



Connecticut Department of Energy and Environmental Protection

Daniel C. Esty, Commissioner

79 Elm Street
Hartford, CT 06106-5127



Milford Housatonic WPCF

Report of the Nitrogen Credit Advisory Board for Calendar Year 2010 To the Joint Standing Environment Committee of the General Assembly

September 30, 2011

**REPORT OF THE NITROGEN CREDIT ADVISORY BOARD
FOR CALENDAR YEAR 2010**

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

Concerning the

NITROGEN CREDIT EXCHANGE PROGRAM

**As required by
Section 22a-523(c) of the
Connecticut General Statutes**

September 30, 2011

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 requirement of Section 22a-523(c) Connecticut General Statutes. Such section 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. This report covers the period from January 1, 2010 to December 31, 2010.

This report provides a summary of the technical progress 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 is only possible if adequate funding is provided through the Clean Water Fund each year to construct new projects and through the development and application of innovative approaches and management techniques to meet nutrient reduction goals for Long Island Sound.

Highlights of the Nitrogen Program for Calendar Year 2010

- All 79 municipalities regulated under the General Permit for Nitrogen Discharges cooperated fully in implementing the program. Aggregate treatment plant performance for 2010 was 9,823 equalized pounds of nitrogen per day (eq. lbs N/day), which is slightly higher than 2014 Total Maximum Daily Load (TMDL) target of 9,141 eq. lbs N/day.
- The Nitrogen Credit Advisory Board recommended a value of \$4.59 per equalized pound of nitrogen in 2010 approved by Commissioner Amey Marrella. The price of a credit in 2009 was \$4.54. This continues the slow increase in credit prices since 2007 when it was \$4.36.
- In 2009, the value of credits purchased by the Nitrogen Credit Exchange was \$2,263,482 and the value of those sold was \$3,274,823. Forty-three facilities were required to purchase credits to meet their permit limits, while thirty-five facilities had credits to sell. One facility (Bridgeport East Side) recorded a zero balance and did not purchase or sell credits.
- Facilities that finished construction in 2009, Milford Beaver Brook (Phase 2), Milford Housatonic (Phase 2) and Stratford (Phase 2), became “project facilities” for 2010. A project facility is defined as any facility with a fully operational nitrogen removal system on January 1, of the trading year. These facilities removed approximately 999 eq. lbs N/day. Nitrogen removal performance for these facilities was better than the predicted 676 eq. lbs N/day.
- Project construction schedules for the coming years indicate that the 2014 TMDL nitrogen load target will likely be met if adequate financing is available from Connecticut Clean Water Fund (CWF).
- Continued success of the Nitrogen Credit Exchange depends on adequate, continuing funding of the CWF of at least \$90 million/year in general obligation bond funding to meet nitrogen control needs and other priority infrastructure financing such as treatment plant upgrades, combined sewer overflow abatement and phosphorus controls. In the current biennial budget, the CWF is slated to receive \$182.6 million of general obligation bonds and \$360 million of revenue bonds.

Executive Summary

In accordance with Sec 22a-523(c) CGS, the Nitrogen Credit Advisory Board (NCAB) submits this 2010 Annual Report of the Nitrogen Credit Advisory Board on the progress of the Nitrogen Credit Exchange Program for the calendar year 2010.

The NCAB highlights these key findings and concerns regarding the continuing success of the program:

- Milford Beaver Brook (Phase 2), Milford Housatonic (Phase 2), and Stratford (Phase 2) were completed in 2009 and therefore became project facilities in 2010. A project facility is defined as any facility with a fully operational nitrogen removal system on January 1, of the trading year.
- Five additional facilities finished construction in 2010 and will become project facilities for the 2011 trading year: Danbury, Groton Town, Southington, Meriden and New Hartford. Glastonbury and Stafford will finalize construction in 2011 and the Windham facility will finish construction 2012.
- The New Hartford Plant went through a hydraulic expansion from 0.09 million gallons per day (MGD) to 0.40 MGD, the plant has been design to remove 7.5 mg/l per day. Since the plant went through a hydraulic expansion in 2010 the mass load also increased; therefore the New Hartford plant will now be included in the Nitrogen Trading Program. The New Hartford plant will be required to comply with the requirements of the General Permit for Nitrogen Discharges in 2011.
- Project implementation depends on continued bonding authorization for the CWF to avoid backlogging projects and to ensure the 2014 nitrogen reduction goal is met.
- The Clean Water Fund Project Priority List for fiscal years 2010 and 2011 was issued in final form on June 25, 2010 and provides \$79,995,976 in general obligation bonds, \$200,000,000 in state revenue bonds, and \$33,963,000 in Federal capitalization grants. This level of funding provides only partial funding for the Mattabassett WPCA denitrification project in FY11. Greater New Haven WPCA's project is currently delayed two years and Norwalk has deferred implementation of their final denitrification project.

Major accomplishments and activities relative to the 2010 program operations include:

- In 2010 the equalized average load of 9,823 eq. lbs N/day was lower than the 2010 nitrogen general permit limit of 10,434 eq. lbs N/day. The permit loads are intentionally set below the prevailing WLA to ensure compliance with the TMDL requirements.
- The Nitrogen Credit Advisory Board recommended a value of \$4.59 per equalized pound of nitrogen in 2010 based on capital and operational costs and nitrogen removal at project facilities. The price of a credit in 2009 was \$4.54.
- In 2010, forty-three facilities were required to purchase credits to remain in compliance with the General Permit. Municipalities purchasing credits for a total cost of \$2,263,482. Thirty five facilities received payments totaling \$3,274,823. One facility (Bridgeport East Side) had a balance of zero and did not purchase or sell credits as a result.

- Facilities completing construction in 2010 included: Danbury, Groton (Town), Southington, Meriden, and New Hartford. These improvements are projected to reduce the nitrogen load to Long Island Sound by 664 eq. lbs N/day. Between 2011 and 2012, Stafford, Glastonbury, South Windsor, Ansonia, West Haven, New Milford, and Hartford (phase 2) will be completed. It is estimated that nitrogen loads will be reduced by an additional 1,413 eq. lbs N/day.
- With the above reductions, the state aggregate nitrogen load by 2013 is estimated to be 9,330 eq. lbs N/day, which is very close to the 2014 TMDL limit of 9,141eq. lbs N/day.
- The revision of the Long Island Sound TMDL was anticipated in 2010 with the understanding that dissolved oxygen criteria attainment will require nitrogen reductions from additional sources throughout the watershed. However, the decision was made that the TMDL revision should be a 5-state TMDL, including Massachusetts, New Hampshire and Vermont to ensure full participation in the evaluation and commitment to the planned reductions in nitrogen. The TMDL completion date schedule is, therefore, under review.

I. Introduction

Background

Long Island Sound's (LIS) most pressing water quality problem is caused by over enrichment of nutrients, specifically nitrogen, which 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 the dissolved oxygen in the water 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 create an ecosystem imbalance by disrupting 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 water bodies that do not meet minimum State Water Quality Standards, such as Long Island Sound. 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's and New York's jointly submitted TMDL to address the impairment to Long Island Sound water quality that results from excessive nitrogen loading. The TMDL established the maximum loading for nitrogen that Long Island Sound can assimilate without causing impaired water quality, apportioned that maximum loading among sources, and laid out a plan to achieve the loading reductions necessary to meet Water Quality Standards.

In the TMDL, discharges from municipal sewage treatment plants (STPs), stormwater 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 (WLA) 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 – Attachment A), 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.

2010 Performance of the Nitrogen Credit Exchange

In 2010 the equalized average load of nitrogen to LIS was 9,823 eq. lbs N/day, which is slightly higher than 2014 WLA target specified in the TMDL of 9,141 eq. lbs N/day.

In 2010 the equalized average load of 9,823 eq. lbs N/day was lower than the 2010 nitrogen general permit limit of 10,434 eq. lbs N/day. The permit loads are intentionally set below the WLA to ensure compliance with the TMDL requirements (Attachment B).

- In general, there has been a downward trend in aggregate end-of-pipe loads of nitrogen statewide on an annual basis through the end of 2010. (Attachment C). Milford Beaver Brook WPCF(Phase 2), Milford Housatonic (phase 2) WPCF and Stratford (Phase 2)WPCF contributed to reduced

nitrogen loads to LIS because they finished construction in 2009 and were fully removing nitrogen, making them eligible “project facilities” for the 2010 nitrogen credit exchange.

- In general, weather, particularly rainfall and snowmelt did not appear to impact nitrogen removal in 2010. Although the load in March 2010 (17,669 eq. lbs N/day) was higher than the previous year (attachment B), the plants were able to comply with the 2010 TMDL permit limit (10,434 eq. lbs N/day). The effect can be seen in Figure 1.
- The drier and warmer weather that occurred during most of 2010 enhanced nitrogen removal. August of 2010 was the lowest aggregate monthly (7,075 eq. lbs N/day) nitrogen load since the program started and was well below the final WLA target of 9,141 eq. lbs N/day set for 2014.

