



Connecticut Department of Environmental Protection

Gina McCarthy, Commissioner



Jewett City Water Pollution Control Facility

2006 Report of the Nitrogen Credit Advisory Board To The Joint Standing Environmental Committee Of The General Assembly

January 3, 2007

79 Elm Street
Hartford, CT 06106-5127

**2006 REPORT OF THE NITROGEN
CREDIT ADVISORY BOARD**

**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**

January 3, 2007

**2006 Report 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 Section 22a-523(c) CGS. 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. The 2005 annual report was issued in May 2006 and covered the entire 2005 calendar year of program operations. Attachment B provides a table of municipalities purchasing and selling nitrogen credits in 2005. This report is intended to supplement the 2005 annual report with additional data and information as required by the relevant statute.

Cover photograph courtesy of Metcalf and Eddy

Overview

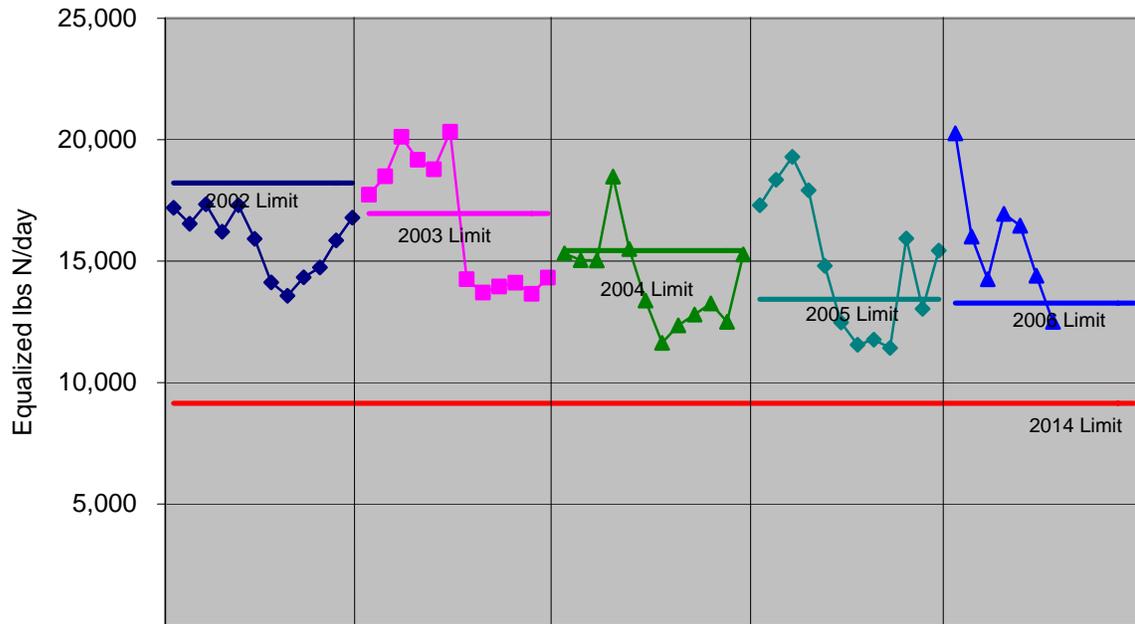
The Total Maximum Daily Load (TMDL) for nitrogen discharged into Long Island Sound, adopted by Connecticut and approved by the federal Environmental Protection Agency, requires a 48% reduction in the aggregate nitrogen load from 79 municipal sewage treatment facilities by the year 2009 and a 64% reduction by 2014. **The single most critical factor relative to the continued success of Connecticut in making progress towards meeting these goals is the availability of Clean Water Fund financing to support nitrogen removal projects.** In order to achieve the required interim compliance nitrogen reduction by 2009 and the final TMDL reduction by 2014, an estimated total of 750 million dollars of additional capital improvements are needed. Requests from municipalities for financing to support nitrogen removal construction projects in fiscal years 2006 and 2007 have greatly exceeded the funding available. Numerous municipalities have completed design of nitrogen removal projects and are ready to be bid for construction, however, Clean Water Fund financing is not available. Financing must be provided so that these projects can be constructed in a timely manner thereby insuring the State's continued compliance with the TMDL and that our water quality goals for a healthy Long Island Sound are achieved.

