



Connecticut Department of Energy and Environmental Protection

Robert J. Klee, Commissioner

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Hartford, CT 06106-5127



Windham WPCF

Report of the Nitrogen Credit Advisory Board for Calendar Year 2013 To the Joint Standing Environment Committee of the General Assembly

September 30, 2014

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**REPORT OF THE NITROGEN CREDIT ADVISORY BOARD
FOR CALENDAR YEAR 2013**

**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, 2014

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 Connecticut General Statutes (CGS) Section 22a-523(c). 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, 2013 to December 31, 2013.

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.

Executive Summary

In accordance with CGS Sec. 22a-523(c) the Nitrogen Credit Advisory Board (NCAB) submits this Report of the Nitrogen Credit Advisory Board for calendar year 2013 on the progress of the Nitrogen Credit Exchange Program.

Major accomplishments and activities relative to the 2013 program operations include:

- One of DEEP's management strategies to reduce nitrogen loading was to implement an innovative nitrogen-trading program among the Water Pollution Control Facilities (WPCFs) located throughout the State which are covered under the General Permit for Nitrogen Discharges. The goal was to cost-effectively reduce the nitrogen load from those sources by nearly 65% by the end of 2014. The Nitrogen Trading Program met the 2014 goal of complying with the Total Maximum Daily Load (TMDL) cost-effectively by:
 - Encouraging denitrification at Sewer Treatment Plants (STPs) with enhanced Clean Water Fund grants
 - Spreading nitrogen removal upgrades over thirteen years, thereby reducing the impact on the Clean Water Fund (CWF)
 - Providing a fiscal alternative to the immediate expenditure of capital funds.
- Steady progress was made in 2013 towards achieving the 2014 TMDL allocation of 9,141 equalized (eq). lbs N/day (Attachment C). The effects of cold weather during 2013 didn't affect the plants ability to comply with the TMDL. The annual aggregate equalized average nitrogen load was 8,851 eq. lbs N/day, which is 5% below the 2013 TMDL target of 9,351 eq. lbs N/day and below the final 2014 aggregate permit limit. The exceptional job performed by the operators at the WPCFs assisted in the reduction of pounds of nitrogen discharged.
- In 2013 the Nitrogen Credit Advisory Board recommended a value of \$5.61 per equalized pound. The price of a credit was 12% higher than 2012 (\$5.01) because five projects (Ansonia, New Milford, South Windsor, West Haven and Windham) became project facilities in 2013 and operation and maintenance cost moderately increased.
- In 2013, thirty-eight WPCFs were required to purchase credits equal to \$2,408,402 and forty-two WPCFs produced credits valued at \$3,429,365. This left an excess of credits available valued at \$1,020,963 since there were more sellers than buyers as more plants have constructed nitrogen removal. As per the statutes; the State subsidized the trading program by buying the excess credits.

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

- The Clean Water Fund Project Priority List for fiscal years 2014 and 2015 was issued in its final form on July 7, 2014 and provides a plan of expenditure of \$285M in general obligation bonds, \$578.8M in State revenue bonds and \$33.2M in Federal capitalization grants. A portion of those funds are for the design and construction of treatment plant upgrades for nitrogen removal. Nitrogen removal projects that are currently under design include the Farmington WPCF and the Norwich WPCF. The Metropolitan District Rocky Hill WPCF is expected to begin construction later this year. Nitrogen removal projects that are currently under construction include the Mattabassett District WPCF, the Greater New Haven WPCF, the Metropolitan District Hartford WPCF, the Manchester WPCF and the

Plymouth WPCF. Looking forward in this Priority List, the next two WPCF upgrades that will include nitrogen removal will include the Sprague WPCF and the Killingly WPCF.

- Fifty-two (52) WPCFs have become “Project Facilities” completing construction for nitrogen removal through 2013, with an expected total of fifty-nine (59) “Project Facilities” completing construction by 2018. In June of 2013 Southbury Training School was connected to Southbury Heritage Village facility and in 2016 the Middletown will be connected to the Mattabassett facility. Through 2013 the total amount of grants and loans invested by the CWF for these nitrogen removal upgrade projects is over \$330 million with an expected total over \$450 million through 2018. It is estimated that \$300 – 400 million have been saved by not forcing WPCFs to upgrade all at once.
- The DEEP is projecting that in the future, the State will continue to comply with the TMDL since another seven WPCFs with very significant nitrogen loads will complete nitrogen removal projects by 2018. This will be aided by the continued ability of the operators to optimize nitrogen removal at the WPCFs.
- The Nitrogen General Permit will be renewed during 2015 to extend it for another five years. No changes are anticipated during that time to the TMDL.
- The projections for 2018, following the current program and based on an average performance year, have the State subsidizing the program in that year at over \$5 million.
- To address the unsustainable State subsidization of the Program, and to avoid discontinuing the program, the DEEP and the NCAB explored different scenarios.
- In 2014, NCAB voted to move the trading program to self-sufficiency. Legislative changes will be necessary to accomplish this change.
- The self-sufficiency scenario achieves a revenue –neutral state in the following manner. The WPCFs not meeting their Nitrogen General Permit (NGP) limit (“the buyers”) will continue to buy credits calculated in the usual manner. The WPCFs meeting their NGP limit (“the sellers”) will divide the funds paid by the buyers proportionally, based on the seller’s relative performance.

I. Introduction

Background

Long Island Sound's (LIS) most pressing water quality problem is caused by over enrichment by 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 WPCFs 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 it 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 WPCFs, 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 WPCFs through a wasteload allocation (WLA) process.

Nitrogen "trading" was identified as a mechanism for cost-effectively attaining the aggregate goal for Connecticut WPCFs. 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, which has now completed 12 years of successful operation.

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 DEEP 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 1). 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. That change is illustrated by the direction of the Hypoxia area trend (Figure 1) and although there have been periods of increase and decrease, overall it shows a decreasing trend. Since 1987, the affected area has averaged about 178.8 square miles and during the last 10 years, only the 2003 and 2012 events were

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 10 years, the areal indicator appears to be benefitting from nitrogen management.

According to the Northeast Regional Climate Center, August 2013 was cooler than normal, although May, June and July were above normal across the Northeast. Additionally, precipitation was above normal for the summer period (June-August) with both Connecticut and New York receiving about 5 inches more than average. The cooler August temperatures likely helped to reduce the overall areal extent of hypoxia for 2013. Compared to the 27-year averages, 2013 was below average in area and slightly above average in duration. In fact, 2013 had the third smallest area behind 1997 and 1992 at just 80.7 square miles.

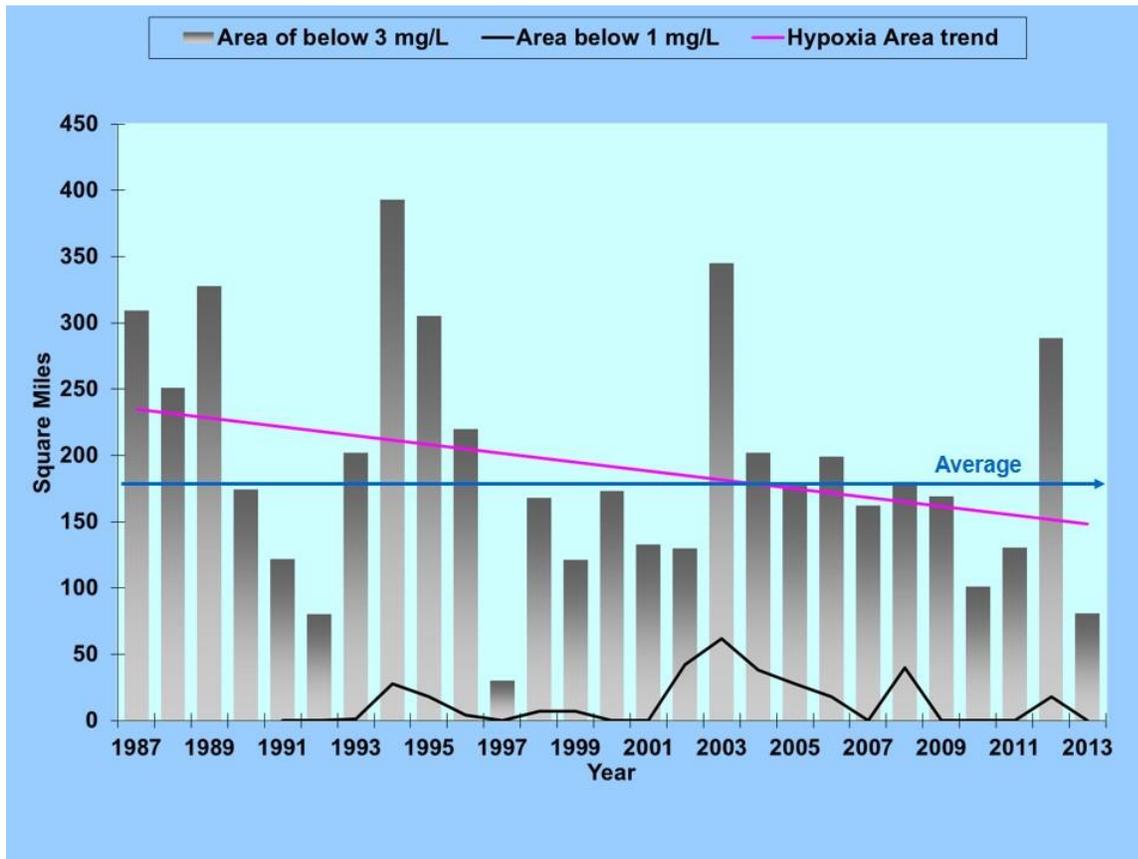


Figure 1. Area and trend of hypoxia in Long Island Sound, 1987-2013.

During 2013 hypoxia in Long Island Sound reached its maximum extent by mid-August and persisted into September finally subsiding around 7 September.

2013 Performance of the Nitrogen Credit Exchange

Steady progress has been made towards achieving the 2014 TMDL allocation of 9,141 eq. lbs N/day. In 2013 the nitrogen load from WPCFs to LIS averaged 8,851 eq. lbs N/day which is 5% below the 2013 permit limit of 9,351 eq. lbs N/day (Attachment B). Despite the cold weather in 2013, the state complied with limit.

November was the best aggregate monthly performance of the year, 6,864 eq. lbs N/day, close to record performance in 2012 of 6,796 eq. lbs N/day (Figure 2).

The highest month for aggregate nitrogen load during 2013 was 14,042, eq. lbs N/day in March, most likely due to a heavy rain event and snow melt, however, the rest of the year the State was very much in compliance with the 2013 permit (Figure 2) except the month of June.