The number of nitrogen removal upgrade projects that became operational during the year is related to the level of funding available from the Clean Water Fund (CWF). The general permit limits are based on the anticipated ability of sewage treatment plants to remove additional nitrogen.



Figure 1. Monthly aggregate performance of 79 facilities during 2010.

Condition of Long Island Sound

Nitrogen trading has led to measurable reductions in Connecticut’s nitrogen load to LIS. Signs of improvement in hypoxia are evident, but more reductions are needed to meet management goals to attain a healthy LIS. Added attention must be directed towards point sources from outside of Connecticut, including atmospheric sources, and stormwater and nonpoint source runoff.

The area affected by hypoxia in LIS, which is monitored each summer by DEP staff with funding from the federal EPA Long Island Sound Study (LISS), provides a good indicator of overall condition, and the long term trend (Figure 2). Although annual variation is large, subject to changing weather conditions that affect the severity of hypoxia each year, the underlying trend in hypoxic area is downward, although slight. That change is best illustrated by the direction of the 5-year moving average (Figure 2). Since 1987, the affected area has averaged about 195 square miles; however, during the last 10 years, only the 2003 event was significantly higher than the long term average. Taking into consideration that several of the warmest years on record, which exacerbates hypoxia, have occurred in the last 12 years, the areal

indicator appears to be benefitting from nitrogen management. Also, no observations below 1.0 mg/L of dissolved oxygen, severe hypoxia or anoxia, were reported in 2009 or in 2010 (Figure 2).

Wet weather can deliver a surplus of nitrogen to the Sound, and the late winter and early spring of 2010 endured some significant rainfall events, and the summer of 2010 exhibited typical, stable summer weather that can increase the impact of hypoxia. Despite these conditions conducive to hypoxia, the area of hypoxia continued to decline since its most recent peak in 2003 (Figure 2).

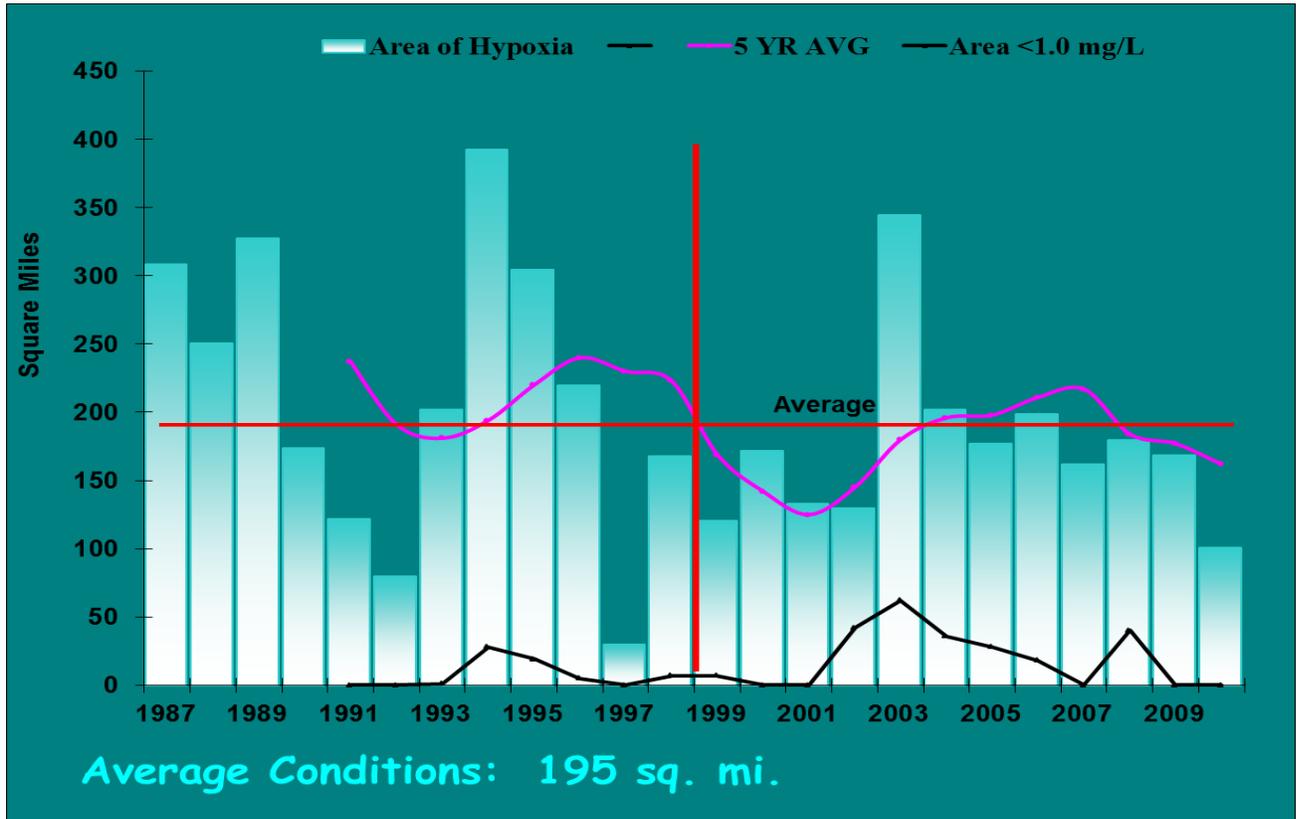


Figure 2. Area and trend of hypoxia in Long Island Sound, 1987-2010.

The hot, stable conditions of 2010 were expected to create favorable conditions for a severe hypoxia event. However, as of early August, the areal extent of hypoxia had peaked, covering only about 167 sq. mi., lower than 2009. By late August, hypoxia had dissipated with the lowest dissolved oxygen concentrations observed in the 3.0 to 3.5 mg/L range in small areas of the Sound.

II. The 2010 Nitrogen Credit Exchange

Credit Price

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:

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

"Nitrogen Removal Project" is defined as any alteration of the physical structure of a wastewater treatment facility specifically constructed to remove nitrogen that was financed by the CWF. A "Project Facility" is further defined as any facility with a fully operational nitrogen removal system of any scale on January 1 of the trading year. Under this definition, 41 facilities were considered to be Project Facilities during 2010 (Attachments D, E and F).

"Capital Costs" were established by the Board as the annual CWF 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 is not considered to be a capital cost for purposes of setting credit prices. Using this procedure, the Board established the annual capital cost for nitrogen treatment in 2010 at \$9,054,182 (Attachment F). 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 \$13,348,752 was adopted by the Board as the annual operation and maintenance cost for nitrogen removal in 2010. Combining capital and operation and maintenance costs yielded a total cost for nitrogen removal in 2010 of \$22,402,934 (Attachment F).

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 the 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 13,384 eq. lbs N/day of nitrogen was reduced by the 41 project facilities that were on line in 2010 (See Attachment E). Based on these analyses, the cost was determined by dividing the Total Project Cost of \$22,402,934 by 13,384 pounds per day of equalized nitrogen removed during the year times 365 days in the year.

The Board formally submitted a recommendation to the Commissioner that she establish the value of an equalized nitrogen credit at \$4.59 for trading in 2010. The Commissioner accepted this recommendation and issued a draft ruling pursuant to CGS Section 22a-527 (Attachment H). 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 \$4.59 for 2010.

Numbers of Credits Traded and Final Balances

In 2010, forty-three facilities were required to purchase credits in order to remain in compliance with the General Permit (Attachment D). Municipalities purchased 493 equalized credits at a total cost of \$2,263,482 (Table 1). Thirty-five facilities received payments totaling \$3,274,823 from the sale of 713,469 equalized nitrogen credits. One facility (Bridgeport East Side) didn't purchase or sell credits because its balance was zero. More nitrogen was removed than required in the nitrogen general permit in 2010, payments from credit purchasers are lower than monies paid out by sellers (Attachment D).

Fluctuations above and below the aggregate limits are expected and acceptable in the trading program provided the conditions of the TMDL are met. The goal is a “balanced budget”, where credits sold are adequate to cover those purchased. Credit prices have risen from \$1.65 to \$4.59 over the eight years of operation of the NCE. The price of a credit has risen slowly since 2007 when it was \$4.36, representing the last substantial increase (from \$3.40). The combination of fewer projects coming on line and good performance results has kept prices relatively stable since 2007.

III. Progress towards TMDL goal

Nitrogen Loading Trend and Scheduled Projects

Despite the effect of intense storms, wet weather, and cold periods that impair nitrogen removal capability at municipal facilities and the financial limitations that have kept the number of nitrogen removal projects below desired levels, steady progress has been made towards achieving the 2014 TMDL allocation.

