



Connecticut Department of Energy and Environmental Protection

Daniel C. Esty, Commissioner

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Glastonbury WPCF

Report of the Nitrogen Credit Advisory Board for Calendar Year 2012 To the Joint Standing Environment Committee of the General Assembly

December 16, 2013

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**REPORT OF THE NITROGEN CREDIT ADVISORY BOARD
FOR CALENDAR YEAR 2012**

**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**

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, 2012 to December 31, 2012.

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 2012 on the progress of the Nitrogen Credit Exchange Program.

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

- Nitrogen removal projects in Glastonbury and Stafford were completed in 2011 and therefore became project facilities for 2012. A project facility is defined as any facility with a fully operational nitrogen removal system on January 1 of the trading year.
- Ansonia, New Milford, South Windsor and West Haven completed construction in 2012 and will become project facilities for the 2013 trading year.
- Project implementation depends on continued bonding authorization for the Clean Water Fund (CWF) to avoid backlogging projects and to ensure the 2014 nitrogen reduction goal is met.
- The Clean Water Fund Project Priority List for fiscal years 2012 and 2013 was issued in its final form on April 17, 2012 and provides \$182.6M in general obligation bonds, \$360M in state revenue bonds and \$34.3M 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 Water Pollution Control Facility (WPCF), the Norwich WPCF and the Metropolitan District Rocky Hill WPCF. 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.

Major accomplishments and activities relative to the 2012 program operations include:

- In 2013 all eighty municipalities regulated under the General Permit for Nitrogen Discharges cooperated fully in implementing the program. In 2012 the aggregate equalized average nitrogen load was 8,246 eq. lbs N/day, which is below the 2012 TMDL target of 9,573 eq. lbs N/day and below the final 2014 aggregate permit limit of 9,141 eq. lbs N/day. 2012 was the warmest year on record since 1895 for the northeast and the warm weather enhanced nitrogen removal.
- In 2012 the Nitrogen Credit Advisory Board recommended a value of \$5.01 per equalized pound. The price of a credit was less in 2012 than 2011 because of these factors:
 1. Two projects (Glastonbury and Stafford) became project facilities in 2012 with the Stafford project funded outside of the Program resulting in a minor overall total capital cost increase.
 2. The cost of operation and maintenance increased moderately over 2012.
 3. The exceptional weather assisted in the effort of reducing the pounds of nitrogen discharged.
- In 2012, thirty-three facilities were required to purchase credits in order to remain in compliance with the Nitrogen General Permit (Attachment D). The value purchased credit was \$1,506,203. Forty-seven facilities sold credits at a total cost of \$3,932,237.
- Performance in 2013 is estimated to be 9,330 eq. lbs N/day, close to the 2014 TMDL limit of 9,141eq. lbs N/day.
- The revision of the Long Island Sound TMDL originally planned for 2010, has been delayed. Under the revision, dissolved oxygen criteria attainment may require additional nitrogen reductions from sources throughout the watershed. The revised TMDL will include five states – Massachusetts, New

Hampshire and Vermont in addition to Connecticut and New York – to ensure a watershed-wide commitment to the assessment and planned reductions in nitrogen.

I. Introduction

Background

Long Island Sound's (LIS) most pressing water quality problem is caused by over enrichment of nutrients, specifically nitrogen, which leads to greatly reduced levels of dissolved oxygen in the bottom waters of western LIS. The overload of nitrogen fuels excessive growth of algae, which eventually dies, sinks to the bottom and decays. During decay, oxygen is consumed and the dissolved oxygen in the water falls to levels well below those allowable in State Water Quality Standards. Low oxygen levels, or "hypoxia" typically occur during the July through September period. These conditions are inadequate to support healthy populations of fish and shellfish because they create an ecosystem imbalance by disrupting the feeding, growth and reproduction of nearly all forms of aquatic life. Primary sources of nitrogen include municipal 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 11 years of successful operation.

Condition of Long Island Sound

Nitrogen upgrades on the associated 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 183 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 NOAA’s national climatic data center 2012 was the warmest year on record since 1895 for the northeast, 3.3 degrees above the long term average. This mild weather increased productivity in Long Island Sound in the form of phytoplankton over an unusually long period. Normal patterns of productivity see spikes in late winter, spring and then again in the fall. During 2012 phytoplankton levels remained high from late winter through the end of summer. This prolonged productivity supplied excess amounts of organic matter to the bottom waters of Long Island Sound which through the natural process of decay reduced the available oxygen over a larger than average area.

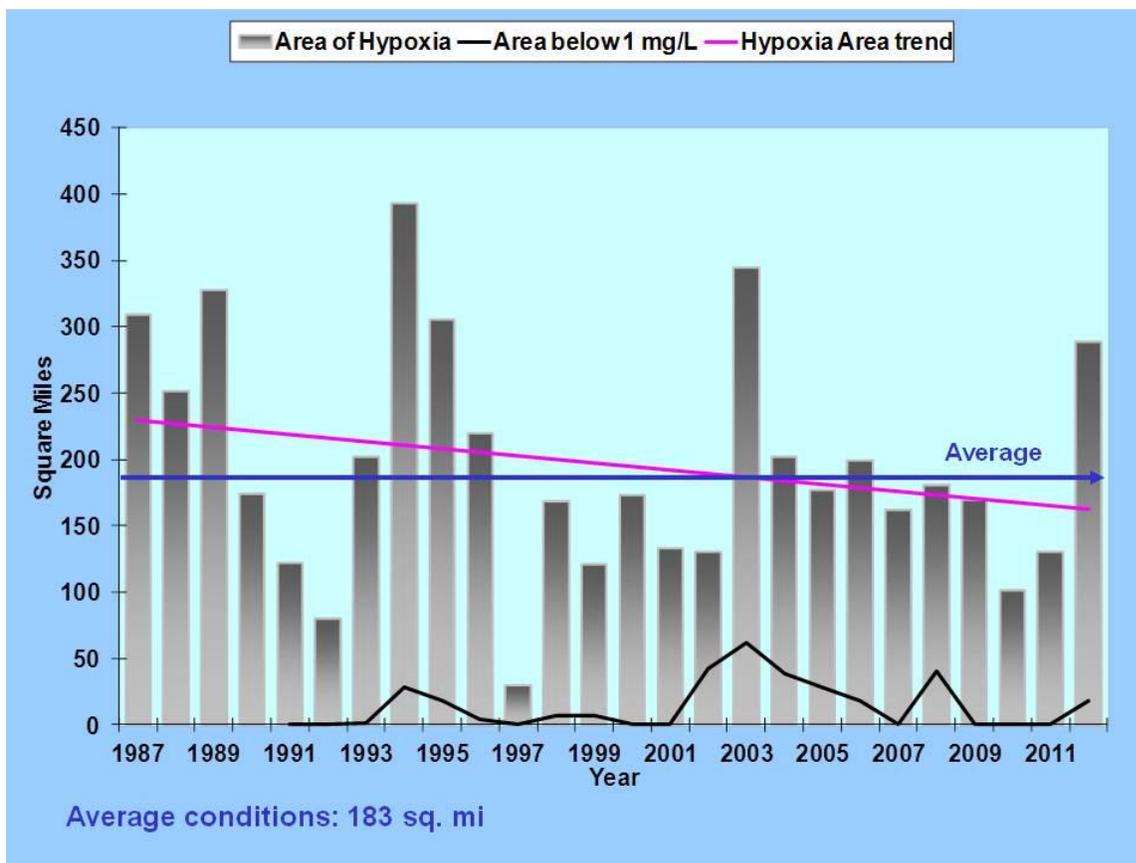


Figure 1. Area and trend of hypoxia in Long Island Sound, 1987-2012.