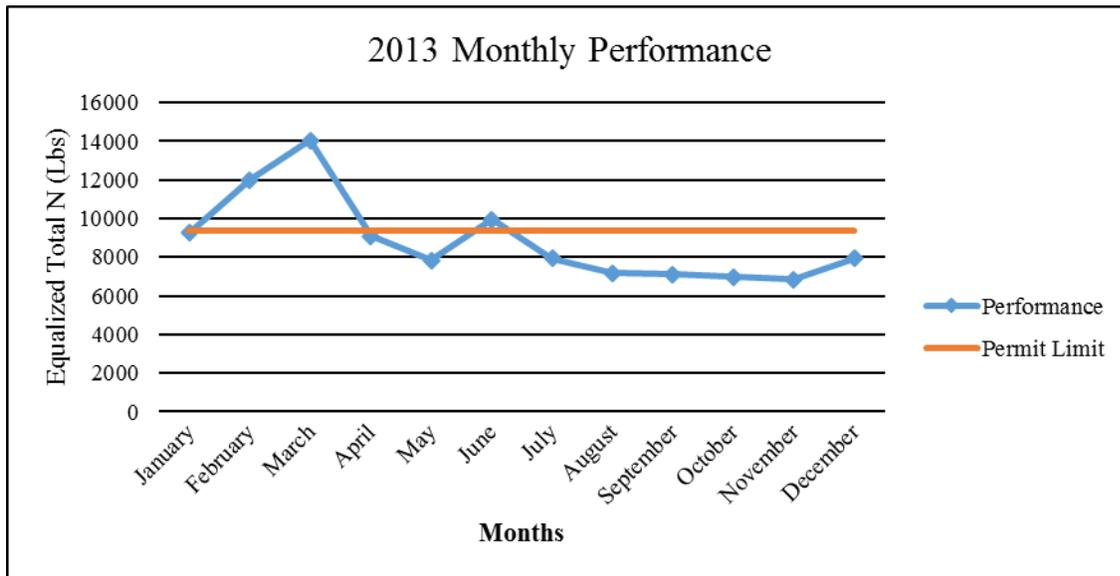


Figure 2. Monthly aggregate performance of 80 facilities during 2013.

II. The 2013 Nitrogen Credit Exchange

Credit Price

The Nitrogen Credit Advisory Board proposes an annual value for equalized nitrogen credits to the Commissioner of Department of Energy and Environmental Protection. The Board derives 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 Connecticut's Clean Water Fund (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, five project facilities that finished construction in 2012, Ansonia, New Milford, South Windsor, West Haven and Windham, became Project Facilities in 2013. These facilities increased the number of project facilities from forty seven to fifty two in 2013.

"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 DEEP. 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 2013 at \$11,896,916 (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 \$19,187,150 was adopted by the Board as the annual operation and maintenance cost for nitrogen removal in 2013. Combining capital and operation and maintenance costs yielded a total cost for nitrogen removal in 2013 of \$31,084,066 (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 15,193 eq. lbs N/day of nitrogen was reduced by the 52 project facilities that were on line in 2013 (Attachment D & E). Based on these analyses, the cost was determined by dividing the Total Project Cost of \$31,084,066 by 15,193 pounds per day of equalized nitrogen removed during the year times 365 days in the year.

The Board formally submitted a recommendation to the DEEP Commissioner that he establish the value of an equalized nitrogen credit at \$5.61 for trading in 2013. The Deputy Commissioner, on behalf of Commissioner Klee, 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 \$5.61 for 2013.

The price of a nitrogen credit was higher in 2013 than 2012 because of these factors:

- Five projects (Ansonia, New Milford, South Windsor, West Haven and Windham) became project facilities in 2013.
- The cost of operation and maintenance increased moderately over 2013.

Numbers of Credits Traded and Final Balances

In 2013, thirty-eight facilities were required to purchase credits in order to remain in compliance with the Nitrogen General Permit (Attachment D). The value of facilities that purchased credit was \$2,408,402. Forty-two WPCFs produced credits valued at \$3,429,365 (Attachment D). The good performance in 2013 result in more municipalities being able to sell rather than purchase nitrogen credits.

III. Progress towards TMDL goal

Nitrogen Loading Trend and Scheduled Projects

Steady progress was made in 2013 towards achieving the 2014 TMDL allocation of 9,141 eq. lbs N/day (Attachment C). Despite the cold weather affects the performance of the plants, the plants were able to comply with the 2013 TMDL limit. The twelve month moving nitrogen load average through December 2013 was 8,831 eq. lbs N/day (yellow line in Figure 3).

Five project facilities –Ansonia, New Milford, South Windsor, West Haven and Windham completed construction for nitrogen removal in 2012; therefore, they were considered project facilities in 2013. In June of 2013 Southbury Training School’s discharge was rerouted to Southbury Heritage Village WPCF, therefore Southbury Training School was removed from the trading program. Ansonia removed 170 eq. lbs N/day in 2013, the facility removed more nitrogen than New Milford, South Windsor and Windham all together. The West Haven WPCF removed 430 eq. lbs N/day in 2013. The five facilities that become project facilities in 2013 removed 686 eq. lbs N/day that is 5% of the total amount removed 15,193 eq. lbs N/day by all the project facilities since the program started.

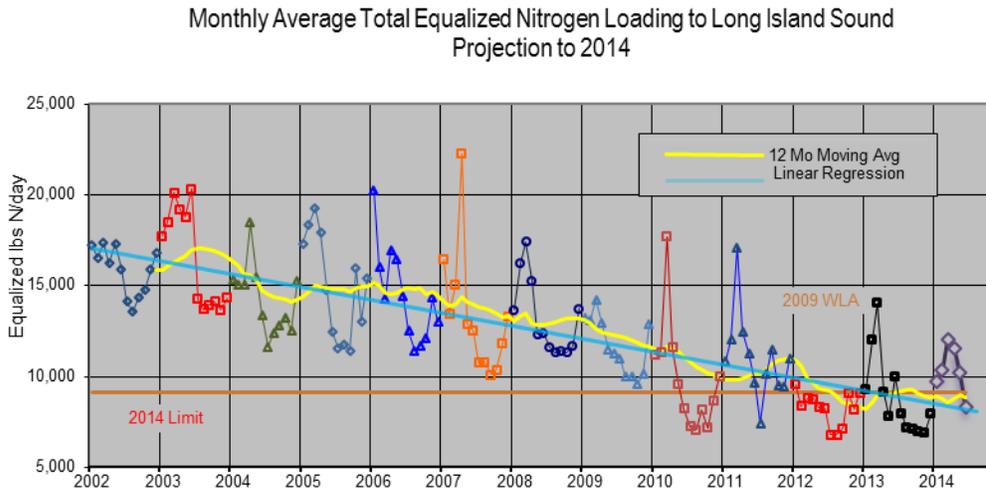


Figure 3. Monthly average total nitrogen loading to Long Island Sound 2002 2014

Meeting the 2014 Wasteload Allocation and Permit Limits.

The nitrogen trading program has been an innovative approach to cost effectively meeting the 2014 TMDL goal of reducing nitrogen loading by 65% by:

- Encouraging denitrification at WPCFs by providing enhanced Clean Water Fund grants; and
- Spreading nitrogen removal upgrades over twelve years, allowing WPCFs to purchase credits rather than immediately upgrading to meet 65% removal requirements

The DEEP is projecting that in the future, the State will continue to comply with the TMDL as additional facilities that are under construction with very significant nitrogen loads are forecast to complete nitrogen removal projects by 2018. This will be aided by the continued ability of the operators to optimize nitrogen removal at the WPCFs.

By 2018, an additional 1,777 eq. lbs N/day is projected to be reduced as a result of projects in Putnam, Manchester, Mattabassett, New Haven, Hartford (phase 3), Rocky Hill and Norwich coming on line. A total of fifty nine project facilities are anticipated by the 2018 trading year (Figure 4).

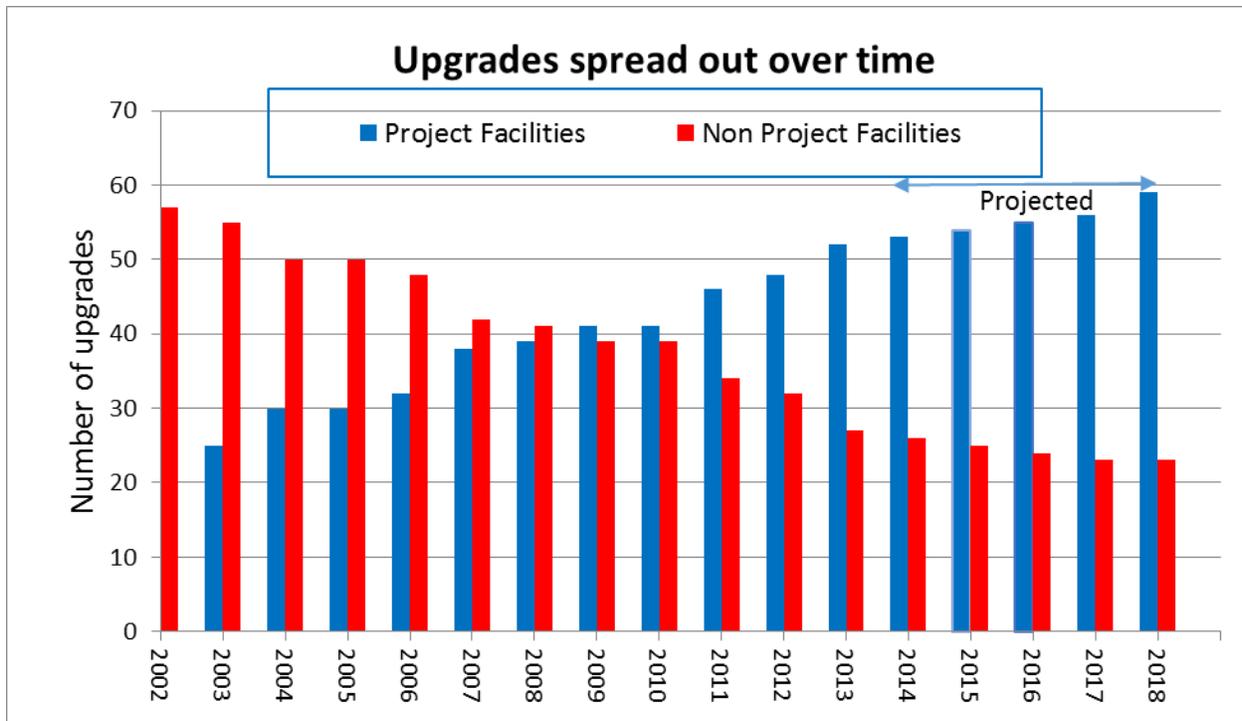


Figure 4. Upgrades of WPCF spread out over time

Proposed Revisions to the Program

In 2012, thirty-three WPCFs were required to purchase credits in order to maintain compliance with the Nitrogen General Permit at a value of \$1,506,203. In the same year, forty-seven WPCFs sold credits valued at \$3,932,232. This left an excess of credits valued at \$2,426,029 that the State had to purchase in 2013.