In 2010, the equalized average nitrogen load was 9,823 eq. lbs N/day, which is slightly higher than 2014 TMDL target of 9,141 eq. lbs N/day. The twelve month moving nitrogen load average through December 2010 was 9,870 eq. lbs N/day (yellow line in Figure 3) and has continued its downward trend into 2011.

Three facilities Milford Beaver Brook (Phase 2), Milford Housatonic (Phase 2) and Stratford (Phase 2), completed construction for nitrogen removal in 2009, which helped to meet with 2010 TMDL limit.

- Danbury, Groton Town, Southington, Meriden and New Hartford finished construction in 2010; therefore, they will be considered project facilities in 2011. Good performance was observed for these five project facilities in 2010. The total amount of eq. lbs N/day removed from these facilities in 2010 was 664 eq. lbs N/day. Glastonbury and Stafford finish construction in 2011. The Windham plant will finish construction in 2012.
- The New Hartford Plant was upgraded in 2010 and went through a hydraulic expansion from 0.09 million gallons per day (MGD) to 0.40 MGD. As a result, the New Hartford plant is now large enough to be included in the Nitrogen Trading Program. The New Hartford plant will need to comply with the requirements of the General Permit for Nitrogen Discharges starting in 2011.

**Monthly Average Total Equalized Nitrogen Loading to Long Island Sound
Projection to 2014**

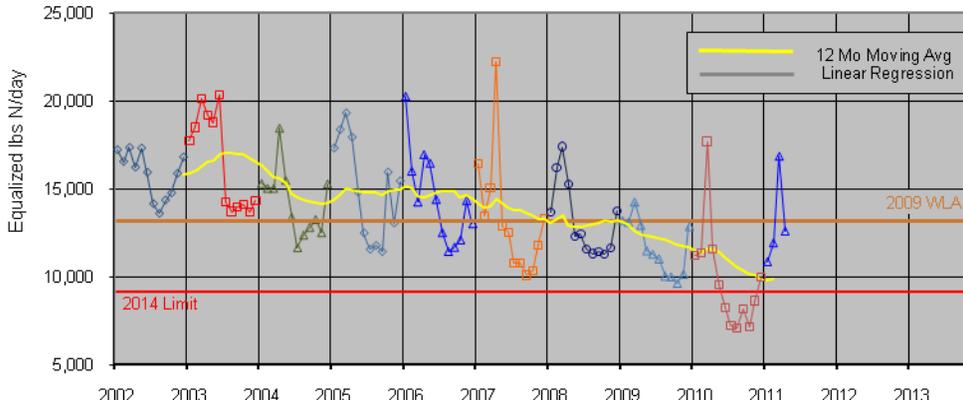


Figure 3. Monthly average total nitrogen loading to Long Island Sound, 2002-2011 Meeting the 2014 Wasteload Allocation and Permit Limits.

The Department developed projections to determine whether the 2014 TMDL target nitrogen load allocation will be attained. Assumptions included:

- The total amount of nitrogen removed from project facilities that finished construction (Milford Beaver Brook (Phase 2), Milford Housatonic (Phase 2) and Stratford (Phase 2)) was approximately 999 eq. lbs N/day. This is more nitrogen removed than the predicted 676 eq. lbs N/day.
- Facility upgrades for nitrogen removal completed in 2010 included Danbury, Groton Town, Southington, Meriden and New Hartford. By 2011 Stafford and Glastonbury will be finished and by 2012 with projects in South Windsor, Ansonia, West Haven, New Milford, and Hartford (phase 2) planned for completion, it is estimated that nitrogen loads will be reduced by an additional 1,413 eq. lbs N/day.
- With these reductions the state aggregate nitrogen load by 2013 is estimated to be very close to the 2014 TMDL limit of 9,141eq. lbs N/day.

Clearly, additional projects will need to become operational, and nitrogen removal will need to be optimized at existing project facilities by 2014 if the permit limit is to be successfully met each year. The annual reduction in limits reflects the statewide projection of nitrogen reduction generated by newly constructed treatment facilities. A linear extrapolation predicts that by the end of 2011 the plants will collectively reduce the nitrogen load by 60%. By 2013 the reduction will be 64%, which is very close to the TMDL WLA for 2014.

Proposed Revisions to the Program

The Department and Nitrogen Credit Advisory Board members will continue to work with municipalities that plan to host projects to ensure their projects are implemented. If warranted, the DEP and NCAB members will evaluate the potential benefits of adjusting the price of the nitrogen credit and other actions

that will help maintain progress towards the goal. Strategies including either incentive or enforcement may be needed to encourage municipalities with key projects to initiate and complete improvements to their facilities in a timely manner.

The Nitrogen General Permit (NGP) expired at the end of 2010. The permit was reissued on December 29, 2010 (Attachment I). The reissued general permit for Nitrogen Discharges covers the 5-year period January 2011-2015. The limits derived are consistent the methodology used to set limits in the prior permits.

In 2009 the NCAB also approved a funding program for dissolved oxygen and nitrogen sampling equipment purchases by municipal treatment plants. The equipment will help optimize the denitrification process. By constantly monitoring dissolved oxygen and nitrate levels facilities will be better able to control the amount of dissolved oxygen entering the anoxic zones and optimize nitrate recycles and supplemental carbon. It is estimated that an additional 1,374 eq. lbs N/day will be removed from the facilities that are acquiring analyzers to be used for process control. It is expected that the new monitoring equipment will be installed by the fall of 2011 by the WPCFs that expressed interest in purchasing the equipment.

IV. Finances

The principal factor affecting the rate of progress in reducing nitrogen loads is the availability of financing through the Clean Water Fund to complete nitrogen removal upgrades to municipal sewage treatment facilities. The improved performance necessary to achieve future limits will require construction of upgraded treatment technology at a number of facilities in Connecticut.

The Clean Water Fund Project Priority List for fiscal years 2010 and 2011 was issued in final form on June 25, 2010. The approved funding list includes \$79,995,976 in general obligation bonds, \$200,000,000 in state revenue bonds, and \$33,963,000 in Federal capitalization grants. Two nitrogen projects that were on the fundable projects list for fiscal year 2011 will not move to construction this year. New Haven's upgrade will be delayed by approximately two years and Norwalk has deferred implementation of their upgrade. However, the funds for these projects were redirected to partially fund to Mattabassett District in FY11 due to affordability issues.

Cost of Projects on Line

Three additional nitrogen removal projects came on line early in 2009 –Milford Beaver Brook (phase 2), Milford Housatonic (Phase 2), and Stratford (Phase 2) (Attachment G). These projects cost over \$100 million total to construct, with \$21 million going towards nitrogen removal.

Five additional projects finished construction in 2010 and will become project facilities for the 2011 trading year: Danbury, Groton Town, Southington, Meriden and New Hartford. Total upgrade cost for these facilities about \$87 million with the denitrification portion at \$35 million. The complete list of nitrogen removal projects that have been completed or currently approved for funding by the Clean Water Fund is provided as Attachment G.

Through 2010, Connecticut and its municipalities have spent or committed to more than \$0.7 billion in financing upgrade projects at facilities involved in the NCE. More than \$200 million of that investment has gone towards nitrogen control. Currently, it is estimated that total upgrade costs to meet the nitrogen control target will exceed \$1 billion, with more than \$400 million of that relevant to nitrogen control upgrades. However, the trading of nitrogen credits with its economic efficiencies is estimated to save in

the range of \$300 - \$400 million compared to a traditional individual permit program where every facility would be required to meet its individual limit.

Use of NCE Funds

This is the fourth time since the program started in 2002 that more credits were sold into than purchased from the Nitrogen Credit Exchange. According to Sec. 22a-524(b)(11) of the Connecticut General Statutes, the Commissioner, in consultation with the NCAB, shall: "Establish accounts of funds created from the purchase and sale of equivalent nitrogen credits to be used for administration of the nitrogen credit exchange program and which may be used for nitrogen removal projects, habitat restoration projects and research". Further, in Sec. 22a-524(b)(12) of the Connecticut General Statutes, the Commissioner, in consultation with the NCAB, shall: "Establish any other policies or procedures the commissioner may deem necessary to carry out the nitrogen credit exchange program; and Sec. 22a-524(b)(13) provides abilities to "establish a technical assistance program" to educate and assist municipalities in implementing the nitrogen credit exchange program".