Progress in Meeting the TMDL

The aggregate monthly loading from Connecticut's 79 treatment facilities is shown in Figure 1. These data indicate that steady progress has been made towards achieving the 2009 and 2014 TMDL allocations. Data reported through the first 9 months for 2006 averaged 14,921 equalized pounds per day of total nitrogen discharged to Long Island Sound (see attachment A). This represents a reduction of approximately 40% from baseline. Note also that there is significant seasonal variability in nitrogen loadings. The Board has recommended implementation of a training and technical assistance program for Connecticut wastewater treatment plant operators to improve nitrogen removal efficiency and operations in cold and wet weather conditions that can adversely impact the biological treatment processes relied upon to remove nitrogen from wastewater.

The principal factor moderating the rate of progress in reducing nitrogen loads is the availability of financing through the Clean Water Fund to complete nitrogen removal upgrades to municipal sewage treatment facilities. The improved performance necessary to achieve future limits will require construction of upgraded treatment technology at a number of facilities in Connecticut. This construction must start soon in order to meet the 2009 limit of a 48% reduction in the TMDL and be sustained to meet the final TMDL limit for nitrogen of 9,166 equalized pounds per day by 2014. Please note that major treatment plants upgrades typically take five to six years to move from planning, design and to complete construction.

Figure 1
 Monthly Average Total Nitrogen Loading to Long Island Sound from all 79 facilities
 years 2002-2006



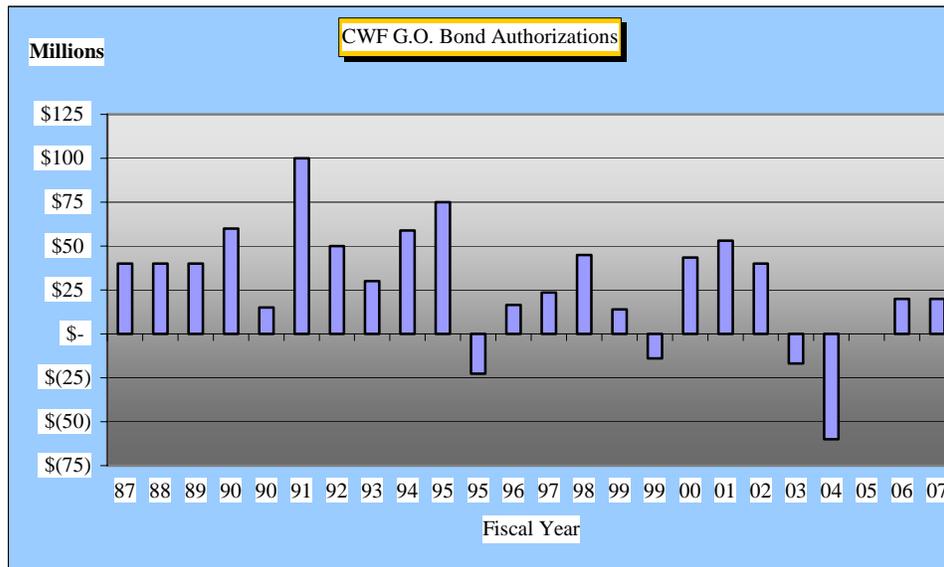
The performance of individual facilities during the first 9 months of 2006 is provided as Attachment A, *Total Nitrogen Balance Sheets*.