In 2013, thirty-eight WPCFs were required to purchase credits equal to \$2,408,402 and forty-two WPCFs produced credits valued at \$3,429,365. This left an excess of credits available valued at \$1,020,963 that the State purchased this year.

The projections for 2018, following the current program and based on an average performance year, have the State subsidizing the program in that year at over \$5 million (Figure 5). This level of continued subsidization is not sustainable for the State.

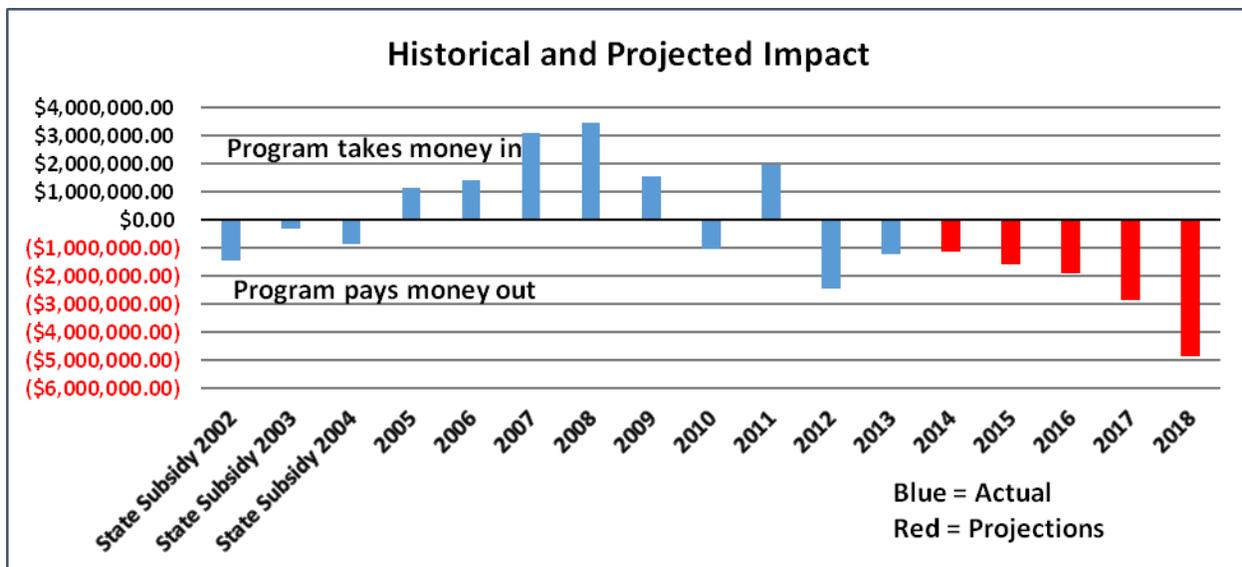


Figure 5. Balance Buyers-Sellers and Projections

To address the unsustainable State subsidization of the Nitrogen Trading Program and to avoid discontinuing the program, the DEEP and the Nitrogen Credit Advisory Board (NCAB) explored different scenarios.

In 2014, the NCAB voted to move the trading program forward to self-sufficiency. Legislative changes will be necessary to accomplish this change. Different scenarios were evaluated with the outcome resulting in the following near-term goals for the trading program to become self-sufficient:

- Maintain compliance with the TMDL by continuing to encourage optimizing denitrification at WPCFs consistent with requirements in WPCF NPDES permits;
- Continue the use of the Nitrogen General Permit by seeking general permit renewal in 2015;
- Maintain options for future compliance should the TMDL be modified;
- Move the trading program to self-sufficiency to eliminate continuing State subsidy by 2015 trading year;
- Seek statutory changes to the Nitrogen Trading Program as necessary to enable program self-sufficiency

The self-sufficiency scenario achieves a revenue-neutral state in the following manner. The WPCF not meeting the Nitrogen General Permit goals (“the buyers”) will continue to buy credits. The WPCFs meeting the General Permit Goals (“the sellers”) will divide the funds paid by the buyers proportionally, based on the seller’s relative performance. Most sellers will receive a reduction in the amount received as the State would no longer be subsidizing credits and the number of buyers is decreasing.

The next steps to comply with the near-term goals of the trading program are to:

- Renew the nitrogen general permit before December 31, 2015 for five years;
- Continue trading in the same manner since the program was implemented in 2002 for the 2014 trading year;
- Outreach to WPCFs about proposal program changes; and

- Continue discussion of alternative funding mechanisms.

See Attachment J for further discussion of proposed program changes.

IV. Finances

The Clean Water Fund (CWF)

The FY 2014 and FY 2015 capital budget increased Connecticut’s ability to meet state wastewater infrastructure needs and provides a stimulus to a sagging economy. This budget set a new high for Clean Water Fund allocations at a time when the economic benefits to the State were most needed.

The CWF Priority List for fiscal years FY 2014 and FY 2015 became effective on July 7, 2014. The level of State funding for the CWF is as follows:

General Obligation Bonds	Revenue Bonds	Total Funding
2014 \$67M	\$318M	\$385M
2015 \$218M	\$261M	\$479M

It is expected that a portion of the available funding will be for nitrogen removal projects in Hartford, Rocky Hill, Norwich, Farmington, Killingly and Sprague.

Investment in Projects on Line

The five projects completed in 2012 that became project facilities for the 2013 trading year are Ansonia, New Milford, South Windsor, West Haven and Windham. These projects were funded by the CWF with a total upgrade investment of \$185 million with the denitrification portion resulting in an annual CWF loan repayment cost of \$38 million. The complete list of nitrogen removal projects that have been completed or are currently approved for funding by the Clean Water Fund (Attachment G).

The Nitrogen Trading Program has been an innovative approach to cost effectively meeting the 2014 LIS. It is estimated that this fiscal strategy has resulted in cost savings of \$300 - \$400 million. To date, \$332 million has been funded by the CWF project facilities to upgrade 52 facilities to remove nitrogen.

Use of Nitrogen Credit Exchange Funds

According to CGS Sec. 22a-524(b)(11), 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 CGS, Sec. 22a-524(b)(12), 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 CGS, 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 years, the NCAB recommended the funds be used for training and providing technical assistance.

Other projects that are in progress and funded with the credit exchange funds are:

- Providing funding to the USGS for enhanced Connecticut River monitoring. Because the Connecticut River is tidal, the loads along the river from Middle Haddam to Long Island Sound. On November 2007, \$180,000 was allocated to monitor the river, December 2010 the Board allocated an additional \$90,000 for fiscal year 2011-2012 to continue monitoring and in 2012 additional \$45,000 to monitor the river during 2013. USGS monitored nitrogen loads during different seasons and during the storms in 2011 and 2012. The monitoring of the Connecticut River at Middle Haddam uses new and novel approaches for continuous total nitrogen monitoring of fresh, tidal river. The project is ongoing; the data analysis developed under this project element will help to advance understanding of the hydrologic and water-quality processes in the tidal environment, as well as advancing both field and analytical methodology.
- The NCAB funded 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) and 2013 (100,000). Using those data along with their existing database USGS just released a report on nitrogen loads and trends to Long Island Sound. *Estimated Nitrogen Loads from Selected Tributaries in Connecticut Drainage to Long Island Sound, 1999 – 2009* <http://pubs.usgs.gov/sir/2013/5171/>.
- The Advisory Board has also recommended eight years of membership (2011-2013) 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.
- The NCAB recommended \$1,966,500 be used for funding 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. Twenty-one plants have requested money for reimbursement. Facilities have been better able to control the amount of dissolved oxygen entering the anoxic zones and optimize nitrate recycles and supplemental carbon.

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, includes a timeline for regular evaluations of TMDL progress and revisions, as appropriate, in order to account for the phased implementation approach of the TMDL. These steps were anticipated to account for finalization of the Federal dissolved oxygen criteria for coastal waters, anticipated changes in Connecticut and New York water quality standards, a new System-wide Eutrophication Model (SWEM) for Long Island Sound, and more specific nitrogen reduction targets for Upper Connecticut River Sources in Massachusetts, New Hampshire and Vermont and for atmospheric deposition. To date, the Federal dissolved oxygen criteria has been finalized, Connecticut and New York's water quality standards for dissolved oxygen have been adopted, the SWEM model has been adapted for Long Island Sound, and several studies related to nitrogen loading and delivery in the Upper Connecticut River watershed have been completed.

In 2010 the EPA Regional Administrators (Regions 1 and 2) and the Commissioners from the Long Island Sound watershed States agreed to proceed with a five-State TMDL. A TMDL workgroup was formed which continues to hold bi-weekly conference calls to work through the necessary tasks relative to TMDL implementation and evaluation. In 2011, the workgroup identified technical issues and held a joint meeting with State water directors and EPA. The outcome of this meeting was to develop an enhanced implementation plan for the current TMDL while moving forward with a more comprehensive analysis to support revision of the TMDL at a later date. The five-States and EPA completed an enhanced implementation plan and TMDL revision framework. The enhanced implementation plan contains the following actions:

1. CT and NY will continue wastewater treatment plant (WWTP) upgrades in accordance with the 2000 TMDL.
2. EPA and the upper States (MA, VT, NH) will implement a WWTP permitting strategy consisting of capping nitrogen loads, requiring optimization studies, and incorporating nitrogen monitoring.
3. All States will complete an evaluation of current stormwater and nonpoint source control efforts to qualitatively assess whether they are adequate for meeting the 2000 TMDL load allocations.
4. EPA and States will develop and implement a tracking system to quantitatively assess progress relative to the 2000 TMDL nonpoint source and stormwater allocations.

Progress on actions 1 and 2 are ongoing, the report of the enhanced implementation plan (action 3) has been completed and a website to host the report is under development. The first phase of action 4 (a preliminary evaluation of tracking tool systems) has been completed. The second phase of action 4 (development of a tracking tool system) is currently under discussion.

As a result of action 3 (qualitative assessment of stormwater and nonpoint source controls efforts), a new framework is being developed to update and enhance TMDL implementation strategies to further reduce nitrogen loading through additional control measures, reduce hypoxia in LIS (via treatment alternatives and ecosystem resiliency), and measure progress to allow for adaptive management. Actions in the framework are meant to be practical, support attainment of water quality standards in LIS, and establish a management program to assess the TMDL. The overall outcome of the framework is intended to enhance implementation of the current TMDL by integrating more actions in the upper basin States (MA, NH, and VT), taking more actions to reduce N from nonpoint sources and stormwater, and continued emphasis on adaptive management.

A project to improve the SWEM model, mentioned above and funded by the Long Island Sound Study is currently being finalized. The project improved the calibration of SWEM to more accurately reflect actual production and respiration estimates, incorporated an algal production formulation, developed high resolution output in NETCDF format, and a website dedicated to making the SWEM model more accessible to the scientific community was developed. The project increased the model's consistency with the scientific communities understanding of mixing and circulation in estuaries when compared to the previous version. Although the model is now more consistent with observed estimates of primary production and community respiration, the model continues to over predict dissolved oxygen levels observed in the bottom water of LIS. At this time, the model has limited applicability to management and will be considered with other model applications to determine the best modeling approach for LIS.