Over the past two years, the NCAB recommended that funds be used for:

- Training and providing technical assistance of which \$240,000 was assigned in 2007. New England Interstate Water Pollution Control Commission (NEIWPCC) has been retained to work with CT DEP and selected municipalities to train operators on the topics of nitrogen removal, the Biological Nitrogen Removal process, and better management of wet weather/cold weather conditions that have an adverse impact on nitrogen removal. This has helped ensure that the maximum benefit from existing upgrades is attained. The money assigned to this project has not all been spent.
- Providing supplemental funding to the USGS for enhanced Connecticut River monitoring. Because the Connecticut River is tidal, the loads along the river from Thompsonville to Long Island Sound are poorly understood. On November 2007, \$180,000 was allocated to monitor the river and on December 2010 the Board allocated an additional \$90,000 for fiscal year 2011-2012 to continue monitoring. Project is ongoing.
- The NCAB is funding enhanced nutrient monitoring statewide by partnering with the USGS. In 2008, \$240,000 was provided for monitoring to be conducted on rivers throughout the state to better determine nitrogen loads from within and outside of Connecticut. An additional \$323,500 was allocated to keep monitoring in federal fiscal year 2011 (\$45,000) and 2012 (\$45,000). Using those data along with their existing database, USGS will comprehensively analyze and report on nitrogen loads and trends to Long Island Sound. The project is ongoing.
- The NCAB has previously set aside \$100,000 in 2007 for a study of combined sewer overflows (CSO), sanitary sewer overflows (SSO) and stormwater separation effects on nitrogen loads and other urban stormwater and sewage pollutants. In 2008, total project funding of \$741,854 was recommended by the Board and approved by the Commissioner. DEP has partnered with the University of Connecticut center for Environmental Science and Engineering (CESE) to evaluate the relative benefits and impacts of sewer separation and delivery of nitrogen to the receiving water via the POTW and direct storm sewer discharge. The project is ongoing.
- The Advisory Board has also recommended a sixth year's membership (2010-2011) in the Water Environment Research Foundation (WERF) at a cost of \$10,250 per year. WERF keeps members informed on the latest technology, technical discussion groups, seminars, and workshops relevant

to treatment plant operations and nitrogen removal. WERF is also embarking on a nitrogen research initiative that will be very useful to nitrogen management in Connecticut and plans to use the NCE's data and experiences in their evaluations.

- The NCAB has recommended \$1,966,500 to be used for funding for the purchase of on-line (automated) or portable analyzers for dissolved oxygen (DO) and nitrogen analyzer equipment for those WPCFs that don't currently have equipment, or adequate equipment. WPCFs will be reimbursed 75% of the purchase price, which is estimated to be \$40,000 for two on-line analyzers and \$3,000 for portable analyzers. The project is ongoing.

The Advisory Board continues to explore ideas for the use of the funds for training and improvements in treatment plants to enhance nitrogen removal and to ensure that the program achieves the TMDL limit.

V. Revisions to the TMDL/Upper Connecticut River

The Total Maximum Daily Load (TMDL) for nitrogen, adopted in 2001, was scheduled for revision in 2003 to include changes related to anticipated changes in Connecticut and New York water quality standards, a new System-wide Eutrophication Model (SWEM) being developed for Long Island Sound, and to include more specific nitrogen reduction targets for Upper Connecticut River Sources in Massachusetts, New Hampshire and Vermont and for atmospheric deposition. Lengthy delays in the completion of and scenario testing with the SWEM model, as well as implementation of studies of nitrogen loading and delivery in the Upper Connecticut River have put off the TMDL revision, most recently scheduled for completion in 2010.

However, Commissioners from the five states that are in the Long Island Sound watershed recently agreed to collaborate on a five-state TMDL process. While this will delay put completion of the revised TMDL, it provides all states (Connecticut, New York, Massachusetts, New Hampshire and Vermont) with a better opportunity to contribute to the revision of the TMDL, and a legal commitment to implementing the TMDL.

With coordination by NEIWPC, the watershed states have been meeting regularly and evaluating the data being generated by the studies of the Upper Connecticut River to develop an equitable and reasonable nitrogen management plan. In particular, a new watershed model has been developed that allows managers to identify nitrogen loads from all point and nonpoint sources, the delivery efficiency of that nitrogen to Long Island Sound, and the costs and feasibility of reductions. These tools, and continued meeting and engagement of all five states will help maintain a commitment to revising the TMDL.

VI. Recommendations for Statutory Change

Until there is further assessment of the program, and a TMDL, there were no recommendations to make any statutory changes raised by the Board during 2010.

VIII. Attachments

- A. Nitrogen Credit Advisory Board Members 2010
- B. Total nitrogen Balance Sheet - Monthly Averages by plant 2010
- C. Total nitrogen Balance Sheet 2002 - 2010
- D. Nitrogen Exchange Balance Sheet 2010
- E. Equalized lbs reduced by project facilities 2010
- F. Total Annual Project Costs 2010
- G. Nitrogen Removal Projects Financed by the CWF through 2010

- H. Draft Ruling
- I. General Permit for Nitrogen Discharges - 2010
- J. Nitrogen Credit Advisory Board 2012 Meeting Schedule

IV. Acknowledgements

DEEP thanks Paul E. Stacey, Research Coordinator for the Great Bay National Estuarine Research Reserve and the members of Nitrogen Board for their contributions to this document.

Attachment A
LIST OF APPOINTEES 2010

Name	Current Appointing Authority	Term	Term Expires*
1. Vacant	Martin M. Looney Senate Majority Leader	3 years	
2. Under Secretary Office of Police Management	Secretary Office of Policy and Management	No specific Term	
3. Robert Moore The MDC PO Box 800 555 Main St. Hartford, CT 06142-0800 Phone: 278-7850	Donald E. Williams, Jr. Senate President Pro Tem (Sullivan appointee)	3 years	November 2005 *
4. Betsey Wingfield Bureau Chief DEP 79 Elm St Hartford, CT 06016 Phone: (860) 424-3704	Amey Marrella Commissioner Environmental Protection	No specific term	

5.	Sharon Dixon Peay Office of the Treasurer 55 Elm Street Hartford, CT 06106 Phone: (860) 702-3134	Denise Nappier Secretary Office of the Treasurer	No specific Term	
6	Astrid T. Hanzalek 31 Abraham Terrace Suffield, CT 06078 Phone: (860) 668-2739	Lawrence F. Cafero, Jr. House Minority Leader (Ward Appointee)	3 years	September 2010
7.	Brian Armet Executive Director Mattabassett District 245 Main Street Cromwell, CT 06416 Phone: (860) 635-5550	Denise Merrill House Majority Leader (Pudlin Appointee)	3 years	June 2008 *
8.	Richard Cellar 83 Lawrence Road Fairfield, CT 06824-3039 Phone: (203) 255-5017	John McKinney Senate Minority Leader (DeLuca Appointee)	3 years	November 2005 *
9.	Carl Almquist Town of Groton WPCA 134 Groton Long Point Road Groton, CT 06340 - 4873 Phone: (860) 448-4083	M. Jodi Rell Governor	3 years	November 2007*

10.	Jeanette Brown Stamford WPCF Harbor View Avenue Stamford, CT 06902 (203) 977-5809	Denise Merrill House Majority Leader (Donovan Appointee)	3 years	November 2009
11.	William Norton, Director City of West Haven WPCA 355 Main Street West Haven, CT06516 (203) 937-3706	Christopher G. Donovan Speaker of the House (Amann Appointee)	3 years	February 2008*
12.	Vacant	Martin M. Looney Senate Majority Leader	3 years	

* Appointees remain active until removed by their appointees authority

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2010

	<u>Limit '10</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>	<u>AVG</u>
<u>ZONE: 1</u>														
GROTON CITY WPCF	113	176	139	203	121	87	77	61	67	67	69	122	94	107
GROTON TOWN WPCF	175	405	221	315	647	551	206	91	292	135	156	164	151	278
P JEWETT CITY WPCF	18	5	7	7	6	6	7	5	3	4	4	5	9	6
KILLINGLY WPCF	150	152	180	252	404	516	226	125	231	122	115	163	170	221
P LEDYARD WPCF	8	10	10	10	4	3	2	5	5	4	5	5	5	5
MONTVILLE WPCF	135	54	70	132	106	110	115	108	86	68	42	53	44	82
P NEW LONDON WPCF	441	527	422	531	340	222	248	206	234	202	298	333	459	335
NORWICH WPCF	229	589	835	551	639	434	397	415	335	344	363	392	481	481
PLAINFIELD NORTH WPCF	39	112	106	141	133	130	95	79	70	62	69	86	63	95
PLAINFIELD VILLAGE WPCF	27	47	55	68	64	79	79	20	32	48	29	41	44	51
PUTNAM WPCF	60	116	166	184	136	174	198	113	56	140	108	137	157	140
SPRAGUE WPCF	8	23	39	37	22	28	18	20	13	15	14	14	13	21
STAFFORD SPRINGS WPCF	68	125	144	175	160	131	102	113	98	86	114	110	188	129
STONINGTON BOROUGH WP	15	8	14	27	20	16	6	13	8	7	6	6	8	11
STONINGTON MYSTIC WPCF	31	10	33	41	69	55	28	27	32	27	25	18	19	32
STONINGTON PAWCATUCK	28	28	32	40	114	45	15	18	16	17	16	28	30	33
THOMPSON WPCF	12	24	37	29	27	35	42	32	36	33	30	21	18	30
P UCONN WPCF	50	114	209	156	44	17	30	10	6	90	23	23	53	65
WINDHAM WPCF	143	534	684	745	425	375	294	109	121	111	124	212	351	340
<u>ZONE: 2</u>														
P BRISTOL WPCF	455	567	733	754	624	542	607	553	399	307	428	487	718	560
CANTON WPCF	28	160	143	129	135	141	138	99	95	93	98	106	118	121
P EAST HAMPTON WPCF	62	218	159	124	195	174	74	76	52	75	67	75	121	117
P EAST HARTFORD WPCF	334	365	454	465	524	336	298	352	301	278	267	373	381	366
P EAST WINDSOR WPCF	68	21	27	36	32	10	14	18	15	13	15	18	20	20
P ENFIELD WPCF	318	270	198	285	366	228	193	209	230	240	249	223	289	248
FARMINGTON WPCF	203	261	272	399	371	229	167	192	187	193	179	234	321	250
GLASTONBURY WPCF	112	195	143	232	131	105	78	42	88	70	125	93	110	118
P HARTFORD WPCF	2714	4595	5494	5875	4516	3505	3007	2040	1606	2059	2404	5338	5647	3841
MANCHESTER WPCF	356	1061	864	1187	933	1011	919	784	672	669	664	779	848	866
MATTABASSETT WPCF	952	1780	1212	1768	1530	1397	1127	752	663	994	750	1400	1757	1261
MIDDLETOWN WPCF	253	508	512	1232	582	523	267	267	381	391	394	505	399	497