The Adequacy of Clean Water Fund Financing for Nitrogen Removal Projects

The Connecticut Clean Water Fund was created in July 1986 (Sec 22a-475 through 22a-483 CGS) to provide financial aid through grants and low interest loans to municipalities for the planning, design and construction of municipal wastewater treatment facilities. The Clean Water Fund is administered by the Department of Environmental Protection and the Office of the Treasurer and is financed through a combination of state general obligation bonds, federal grant funding, and State Clean Water Fund revenue bonds. Nitrogen removal process improvements at municipal treatment facilities are eligible for a 30% grant and a low interest loan for the remainder of the cost. This combination of state revolving loans and grants is the basis of a financial assistance program that municipalities rely upon in order to construct nitrogen removal projects and is vital to continued progress in reducing nitrogen loadings into Long Island Sound.

Since its inception in 1987 through 2002, the average annual General Obligation (GO) bond authorization has been \$47.9 million. Such funding allowed consistent progress on major nitrogen removal projects. From FY 03-07, however, the average annual funding was a negative \$7.6 million, due to sizable rescissions in FY03 and FY04, a zero authorization in FY 05, and with \$20 million GO in each of fiscal years 2006-2007 (see Figure 2). During this same year time period, municipalities have been planning and designing nitrogen removal projects in order to comply with the General Permit for Nitrogen Discharges. This combination of developing new nitrogen removal projects at the same time that funding has diminished has created a significant backlog of municipalities that have completed design but can not move forward with construction.

Figure 2



As a result of this backlog, the Department of Environmental Protection has taken a series of steps to ensure efficient administration of available funds, use of the funds for the highest environmental projects, and to ensure that the maximum number of construction projects are initiated. In the FY 06 and FY 07 Clean Water Fund Priority List, a number of steps were taken as follows:

- 1) 40% of all available GO bonds were dedicated to full scale nitrogen removal projects (another 40% was dedicated to combined sewer overflow projects with the remaining 20% dedicated to various reserves for special categories of funding)
- 2) Of the 40% of available GO bonds dedicated to full scale nitrogen removal projects, partial funding was committed to 3 construction projects rather than full funding for only 2 projects,
- 3) One of the reserves was for interim denitrification projects, and

- 4) Funding of planning and design cost for nitrogen removal projects has been deferred for CWF financing until such time as the project is funded for construction.

In spite of the administrative steps taken with the FY06 and FY 07 Clean Water Fund Priority List to maximize the number of denitrification projects entering construction, there remain five projects that are ready to enter construction for which there is no Clean Water financing. In response to requests from several of these municipalities, the Commissioner has granted deviations from the Clean Water Fund Regulations to four communities. Such deviations allow these communities to move ahead now with construction utilizing local funds while retaining eligibility to compete for future funds in FY08 and beyond.

The Department has looked ahead from the current date to June 2009 (the end of FY09) to assess the number of projects ready to proceed to construction during that time period for nitrogen removal. The projects are listed in Attachment C and note that the 17 additional projects and a portion of 3 projects needing financing (Milford, Stratford and Meriden) are estimated at a total cost of 347 million dollars (Please see Attachment C). This will require 86 million dollars in new general obligation bonds and 261 million in revenue bonds to enable the Clean Water Fund to reach all the above projects. However, this is only addressing the nitrogen portion of need under the Clean Water Fund. Construction of the additional projects are necessary in order for Connecticut to meet the 2009 nitrogen removal TMDL requirements for Long Island Sound.

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

Please note that Commissioner McCarthy has convened a Clean Water Fund Advisory Work Group that is presently meeting and a final report will be prepared this fall. The charge to the Task Force is to evaluate creative options for the Clean Water Fund to provide a sustainable level of funding to assist municipalities in addressing emerging water quality issues and enhancement of the wastewater infrastructure, all with an end goal of protecting water quality.