VI. Recommendations for Statutory Change

Legislative changes to support the near-term goals of the trading program are necessary to move to self-sufficiency in order to avoid long-term State subsidization. The self-sufficiency scenario achieves a revenue-neutral state in the following manner: The WPCF not meeting the Nitrogen General Permit goals (“the buyers”) will continue to buy credits and the WPCFs meeting the General Permit Goals (“the sellers”) will divide the funds paid by the buyers proportionally, based on the seller’s relative performance. Most sellers will receive a reduction in the amount received as the State would no longer be subsidizing credits and the number of buyers is decreasing.

VII. Attachments

- A. Nitrogen Credit Advisory Board Members 2013
- B. Total nitrogen Balance Sheet - Monthly Averages by plant 2013
- C. Total nitrogen Balance Sheet 2002 - 2013
- D. Nitrogen Exchange Balance Sheet 2013
- E. Equalized lbs reduced by project facilities 2013
- F. Total Annual Project Costs 2013
- G. Nitrogen Removal Projects Financed by the CWF through 2013
- H. Notice of Proposed Value of an Equivalent Nitrogen Credit for 2013
- I. General Permit for Nitrogen Discharges -
- J. Notice of Future Plans of the Nitrogen Trading Program
- K. Nitrogen Credit Advisory Board 2015 Meeting Schedule

VIII. Acknowledgements

DEEP thanks to the members of Nitrogen Board for their contributions to this document and ongoing participation in the NCE Program.

Attachment A

LIST OF APPOINTEES 2013

	Name	Current Appointing Authority	Term	Term Expires*
1.	Vacant	Senate Majority Leader		3 years
2.	Vacant	Secretary Office of Policy and Management	No specific Term	
3.	Thomas A. Tyler The Metropolitan District 240 Brainard Road Hartford, CT 06114	Senate President Pro Tempore		3 years
4.	Betsey Wingfield Bureau Chief DEEP 79 Elm St Hartford, CT 06016 Phone: (860) 424-3704	Amey Marrella Commissioner Environmental Protection	No specific term	
5.	Kristin Writanen Office of the Treasurer 55 Elm Street Hartford, CT 06106 Phone: (860) 702-3000	Denise L. 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	
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.	Joseph Michelangelo 1 Fitzgerald Lane Branford, CT 06405	John McKinney Senate Minority Leader	3 years	January 2013
9.	Vacant	Governor	3 years	
10.	Guy P. Russo 599 Chamberlain Hill Road Middletown, CT 06457	Joe Aresimowicz House Majority Leader	3 years	
11.	Timothy Dowding 205 Franklin St. Stamford, CT 06901	Martin Looney Senate Majority Leader	3 years	
12.	William Norton, Director City of West Haven WPCA 355 Main Street West Haven, CT06516 (203) 937-3706	Christopher G. Donovan Speaker of the House	3 years	February 2008*

* Appointees remain active until removed by their appointees' authority

Attachment B

Total Nitrogen Balance Sheet -2013 Monthly Averages by Plant

Plant	Limit	Avg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zone 1														
GROTON CITY WPCF	102	98	69	84	92	64	89	251	83	87	97	78	111	74
GROTON TOWN WPCF	157	199	189	210	190	137	157	310	243	190	208	180	197	176
JEWETT CITY WPCF	16	11	26	20	5	5	8	7	4	3	8	11	13	18
KILLINGLY WPCF	134	277	236	247	386	411	506	446	171	227	168	153	197	174
LEDYARD WPCF	7	6	7	10	6	6	5	4	3	4	6	5	7	11
MONTVILLE WPCF	121	54	55	73	65	77	67	69	60	39	33	35	28	49
NEW LONDON WPCF	395	296	334	367	343	215	236	403	335	258	288	278	229	261
NORWICH WPCF	205	535	371	611	565	408	547	677	788	601	499	469	373	510
PLAINFIELD NORTH WPCF	35	108	138	131	137	126	82	80	64	63	91	114	158	114
PLAINFIELD VILLAGE WPCF	24	48	56	45	69	49	50	49	32	42	40	56	44	46
PUTNAM WPCF	54	68	173	129	78	65	34	60	45	51	49	46	25	60
SPRAGUE WPCF	7	12	11	18	19	10	16	29	9	7	5	4	5	14
STAFFORD SPRINGS WPCF	61	164	167	203	241	166	144	149	141	137	118	155	180	164
STONINGTON BOROUGH WPCF	14	11	7	10	7	8	6	8	12	22	16	12	11	18
STONINGTON MYSTIC WPCF	28	41	20	29	26	34	38	80	80	53	42	40	22	29
STONINGTON PAWCATUCK WPCF	25	18	26	27	26	21	15	19	13	12	14	14	16	15
THOMPSON WPCF	10	31	31	23	28	17	23	54	8	20	58	33	33	47
UCONN WPCF	45	60	41	59	51	34	54	57	29	67	81	79	77	94
WINDHAM WPCF	128	112	97	131	138	126	94	130	136	106	90	124	90	85
Zone 2														
BRISTOL WPCF	407	517	538	443	595	479	510	737	460	582	467	391	409	598
CANTON WPCF	25	95	100	124	109	84	85	98	87	84	83	89	96	102
EAST HAMPTON WPCF	55	101	136	121	140	90	88	93	99	75	98	82	75	109
EAST HARTFORD WPCF	299	525	549	579	779	662	690	602	576	356	436	257	288	521
EAST WINDSOR WPCF	61	29	25	29	39	31	27	44	26	21	30	18	22	30
ENFIELD WPCF	285	252	219	215	294	236	222	420	283	158	245	259	226	247
FARMINGTON WPCF	181	289	449	420	474	388	201	237	156	132	168	275	276	290
GLASTONBURY WPCF	100	51	49	59	62	36	43	67	44	47	58	56	41	44
HARTFORD WPCF	2431	3888	4459	6096	5546	3948	3560	4244	3245	3572	2579	3047	2312	4048
MANCHESTER WPCF	319	946	1132	875	1068	922	702	1063	1096	892	901	857	940	901
MATTABASSETT WPCF	853	1127	1265	1596	1709	1532	692	1106	582	827	822	1092	961	1345
MIDDLETOWN WPCF	227	581	552	916	887	601	432	675	464	416	503	492	548	483
NEW HARTFORD WPCF	5	3	2	2	2	10	3	3	5	3	3	2	2	2
PLAINVILLE WPCF	103	104	94	127	119	105	262	128	69	56	63	53	93	80

Total Nitrogen Balance Sheet -2013 Monthly Averages by Plant

Plant	Limit	Avg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PLYMOUTH WPCF	43	83	75	120	99	76	61	102	97	62	64	72	88	77
PORTLAND WPCF	32	23	26	38	52	30	16	31	14	23	10	11	15	13
ROCKY HILL WPCF	295	412	294	309	524	398	427	651	428	468	373	397	323	349
SIMSBURY WPCF	109	48	46	51	72	54	41	56	47	39	53	37	46	39
SOUTH WINDSOR WPCF	108	109	94	92	105	85	113	139	140	111	111	106	106	108
SUFFIELD WPCF	46	36	47	43	39	18	20	29	38	18	51	61	41	22
VERNON WPCF	188	344	439	359	507	319	375	408	364	242	291	277	231	318
WINDSOR LOCKS WPCF	67	71	56	57	102	55	50	162	68	54	69	45	51	77
WINDSOR POQUONOCK WPCF	100	512	391	466	574	548	656	570	526	481	463	483	470	510
WINSTED WPCF	65	79	77	82	102	97	88	100	68	47	64	66	73	80

Zone 3

BRANFORD WPCF	196	131	98	236	319	121	112	143	111	115	97	76	59	85
CHESHIRE WPCF	105	78	61	227	123	69	54	45	41	35	63	53	114	55
MERIDEN WPCF	459	164	268	382	341	108	89	189	105	91	72	75	142	105
NEW HAVEN EAST WPCF	1603	1667	1403	3221	2345	1759	1340	1633	1680	1163	1721	1295	1137	1308
NORTH HAVEN WPCF	162	150	198	206	180	131	138	213	134	112	105	122	113	148
SOUTHINGTON WPCF	208	99	191	75	165	90	66	204	69	65	62	65	67	65
WALLINGFORD WPCF	275	427	550	614	815	500	372	497	337	296	259	270	297	318
WEST HAVEN WPCF	361	249	248	358	497	207	171	409	202	207	177	147	160	203

Zone 4

ANSONIA WPCF	117	59	57	58	89	66	76	107	50	39	37	39	35	54
BEACON FALLS WPCF	12	42	36	44	43	36	32	38	34	43	44	51	58	48
DANBURY WPCF	452	401	401	555	493	391	443	565	447	454	261	288	200	318
DERBY WPCF	73	54	65	61	90	47	43	75	58	34	36	33	36	67
LITCHFIELD WPCF	24	24	29	29	34	24	26	32	15	11	19	15	22	28
MILFORD BEAVER BROOK WPCF	96	70	70	94	126	74	48	89	63	61	60	61	44	51
MILFORD HOUSATONIC WPCF	315	343	358	508	646	406	200	373	511	307	223	253	170	161
NAUGATUCK TREATMENT Co.	252	251	200	205	422	247	238	365	281	245	181	188	185	257
NEW MILFORD WPCF	28	27	39	26	23	23	25	27	29	28	26	25	23	26
NEWTOWN WPCF	17	15	22	18	14	11	12	18	11	16	18	20	11	14
NORFOLK WPCF	11	17	19	18	23	25	22	24	19	11	10	7	12	13
NORTH CANAAN WPCF	13	28	27	25	29	29	22	39	26	21	23	25	43	28
SALISBURY WPCF	22	33	23	18	26	29	34	47	35	29	47	41	34	31
SEYMOUR WPCF	62	52	55	57	113	47	33	56	85	32	33	34	43	37

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Total Nitrogen Balance Sheet -2013 Monthly Averages by Plant

Plant	Limit	Avg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SHELTON WPCF	108	61	41	67	147	54	47	48	47	34	34	56	96	63
SOUTHBURY TR. SCHOOL WPCF	15	3	3	4	7	3	2	0						
STRATFORD WPCF	364	300	277	625	815	550	141	223	206	165	168	152	137	144
THOMASTON WPCF	43	31	25	57	33	26	25	42	28	29	19	17	22	45
TORRINGTON WPCF	254	266	215	260	347	305	218	353	244	250	243	213	237	304
WATERBURY WPCF	1049	742	437	807	2444	734	581	974	678	515	445	433	385	468