P = Project Facility

Report Date: 6/17/2011

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2010

	<u>Limit '10</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>	<u>AVG</u>
P PLAINVILLE WPCF	115	130	129	206	121	73	60	63	56	66	76	96	88	97
PLYMOUTH WPCF	48	81	65	91	56	54	37	31	31	40	78	124	130	68
P PORTLAND WPCF	36	34	41	69	45	28	15	22	18	14	13	23	21	28
ROCKY HILL WPCF	329	460	449	622	413	483	532	594	527	466	396	539	495	498
P SIMSBURY WPCF	122	54	57	74	64	19	37	33	36	34	26	33	43	43
SOUTH WINDSOR WPCF	120	330	305	369	326	348	345	368	415	338	341	333	291	342
P SUFFIELD WPCF	51	23	60	54	35	9	9	11	11	23	29	10	24	25
VERNON WPCF	210	404	464	603	335	378	378	270	376	359	340	325	399	386
P WINDSOR LOCKS WPCF	75	112	169	207	128	71	65	63	59	62	61	76	77	96
WINDSOR POQUONOCK WPC	112	425	455	489	615	541	544	498	505	409	498	509	444	494
P WINSTED WPCF	73	103	137	71	81	59	42	46	35	42	48	47	54	64
ZONE: 3														
P BRANFORD WPCF	219	205	207	280	95	126	92	86	47	55	44	42	40	110
P CHESHIRE WPCF	117	37	42	63	55	28	23	45	23	27	41	41	36	38
MERIDEN WPCF	513	864	1167	1315	1185	1350	964	459	249	188	126	192	295	696
P NEW HAVEN EAST WPCF	1790	1459	1888	1909	1526	1372	2019	1242	1195	1193	1173	1361	1594	1494
P NORTH HAVEN WPCF	180	218	199	286	183	146	147	134	119	123	115	119	185	164
SOUTHINGTON WPCF	232	245	264	367	295	191	237	90	169	81	80	139	169	194
P WALLINGFORD WPCF	307	544	452	965	579	423	333	292	272	276	356	410	570	456
P WEST HAVEN WPCF	403	591	611	1476	938	585	350	404	314	446	473	556	599	612
ZONE: 4														
ANSONIA WPCF	131	206	275	417	345	175	155	120	102	104	92	78	71	178
BEACON FALLS WPCF	14	72	59	67	60	60	48	49	50	64	65	68	58	60
DANBURY WPCF	505	991	914	1082	801	701	458	277	459	416	444	562	628	644
P DERBY WPCF	81	67	56	144	75	46	40	41	34	51	70	79	59	63
P LITCHFIELD WPCF	27	44	55	62	35	25	24	16	16	33	31	45	41	35
P MILFORD BEAVER BROOK W	108	168	139	213	122	65	77	102	78	65	55	57	73	101
P MILFORD HOUSATONIC WPC	352	228	188	576	279	241	206	200	165	150	142	252	231	238
NAUGATUCK TREATMENT C	281	421	377	457	282	191	159	138	198	125	163	175	289	248
NEW MILFORD WPCF	28	173	202	188	168	126	81	128	109	94	108	131	117	135
P NEWTOWN WPCF	19	30	21	38	19	14	10	6	12	19	29	28	32	21
NORFOLK WPCF	13	17	44	28	19	23	25	20	15	19	27	24	16	23
NORTH CANAAN WPCF	15	30	34	41	30	21	20	23	17	21	24	24	30	26
SALISBURY WPCF	24	32	41	29	31	29	36	34	30	36	45	34	27	34

P = Project Facility

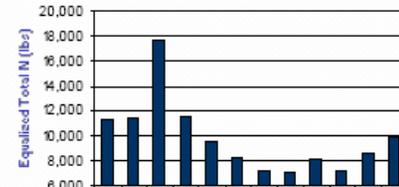
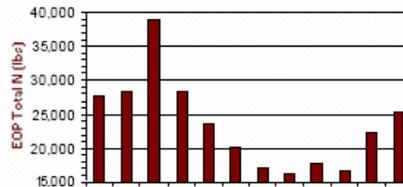
Report Date: 6/17/2011

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2010

	<u>Limit '10</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>	<u>AVG</u>
P SEYMOUR WPCF	70	53	52	110	61	60	59	70	54	50	43	56	73	62
P SHELTON WPCF	121	162	117	206	123	117	87	76	80	77	105	105	98	113
SOUTHURY TR. SCHOOL W	17	5	4	15	7	7	6	7	7	6	5	7	12	7
P STRATFORD WPCF	406	327	243	539	270	184	175	165	183	168	176	245	264	245
P THOMASTON WPCF	48	38	30	24	34	19	21	23	25	20	13	26	31	25
TORRINGTON WPCF	283	257	216	403	240	175	153	229	202	162	228	275	369	242
P WATERBURY WPCF	1153	1387	776	1661	913	640	633	809	461	474	456	532	878	802
ZONE: 5														
P BRIDGEPORT EAST WPCF	413	267	347	506	381	448	399	347	406	454	505	433	459	412
P BRIDGEPORT WEST WPCF	1189	977	1243	2703	1455	1296	437	723	952	2109	880	911	851	1211
P FAIRFIELD WPCF	464	250	145	454	271	258	440	440	338	433	282	246	348	325
P WESTPORT WPCF	99	48	58	141	48	35	24	21	18	21	23	23	34	41
ZONE: 6														
P GREENWICH WPCF	547	510	490	768	527	382	380	353	377	396	427	414	471	458
P NEW CANAAN WPCF	73	46	27	85	31	16	16	13	13	16	19	21	41	29
P NORWALK WPCF	820	691	679	1016	676	510	494	413	585	542	492	504	598	600
P RIDGEFIELD SOUTH ST. WPC	33	66	51	118	37	40	21	24	24	27	34	34	30	42
P STAMFORD WPCF	1057	630	652	1338	498	358	324	379	306	313	315	367	484	497
End-Of-Pipe Total		27,561	28,305	39,071	28,328	23,756	20,310	16,943	16,202	17,667	16,856	22,292	25,353	
Equalized Total		11,222	11,346	17,669	11,564	9,561	8,240	7,254	7,075	8,167	7,206	8,620	9,953	