The warm weather and persistently high productivity seen during 2012 lead to a severe hypoxia event. The areal extent of hypoxia covered a little over 288 sq. mi., above the overall average of 183 sq. mi. Hypoxia reached its maximum extent by mid August and persisted through mid September, subsiding around 10 September when fall turnover allowed for the mixing of surface and bottom waters.

2012 Performance of the Nitrogen Credit Exchange

In 2012 the equalized average load of nitrogen from WPCFs to LIS was 8,246 eq. lbs N/day, which is below the 2012 permit limit of 9,573 eq. lbs N/day (Attachment B) and below the final 2014 aggregate

permit limit of 9,141 eq. lbs N/day. As mentioned above 2012 was the warmest year on record since 1895 for the northeast, and the warm weather enhanced nitrogen removal at the WPCFs. Hurricane Sandy, in October, had a minor impact on nitrogen removal at the plants. Also of note during 2012:

- The lowest monthly end-of-pipe load in the history of the NCE (6,796 eq. lbs N/day) occurred in July when the drier and warmer weather that occurred in the summer enhanced nitrogen removal.
- January, which had the highest aggregate monthly nitrogen load of 9,352 eq. lbs N/day, and the remainder of 2012 was under the permit limit of 9,573 eq. lbs N/day (Figure 2).
- As discussed below, 2012 saw the greatest total dollar value of credits sold and the greatest dollar value of credits purchased by the Program.

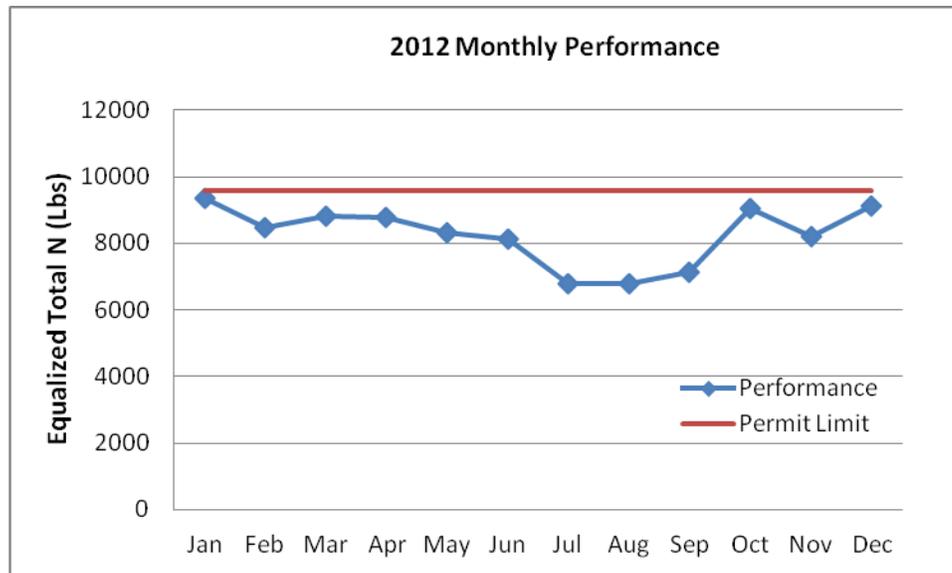


Figure 2. Monthly aggregate performance of 80 facilities during 2012.

II. The 2012 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, two project facilities that finished construction in 2011, Glastonbury and Stafford, became Project Facilities in 2012. These facilities increased the number of project facilities from forty-eight in 2012.

"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 2012 at \$10,308,819 (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 \$18,097,458 was adopted by the Board as the annual operation and maintenance cost for nitrogen removal in 2012. Combining capital and operation and maintenance costs yielded a total cost for nitrogen removal in 2012 of \$28,406,277 (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 15,538 eq. lbs N/day of nitrogen was reduced by the 48 project facilities that were on line in 2012 (Attachment E). Based on these analyses, the cost was determined by dividing the Total Project Cost of \$28,406,277 by 5,538 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 \$5.01 for trading in 2012. The Deputy Commissioner, on behalf of Commissioner Esty, 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 \$5.01 for 2012.

The price of a nitrogen credit was less in 2012 than 2011 because of these factors:

- Two projects (Glastonbury and Stafford) became project facilities in 2012 with the Stafford project funded outside of the Program resulting in a minor overall total capital cost -increase.
- The cost of operation and maintenance increased moderately over 2012.
- The total reduction in equalized pounds of nitrogen increased because of the exceptionally good weather.

Numbers of Credits Traded and Final Balances

In 2012, thirty-three 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 \$1,506,203. Forty-seven facilities sold credits at a total cost of \$3,932,237 (Attachment D). The good weather in 2012 enhanced nitrogen removal resulting 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 2012 towards achieving the 2014 TMDL allocation of 9,141 eq. lbs N/day (Attachment C). The effects of warm and dry weather enhanced nitrogen removal in 2012. The twelve month moving nitrogen load average through December 2012 was 8,246 eq. lbs N/day (yellow line in Figure 3).

Two project facilities –Glastonbury and Stafford completed construction for nitrogen removal in 2011; therefore, they were considered project facilities in 2012. Glastonbury WPCF removed 38 eq. lbs N/day in 2012. The Stafford WPCF has had some difficulties removing nitrogen since the equipment installed to remove nitrogen has not been working to the full capacity. Ansonia, New Milford, South Windsor, West Haven and Windham finished construction in 2012; therefore, they will become project facilities in 2013. The total amount of eq. lbs N/day removed from these facilities in 2012 was 658 eq. lbs N/day.

Meeting the 2014 Wasteload Allocation and Permit Limits.

From January through August 2013 the twelve month moving nitrogen load average of 9,214 eq. lbs N/day indicates that the plants may be close to complying with the 2013 permit. Unfavorable weather conditions could decrease the efficiency of plants, making fewer credits available, and potentially causing the state to exceed the general permit limit.

The Department continues to refine its projections to determine whether the 2014 TMDL target nitrogen load allocation will be attained. By 2018, an additional 1,000 eq. lbs N/day is projected to be reduced as a result of projects in Putnam, Manchester, Mattabassett, New Haven, Hartford (phase 2), Rocky Hill and Norwich coming on line. A total of sixty project facilities are anticipated by the 2018 trading year.