Zone 5

BRIDGEPORT EAST WPCF	370	444	545	577	521	380	536	470	345	353	290	315	534	456
BRIDGEPORT WEST WPCF	1065	919	963	1075	1621	815	788	1002	663	728	654	829	957	932
FAIRFIELD WPCF	416	296	375	362	308	286	250	357	303	231	252	260	269	294
WESTPORT WPCF	89	27	22	33	45	22	21	73	17	15	16	19	16	23

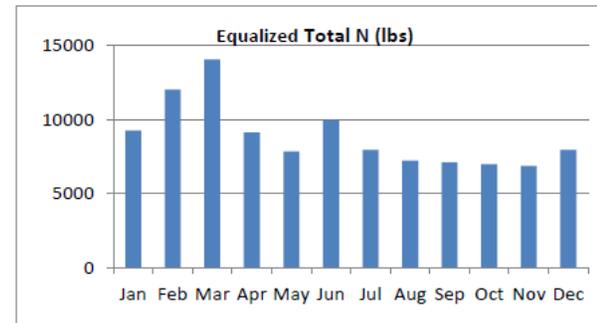
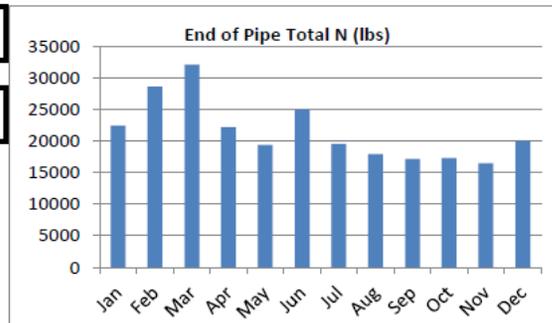
Zone 6

GREENWICH WPCF	490	443	450	402	503	442	460	582	433	411	432	385	368	450
NEW CANAAN WPCF	65	25	28	37	38	25	18	38	17	20	13	15	23	27
NORWALK WPCF	734	702	824	1097	1187	758	526	583	614	573	711	573	400	583
RIDGEFIELD SOUTH ST. WPCF	30	47	72	60	61	39	68	50	36	27	33	33	39	47
STAMFORD WPCF	947	440	593	450	576	497	537	328	285	407	355	396	446	410

End of Pipe Total	22456	28594	32080	22159	19349	24958	19497	17928	17155	17290	16483	20018
Equalized Total	9258	12014	14042	9107	7832	9967	7926	7196	7100	6976	6864	7929

End of Pipe Permit = 18,874
End of Pipe Avg = 21,497

Equalized Permit = 9,351
Equalized Avg = 8,851



Attachment C

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2013

	<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>2011</u>	<u>2012</u>	<u>2013</u>	<u>Average 2010-2013</u>
ZONE:1													
GROTON CITY WPCF	210	161	179	132	118	129	110	114	107	99	76	98	95
GROTON TOWN WPCF	566	465	447	444	470	421	451	353	278	260	246	199	246
JEWETT CITY WPCF	36	40	39	13	10	13	13	8	9	6	5	11	88
KILLINGLY WPCF	162	147	159	177	152	158	191	126	170	247	225	277	230
LEDYARD WPC	5	3	4	5	7	5	7	5	5	6	6	6	6
MONTVILLE WPCF	187	153	222	92	98	69	82	91	82	115	63	54	79
NEW LONDON WPCF	449	405	332	434	423	414	377	391	335	304	243	296	295
NORWICH WPCF	758	986	769	748	828	684	673	612	481	470	457	535	486
PLAINFIELD NORTH WPCF	50	87	78	90	119	108	105	88	95	65	66	108	84
PLAINFIELD VILLAGE WPCF	32	44	41	49	54	42	42	43	51	31	28	48	40
PUTNAM WPCF	163	170	174	193	205	206	206	157	140	147	153	68	127
SPRAGUE WPCF	15	7	10	13	22	14	15	21	21	16	7	12	14
STAFFORD SPRINGS WPCF	135	131	121	131	114	120	160	162	129	191	208	164	173
STONINGTON BOROUGH WPCF	55	55	42	47	37	22	19	13	11	8	7	11	9
STONINGTON MYSTIC WPCF	36	43	49	48	51	31	30	25	32	28	30	41	33
STONINGTON PAWCATUCK	46	34	46	30	25	18	19	25	33	32	22	18	26
THOMPSON WPCF	21	35	29	33	28	28	21	18	30	29	44	31	34
UCONN WPCF	78	70	107	65	94	67	103	83	65	55	52	60	58
WINDHAM WPCF	265	243	216	165	167	174	258	364	340	289	146	112	222
End of Pipe Total	3269	3279	3064	2909	3022	2723	2882	2699	2414	2398	2084	2149	2261
ZONE:2													
BRISTOL WPCF	949	1121	793	567	575	532	511	452	560	632	416	517	531
CANTON WPCF	70	87	101	106	113	92	99	100	121	103	90	95	102
EAST HAMPTON WPCF	86	119	96	85	140	110	136	121	117	127	82	101	107
EAST HARTFORD WPCF	755	749	812	803	902	391	417	418	366	505	397	525	448
EAST WINDSOR WPCF	20	34	31	45	32	32	27	26	20	31	32	29	28
ENFIELD WPCF	914	839	275	535	331	218	272	282	248	324	219	252	261
FARMINGTON WPCF	386	354	401	398	440	433	309	269	250	340	241	289	280
GLASTONBURY WPCF	263	307	340	214	290	295	364	223	118	101	77	51	87

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2013

	<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>2011</u>	<u>2012</u>	<u>2013</u>	<u>Average 2010-2013</u>
HARTFORD WPCF	5978	5900	6529	6831	7408	5839	5326	4217	3841	5090	3282	3888	4025
MANCHESTER WPCF	822	762	755	772	785	715	705	851	866	1069	1064	946	986
MATTABASSETT WPCF	2120	1795	1453	1408	1202	1129	1053	1123	1261	1377	1200	1127	1241
MIDDLETOWN WPCF	392	385	424	486	440	397	446	490	497	567	521	581	542
PLAINVILLE WPCF	252	304	311	285	301	280	315	135	97	129	122	104	113
PLYMOUTH WPCF	73	69	68	76	80	71	87	85	68	100	74	83	81
PORTLAND WPCF	24	28	36	33	34	26	33	33	28	39	25	23	29
ROCKY HILL WPCF	631	767	780	919	787	610	484	526	498	542	446	412	475
SIMSBURY WPCF	344	316	323	368	206	84	70	84	43	84	50	48	56
SOUTH WINDSOR WPCF	298	324	317	340	298	322	323	326	342	276	111	109	210
SUFFIELD WPCF	34	37	38	72	88	74	88	47	25	35	34	36	33
VERNON WPCF	483	663	538	488	580	469	426	361	386	520	422	344	418
WINDSOR LOCKS WPCF	131	116	100	143	98	94	110	113	96	89	58	71	79
WINDSOR POQUONOCK	427	422	441	467	432	419	457	450	494	500	483	512	497
WINSTED WPCF	250	187	201	206	223	120	82	66	64	70	63	79	69
End of Pipe Total	15701	15683	15163	15647	15785	12752	12140	10798	9642	12650	9509	10222	10697
ZONE:3													
BRANFORD WPCF	142	79	129	135	103	111	105	94	110	102	94	131	109
CHESHIRE WPCF	468	492	536	480	171	74	75	63	38	74	48	78	60
MERIDEN WPCF	860	917	882	781	827	810	1008	1051	696	253	142	164	314
NEW HAVEN EAST WPCF	1400	1630	1408	1703	2271	2201	1650	1592	1494	1993	1493	1667	1662
NORTH HAVEN WPCF	534	502	489	424	226	214	249	191	164	199	172	150	171
SOUTHINGTON WPCF	819	798	768	754	761	868	911	725	194	262	99	99	164
WALLINGFORD WPCF	549	601	627	657	522	340	381	429	456	517	356	427	439
WEST HAVEN WPCF	796	668	511	601	546	498	779	549	612	673	326	249	465
End of Pipe Total	5568	5687	5349	5535	5427	5116	5158	4694	3764	4073	2730	2965	3383
ZONE:4													
ANSONIA WPCF	273	307	260	287	289	237	260	270	178	76	63	59	106
BEACON FALLS WPCF	41	45	38	42	44	50	57	58	60	52	40	42	51
DANBURY WPCF	1866	1875	1825	1766	2072	1778	1885	1974	644	576	462	401	561
DERBY WPCF	53	64	58	59	65	63	64	64	63	82	71	54	72
LITCHFIELD WPCF	67	54	35	49	39	38	45	43	35	39	24	24	33
MILFORD BEAVER BROOK	130	180	120	127	130	132	121	137	101	127	74	70	93

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2013

	<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>2011</u>	<u>2012</u>	<u>2013</u>	<u>Average 2010-2013</u>
MILFORD HOUSATONIC	439	429	431	479	574	662	742	324	238	598	291	343	368
NAUGATUCK TREATMENT	479	440	234	279	263	250	344	345	248	320	222	251	260
NEW MILFORD WPCF	76	52	56	91	86	88	103	109	135	117	32	27	78
NEWTOWN WPCF	34	50	32	24	36	26	19	18	21	20	18	15	19
NORFOLK WPCF	9	13	12	20	29	32	29	26	23	30	21	17	23
NORTH CANAAN WPCF	18	22	21	31	23	25	24	25	26	26	24	28	26
SALISBURY WPCF	27	27	23	28	29	28	34	32	34	35	28	33	33
SEYMOUR WPCF	55	56	61	69	66	62	58	69	62	89	41	52	61
SHELTON WPCF	452	545	509	501	480	413	219	219	113	121	69	61	91
SOUTHBURY TR. SCHOOL	17	18	16	14	10	7	8	4	7	9	3	3	6
STRATFORD WPCF	535	646	431	539	537	616	1425	605	245	259	179	300	246
THOMASTON WPCF	35	51	45	45	44	32	42	40	25	27	18	31	25
TORRINGTON WPCF	283	299	287	254	265	247	275	226	242	298	195	266	250
WATERBURY WPCF	778	1335	913	965	1001	1034	869	857	802	914	582	742	760
End of Pipe Total	5667	6508	5407	5669	6082	5820	6623	5445	3302	3815	2457	2819	3160
ZONE:5													
BRIDGEPORT EAST WPCF	568	615	459	470	468	271	253	301	412	376	325	444	389
BRIDGEPORT WEST WPCF	2305	2306	1158	1564	1145	1146	1262	1019	1211	1017	1006	919	1038
FAIRFIELD WPCF	735	453	417	383	530	408	488	431	325	388	338	296	337
WESTPORT WPCF	140	133	152	148	153	70	44	38	41	35	25	27	32
End of Pipe Total	3748	3508	2186	2565	2296	1895	2047	1789	1989	1816	1694	1686	1796
ZONE:6													
GREENWICH WPCF	410	459	443	556	520	697	479	461	458	572	430	443	476
NEW CANAAN WPCF	21	24	20	30	30	38	29	30	29	39	21	25	29
NORWALK WPCF	605	888	784	818	755	1043	766	881	600	742	640	702	671
RIDGEFIELD SOUTH ST.	23	27	28	35	28	32	34	38	42	39	38	47	42
STAMFORD WPCF	1652	1645	1523	1418	1029	726	550	510	497	592	506	440	509
End of Pipe Total	2711	3044	2798	2857	2362	2536	1858	1920	1626	1984	1635	1657	1726
State End of Pipe Total	36664	37708	33966	33182	34974	30842	30702	27345	27345	26736	20109	21498	23023