End-Of-Pipe Permit = 21,082
End-Of-Pipe Avg. = 23,554

Equalized Permit = 10,434
Equalized Avg. = 9,823



Attachment C

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2010

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>Average 2008- 2010</u>
ZONE:1										
GROTON CITY WPCF	210	161	179	132	118	129	110	114	107	110
GROTON TOWN WPCF	566	465	447	444	470	421	451	353	278	361
JEWETT CITY WPCF	36	40	39	13	10	13	13	8	9	10
KILLINGLY WPCF	162	147	159	177	152	158	191	126	170	162
LEDYARD WPC	5	3	4	5	7	5	7	5	5	6
MONTVILLE WPCF	187	153	222	92	98	69	82	91	82	85
NEW LONDON WPCF	449	405	332	434	423	414	377	391	335	368
NORWICH WPCF	758	986	769	748	828	684	673	612	481	589
PLAINFIELD NORTH WPCF	50	87	78	90	119	108	105	88	95	96
PLAINFIELD VILLAGE WPCF	32	44	41	49	54	42	42	43	51	45
PUTNAM WPCF	163	170	174	193	205	206	206	157	140	168
SPRAGUE WPCF	15	7	10	13	22	14	15	21	21	19
STAFFORD SPRINGS WPCF	135	131	121	131	114	120	160	162	129	150
STONINGTON BOROUGH WPCF	55	55	42	47	37	22	19	13	11	14
STONINGTON MYSTIC WPCF	36	43	49	48	51	31	30	25	32	29
STONINGTON PAWCATUCK	46	34	46	30	25	18	19	25	33	26
THOMPSON WPCF	21	35	29	33	28	28	21	18	30	23
UCONN WPCF	78	70	107	65	94	67	103	83	65	84
WINDHAM WPCF	265	243	216	165	167	174	258	364	340	321
End of Pipe Total	3269	3279	3064	2909	3022	2723	2882	2699	2414	2665
ZONE:2										
BRISTOL WPCF	949	1121	793	567	575	532	511	452	560	508
CANTON WPCF	70	87	101	106	113	92	99	100	121	107
EAST HAMPTON WPCF	86	119	96	85	140	110	136	121	117	125
EAST HARTFORD WPCF	755	749	812	803	902	391	417	418	366	400
EAST WINDSOR WPCF	20	34	31	45	32	32	27	26	20	24
ENFIELD WPCF	914	839	275	535	331	218	272	282	248	267
FARMINGTON WPCF	386	354	401	398	440	433	309	269	250	276
GLASTONBURY WPCF	263	307	340	214	290	295	364	223	118	235
HARTFORD WPCF	5978	5900	6529	6831	7408	5839	5326	4217	3841	4461
MANCHESTER WPCF	822	762	755	772	785	715	705	851	866	807
MATTABASSETT WPCF	2120	1795	1453	1408	1202	1129	1053	1123	497	891
MIDDLETOWN WPCF	392	385	424	486	440	397	446	490	497	478
PLAINVILLE WPCF	252	304	311	285	301	280	315	135	97	182
PLYMOUTH WPCF	73	69	68	76	80	71	87	85	68	80
PORTLAND WPCF	24	28	36	33	34	26	33	33	28	31
ROCKY HILL WPCF	631	767	780	919	787	610	484	526	498	503
SIMSBURY WPCF	344	316	323	368	206	84	70	84	43	66
SOUTH WINDSOR WPCF	298	324	317	340	298	322	323	326	342	330
SUFFIELD WPCF	34	37	38	72	88	74	88	47	25	53
VERNON WPCF	483	663	538	488	580	469	426	361	386	391
WINDSOR LOCKS WPCF	131	116	100	143	98	94	110	113	96	106
WINDSOR POQUONOCK	427	422	441	467	432	419	457	450	494	467
WINSTED WPCF	250	187	201	206	223	120	82	66	64	71
End of Pipe Total	15701	15683	15163	15647	15785	12752	12140	10798	9642	10860
ZONE:3										
BRANFORD WPCF	142	79	129	135	103	111	105	94	110	103
CHESHIRE WPCF	468	492	536	480	171	74	75	63	38	59

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2010

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>Average 2008- 2010</u>
MERIDEN WPCF	860	917	882	781	827	810	1008	1051	696	918
NEW HAVEN EAST WPCF	1400	1630	1408	1703	2271	2201	1650	1592	1494	1579
NORTH HAVEN WPCF	534	502	489	424	226	214	249	191	164	201
SOUTHINGTON WPCF	819	798	768	754	761	868	911	725	194	610
WALLINGFORD WPCF	549	601	627	657	522	340	381	429	456	422
WEST HAVEN WPCF	796	668	511	601	546	498	779	549	612	647
End of Pipe Total	5568	5687	5349	5535	5427	5116	5158	4694	3764	4539
ZONE:4										
ANSONIA WPCF	273	307	260	287	289	237	260	270	178	236
BEACON FALLS WPCF	41	45	38	42	44	50	57	58	60	58
DANBURY WPCF	1866	1875	1825	1766	2072	1778	1885	1974	644	1501
DERBY WPCF	53	64	58	59	65	63	64	64	63	64
LITCHFIELD WPCF	67	54	35	49	39	38	45	43	35	41
MILFORD BEAVER BROOK	130	180	120	127	130	132	121	137	101	120
MILFORD HOUSATONIC	439	429	431	479	574	662	742	324	238	435
NAUGATUCK TREATMENT	479	440	234	279	263	250	344	345	248	312
NEW MILFORD WPCF	76	52	56	91	86	88	103	109	135	116
NEWTOWN WPCF	34	50	32	24	36	26	19	18	21	19
NORFOLK WPCF	9	13	12	20	29	32	29	26	23	26
NORTH CANAAN WPCF	18	22	21	31	23	25	24	25	26	25
SALISBURY WPCF	27	27	23	28	29	28	34	32	34	33
SEYMOUR WPCF	55	56	61	69	66	62	58	69	62	63
SHELTON WPCF	452	545	509	501	480	413	219	219	113	184
SOUTHURRY TR. SCHOOL	17	18	16	14	10	7	8	4	7	6
STRATFORD WPCF	535	646	431	539	537	616	1425	605	245	758
THOMASTON WPCF	35	51	45	45	44	32	42	40	25	36
TORRINGTON WPCF	283	299	287	254	265	247	275	226	242	248
WATERBURY WPCF	778	1335	913	965	1001	1034	869	857	802	843
End of Pipe Total	5667	6508	5407	5669	6082	5820	6623	5445	3302	5123
ZONE:5										
BRIDGEPORT EAST WPCF	568	615	459	470	468	271	253	301	412	322
BRIDGEPORT WEST WPCF	2305	2306	1158	1564	1145	1146	1262	1019	1211	1164
FAIRFIELD WPCF	735	453	417	383	530	408	488	431	325	415
WESTPORT WPCF	140	133	152	148	153	70	44	38	41	41
End of Pipe Total	3748	3508	2186	2565	2296	1895	2047	1789	1989	1942
ZONE:6										
GREENWICH WPCF	410	459	443	556	520	697	479	461	458	466
NEW CANAAN WPCF	21	24	20	30	30	38	29	30	29	29
NORWALK WPCF	605	888	784	818	755	1043	766	881	600	749
RIDGEFIELD SOUTH ST.	23	27	28	35	28	32	34	38	42	38
STAMFORD WPCF	1652	1645	1523	1418	1029	726	550	510	497	519
End of Pipe Total	2711	3044	2798	2857	2362	2536	1858	1920	1626	1801
State End of Pipe Total	36664	37708	33966	33182	34974	30842	30702	27345	27345	26930

E Pounds Reduced by Project Facilities - 2010

Project Facilities	Baseload	Average	EOP	E Factor	E Pounds
		TN	Reduced		Reduced
BRANFORD WPCF	526	110	416	0.60	249.60
BRIDGEPORT EAST WPCF	991	413	578	0.85	491.30
BRIDGEPORT WEST WPCF	2852	1149	1703	0.85	1,447.55
BRISTOL WPCF	1091	560	531	0.18	95.58
CHESHIRE WPCF	281	75	206	0.49	100.94
DERBY WPCF	195	64	131	0.67	87.77
EAST HAMPTON WPCF	148	118	30	0.20	6.00
EAST HARTFORD WPCF	801	366	435	0.19	82.65
EAST WINDSOR WPCF	163	20	143	0.19	27.17
ENFIELD WPCF	763	248	515	0.19	97.85
FAIRFIELD WPCF	1113	325	788	0.85	669.80
GREENWICH WPCF	1313	458	855	1.00	855.00
HARTFORD WPCF	6512	3841	2671	0.20	534.20
JEWETT CITY WPCF	42	13	29	0.17	4.93
LEDYARD WPCF	20	6	14	0.18	2.52
LITCHFIELD WPCF	64	36	28	0.35	9.80
MILFORD BEAVER BROOK WPCF	258	101	157	0.67	105.19
MILFORD HOUSATONIC WPCF	844	238	606	0.67	406.02
NEW CANAAN WPCF	175	29	146	1.00	146.00
NEW HAVEN EAST WPCF	4294	1494	2800	0.60	1,680.00
NEW LONDON WPCF	1057	335	722	0.18	129.96
NEWTOWN WPCF	45	22	23	0.46	10.58
NORTH HAVEN WPCF	433	249	184	0.60	110.40
NORWALK WPCF	1967	600	1367	1.00	1,367.00
PLAINVILLE WPCF	277	97	180	0.18	32.40
PORTLAND WPCF	86	29	57	0.20	11.40
RIDGEFIELD SOUTH ST. WPCF	80	42	38	1.00	38.00
SEYMOUR WPCF	167	62	105	0.67	70.35
SHELTON WPCF	290	113	177	0.67	118.59
SIMSBURY WPCF	293	70	223	0.18	40.14
STAMFORD WPCF	2536	497	2039	1.00	2,039.00
STRATFORD WPCF	974	245	729	0.67	488.43
SUFFIELD WPCF	123	88	35	0.19	6.65
THOMASTON WPCF	114	25	89	0.60	53.40
UCONN WPCF	120	65	55	0.15	8.25
WALLINGFORD WPCF	737	456	281	0.60	168.60
WATERBURY WPCF	2766	802	1964	0.60	1,178.40
WEST HAVEN WPCF	967	612	355	0.60	213.00
WESTPORT WPCF	238	41	197	0.85	167.45
WINDSOR LOCKS WPCF	180	96	84	0.19	15.96
WINSTED WPCF	175	82	93	0.18	16.74