Distressed Community Funding

The nitrogen removal program in Connecticut has benefited in the past from approximately \$9.7 million dollars in federal assistance from the Long Island Sound Restoration Act. Connecticut has chosen to use the funds it has received to assist approximately 30 distressed communities to plan for and design nitrogen upgrade projects. While the Long Island Sound Restoration Act has recently been reauthorized, Congress has not appropriated any federal funds for the last two federal fiscal years. Loss of this federal assistance further limits the ability of projects to be constructed and places an additional burden on the State to fund these projects.

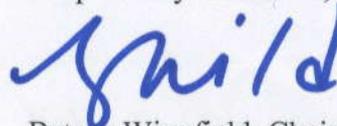
Nitrogen Removal Projects

To date a total of 44 nitrogen removal construction projects at 34 municipal wastewater treatment plants have been completed. Twelve projects involved major construction of facilities designed to achieve maximum nitrogen removal to meet the long-term nitrogen reduction goal. The remaining 32 projects involved retrofitting of existing facilities to reduce levels to an intermediate level. There are eight nitrogen removal projects currently under construction with six designed for the long-term goal. A complete list of nitrogen removal projects that have been completed or currently approved for funding by the Clean Water Fund is provided as Attachment D.

Summary

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

Respectfully submitted,



Betsey Wingfield, Chairman
Nitrogen Credit Advisory Board

Attachments:

- A Total Nitrogen Balance Sheet – Monthly Averages by Plant, Jan.-Sept., 2006
- B 2005 Final Balance municipal credits purchased and sold
- C Nitrogen Removal projects requesting CWF financing in FY 08-09
- D Nitrogen Removal Projects Financed by CWF to date

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2006

	<u>Limit '06</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
ZONE: 1													
GROTON CITY WPCF	144	184	165	105	95	112	79	205	119	90			
GROTON TOWN WPCF	223	610	454	528	502	584	574	417	375	335			
JEWETT CITY WPCF	22	9	12	11	12	25	9	6	4	6			
KILLINGLY WPCF	191	179	255	173	189	276	187	142	78	45			
P LEDYARD WPCF	11	7	10	13	3	5	7	4	4	6			
MONTVILLE WPCF	171	67	97	88	128	130	119	79	71	71			
P NEW LONDON WPCF	561	396	310	377	412	409	248	275	349	416			
NORWICH WPCF	292	717	827	1147	1258	1301	1075	697	566	524			
PLAINFIELD NORTH WPCF	50	113	107	354	119	127	100	71	48	65			
PLAINFIELD VILLAGE WPCF	35	63	197	61	68	34	41	27	18	22			
PUTNAM WPCF	77	248	214	204	196	217	186	151	175	181			
SPRAGUE WPCF	11	17	22	23	23	25	28	13	26	28			
STAFFORD SPRINGS WPCF	87	111	98	108	97	119	127	121	126	105			
STONINGTON BOROUGH WP	20	45	37	34	51	43	45	35	50	28			
STONINGTON MYSTIC WPCF	39	50	59	49	53	54	54	73	57	47			
STONINGTON PAWCATUCK	35	34	29	23	26	25	23	16	14	16			
THOMPSON WPCF	15	23	34	38	51	46	32	15	12	29			
P UCONN WPCF	64	116	70	62	58	45	25	14	85	209			
WINDHAM WPCF	183	155	192	229	194	166	175	104	82	85			
ZONE: 2													
P BRISTOL WPCF	579	911	733	444	440	588	626	403	377	525			
CANTON WPCF	35	140	132	128	128	129	112	94	85	87			
P EAST HAMPTON WPCF	79	98	152	230	247	206	250	87	62	62			
EAST HARTFORD WPCF	425	831	869	1227	938	1375	1586	1443	732	431			
P EAST WINDSOR WPCF	87	36	50	36	29	29	34	22	18	23			
ENFIELD WPCF	405	382	589	349	403	302	296	269	181	193			
FARMINGTON WPCF	258	430	460	517	359	412	511	533	566	382			
GLASTONBURY WPCF	142	335	337	330	287	309	320	258	218	235			
HARTFORD WPCF	3456	7493	6638	7775	8570	7793	8968	6804	7481	6933			
MANCHESTER WPCF	454	904	1120	856	771	718	811	654	655	687			
MATTABASSETT WPCF	1213	1553	1388	1073	1343	1570	1286	979	973	1057			
MIDDLETOWN WPCF	323	810	672	455	595	607	367	216	243	254			