Table 3

LIS Total Nitrogen Credit Exchange FINAL Balance - 2013

SELLING Credits		BUYING Credits	
Facility Name		Facility Name	
STAMFORD WPCF	\$1,038,159	HARTFORD WPCF	\$596,685.00
WATERBURY WPCF	\$377,177	MANCHESTER WPCF	\$243,937.00
MERIDEN WPCF	\$295,988	WALLINGFORD WPCF	\$186,746.00
BRIDGEPORT WEST WPCF	\$254,113	WINDSOR POQUONOCK WPCF	\$160,290.00
FAIRFIELD WPCF	\$208,860	MIDDLETOWN WPCF	\$144,974.00
WEST HAVEN WPCF	\$137,602	BRIDGEPORT EAST WPCF	\$128,797.00
SOUTHINGTON WPCF	\$109,365	NORWICH WPCF	\$121,630.00
WESTPORT WPCF	\$107,911	MATTABASSETT WPCF	\$112,211.00
GREENWICH WPCF	\$96,240	EAST HARTFORD WPCF	\$87,926.00
STRATFORD WPCF	\$87,803	NEW HAVEN EAST WPCF	\$78,630.00
NEW CANAAN WPCF	\$81,906	VERNON WPCF	\$60,692.00
BRANFORD WPCF	\$79,858	ROCKY HILL WPCF	\$47,915.00
ANSONIA WPCF	\$79,572	BEACON FALLS WPCF	\$41,158.00
NORWALK WPCF	\$65,525	KILLINGLY WPCF	\$40,994.00
SHELTON WPCF	\$64,480	BRISTOL WPCF	\$40,543.00
DANBURY WPCF	\$48,038	FARMINGTON WPCF	\$39,806.00
NEW LONDON WPCF	\$36,489	MILFORD HOUSATONIC WPCF	\$38,414.00
MILFORD BEAVER BROOK WPCF	\$35,670	RIDGEFIELD SOUTH ST. WPCF	\$34,810.00
CHESHIRE WPCF	\$27,090	STAFFORD SPRINGS WPCF	\$31,636.00
DERBY WPCF	\$26,067	CANTON WPCF	\$25,800.00
MONTVILLE WPCF	\$24,695	PLAINFIELD NORTH WPCF	\$20,927.00
SIMSBURY WPCF	\$22,483	EAST HAMPTON WPCF	\$18,838.00
GLASTONBURY WPCF	\$20,067	GROTON TOWN WPCF	\$15,480.00
NORTH HAVEN WPCF	\$14,743	PLYMOUTH WPCF	\$14,743.00
THOMASTON WPCF	\$14,743	TORRINGTON WPCF	\$14,743.00
SEYMOUR WPCF	\$13,719	NORTH CANAAN WPCF	\$10,750.00
ENFIELD WPCF	\$12,839	SALISBURY WPCF	\$7,883.00
EAST WINDSOR WPCF	\$12,450	THOMPSON WPCF	\$7,740.00
SOUTHBURY TR. SCHOOL WPCF	\$11,303	PLAINFIELD VILLAGE WPCF	\$6,880.00
WINDHAM WPCF	\$4,914	WINSTED WPCF	\$5,160.00
SUFFIELD WPCF	\$3,891	STONINGTON MYSTIC WPCF	\$4,792.00
PORTLAND WPCF	\$3,686	UCONN WPCF	\$4,607.00
STONINGTON PAWCATUCK WPCF	\$2,437	NORFOLK WPCF	\$4,300.00
NEWTOWN WPCF	\$1,884	PUTNAM WPCF	\$4,013.00
JEWETT CITY WPCF	\$1,741	SPRAGUE WPCF	\$1,638.00
GROTON CITY WPCF	\$1,474	WINDSOR LOCKS WPCF	\$1,556.00
NAUGATUCK TREATMENT Co.	\$1,229	SOUTH WINDSOR WPCF	\$389.00
STONINGTON BOROUGH WPCF	\$1,106	PLAINVILLE WPCF	\$369.00
NEW MILFORD WPCF	\$942		
NEW HARTFORD WPCF	\$737		
LEDYARD WPCF	\$369		
LITCHFIELD WPCF	\$0		
TOTAL	\$3,429,365	TOTAL	\$2,408,402.00

Difference: Selling - Buying = \$1,020,963

BOLD = Clean Water Fund Nitrogen Project Facility

The final balance (annual dollar amount) for each facility was calculated by subtracting the facility's 2013 TN loading as reported to DEEP, from the facility's General Permit 2013 limit; The difference was then multiplied by the E-factor for that facility to determine the number of credits available to sell or needed to purchase. Credits were then multiplied by the value of a credit (\$5.61) to calculate the annual balance shown above.

Equalized lbs reduced by project facilities 2013

Project Facilities	Baseload	Average TN	EOP Reduced	E Factor	E Pounds Reduced
ANSONIA WPCF	314	59	255	0.67	170.85
BRANFORD WPCF	526	131	395	0.6	237
BRIDGEPORT EAST WPCF	991	444	547	0.85	464.95
BRIDGEPORT WEST WPCF	2852	919	1933	0.85	1643.05
BRISTOL WPCF	1091	517	574	0.18	103.32
CHESHIRE WPCF	281	78	203	0.49	99.47
DANBURY WPCF	1211	401	810	0.46	372.6
DERBY WPCF	195	54	141	0.67	94.47
EAST HAMPTON WPCF	148	101	47	0.2	9.4
EAST HARTFORD WPCF	801	525	276	0.19	52.44
EAST WINDSOR WPCF	163	29	134	0.19	25.46
ENFIELD WPCF	763	252	511	0.19	97.09
FAIRFIELD WPCF	1113	296	817	0.85	694.45
GLASTONBURY WPCF	268	51	217	0.2	43.4
GREENWICH WPCF	1313	443	870	1	870
GROTON TOWN WPCF	420	199	221	0.18	39.78
HARTFORD WPCF	6512	3888	2624	0.2	524.8
JEWETT CITY WPCF	42	11	31	0.17	5.27
LEDYARD WPCF	20	6	14	0.18	2.52
LITCHFIELD WPCF	64	24	40	0.35	14
MERIDEN WPCF	1230	164	1066	0.49	522.34
MILFORD BEAVER BROOK WPCF	258	70	188	0.67	125.96
MILFORD HOUSATONIC WPCF	844	343	501	0.67	335.67
NEW CANAAN WPCF	175	25	150	1	150
NEW HARTFORD WPCF	12	3	9	0.18	1.62
NEW HAVEN EAST WPCF	4294	1667	2627	0.6	1576.2
NEW MILFORD WPCF	66	27	39	0.46	17.94
NEW LONDON WPCF	1057	296	761	0.18	136.98
NEWTOWN WPCF	45	15	30	0.46	13.8
NORTH HAVEN WPCF	433	150	283	0.6	169.8
NORWALK WPCF	1967	702	1265	1	1265
PLAINVILLE WPCF	277	104	173	0.18	31.14
PORTLAND WPCF	86	23	63	0.2	12.6
RIDGEFIELD SOUTH ST. WPCF	80	47	33	1	33
SEYMOUR WPCF	167	52	115	0.67	77.05
SHELTON WPCF	290	61	229	0.67	153.43
SIMSBURY WPCF	293	48	245	0.18	44.1
SOUTHINGTON WPCF	557	99	458	0.49	224.42
SOUTH WINDSOR WPCF	289	109	180	0.19	34.2
STAFFORD WPCF	164	164	0	0.15	0
STAMFORD WPCF	2536	440	2096	1	2096
STRATFORD WPCF	974	300	674	0.67	451.58
SUFFIELD WPCF	122	36	86	0.19	16.34

Project Facilities	Baseload	Average TN	EOP Reduced	E Factor	E Pounds Reduced
THOMASTON WPCF	114	31	83	0.6	49.8
UCONN WPCF	120	60	60	0.15	9
WALLINGFORD WPCF	737	427	310	0.6	186
WATERBURY WPCF	2766	742	2024	0.6	1214.4
WEST HAVEN WPCF	967	249	718	0.6	430.8
WESTPORT WPCF	238	27	211	0.85	179.35
WINDHAM WPCF	344	112	232	0.15	34.8
WINDSOR LOCKS WPCF	180	71	109	0.19	20.71
WINSTED WPCF	175	79	96	0.18	17.28
Total					15193.16
Project Cost					\$ 31,084,066.00
Credit Cost:					\$5.61
BOLD=New Project Plant for Year 2013					