In 2009 the NCAB approved a funding program for dissolved oxygen and nitrogen sampling equipment purchases by municipal treatment plants. Twenty one plants have installed. The plants that have installed the equipment have improved nitrogen removal capabilities beyond their current performance through computerized controls and helped to optimize the denitrification process. By constantly monitoring dissolved oxygen and nitrate levels, facilities have been better able to control the amount of dissolved oxygen entering the anoxic zones and optimize nitrate recycles and supplemental carbon.

Clearly, additional projects will need to become operational, and nitrogen removal will need to be optimized at existing project facilities by 2014 if the permit limit is to be successfully met each year. The annual reduction in limits reflects the statewide projection of nitrogen reduction generated by newly constructed treatment facilities.

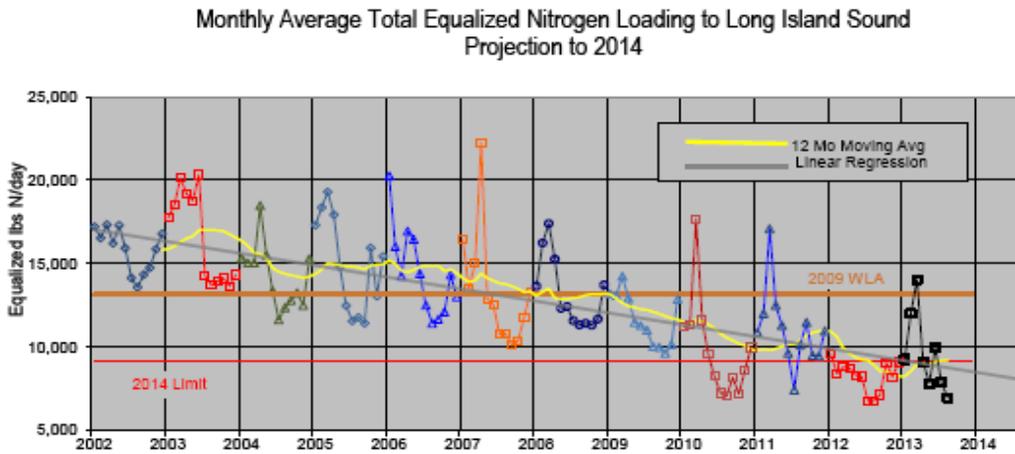


Figure 3. Monthly average total nitrogen loading to Long Island Sound, 2002-2013

Proposed Revisions to the Program

The Department and Nitrogen Credit Advisory Board members will continue to work with municipalities that plan to host projects to ensure their projects are implemented. If warranted, the DEEP and NCAB members will evaluate the potential benefits of adjusting the price of the nitrogen credit and other actions that will help maintain progress towards the goal. Strategies including either incentive or enforcement may be needed to encourage municipalities with key projects to initiate and complete improvements to their facilities in a timely manner and to operate them to their full potential. The Department is working with the Nitrogen Credit Advisory Board also to determine the future plans of the program after 2014.

The Nitrogen General Permit (NGP) was reissued on December 29, 2010 (Attachment I). The reissued general permit for Nitrogen Discharges covers the 5-year period January 2011-December 2015. The limits derived are consistent with the methodology used to set limits in the prior permits. With the final permit limit set for 2014, and the TMDL requirement that the limit not be exceeded in aggregate thereafter, the NCAB will be reviewing the future of the program and how to maintain a successful NCE that has accelerated progress toward that goal, and saved substantial costs to the State’s municipalities.

The key issue is whether the annual aggregate average can be kept below the 2014 limit, and the consequences for not meeting that limit each year. Prior to that final limit step-down in 2014, the NCE had flexibility to range above and below the annual limits in the permit, provided performance was below the 2009 step-down required by the TMDL. In 2014 the TMDL step-down and the aggregate permit limits become one and the same at 9,141 eq. lbs N/day, and the “buffer” between permit limits and the TMDL step down disappears.

The NCAB will evaluate the potential benefit of continuing and perhaps improving nitrogen removal performance, and whether trading should be modified to achieve a net zero balance for purchases and sales each year.

IV. Finances

The Clean Water Fund

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 is currently under development. It is expected that available funding will include the FY 2013 funds from the previous state capital budget that has not been allocated to the CWF as well as the FY 2014 and FY 2015 in the recently approved state capital budget. The level of state funding for the CWF is expected to be as follows:

FY	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, New Haven, Plymouth and Norwich.

Investment in Projects on Line

The two projects completed in 2011 that became project facilities for the 2012 trading year are Glastonbury WPCF and Stafford WPCF. Glastonbury was funded by the Clean Water Fund with a total upgrade investment of \$24 million with the denitrification portion resulting in an annual CWF loan repayment cost of \$272 thousand. The Stafford project was funded by the Department of Agriculture - Rural Development. The complete list of nitrogen removal projects that have been completed or are currently approved for funding by the Clean Water Fund (Attachment G).

Funded projects not yet completed have total project cost estimates in excess of \$250 million, with the nitrogen portions of at least \$50 million. Thus, it is estimated that total upgrade costs to meet the nitrogen control target will easily exceed \$1 billion, with more than \$300 million of that relevant to nitrogen control upgrades. However, the trading of nitrogen credits with its economic efficiencies is estimated to save in the range of \$300 - \$400 million compared to a traditional individual permit program where every facility would be required to meet its individual limit.

Use of Nitrogen Credit Exchange Funds

Since the program started in 2002 four times more credits have been sold by the NCE than were purchased from the NCE. 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 are poorly understood. 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). 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 a seventh year's membership (2011-2012) 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, was scheduled for revision in 2003 to include anticipated changes in Connecticut and New York water quality standards, a new System-wide Eutrophication Model (SWEM) being developed for Long Island Sound, and to include more specific nitrogen reduction targets for Upper Connecticut River Sources in Massachusetts, New Hampshire and Vermont and for atmospheric deposition. The time necessary to complete the SWEM model and associated scenario testing, as well as implementation of studies related to nitrogen loading and delivery in the Upper Connecticut River resulted in delay of the TMDL revision.

Furthermore, 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 held bi-weekly conference calls to work through the necessary tasks to complete a

revised TMDL. 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. 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 the attainment of the 2000 TMDL load allocations.

Progress on actions 1 and 2 are ongoing, the report of the enhanced implementation plan (action 3) is currently being finalized, and action 4 is in the preliminary stage.

Also, a project to improve the SWEM model with funding from the Long Island Sound Study is underway and anticipated to be completed by the end of 2013. It is expected that the upgraded model will more accurately predict the response of dissolved oxygen conditions in Long Island Sound under a variety of nitrogen loading scenarios. In addition, a watershed model has been developed that allows managers to identify nitrogen loads from all point and nonpoint sources, the delivery efficiency of that nitrogen to Long Island Sound, and the costs and feasibility of reductions. These tools, and continued meeting and engagement of all five states will help maintain a commitment to revising the TMDL.