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2006

	<u>L</u> imit '06	<u>J</u> AN	<u>F</u> EB	<u>M</u> AR	<u>A</u> PR	<u>M</u> AY	<u>J</u> UN	<u>J</u> UL	<u>A</u> UG	<u>S</u> EP	<u>O</u> CT	<u>N</u> OV	<u>D</u> EC
PLAINVILLE WPCF	147	384	351	281	310	336	355	311	267	268			
PLYMOUTH WPCF	61	75	113	83	54	71	97	64	43	67			
P PORTLAND WPCF	46	71	48	31	51	37	47	21	18	18			
ROCKY HILL WPCF	419	1099	846	511	662	1031	1048	756	625	717			
SIMSBURY WPCF	156	351	357	340	276	336	279	204	69	43			
SOUTH WINDSOR WPCF	153	428	282	285	288	281	268	267	228	277			
SUFFIELD WPCF	65	202	94	89	21	83	82	134	126	85			
VERNON WPCF	268	766	645	558	562	574	676	504	456	483			
P WINDSOR LOCKS WPCF	96	114	101	148	114	101	101	96	84	59			
WINDSOR POQUONOCK WPC	142	496	434	438	403	479	462	381	426	439			
WINSTED WPCF	93	200	195	205	192	229	222	233	238	239			
ZONE: 3													
P BRANFORD WPCF	279	199	175	191	79	98	68	71	71	69			
CHESHIRE WPCF	149	503	382	310	142	198	132	110	58	36			
MERIDEN WPCF	653	1099	862	537	758	939	962	822	652	608			
P NEW HAVEN EAST WPCF	2279	3637	2175	1514	3163	2313	1338	1550	1265	1638			
P NORTH HAVEN WPCF	230	306	259	153	157	211	289	210	157	212			
SOUTHINGTON WPCF	296	788	683	795	669	911	673	823	742	767			
P WALLINGFORD WPCF	391	1069	738	556	546	670	589	362	310	345			
P WEST HAVEN WPCF	513	980	693	468	634	728	466	423	407	413			
ZONE: 4													
ANSONIA WPCF	167	376	317	304	290	361	330	189	207	196			
BEACON FALLS WPCF	18	48	39	37	49	50	45	36	32	50			
DANBURY WPCF	643	1960	1968	1928	2296	2257	2075	2662	2291	2125			
P DERBY WPCF	104	73	58	55	75	83	71	53	57	71			
P LITCHFIELD WPCF	34	62	56	36	41	42	44	30	17	26			
P MILFORD BEAVER BROOK W	137	163	138	98	167	137	130	112	122	121			
P MILFORD HOUSATONIC WPC	448	789	576	592	655	613	463	372	487	513			
NAUGATUCK TREATMENT C	358	480	313	325	359	316	214	252	198	144			
NEW MILFORD WPCF	35	80	55	84	109	93	71	90	93	89			
P NEWTOWN WPCF	24	40	37	29	32	37	15	21	22	42			
NORFOLK WPCF	16	37	27	39	22	29	36	21	25	22			
NORTH CANAAN WPCF	19	24	29	26	19	23	17	17	15	26			
SALISBURY WPCF	31	25	33	30	19	25	34	37	28	33			