TOTAL: 13,384.57

Projects Cost \$22,402,934

Credit Cost: \$4.59

Attachment F
Total Annual Project Cost 2010

Project Facilities	Total Annual Capital Cost	Total Annual O&M Cost	Total Annual Project Cost
BRANFORD WPCF	\$168,661	\$522,315	\$690,976
BRIDGEPORT EAST WPCF	\$51,755	\$727,246	\$779,001
BRIDGEPORT WEST WPCF	\$155,266	\$1,266,095	\$1,421,361
BRISTOL WPCF	\$28,759	\$120,848	\$149,607
CHESHIRE WPCF*	\$317,316	\$259,524	\$576,840
DERBY WPCF	\$31,785	\$107,299	\$139,084
EAST HAMPTON WPCF	\$30,144	\$156,875	\$187,019
EAST HARTFORD WPCF	\$82,707	\$174,767	\$257,474
EAST WINDSOR WPCF	\$61,136	\$60,296	\$121,432
ENFIELD WPCF	\$0	\$415,112	\$415,112
FAIRFIELD WPCF	\$514,885	\$513,626	\$1,028,511
GREENWICH WPCF	\$0	\$163,846	\$163,846
HARTFORD WPCF	\$107,555	\$609,050	\$716,605
JEWETT CITY WPCF	\$65,659	\$96,446	\$162,105
LEDYARD WPCF	\$18,062	\$13,744	\$31,806
LITCHFIELD WPCF	\$45,829	\$45,047	\$90,876
MILFORD BEAVER BROOK WPCF	\$143,806	\$124,814	\$268,620
MILFORD HOUSATONIC WPCF	\$399,082	\$147,640	\$546,722
NEW CANAAN WPCF	\$56,656	\$75,088	\$131,744
NEW HAVEN EAST WPCF	\$151,122	\$708,583	\$859,705
NEW LONDON WPCF	\$54,978	\$328,004	\$382,982
NEWTOWN WPCF	\$72,954	\$93,568	\$166,522
NORTH HAVEN WPCF	\$54,418	\$137,354	\$191,772
NORWALK WPCF	\$276,853	\$1,058,693	\$1,335,546
PLAINVILLE WPCF	\$253,448	\$442,363	\$695,811
PORTLAND WPCF	\$44,740	\$123,419	\$168,159
RIDGEFIELD SOUTH ST. WPCF	\$0	\$57,875	\$57,875
SEYMOUR WPCF	\$14,654	\$103,940	\$118,594
SIMSBURY WPCF	\$211,063	\$36,909	\$247,972
SHELTON WPCF	\$21,642	\$353,094	\$374,736
STAMFORD WPCF	\$2,238,236	\$1,523,289	\$3,761,525
STRATFORD WPCF	\$648,477	\$424,403	\$1,072,880
SUFFIELD WPCF	\$0	\$101,112	\$101,112
THOMASTON WPCF	\$56,408	\$149,659	\$206,067
UCONN WPCF	\$0	\$42,800	\$42,800
WALLINGFORD WPCF	\$122,125	\$258,426	\$380,551
WATERBURY WPCF	\$737,935	\$874,523	\$1,612,458
WEST HAVEN WPCF	\$0	\$626,415	\$626,415
WESTPORT WPCF	\$1,688,193	\$57,515	\$1,745,708
WINDSOR LOCKS WPCF	\$84,200	\$147,660	\$231,860
WINSTED WPCF	\$43,673	\$99,470	\$143,143
TOTAL	\$9,054,182	\$13,348,752	\$22,402,934

BOLD = New Project Plant for Year 2010

Attachment G

Nitrogen Removal Projects Financed by the CWF through 2010

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2010 lbs/day
Seymour	9,800,000	250,000	1993	167	62
East Windsor	10,000,000	1,000,000	1996	163	20
Fairfield Phase 1	4,700,000	4,700,000	1996	1113	325
Greenwich	500,000	500,000	1996	1313	458
Milford BB Phase 1	1,000,000	1,000,000	1996	258	101
Milford H Phase 1	650,000	650,000	1996	844	238
Norwalk Phase 1	1,100,000	1,100,000	1996	1967	600
Ridgefield	200,000	200,000	1996	80	42
Stratford Phase 1	800,000	800,000	1996	974	245
Univ. of Conn	12,000,000	1,058,000	1996	120	65
West Haven Phase 1	750,000	750,000	1996	967	612
Westport Phase 1	400,000	400,000	1996	238	41
Ledyard	3,500,000	3,500,000	1997	20	5
New Haven Phase 1	8,200,000	8,200,000	1997	4294	1494
Newtown	12,000,000	1,058,000	1997	45	21
Stamford Phase 1	3,500,000	3,500,000	1997	2536	497
Derby	2,763,000	2,763,000	2000	195	63
New Canaan	14,000,000	1,235,000	2000	175	29
Norwalk Phase 2	56,000,000	5,538,000	2000	1967	600
Waterbury	120,000,000	17,359,000	2000	2766	802
East Hampton	690,000	690,000	2001	148	117
Thomaston	9,313,000	1,164,000	2001	114	25
New London	3,069,000	2,889,000	2002	1057	335
Portland	5,200,000	1,047,000	2002	86	28

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2010 lbs/day
Branford	21,542,000	3,158,000	2003	526	110
Fairfield Phase 2	40,551,000	12,046,000	2003	1113	325
Windsor Locks	2,349,000	1,841,000	2003	180	96
Bridgeport E Phase 1	2,090,000	2,090,000	2004	991	412
Bridgeport W Phase 1	2,375,000	2,375,000	2004	2852	1211
Bristol Phase 1	584,000	584,000	2004	1091	560
Enfield	2,390,000	2,390,000	2004	763	248
Litchfield	4,000,000	1,000,000	2004	64	35
Jewett City	10,000,000	1,500,000	2005	42	6
Stamford Phase 2	97,223,000	59,500,000	2006	2536	497
North Haven	1,000,000	1,000,000	2006	433	164
Wallingford	2,276,000	2,276,000	2006	737	456
East Hartford	1,965,000	1,965,000	2007	801	366
Cheshire	5,775,000	5,775,000	2007	281	38
Simsbury Phase 1	21,231,000	4,044,000	2007	293	43
Suffield	4,075,000	3,370,000	2007	122	25
Winsted	1,100,000	1,100,000	2007	175	64
Westport Phase 2	37,131,000	8,253,000	2008	238	41
Shelton	21,642,000	4,293,000	2008	290	113
Hartford Interim Project	6,900,000	6,900,000	2008	6512	3841
Plainville	22,931,076	4,815,525	2008	277	97
Milford BB Phase 2	11,700,000	1,613,000	2009	258	101
Milford H Phase 2	34,900,000	10,038,000	2009	844	238
Stratford Phase 2	54,000,000	10,116,000	2009	974	245
Danbury	5,000,000	5,000,000	2010	1211	644
Groton Town	16,551,000	4,842,000	2010	420	278
Southington Interim Project	13,000,000	13,000,000	2010	433	194

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2010 lbs/day
Meriden	42,455,000	32,517,000	2010	1230	696
New Hartford	10,000,000	1,000,000	2010	12	7
Stafford	12,100,000	1,581,000	2011	164	129
Glastonbury	30,611,000	6,671,854	2011	268	118
Hartford	33,589,000	To be Determine	2012	6512	3841
South Windsor	36,000,000	7,300,000	2012	289	342
Windham	22,917,000	1,638,583	2012	344	340
New Milford	29,900,000	6,080,545	2012	66	135
West Haven	55,000,000	13,200,000	2012	967	612
Ansonia	41,731,000	10,015,000	2012	314	178



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Notice of Proposed Value of an Equivalent Nitrogen Credit for 2010

To: Connecticut Municipalities with Sewage Treatment Facilities
From: Amey W. Marrella, Commissioner Department of Environmental Protection
Betsey Wingfield, Chair, Nitrogen Credit Advisory Board

The Connecticut Department of Environmental Protection, working with the Nitrogen Credit Advisory Board, has established a Nitrogen Credit Exchange Program and General Permit to comply with Sections 22a-521 through 22a-527 of the General Statutes of Connecticut (The Nitrogen Reduction Program in Connecticut for Long Island Sound). The General Permit requirements for your sewage treatment facility became effective on January 1, 2002 and were revised with the permit reissuance on January 29, 2010. Attach is the permit renewal of the General Permit for Nitrogen Discharges period 2011 – 2015.