VI. Recommendations for Statutory Change

There were no recommendations to make any statutory changes raised by the Board during 2012. However, during the next year, the NCAB will be considering options for continuing the NCE post meeting the 2014 aggregate permit limit and TMDL wasteload allocation.

VII. Attachments

- A. Nitrogen Credit Advisory Board Members 2012
- B. Total nitrogen Balance Sheet - Monthly Averages by plant 2012
- C. Total nitrogen Balance Sheet 2002 - 2012
- D. Nitrogen Exchange Balance Sheet 2012
- E. Equalized lbs reduced by project facilities 2012
- F. Total Annual Project Costs 2012
- G. Nitrogen Removal Projects Financed by the CWF through 2012
- H. Notice of Proposed Value of an Equivalent Nitrogen Credit for 2012
- I. General Permit for Nitrogen Discharges -
- J. Nitrogen Credit Advisory Board 2014 Meeting Schedule

VIII. Acknowledgements

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

Attachment A

LIST OF APPOINTEES 2012

	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.	Sharon Dixon Peay Office of the Treasurer 55 Elm Street Hartford, CT 06106 Phone: (860) 702-3134	Denise Nappier Secretary Office of the Treasurer	No specific Term	

6	Astrid T. Hanzalek 31 Abraham Terrace Suffield, CT 06078 Phone: (860) 668-2739	Lawrence F. Cafero, Jr. House Minority Leader (Ward Appointee)	3 years	
7.	Brian Armet Executive Director Mattabassett District 245 Main Street Cromwell, CT 06416 Phone: (860) 635-5550	Denise Merrill House Majority Leader (Pudlin Appointee)	3 years	June 2008 *
8.	Richard Cellar 83 Lawrence Road Fairfield, CT 06824-3039 Phone: (203) 255-5017	John McKinney Senate Minority Leader (DeLuca Appointee)	3 years	November 2005 *
9.	Carl Almquist Town of Groton WPCA 134 Groton Long Point Road Groton, CT 06340 - 4873 Phone: (860) 448-4083	M. Jodi Rell Governor	3 years	November 2007*
10.	Vacant	House Majority Leader	3 years	
11.	William Norton, Director City of West Haven WPCA 355 Main Street West Haven, CT06516 (203) 937-3706	Christopher G. Donovan Speaker of the House (Amann Appointee)	3 years	February 2008*
12.	Vacant	Senate Majority Leader	3 years	

* Appointees remain active until removed by their appointees authority

Attachment B

Total Nitrogen Balance Sheet -2012 Monthly Averages by Plant

Plant	Limit	Avg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zone 1														
GROTON CITY WPCF	104	76	98	97	87	72	88	65	65	62	79	80	64	54
GROTON TOWN WPCF	161	246	293	451	333	450	240	139	105	129	141	377	146	151
JEWETT CITY WPCF	16	5	7	5	4	4	3	2	3	3	3	5	10	12
KILLINGLY WPCF	137	225	177	175	177	386	420	167	213	238	142	182	158	265
LEDYARD WPCF	8	6	12	9	7	5	6	3	4	4	6	4	7	6
MONTVILLE WPCF	124	63	49	55	61	78	110	74	47	44	44	47	71	78
NEW LONDON WPCF	404	243	347	221	219	214	244	258	212	219	222	231	277	252
NORWICH WPCF	210	457	505	435	404	370	472	485	439	511	457	474	389	546
PLAINFIELD NORTH WPCF	36	66	80	85	55	68	61	61	48	45	53	45	106	83
PLAINFIELD VILLAGE WPCF	25	28	36	25	26	18	33	28	16	14	21	26	45	48
PUTNAM WPCF	55	153	165	176	146	102	146	111	90	81	215	225	166	218
SPRAGUE WPCF	8	7	7	11	9	13	6	4	4	6	10	6	4	3
STAFFORD SPRINGS WPCF	63	208	270	283	273	248	166	183	158	203	226	159	161	161
STONINGTON BOROUGH WPCF	14	7	7	7	7	6	9	6	7	9	5	8	8	5
STONINGTON MYSTIC WPCF	28	30	23	18	18	32	33	34	51	48	30	26	24	23
STONINGTON PAWCATUCK WPCF	25	22	26	37	22	14	25	23	15	20	17	19	19	22
THOMPSON WPCF	11	44	48	33	55	37	60	52	43	45	45	54	23	16
UCONN WPCF	46	52	56	104	83	52	23	29	17	25	76	32	77	50
WINDHAM WPCF	132	146	183	209	169	146	162	129	103	137	147	144	118	101
Zone 2														
BRISTOL WPCF	417	416	461	430	420	365	349	402	367	407	322	573	467	426
CANTON WPCF	25	90	103	104	97	88	100	105	77	68	78	82	88	93
EAST HAMPTON WPCF	57	82	86	66	62	65	61	70	61	85	125	96	98	108
EAST HARTFORD WPCF	306	397	345	363	572	550	456	315	318	296	339	305	421	488
EAST WINDSOR WPCF	62	32	27	34	29	39	30	28	28	29	27	51	30	27
ENFIELD WPCF	292	219	221	239	273	203	237	230	170	208	206	211	226	207
FARMINGTON WPCF	186	241	313	338	245	233	229	250	190	171	201	195	220	303
GLASTONBURY WPCF	103	77	129	118	85	59	48	60	57	84	88	43	57	93
HARTFORD WPCF	2491	3282	4318	4104	3929	3093	3621	2679	2418	2515	2530	2753	3142	4284
MANCHESTER WPCF	327	1064	929	1177	1363	889	931	1159	938	1007	1098	994	1165	1114
MATTABASSETT WPCF	874	1200	1269	1554	1171	1055	977	1237	986	987	1145	1316	1342	1361
MIDDLETOWN WPCF	233	521	606	557	554	465	565	588	375	388	525	581	439	607
NEW HARTFORD WPCF	5	2	2	4	2	2	3	4	2	3	3	2	1	1
PLAINVILLE WPCF	106	122	254	151	156	76	109	135	145	82	99	90	85	86

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Total Nitrogen Balance Sheet -2012 Monthly Averages by Plant

Plant	Limit	Avg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sen	Oct	Nov	Dec
PLYMOUTH WPCF	44	74	99	108	82	58	68	61	53	70	57	88	61	82
PORTLAND WPCF	33	25	40	48	34	25	21	17	21	19	24	18	18	19
ROCKY HILL WPCF	302	446	425	454	499	582	534	517	454	412	343	469	361	306
SIMSBURY WPCF	112	50	113	83	42	37	41	57	42	35	31	35	39	48
SOUTH WINDSOR WPCF	111	111	192	84	87	78	112	114	111	112	112	116	109	103
SUFFIELD WPCF	47	34	46	68	37	31	21	10	11	23	35	44	49	38
VERNON WPCF	193	422	460	506	461	461	483	387	343	315	354	367	379	553
WINDSOR LOCKS WPCF	69	58	60	54	68	51	60	49	61	51	59	79	51	51
WINDSOR POQUONOCK WPCF	103	483	478	465	497	488	536	524	453	608	519	441	391	391
WINSTED WPCF	67	63	91	91	117	60	64	46	28	42	51	52	57	58