Total Annual Project Cost 2013

Project Facilities	Total Annual Capital Cost	Total Annual O&M Cost	Total Annual Project Cost
ANSONIA WPCF	\$465,697	\$299,327	\$765,024
BRANFORD WPCF	\$168,661	\$478,124	\$646,785
BRIDGEPORT EAST WPCF	\$51,755	\$604,076	\$655,831
BRIDGEPORT WEST WPCF	\$155,266	\$880,519	\$1,035,785
BRISTOL WPCF*	\$28,759	\$113,626	\$142,385
CHESHIRE WPCF	\$317,316	\$277,096	\$594,412
DANBURY WPCF	\$46,466	\$494,422	\$540,888
DERBY WPCF	\$31,785	\$114,346	\$146,131
EAST HARTFORD WPCF	\$82,707	\$145,827	\$228,534
EAST WINDSOR WPCF	\$61,136	\$107,789	\$168,925
ENFIELD WPCF	\$0	\$293,335	\$293,335
FAIRFIELD WPCF	\$514,885	\$583,205	\$1,098,090
GLASTONBURY WPCF	\$272,568	\$409,410	\$681,978
GREENWICH WPCF	\$0	\$197,883	\$197,883
GROTON TOWN WPCF	\$242,100	\$174,515	\$416,615
HARTFORD WPCF	\$107,555	\$785,691	\$893,246
JEWETT CITY WPCF	\$65,659	\$175,154	\$240,813
LEDYARD WPCF	\$18,062	\$31,156	\$49,218
LITCHFIELD WPCF	\$45,829	\$74,006	\$119,835
MERIDEN WPCF	\$492,418	\$1,023,938	\$1,516,356
MILFORD BEAVER BROOK WPCF	\$143,806	\$197,806	\$341,612
MILFORD HOUSATONIC WPCF	\$399,082	\$386,481	\$785,563
NEW CANAAN WPCF	\$56,656	\$119,045	\$175,701
NEW HARTFORD WPCF	\$0	\$86,196	\$86,196
NEW HAVEN EAST WPCF	\$151,122	\$783,763	\$934,885
NEW LONDON WPCF	\$54,978	\$353,020	\$407,998
NEW MILFORD WPCF	\$299,782	\$111,311	\$411,093
NEWTOWN WPCF	\$72,954	\$88,347	\$161,301
NORTH HAVEN WPCF	\$54,418	\$137,344	\$191,762
NORWALK WPCF	\$276,853	\$668,920	\$945,773
PLAINVILLE WPCF	\$253,448	\$378,720	\$632,168
PORTLAND WPCF	\$44,740	\$148,884	\$193,624
RIDGEFIELD SOUTH ST. WPCF	\$0	\$62,635	\$62,635
SEYMOUR WPCF	\$14,654	\$212,050	\$226,704
SIMSBURY WPCF	\$211,063	\$27,089	\$238,152
SOUTHINGTON WPCF	\$201,085	\$651,233	\$852,318
SOUTH WINDSOR WPCF	\$303,783	\$198,875	\$502,658
STAFFORD WPCF	\$0	\$71,814	\$71,814
STAMFORD WPCF	\$2,238,236	\$1,385,998	\$3,624,234
STRATFORD WPCF	\$648,477	\$565,362	\$1,213,839
SUFFIELD WPCF	\$56,408	\$149,755	\$206,163
THOMASTON WPCF	\$0	\$49,648	\$49,648
UCONN WPCF	\$0	\$306,781	\$306,781
	Total Annual	Total Annual	Total Annual

Project Facilities	Capital Cost	O&M Cost	Project Cost
WALLINGFORD WPCF	\$122,125	\$267,965	\$390,090
WATERBURY WPCF	\$737,935	\$1,692,261	\$2,430,196
WEST HAVEN WPCF	\$359,358	\$1,731,807	\$2,091,165
WESTPORT WPCF	\$1,688,193	\$69,073	\$1,757,266
WINDHAM WPCF	\$159,477	\$106,866	\$266,343
WINDSOR LOCKS WPCF	\$84,200	\$137,602	\$221,802
WINSTED WPCF	43,673	\$61,000	\$104,673
TOTAL	\$11,896,916	\$19,187,150	\$31,084,066

BOLD = New Project Plant for Year 2013

Nitrogen Removal Projects Financed by the CWF through 2013

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2013 lbs/day
Seymour	9,800,000	250,000	1993	167	52
East Windsor	10,000,000	1,000,000	1996	163	29
Fairfield Phase 1	4,700,000	4,700,000	1996	1113	443
Greenwich	500,000	500,000	1996	1313	443
Milford BB Phase 1	1,000,000	1,000,000	1996	258	70
Milford H Phase 1	650,000	650,000	1996	844	343
Norwalk Phase 1	1,100,000	1,100,000	1996	1967	702
Ridgefield	200,000	200,000	1996	80	47
Stratford Phase 1	800,000	800,000	1996	974	300
Univ. of Conn	12,000,000	1,058,000	1996	120	60
West Haven Phase 1	750,000	750,000	1996	967	249
Westport Phase 1	400,000	400,000	1996	238	27
Ledyard	3,500,000	350,000	1997	20	6
New Haven Phase 1	8,200,000	8,200,000	1997	4294	1667
Newtown	12,000,000	1,058,000	1997	45	15
Stamford Phase 1	3,500,000	3,500,000	1997	2536	440
Derby	2,763,000	677,000	2000	195	54
New Canaan	14,000,000	1,235,000	2000	175	25
Norwalk Phase 2	56,000,000	5,538,000	2000	1967	702
Waterbury	120,000,000	17,359,000	2000	2766	742
East Hampton	690,000	690,000	2001	148	101
Thomaston	9,313,000	1,164,000	2001	114	31
New London	3,069,000	2,669,000	2002	1057	296
Portland	5,200,000	1,047,000	2002	86	23

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2013 lbs/day
Branford	21,542,000	3,158,000	2003	526	131
Fairfield Phase 2	40,551,000	12,046,000	2003	1113	443
Windsor Locks	2,349,000	1,841,000	2003	180	71
Bridgeport E Phase 1	2,090,000	2,090,000	2004	991	444
Bridgeport W Phase 1	2,375,000	2,375,000	2004	2852	919
Bristol Phase 1	584,000	584,000	2004	1091	517
Enfield	2,390,000	2,390,000	2004	763	252
Litchfield	4,000,000	1,000,000	2004	64	24
Jewett City	10,000,000	1,500,000	2005	42	11
Stamford Phase 2	97,223,000	59,500,000	2006	2536	440
North Haven	1,000,000	1,000,000	2006	433	172
Wallingford	2,276,000	2,276,000	2006	737	356
East Hartford	1,965,000	1,965,000	2007	801	397
Cheshire	5,775,000	5,775,000	2007	281	48
Simsbury Phase 1	21,231,000	4,044,000	2007	293	50
Suffield	4,075,000	3,370,000	2007	122	34
Winsted	1,100,000	1,100,000	2007	175	63
Westport Phase 2	37,131,000	8,253,000	2008	238	27
Shelton	21,642,000	4,293,000	2008	290	69
Hartford Interim Project	6,900,000	6,900,000	2008	6512	3282
Plainville	22,931,076	4,815,525	2008	277	122
Milford BB Phase 2	11,700,000	1,613,000	2009	258	70
Milford H Phase 2	34,900,000	10,038,000	2009	844	343
Stratford Phase 2	54,000,000	10,116,000	2009	974	300
Danbury	5,000,000	5,000,000	2010	1211	401
Groton Town	16,551,000	4,842,000	2010	420	199
Southington Interim Project	13,000,000	13,000,000	2010	433	99

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2013 lbs/day
Meriden	42,455,000	32,517,000	2010	1230	164
New Hartford	10,000,000	1,000,000	2010	12	3
Stafford	Funded by USDA		2011	164	164
Glastonbury	23,701,000	272,570	2011	268	51
South Windsor	36,000,000	7,300,000	2012	289	109
Windham	22,917,000	1,638,583	2012	344	112
New Milford	29,900,000	6,080,545	2012	66	27
West Haven	55,000,000	13,200,000	2012	967	249
Ansonia	41,731,000	10,015,000	2012	314	59
Putnam	Funded by USDA		2014	145	68
Manchester	13,500,000	580,000	2015	855	946
Mattabasset	25,000,000	1,070,000	2016	228	1127
New Haven	11,000,000	470,000	2017	4294	1667
Rocky Hill	12,700,000	540,000	2018	789	412
Norwich	21,000,000	900,000	2018	550	535
Hartford	60,000,000	2,570,000	2018	6512	3888



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Affirmative Action/Equal Opportunity Employer

Notice of Proposed Value of an Equivalent Nitrogen Credit for 2013

To: Connecticut Municipalities with Sewage Treatment Facilities

From: Macky McCleary, Deputy Commissioner Department of Energy and Environmental Protection
Betsey Wingfield, Chair, Nitrogen Credit Advisory Board

The Connecticut Department of Energy and Environmental Protection, working with the Nitrogen Credit Advisory Board, have 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).

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 \$5.61 for calendar year 2013. 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 \$5.61 for an equivalent nitrogen credit in calendar year 2013. You have until April 15, 2014 to review the data. Please look over the data for your facility and if you have any questions or objections please contact Iliana Raffa 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 2013. Should you have any questions please contact Ms. Iliana Raffa of the Department's Water Protection and Land Reuse Bureau at 860-424-3758 or email Ms. Raffa at iliana.raffa@ct.gov

Sincerely,

A handwritten signature in black ink, appearing to read "Betsey Wingfield".

Betsey Wingfield
Chairman, Nitrogen Credit Advisory Board

Sincerely,

A handwritten signature in black ink, appearing to read "Macky McCleary".

Macky McCleary,
Deputy Commissioner
Date

cc:

Timothy Dowding, Stamford
Thomas Tylor, Metropolitan District Commission
Brian Armet, Mattabassett District
Joseph Michelangelo, Fairfield
Astrid T. Hanzalek, Suffield
William Norton, West Haven
Guy P. Russo, Middletown
Kristin Writanen, Treasurer's Office



**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 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, 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

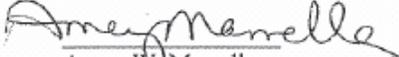
(a) *Abatement of Violations*

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 I

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



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Affirmative Action/Equal Opportunity Employer

Notice of Future Plans of the Nitrogen Trading Program

To: Connecticut Nitrogen Trading Program Participants

From: Connecticut Department of Energy and Environmental Protection and the Connecticut Nitrogen Credit Advisory Board

The Connecticut Department of Energy and Environmental Protection (DEEP), working with the Nitrogen Credit Advisory Board (NCAB), have initiated steps regarding the future plans of the Nitrogen Trading Program.

Nitrogen Trading Approach

The Nitrogen Trading Program has been an innovative approach to cost effectively meeting the 2014 TMDL goal by:

- Encouraging denitrification at sewage treatment plants (STPs) with enhanced Clean Water Fund grants
- Spreading nitrogen removal upgrades over thirteen years with the southwestern and larger STPs moving first, thereby reducing the impact on the Clean Water Fund (CWF)
- Allowing smaller more distant STPs to purchase credits rather than upgrading to meet 65% removal requirements.

Fifty-three (53) of the 79 eligible STPs have become "Project Facilities" completing construction for nitrogen removal through 2013, with an expected total of sixty (60) "Project Facilities" completing construction by 2018. Through 2013 the total amount of grants and loans invested by the CWF for these nitrogen removal upgrade projects is over \$330 million with an expected total over \$450 million through 2018. It is estimated that \$300 – 400 million have been saved by not requiring all STPs to upgrade.

Success towards TMDL Compliance

Steady progress has been made towards achieving the 2014 TMDL allocation of 9,141 equalized pounds of nitrogen per day (eq. lbs N/day). The performance of the STPs in 2013 was 8,851 eq. lbs N/day, which was under the 2014 TMDL limit. The exceptional job performed by the operators at the STPs assisted in the reduction of pounds of nitrogen discharged.

The DEEP is projecting that in the future, the state will continue to comply with the TMDL as an additional seven STPs with very significant nitrogen loads are forecast to complete nitrogen removal projects by 2018. This will be aided by the continued ability of the operators to optimize nitrogen removal at the STPs.

Increasing State Subsidy Strains State Budget

In 2012, thirty-three STPs were required to purchase credits in order to maintain compliance with the Nitrogen General Permit at a value of \$1,506,203. In the same year, forty-seven STPs sold credits valued at \$3,932,232. This left an excess of credits valued at \$2,426,029 that the State had to purchase in 2013.