Under the exchange program, the cost of a credit is calculated on an annual basis. Accordingly, pursuant to Section 22a-527(b), the Nitrogen Credit Advisory Board hereby gives notice that it proposes an annual value for an equivalent nitrogen credit of \$4.59 for calendar year 2010. This value was derived, as specified in Section 22a-527(b), by dividing the total annual project cost for nitrogen removal projects at Connecticut sewage treatment facilities by the reduction in equivalent pounds of nitrogen achieved.

The Commissioner of the Department of Environmental Protection hereby issues a draft ruling accepting the Board's proposal of a value of \$4.59 for an equivalent nitrogen credit in calendar year 2010. You have until March 11th to review the data. Please look over the data for your facility and if you have any questions or objections please contact Iliana Ayala at the number listed below.

Pursuant to Section 22a-527(c), the Commissioner's draft ruling shall become final if no municipality or group of municipalities petition for a review of the proposed value of an equivalent nitrogen credit within 15 business days after the issuance date of the Commissioner's draft ruling.

Enclosed with this notice is a table that lists the facilities that will be buying and selling nitrogen credits under this program for the year 2010. Should you have any questions please contact Ms. Iliana Ayala of the Department's Water Protection and Land Reuse Bureau at 860-424-3758 or email Ms. Ayala at iliana.ayala@ct.gov

Sincerely,

Sincerely,

Betsey Wingfield
Chairman, Nitrogen Credit Advisory Board

Amey W. Marrella
Amey W. Marrella
Commissioner
Date 2/25/11

- Carl Almquist, Groton
- Brian Armet, Mattabassett District
- Jeannette Brown, Stamford
- Richard Cellar, Fairfield
- Astrid T. Hanzalek, Suffield
- Robert Moore, Metropolitan District Commission
- William Norton, West Haven
- Sharon Dixon-Peay, Connecticut Office of the Treasurer



**STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



General Permit for Nitrogen Discharges

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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 Wasteoad 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, 2011, and expires on December 31, 2015.*

(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, 2011*.
- (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

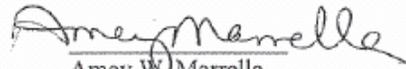
(a) *Abatement of Violations*

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: 12/29/10


Amey W. Marrella
Commissioner

APPENDIX 1

ANNUAL DISCHARGE LIMITS FOR TOTAL NITROGEN

Zone	Publicly Owned Treatment Works	Equivalency Factor	TOTAL NITROGEN (POUNDS/DAY)				
			2011	2012	2013	2014	2015
1	JEWETT CITY WPCF	0.17	17	16	16	15	15
1	GROTON CITY WPCF	0.18	109	104	102	99	99
1	GROTON TOWN WPCF	0.18	168	161	157	153	153
1	KILLINGLY WPCF	0.14	144	137	134	131	131
1	LEDYARD WPC	0.18	8	8	7	7	7
1	MONTVILLE WPCF	0.18	130	124	121	118	118
1	NEW LONDON WPCF	0.18	424	404	395	386	386
1	NORWICH WPCF	0.18	221	210	205	201	201
1	STONINGTON PAWCATUCK WPCF	0.17	26	25	25	24	24
1	PLAINFIELD NORTH WPCF	0.14	38	36	35	34	34
1	PLAINFIELD VILLAGE WPCF	0.14	26	25	24	24	24
1	PUTNAM WPCF	0.14	58	55	54	53	53
1	SPRAGUE WPCF	0.16	8	8	7	7	7
1	STAFFORD SPRINGS WPCF	0.15	66	63	61	60	60
1	STONINGTON BOROUGH WPCF	0.18	15	14	14	14	14
1	STONINGTON MYSTIC WPCF	0.18	30	28	28	27	27
1	THOMPSON WPCF	0.14	11	11	10	10	10
1	UCONN WPCF	0.15	48	46	45	44	44
1	WINDHAM WPCF	0.15	138	132	128	125	125
2	BRISTOL WPCF	0.18	437	417	407	398	398
2	CANTON WPCF	0.18	26	25	25	24	24
2	EAST HAMPTON WPCF	0.20	59	57	55	54	54
2	EAST HARTFORD WPCF	0.19	321	306	299	292	292
2	EAST WINDSOR WPCF	0.19	65	62	61	59	59
2	ENFIELD WPCF	0.19	306	292	285	278	278
2	FARMINGTON WPCF	0.18	195	186	181	178	178
2	GLASTONBURY WPCF	0.20	107	103	100	98	98
2	HARTFORD WPCF	0.20	2611	2491	2431	2377	2377
2	MANCHESTER WPCF	0.19	343	327	319	312	312
2	MATTABASSET WPCF	0.20	916	874	853	834	834
2	MIDDLETOWN WPCF	0.20	244	233	227	222	222
2	NEW HARTFORD	0.18	5	5	5	3	3
2	PLAINVILLE WPCF	0.18	111	106	103	101	101
2	PLYMOUTH WPCF	0.18	46	44	43	42	42
2	WINDSOR POQUONOCK WPCF	0.19	107	103	100	98	98
2	PORTLAND WPCF	0.20	34	33	32	31	31
2	ROCKY HILL WPCF	0.20	316	302	295	288	288
2	SIMSBURY WPCF	0.18	117	112	109	107	107

Zone	Publicly Owned Treatment Works	Equivalency Factor	TOTAL NITROGEN (POUNDS/DAY)				
			2011	2012	2013	2014	2015
2	SOUTH WINDSOR WPCF	0.19	116	111	108	106	106
2	SUFFIELD WPCF	0.19	49	47	46	45	45
2	VERNON WPCF	0.19	202	193	188	184	184
2	WINDSOR LOCKS WPCF	0.19	72	69	67	66	66
2	WINSTED WPCF	0.18	70	67	65	64	64
3	BRANFORD WPCF	0.60	211	201	196	192	192
3	CHESHIRE WPCF	0.49	113	107	105	103	103
3	MERIDEN WPCF	0.49	493	471	459	449	449
3	NEW HAVEN EAST WPCF	0.60	1722	1643	1603	1568	1568
3	NORTH HAVEN WPCF	0.60	174	166	162	158	158
3	SOUTHINGTON WPCF	0.49	223	213	208	204	204
3	WALLINGFORD WPCF	0.60	296	282	275	269	269
3	WEST HAVEN WPCF	0.60	388	370	361	353	353
4	ANSONIA WPCF	0.67	126	120	117	115	115
4	BEACON FALLS WPCF	0.67	13	13	12	12	12
4	DANBURY WPCF	0.46	486	463	452	442	442
4	DERBY WPCF	0.67	78	75	73	71	71
4	LITCHFIELD WPCF	0.35	26	24	24	24	24
4	MILFORD BEAVER BROOK WPCF	0.67	103	99	96	94	94
4	MILFORD HOUSATONIC WPCF	0.67	338	323	315	307	307
4	NAUGATUCK TREATMENT Co.	0.60	271	258	252	246	246
4	NEW MILFORD WPCF	0.46	28	28	28	28	28
4	NEWTOWN WPCF	0.46	18	17	17	42	42
4	NORFOLK WPCF	0.35	12	11	11	11	11
4	NORTH CANAAN WPCF	0.35	14	14	13	13	13
4	SALISBURY WPCF	0.35	23	22	22	21	21
4	SEYMOUR WPCF	0.67	67	64	62	61	61
4	SHELTON WPCF	0.67	116	111	108	106	106
4	SOUTHBURY TR. SCHOOL WPCF	0.46	16	16	15	15	15
4	STRATFORD WPCF	0.67	391	373	364	356	356
4	THOMASTON WPCF	0.60	46	44	43	42	42
4	TORRINGTON WPCF	0.60	273	260	254	248	248
4	WATERBURY WPCF	0.60	1109	1058	1049	1049	1049
5	BRIDGEPORT EAST WPCF	0.85	397	379	370	362	362
5	BRIDGEPORT WEST WPCF	0.85	1144	1091	1065	1041	1041
5	FAIRFIELD WPCF	0.85	446	428	416	406	406
5	WESTPORT WPCF	0.85	95	91	89	87	87
6	GREENWICH WPCF	1.00	526	502	490	479	479
6	NEW CANAAN WPCF	1.00	70	67	65	64	64
6	NORWALK WPCF	1.00	789	752	734	718	718
6	RIDGEFIELD SOUTH ST. WPCF	1.00	32	31	30	29	29
6	STAMFORD WPCF	1.00	1017	970	947	926	926

Attachment J

Nitrogen Credit Advisory Board 2012 Meeting Schedule

All meetings are scheduled for 10:00 am in at 79 Elm Street, Hartford

January 25, 2012

February 22, 2012

March 14, 2012

April 18, 2012

May 16, 2012

June 20, 2012

July 18, 2012

August 15, 2012

September 19, 2012

October 17, 2012

November 14, 2012

December 19, 2012