Zone 3

BRANFORD WPCF	201	94	110	83	106	80	142	68	73	67	103	102	102	90
CHESHIRE WPCF	107	48	54	41	32	34	35	50	69	53	41	34	67	70
MERIDEN WPCF	471	142	152	110	94	115	158	124	150	96	95	134	176	299
NEW HAVEN EAST WPCF	1643	1493	1534	1241	1192	2364	1610	1713	1247	1103	1208	1432	1278	1989
NORTH HAVEN WPCF	166	172	171	150	154	182	178	192	167	176	144	184	186	179
SOUTHINGTON WPCF	213	99	143	126	143	93	105	114	70	58	85	53	99	99
WALLINGFORD WPCF	282	356	557	471	377	396	388	345	273	206	223	260	309	461
WEST HAVEN WPCF	370	214	326	278	309	370	199	157	116	157	141	147	168	204

Zone 4

ANSONIA WPCF	120	63	97	86	85	54	51	49	60	49	65	57	54	50
BEACON FALLS WPCF	13	40	47	36	32	28	28	35	34	46	48	51	49	42
DANBURY WPCF	463	462	531	523	464	440	535	481	322	369	579	446	425	425
DERBY WPCF	75	71	65	57	72	62	100	72	62	66	60	70	74	87
LITCHFIELD WPCF	24	24	36	30	29	20	21	13	14	15	24	29	28	31
MILFORD BEAVER BROOK WPCF	99	74	112	64	65	60	86	82	66	64	58	96	76	59
MILFORD HOUSATONIC WPCF	323	291	527	241	269	276	253	245	269	238	202	347	260	359
NAUGATUCK TREATMENT Co.	258	222	218	227	242	227	288	208	207	216	219	204	216	194
NEW MILFORD WPCF	28	32	49	46	51	30	35	31	23	26	26	24	22	23
NEWTOWN WPCF	17	18	25	15	15	7	14	11	12	21	15	22	25	28
NORFOLK WPCF	11	21	28	22	23	24	18	12	14	15	17	28	17	30
NORTH CANAAN WPCF	14	24	25	20	23	25	22	23	21	23	28	27	23	24
SALISBURY WPCF	22	28	35	28	29	33	35	29	11	30	18	28	30	28
SEYMOUR WPCF	64	41	51	40	56	38	54	37	33	30	35	36	35	42

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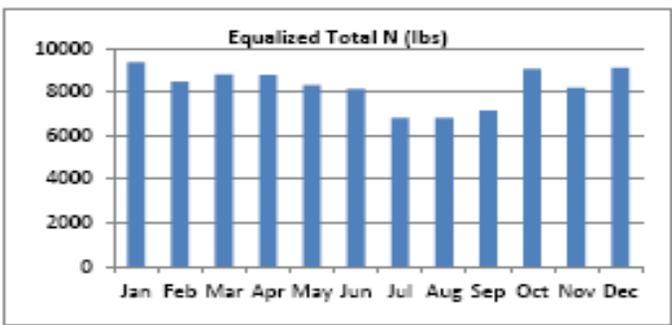
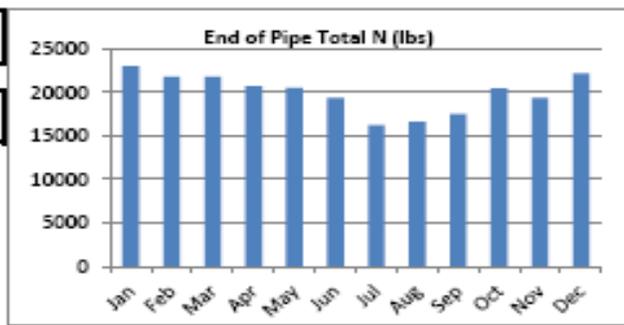
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Total Nitrogen Balance Sheet -2012 Monthly Averages by Plant

Plant	Limit	Avg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sen	Oct	Nov	Dec
SHELTON WPCF	111	69	68	70	84	70	81	66	61	73	54	85	62	48
SOUTHBURY TR. SCHOOL WPCF	16	3	5	4	3	2	3	3	2	3	3	3	3	3
STRATFORD WPCF	373	179	220	194	183	120	151	227	134	143	120	207	192	253
THOMASTON WPCF	44	18	24	22	15	20	14	14	14	16	18	23	17	20
TORRINGTON WPCF	260	195	250	214	199	207	198	190	142	140	184	225	165	221
WATERBURY WPCF	1058	582	689	571	1113	680	747	600	484	505	473	386	417	322
Zone 5														
BRIDGEPORT EAST WPCF	379	325	412	333	349	273	293	133	154	181	282	458	512	519
BRIDGEPORT WEST WPCF	1091	1006	967	943	657	1083	927	1037	738	879	898	2006	862	1079
FAIRFIELD WPCF	426	338	346	338	374	345	346	507	282	274	342	286	323	298
WESTPORT WPCF	91	25	40	22	20	19	21	24	22	20	19	31	19	40
Zone 6														
GREENWICH WPCF	502	430	444	391	390	433	429	478	423	344	436	502	466	422
NEW CANAAN WPCF	67	21	37	28	22	20	19	21	17	16	12	14	20	23
NORWALK WPCF	752	640	569	577	1003	640	495	546	673	636	550	710	642	644
RIDGEFIELD SOUTH ST. WPCF	31	38	41	35	42	31	43	40	26	30	44	41	41	47
STAMFORD WPCF	970	506	592	534	479	463	479	491	424	404	357	536	778	540
End of Pipe Total			23053	21847	21832	20752	20564	19365	16258	16648	17538	20469	19407	22233
Equalized Total			9352	8467	8804	8765	8321	8133	6796	6798	7140	9062	8198	9112