In 2013, thirty-eight STPs were required to purchase credits equal to \$2,408,402 and forty-one STPs produced credits valued at \$3,429,365. This left an excess of credits available valued at \$1,020,963 that the State will have to purchase this year.

The projections for 2018, following the current program and based on an average performance year, have the State subsidizing the program in that year at over \$5 million. This level of continued subsidization is not sustainable for a variety of reasons.

Proposed Program Change to Self-Sufficiency

To address the unsustainable state subsidization of the Nitrogen Trading Program and to avoid discontinuing the program, the DEEP and the NCAB recommend moving the trading program to self-sufficiency, exploring legislative changes to support the near-term goals of the trading program and providing public outreach to the municipalities that participate in the trading program. Different scenarios were evaluated with the outcome resulting in the following near-term goals for the trading program to become self-sufficient:

- Maintain compliance with the TMDL by continuing to encourage optimizing denitrification at STPs consistent with requirements in STP NPDES permits
- Continue the use of the Nitrogen General Permit by seeking general permit renewal in 2015
- Maintain options for future compliance should the TMDL be modified
- Move the trading program to self-sufficiency to eliminate continuing state subsidy by the 2015 trading year
- Include necessary administrative support in a self-sufficient program such as water quality monitoring
- Seek statutory changes to the Nitrogen Trading Program as necessary to enable program self-sufficiency

The self-sufficiency scenario consists of the buyers buying the credits they need to meet their General Permit limit with those payments being shared by the sellers proportionally. Most sellers will receive a reduction in the amount received as the state would no longer be subsidizing credits and the number of buyers is decreasing. The future trading program projection for 2015 and 2018 (self-sufficiency scenario) included in Attachment A is based on an average performance year and with the anticipated upgraded STPs that will be in operation for the given trading year. The future program consists of the buyers buying the credits they need to meet their General Permit limit with those payments being shared by the sellers proportionally.

Next Steps

The next steps to comply with the near-term goals of the trading program are to:

- Renew the nitrogen general permit before December 31, 2015 for five years;
- Continue trading in the same manner since the program was implemented in 2002 for the 2014 trading year;
- Move to a self-sufficient program where the buyers would purchase the equivalent nitrogen credits necessary to meet the TMDL for the 2015 trading year;
- Outreach to STPs about proposal program changes; and
- Continue discussion of alternative funding mechanisms.

How Your Voice Can Be Heard

On September 17 at 10:00 you are invited to participate in a forum to learn more about the near-term goals of the nitrogen trading program at the Department of Energy and Environmental Protection Phoenix Auditorium located at 79 Elm St in Hartford.

For more information about the Nitrogen Control Program for Long Island Sound please go to http://www.ct.gov/deep/cwp/view.asp?a=2719&q=325572&deepNav_GID=1635.

Please call Iliana Raffa at (860)424-3758 if you have any questions or you can send your comments to her at Iliana.Raffa@ct.gov.

Sincerely,


for Betsey Wingfield
Bureau Chief
Bureau of Water Protection and Land Reuse

**LIS Total Nitrogen Credit Exchange
FUTURE TRADING PROGRAM
2015 COMPARISON/PROJECTION AND 2018 PROJECTION**

Revised September 17, 2014

SELLING Credits				BUYING Credits			
Facility Name	Current Trading Program	Self-Sufficient Program	Self-Sufficient Program	Facility Name	Current Trading Program	Self-Sufficient Program	Self-Sufficient Program
	2015	2015	2018		2015	2015	2018
	Cost per Eq. lbs = \$6.73	Cost per Eq. lbs = \$4.95	Cost per Eq. lbs = \$2.13		Cost per Eq. lbs = \$6.73	Cost per Eq. lbs = \$6.73	Cost per Eq. lbs = \$8.08
STAMFORD WPCF	\$1,193,835	\$878,656	\$377,836	HARTFORD WPCF	\$744,304	\$744,304	
NEW HAVEN			\$265,107	WALLINGFORD WPCF	\$233,363	\$233,363	\$280,174
WATERBURY WPCF	\$395,488	\$291,077	\$125,168	WINDSOR POQUONOCK	\$191,603	\$191,603	\$230,038
HARTFORD WPCF			\$109,619	MIDDLETOWN WPCF	\$176,864	\$176,864	
MERIDEN WPCF	\$343,903	\$253,111	\$108,842	BRIDGEPORT EAST WPCF	\$169,495	\$169,495	\$203,495
BRIDGEPORT WEST WPCF	\$255,471	\$188,025	\$80,854	NORWICH WPCF	\$147,387	\$147,387	\$14,746
FAIRFIELD WPCF	\$228,450	\$168,138	\$72,302	NEW HAVEN EAST WPCF	\$144,931	\$144,931	
WEST HAVEN WPCF	\$154,756	\$113,900	\$48,979	MATTABASSETT WPCF	\$142,474	\$142,474	
MATTABASSETT WPCF			\$45,869	EAST HARTFORD WPCF	\$110,540	\$110,540	\$132,714
WESTPORT WPCF	\$125,279	\$92,205	\$39,649	TORRINGTON WPCF	\$76,150	\$76,150	\$32,441
SOUTHINGTON WPCF	\$125,279	\$92,205	\$39,649	VERNON WPCF	\$73,694	\$73,694	\$88,476
NEW CANAAN WPCF	\$95,802	\$70,509	\$30,320	MILFORD HOUSATONIC	\$58,955	\$58,955	\$70,781
STRATFORD WPCF	\$93,345	\$68,702	\$29,543	ROCKY HILL WPCF	\$58,955	\$58,955	
ANSONIA WPCF	\$90,889	\$66,894	\$28,765	BRISTOL WPCF	\$51,585	\$51,585	\$61,933
GREENWICH WPCF	\$88,432	\$65,086	\$27,988	KILLINGLY WPCF	\$51,585	\$51,585	\$61,933
BRANFORD WPCF	\$88,432	\$65,086	\$27,988	FARMINGTON WPCF	\$49,129	\$49,129	\$58,984
SHELTON WPCF	\$73,694	\$54,238	\$23,326	BEACON FALLS WPCF	\$49,129	\$49,129	\$58,984
MANCHESTER WPCF	\$46,673	\$34,351	\$14,771	RIDGEFIELD SOUTH ST.	\$44,216	\$44,216	\$53,086
DANBURY WPCF	\$46,673	\$34,351	\$14,771	STAFFORD SPRINGS WPCF	\$39,303	\$39,303	\$47,187
MILFORD BEAVER BROOK	\$39,303	\$28,927	\$12,439	CANTON WPCF	\$31,934	\$31,934	\$38,340
NEW LONDON WPCF	\$39,303	\$28,927	\$12,439	PLAINFIELD NORTH WPCF	\$24,565	\$24,565	\$29,492
NORWALK WPCF	\$39,303	\$28,927	\$12,439	EAST HAMPTON WPCF	\$22,108	\$22,108	\$26,543
CHESHIRE WPCF	\$29,477	\$21,695	\$9,329	GROTON TOWN WPCF	\$19,654	\$19,654	\$23,594
NEWTOWN WPCF	\$29,477	\$21,695	\$9,329	PLYMOUTH WPCF	\$17,197	\$17,197	\$20,644
MONTVILLE WPCF	\$27,021	\$19,887	\$8,552	NORTH CANAAN WPCF	\$12,282	\$12,282	\$14,746
GLASTONBURY WPCF	\$24,565	\$18,079	\$7,774	SALISBURY WPCF	\$12,282	\$12,282	\$14,746
SIMSBURY WPCF	\$24,565	\$18,079	\$7,774	THOMPSON WPCF	\$9,826	\$9,826	\$11,797
DERBY WPCF	\$24,565	\$18,079	\$7,774	PLAINFIELD VILLAGE WPCF	\$9,826	\$9,826	\$11,797
THOMASTON WPCF	\$14,739	\$10,848	\$4,665	NAUGATUCK TREATMENT	\$7,369	\$7,369	\$8,848
SEYMOUR WPCF	\$14,739	\$10,848	\$4,665	STONINGTON MYSTIC WPCF	\$4,913	\$4,913	\$5,898
ENFIELD WPCF	\$12,282	\$9,040	\$3,887	WINSTED WPCF	\$4,913	\$4,913	\$5,898
EAST WINDSOR WPCF	\$12,282	\$9,040	\$3,887	UCONN WPCF	\$4,913	\$4,913	\$5,898
NORTH HAVEN WPCF	\$12,282	\$9,040	\$3,887	NORFOLK WPCF	\$4,913	\$4,913	\$5,898
WINDHAM WPCF	\$4,913	\$3,616	\$1,555	PLAINVILLE WPCF	\$2,456	\$2,456	\$2,949
SUFFIELD WPCF	\$4,913	\$3,616	\$1,555	SPRAGUE WPCF	\$2,456	\$2,456	\$2,949
STONINGTON BOROUGH WPCF	\$2,456	\$1,808	\$777	SOUTH WINDSOR WPCF	\$2,456	\$2,456	\$2,949
STONINGTON PAWCATUCK	\$2,456	\$1,808	\$777				
PUTNAM WPCF	\$2,456	\$1,808	\$777				
JEWETT CITY WPCF	\$2,456	\$1,808	\$777				
PORTLAND WPCF	\$2,456	\$1,808	\$777				
NEW MILFORD WPCF	\$2,456	\$1,808	\$777				
LEDYARD WPCF	\$0	\$0	\$0				
NEW HARTFORD WPCF	\$0	\$0	\$0				
WINDSOR LOCKS WPCF	\$0	\$0	\$0				
LITCHFIELD WPCF	\$0	\$0	\$0				
GROTON CITY WPCF	\$0	\$0	\$0				
ROCKY HILL			\$0				
TOTAL	\$3,814,866	\$2,807,725	\$1,627,958	TOTAL	\$2,807,725	\$2,807,725	\$1,627,958

If the current trading program were to continue through 2016, the State would have to purchase the excess credits at \$1,007,141.

Bold = Clean Water Fund Nitrogen Project Facilities

The above future trading program projection for 2015 and 2018 (self-sufficiency scenario) are based on an average performance year and with the anticipated upgraded STPs that will be in operation in given trading year. The future program consists of the buyers buying the credits they need to meet their General Permit limit with those payments being shared by the sellers proportionally.

The key steps to comply with the near-term goals of the trading program are to:

- 1) Renew the general permit before December 2015, for another five years
- 2) Continue trading in the same manner since the program was implemented in 2002 for the 2013 and 2014 trading years
- 3) Move to a self-sufficient program for the 2015 trading year and beyond where the buyers would purchase the equivalent nitrogen credits needed to meet the TMDL

Attachment K

Nitrogen Credit Advisory Board 2015 Meeting Schedule

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

February 11, 2015

March 18, 2015

June 17, 2015

October 21, 2015