End of Pipe Permit = 19,327
 End of Pipe Avg = 19,997

Equalized Permit = 9,573
 Equalized Avg = 8,246



Attachment C

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2012

	<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>Average 2010-2012</u>
ZONE:1												
GROTON CITY WPCF	210	161	179	132	118	129	110	114	107	99	76	94
GROTON TOWN WPCF	566	465	447	444	470	421	451	353	278	260	246	261
JEWETT CITY WPCF	36	40	39	13	10	13	13	8	9	6	5	7
KILLINGLY WPCF	162	147	159	177	152	158	191	126	170	247	225	214
LEDYARD WPC	5	3	4	5	7	5	7	5	5	6	6	6
MONTVILLE WPCF	187	153	222	92	98	69	82	91	82	115	63	87
NEW LONDON WPCF	449	405	332	434	423	414	377	391	335	304	243	294
NORWICH WPCF	758	986	769	748	828	684	673	612	481	470	457	469
PLAINFIELD NORTH WPCF	50	87	78	90	119	108	105	88	95	65	66	75
PLAINFIELD VILLAGE WPCF	32	44	41	49	54	42	42	43	51	31	28	37
PUTNAM WPCF	163	170	174	193	205	206	206	157	140	147	153	147
SPRAGUE WPCF	15	7	10	13	22	14	15	21	21	16	7	15
STAFFORD SPRINGS WPCF	135	131	121	131	114	120	160	162	129	191	208	176
STONINGTON BOROUGH WPCF	55	55	42	47	37	22	19	13	11	8	7	9
STONINGTON MYSTIC WPCF	36	43	49	48	51	31	30	25	32	28	30	30
STONINGTON PAWCATUCK	46	34	46	30	25	18	19	25	33	32	22	29
THOMPSON WPCF	21	35	29	33	28	28	21	18	30	29	44	34
UCONN WPCF	78	70	107	65	94	67	103	83	65	55	52	57
WINDHAM WPCF	265	243	216	165	167	174	258	364	340	289	146	258
End of Pipe Total	3269	3279	3064	2909	3022	2723	2882	2699	2414	2398	2084	2299
ZONE:2												
BRISTOL WPCF	949	1121	793	567	575	532	511	452	560	632	416	536
CANTON WPCF	70	87	101	106	113	92	99	100	121	103	90	105
EAST HAMPTON WPCF	86	119	96	85	140	110	136	121	117	127	82	109
EAST HARTFORD WPCF	755	749	812	803	902	391	417	418	366	505	397	423
EAST WINDSOR WPCF	20	34	31	45	32	32	27	26	20	31	32	28
ENFIELD WPCF	914	839	275	535	331	218	272	282	248	324	219	264
FARMINGTON WPCF	386	354	401	398	440	433	309	269	250	340	241	277

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2012

	<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>Average 2010-2012</u>
GLASTONBURY WPCF	263	307	340	214	290	295	364	223	118	101	77	99
HARTFORD WPCF	5978	5900	6529	6831	7408	5839	5326	4217	3841	5090	3282	4071
MANCHESTER WPCF	822	762	755	772	785	715	705	851	866	1069	1064	1000
MATTABASSETT WPCF	2120	1795	1453	1408	1202	1129	1053	1123	1261	1377	1200	1260
MIDDLETOWN WPCF	392	385	424	486	440	397	446	490	497	567	521	528
PLAINVILLE WPCF	252	304	311	285	301	280	315	135	97	129	122	116
PLYMOUTH WPCF	73	69	68	76	80	71	87	85	68	100	74	81
PORTLAND WPCF	24	28	36	33	34	26	33	33	28	39	25	31
ROCKY HILL WPCF	631	767	780	919	787	610	484	526	498	542	446	495
SIMSBURY WPCF	344	316	323	368	206	84	70	84	43	84	50	59
SOUTH WINDSOR WPCF	298	324	317	340	298	322	323	326	342	276	111	243
SUFFIELD WPCF	34	37	38	72	88	74	88	47	25	35	34	31
VERNON WPCF	483	663	538	488	580	469	426	361	386	520	422	443
WINDSOR LOCKS WPCF	131	116	100	143	98	94	110	113	96	89	58	81
WINDSOR POQUONOCK	427	422	441	467	432	419	457	450	494	500	483	492
WINSTED WPCF	250	187	201	206	223	120	82	66	64	70	63	66
End of Pipe Total	15701	15683	15163	15647	15785	12752	12140	10798	9642	12650	9509	10600
ZONE:3												
BRANFORD WPCF	142	79	129	135	103	111	105	94	110	102	94	102
CHESHIRE WPCF	468	492	536	480	171	74	75	63	38	74	48	53
MERIDEN WPCF	860	917	882	781	827	810	1008	1051	696	253	142	364
NEW HAVEN EAST WPCF	1400	1630	1408	1703	2271	2201	1650	1592	1494	1993	1493	1660
NORTH HAVEN WPCF	534	502	489	424	226	214	249	191	164	199	172	178
SOUTHINGTON WPCF	819	798	768	754	761	868	911	725	194	262	99	185
WALLINGFORD WPCF	549	601	627	657	522	340	381	429	456	517	356	443
WEST HAVEN WPCF	796	668	511	601	546	498	779	549	612	673	326	537
End of Pipe Total	5568	5687	5349	5535	5427	5116	5158	4694	3764	4073	2730	3522
ZONE:4												
ANSONIA WPCF	273	307	260	287	289	237	260	270	178	76	63	106
BEACON FALLS WPCF	41	45	38	42	44	50	57	58	60	52	40	51
DANBURY WPCF	1866	1875	1825	1766	2072	1778	1885	1974	644	576	462	561
DERBY WPCF	53	64	58	59	65	63	64	64	63	82	71	72
LITCHFIELD WPCF	67	54	35	49	39	38	45	43	35	39	24	33

Total Nitrogen Balance Sheet - Monthly Averages lbs/day by Plant, 2002 - 2012

	<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>Average 2010-2012</u>
MILFORD BEAVER BROOK	130	180	120	127	130	132	121	137	101	127	74	101
MILFORD HOUSATONIC	439	429	431	479	574	662	742	324	238	598	291	376
NAUGATUCK TREATMENT	479	440	234	279	263	250	344	345	248	320	222	263
NEW MILFORD WPCF	76	52	56	91	86	88	103	109	135	117	32	95
NEWTOWN WPCF	34	50	32	24	36	26	19	18	21	20	18	20
NORFOLK WPCF	9	13	12	20	29	32	29	26	23	30	21	25
NORTH CANAAN WPCF	18	22	21	31	23	25	24	25	26	26	24	25
SALISBURY WPCF	27	27	23	28	29	28	34	32	34	35	28	32
SEYMOUR WPCF	55	56	61	69	66	62	58	69	62	89	41	64
SHELTON WPCF	452	545	509	501	480	413	219	219	113	121	69	101
SOUTHBURY TR. SCHOOL	17	18	16	14	10	7	8	4	7	9	3	6
STRATFORD WPCF	535	646	431	539	537	616	1425	605	245	259	179	228
THOMASTON WPCF	35	51	45	45	44	32	42	40	25	27	18	23
TORRINGTON WPCF	283	299	287	254	265	247	275	226	242	298	195	245
WATERBURY WPCF	778	1335	913	965	1001	1034	869	857	802	914	582	766
End of Pipe Total	5667	6508	5407	5669	6082	5820	6623	5445	3302	3815	2457	3191
ZONE:5												
BRIDGEPORT EAST WPCF	568	615	459	470	468	271	253	301	412	376	325	371
BRIDGEPORT WEST WPCF	2305	2306	1158	1564	1145	1146	1262	1019	1211	1017	1006	1082.3
FAIRFIELD WPCF	735	453	417	383	530	408	488	431	325	388	338	381.33
WESTPORT WPCF	140	133	152	148	153	70	44	38	41	35	25	38
End of Pipe Total	3748	3508	2186	2565	2296	1895	2047	1789	1989	1816	1694	1873
ZONE:6												
GREENWICH WPCF	410	459	443	556	520	697	479	461	458	572	430	497
NEW CANAAN WPCF	21	24	20	30	30	38	29	30	29	39	21	33
NORWALK WPCF	605	888	784	818	755	1043	766	881	600	742	640	741
RIDGEFIELD SOUTH ST.	23	27	28	35	28	32	34	38	42	39	38	40
STAMFORD WPCF	1652	1645	1523	1418	1029	726	550	510	497	592	506	533
End of Pipe Total	2711	3044	2798	2857	2362	2536	1858	1920	1626	1984	1635	1843
State End of Pipe Total	36664	37708	33966	33182	34974	30842	30702	27345	27345	26736	20109	23329

Equalized lbs reduced by project facilities 2012

Project Facilities	Baseload	Average TN	EOP Reduced	E Factor	E Pounds Reduced
BRANFORD WPCF	526	94	432	0.6	259.2
BRIDGEPORT EAST WPCF	991	325	666	0.85	566.1
BRIDGEPORT WEST WPCF	2852	1006	1846	0.85	1569.10
BRISTOL WPCF	1091	416	675	0.18	121.5
CHESHIRE WPCF	281	48	233	0.49	114.17
DANBURY WPCF	1211	462	749	0.46	344.54
DERBY WPCF	195	71	124	0.67	83.08
EAST HAMPTON WPCF	148	82	66	0.2	13.2
EAST HARTFORD WPCF	801	397	404	0.19	76.76
EAST WINDSOR WPCF	163	32	131	0.19	24.89
ENFIELD WPCF	763	219	544	0.19	103.36
FAIRFIELD WPCF	1113	338	775	0.85	658.75
GLASTONBURY WPCF	268	77	191	0.2	38.2
GREENWICH WPCF	1313	430	883	1	883
GROTON TOWN WPCF	420	246	174	0.18	31.32
HARTFORD WPCF	6512	3282	3230	0.2	646
JEWETT CITY WPCF	42	5	37	0.17	6.29
LEDYARD WPCF	20	6	14	0.18	2.52
LITCHFIELD WPCF	64	24	40	0.35	14
MERIDEN WPCF	1230	142	1088	0.49	533.12
MILFORD BEAVER BROOK WPCF	258	74	184	0.67	123.28
MILFORD HOUSATONIC WPCF	844	291	553	0.67	370.51
NEW CANAAN WPCF	175	21	154	1	154
NEW HARTFORD WPCF	12	2	10	0.18	1.8
NEW HAVEN EAST WPCF	4294	1493	2801	0.6	1680.6

NEW LONDON WPCF	1057	243	814	0.18	146.52
NEWTOWN WPCF	45	18	27	0.46	12.42
NORTH HAVEN WPCF	433	172	261	0.6	156.6
NORWALK WPCF	1967	640	1327	1	1327
PLAINVILLE WPCF	277	122	155	0.18	27.9
PORTLAND WPCF	86	25	61	0.2	12.2
RIDGEFIELD SOUTH ST. WPCF	80	38	42	1	42
SEYMOUR WPCF	167	41	126	0.67	84.42
SHELTON WPCF	290	69	221	0.67	148.07
SIMSBURY WPCF	293	50	243	0.18	43.74
SOUTHINGTON WPCF	557	99	458	0.49	224.42
STAFFORD WPCF	164	208	-44	0.15	-6.6
STAMFORD WPCF	2536	506	2030	1	2030
STRATFORD WPCF	974	179	795	0.67	532.65
SUFFIELD WPCF	122	34	88	0.19	16.72
THOMASTON WPCF	114	18	96	0.6	57.6
UCONN WPCF	120	52	68	0.15	10.2
WALLINGFORD WPCF	737	356	381	0.6	228.6
WATERBURY WPCF	2766	582	2184	0.6	1310.4
WEST HAVEN WPCF	967	214	753	0.6	451.8
WESTPORT WPCF	238	25	213	0.85	181.05
WINDSOR LOCKS WPCF	180	58	122	0.19	23.18
WINSTED WPCF	175	63	112	0.18	20.16
Total					15538.54
Project Cost					\$ 28,406,277.00
Credit Cost:					\$ 5.01

Total Annual Project Cost 2012

Project Facilities	Total Annual Capital Cost	Total Annual O&M Cost	Total Annual Project Cost
BRANFORD WPCF	\$168,661	\$478,642	\$647,303
BRIDGEPORT EAST WPCF	\$51,755	\$651,151	\$702,906
BRIDGEPORT WEST WPCF	\$155,266	\$1,230,271	\$1,385,537
BRISTOL WPCF	\$28,759	\$112,114	\$140,873
CHESHIRE WPCF*	\$317,316	\$242,995	\$560,311
DANBURY WPCF	\$46,466	\$395,652	\$442,118
DERBY WPCF	\$31,785	\$95,290	\$127,075
EAST HAMPTON WPCF	\$30,144	\$198,702	\$228,846
EAST HARTFORD WPCF	\$82,707	\$183,566	\$266,273
EAST WINDSOR WPCF	\$61,136	\$103,398	\$164,534
ENFIELD WPCF	\$0	\$299,063	\$299,063
FAIRFIELD WPCF	\$514,885	\$504,100	\$1,018,985
GLASTONBURY WPCF	\$272,568	\$397,948	\$670,516
GREENWICH WPCF	\$0	\$170,512	\$170,512
GROTON TOWN WPCF	\$242,100	\$146,541	\$388,641
HARTFORD WPCF	\$107,555	\$1,094,796	\$1,202,351
JEWETT CITY WPCF	\$65,659	\$115,811	\$181,470
LEDYARD WPCF	\$18,062	\$28,754	\$46,816
LITCHFIELD WPCF	\$45,829	\$22,471	\$68,300
MERIDEN WPCF	\$492,418	\$909,848	\$1,402,266
MILFORD BEAVER BROOK WPCF	\$143,806	\$154,144	\$297,950
MILFORD HOUSATONIC WPCF	\$399,082	\$358,481	\$757,563
NEW CANAAN WPCF	\$56,656	\$133,118	\$189,774
NEW HARTFORD WPCF	\$0	\$84,696	\$84,696
NEW HAVEN EAST WPCF	\$151,122	\$578,922	\$730,044
NEW LONDON WPCF	\$54,978	\$321,652	\$376,630
NEWTOWN WPCF	\$72,954	\$120,546	\$193,500
NORTH HAVEN WPCF	\$54,418	\$139,050	\$193,468
NORWALK WPCF	\$276,853	\$736,486	\$1,013,339
PLAINVILLE WPCF	\$253,448	\$378,720	\$632,168
PORTLAND WPCF	\$44,740	\$132,765	\$177,505
RIDGEFIELD SOUTH ST. WPCF	\$0	\$61,796	\$61,796
SEYMOUR WPCF	\$14,654	\$120,015	\$134,669
SIMSBURY WPCF	\$211,063	\$36,329	\$247,392
SHELTON WPCF	\$21,642	\$771,096	\$792,738
SOUTHINGTON WPCF	\$201,085	\$755,575	\$956,660
STAFFORD WPCF	\$0	\$71,814	\$71,814
STAMFORD WPCF	\$2,238,236	\$1,225,881	\$3,464,117
STRATFORD WPCF	\$648,477	\$556,482	\$1,204,959
SUFFIELD WPCF	\$0	\$72,934	\$72,934
THOMASTON WPCF	\$56,408	\$146,303	\$202,711
UCONN WPCF	\$0	\$49,648	\$49,648
WALLINGFORD WPCF	\$122,125	\$259,802	\$381,927

WATERBURY WPCF	\$737,935	\$1,515,750	\$2,253,685
WEST HAVEN WPCF	\$0	\$1,673,966	\$1,673,966
WESTPORT WPCF	\$1,688,193	\$57,186	\$1,745,379
WINDSOR LOCKS WPCF	\$84,200	\$141,676	\$225,876
WINSTED WPCF	\$43,673	\$61,000	\$104,673
TOTAL	\$10,308,819	\$18,097,458	\$28,406,277

BOLD = New Project Plant for Year 2012

Nitrogen Removal Projects Financed by the CWF through 2012

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2012 lbs/day
Seymour	9,800,000	250,000	1993	167	41
East Windsor	10,000,000	1,000,000	1996	163	32
Fairfield Phase 1	4,700,000	4,700,000	1996	1113	338
Greenwich	500,000	500,000	1996	1313	430
Milford BB Phase 1	1,000,000	1,000,000	1996	258	74
Milford H Phase 1	650,000	650,000	1996	844	291
Norwalk Phase 1	1,100,000	1,100,000	1996	1967	640
Ridgefield	200,000	200,000	1996	80	38
Stratford Phase 1	800,000	800,000	1996	974	179
Univ. of Conn	12,000,000	1,058,000	1996	120	52
West Haven Phase 1	750,000	750,000	1996	967	214
Westport Phase 1	400,000	400,000	1996	238	25
Ledyard	3,500,000	3,500,000	1997	20	6
New Haven Phase 1	8,200,000	8,200,000	1997	4294	1493
Newtown	12,000,000	1,058,000	1997	45	18
Stamford Phase 1	3,500,000	3,500,000	1997	2536	506
Derby	2,763,000	2,763,000	2000	195	71
New Canaan	14,000,000	1,235,000	2000	175	21
Norwalk Phase 2	56,000,000	5,538,000	2000	1967	640
Waterbury	120,000,000	17,359,000	2000	2766	582
East Hampton	690,000	690,000	2001	148	82
Thomaston	9,313,000	1,164,000	2001	114	18
New London	3,069,000	2,889,000	2002	1057	243
Portland	5,200,000	1,047,000	2002	86	25

City or Town	Total Project Cost (\$)	Nitrogen Cost Portion (\$)	Year project Completed	Baseline lbs/day	2012 lbs/day
Branford	21,542,000	3,158,000	2003	526	94
Fairfield Phase 2	40,551,000	12,046,000	2003	1113	338
Windsor Locks	2,349,000	1,841,000	2003	180	58
Bridgeport E Phase 1	2,090,000	2,090,000	2004	991	325
Bridgeport W Phase 1	2,375,000	2,375,000	2004	2852	1006
Bristol Phase 1	584,000	584,000	2004	1091	416
Enfield	2,390,000	2,390,000	2004	763	219
Litchfield	4,000,000	1,000,000	2004	64	24
Jewett City	10,000,000	1,500,000	2005	42	5
Stamford Phase 2	97,223,000	59,500,000	2006	2536	506
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	25
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	74
Milford H Phase 2	34,900,000	10,038,000	2009	844	291
Stratford Phase 2	54,000,000	10,116,000	2009	974	179
Danbury	5,000,000	5,000,000	2010	1211	462
Groton Town	16,551,000	4,842,000	2010	420	246
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	2012 lbs/day
Meriden	42,455,000	32,517,000	2010	1230	142
New Hartford	10,000,000	1,000,000	2010	12	2
Stafford	Funded by USDA		2011	164	208
Glastonbury	23,701,000	272,570	2011	268	77
South Windsor	36,000,000	7,300,000	2012	289	111
Windham	22,917,000	1,638,583	2012	344	146
New Milford	29,900,000	6,080,545	2012	66	32
West Haven	55,000,000	13,200,000	2012	967	214
Ansonia	41,731,000	10,015,000	2012	314	63
Putnam	Funded by USDA		2014	145	153
Manchester	13,500,000	580,000	2015	855	1064
Mattabasset	25,000,000	1,070,000	2016	228	1200
New Haven	11,000,000	470,000	2017	4294	1493
Rocky Hill	12,700,000	540,000	2018	789	446
Norwich	21,000,000	900,000	2018	550	243
Hartford	60,000,000	2,570,000	2018	6512	3282



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Notice of Proposed Value of an Equivalent Nitrogen Credit for 2012

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 \$5.01 for calendar year 2012. 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 \$5.01 for an equivalent nitrogen credit in calendar year 2012. You have until February 22, 2013 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 2012. 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,

Handwritten signature of Betsey Wingfield in black ink.

Betsey Wingfield
Chairman, Nitrogen Credit Advisory Board

Sincerely,

Handwritten signature of Macky McCleary in black ink.

Macky McCleary,
Deputy Commissioner
Date

cc:

Carl Almquist, Groton
Thomas Tyler, Metropolitan District Commission
Brian Armet, Mattabassett District
Joseph Michelangelo, Fairfield
Astrid T. Hanzalek, Suffield
William Norton, West Haven
Sharon Dixon-Peay, Connecticut Office of the Treasurer



**STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



General Permit for Nitrogen Discharges

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General Permit for Nitrogen Discharges

Section 1. Authority

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

Section 2. Definitions

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

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

"Authorized activity" means any activity authorized by this general permit.

"CFR" means Code of Federal Regulations.

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

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

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

"Department" means the Department of Environmental Protection.

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

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

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

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

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

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

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

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

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

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

"Nitrogen 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

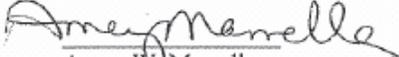
(a) *Abatement of Violations*

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

Attachment J

Nitrogen Credit Advisory Board 2014 Meeting Schedule

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

January 22, 2014

March 19, 2014

June 18, 2014

October 22, 2014