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2006

	Limit '06	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
P SEYMOUR WPCF	89	83	74	76	80	94	62	46	30	47			
P SHELTON WPCF	154	577	428	506	512	464	420	420	397	503			
P SOUTHBURY TR. SCHOOL W	22	16	11	8	14	17	10	6	4	4			
P STRATFORD WPCF	517	1114	614	437	651	863	409	317	409	358			
P THOMASTON WPCF	61	56	51	47	64	42	41	37	21	33			
P TORRINGTON WPCF	361	418	349	262	318	277	259	224	189	190			
P WATERBURY WPCF	1468	1569	1478	728	1475	1339	1624	1173	471	388			
ZONE: 5													
P BRIDGEPORT EAST WPCF	526	491	533	643	673	645	700	486	413	240			
P BRIDGEPORT WEST WPCF	1514	1479	1212	1105	1834	1158	872	1067	1032	1056			
P FAIRFIELD WPCF	591	707	618	452	664	728	537	449	412	563			
P WESTPORT WPCF	126	197	131	201	212	148	126	212	121	174			
ZONE: 6													
P GREENWICH WPCF	697	1122	552	489	476	524	605	349	396	408			
P NEW CANAAN WPCF	93	37	20	17	36	26	28	20	27	28			
P NORWALK WPCF	1044	965	868	726	852	741	657	663	708	799			
P RIDGEFIELD SOUTH ST. WPC	42	71	35	22	22	26	29	18	14	17			
P STAMFORD WPCF	1346	1990	1470	1404	1426	1256	838	489	579	585			

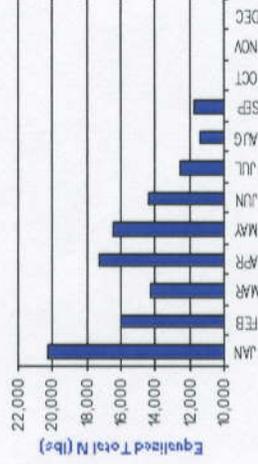
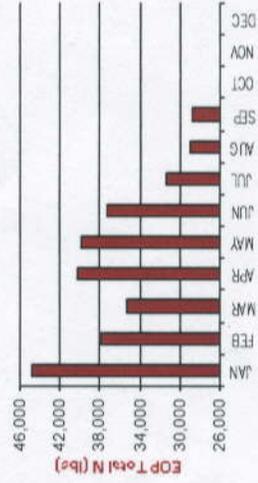
End-Of-Pipe Total

Equalized Total

44,877 37,844 35,242 40,160 39,820 37,208 31,431 28,911 28,801
 20,262 16,016 14,253 17,295 16,457 14,396 12,503 11,432 11,678

End-Of-Pipe Permit = 26,801
End-Of-Pipe Avg. = 36,033

Equalized Permit = 13,280
Equalized Avg. = 14,921



Attachment C

Nitrogen Removal Projects Requesting Funding in FY 2008-09

<u>City or Town</u>	<u>Estimated Total Project Cost</u>	<u>Requested CWF future funds</u>	<u>Year project to be bid</u>
Milford Housatonic*	34,900,000	13,892,000	2006
Milford Beaver Brook	11,700,000	11,700,000	2006
Stratford*	54,000,000	24,300,000	2006
Ansonia	26,000,000	26,000,000	2007
Danbury*	4,000,000	500,000	2007
Hartford Phase 1*	5,000,000	750,000	2006
Glastonbury	27,000,000	27,000,000	2006
Groton Town*	20,000,000	2,500,000	2006
Manchester	2,000,000	2,000,000	2008
Mattabassett**	50,000,000	50,000,000	2007
Meriden*	26,000,000	13,000,000	2007
New Milford	27,500,000	27,500,000	2008
Norwich	30,000,000	30,000,000	2008
Plainville	22,000,000	22,000,000	2006
Southington*	11,000,000	4,000,000	2007
South Windsor	18,000,000	18,000,000	2007
West Haven	38,000,000	38,000,000	2008
Windham	22,000,000	22,000,000	2007
Windsor Locks	1,500,000	1,500,000	2007
Vernon	2,500,000	2,500,000	2007
Future Project Design Allocation***	10,000,000	10,000,000	
Total FY 08-09 CWF needs****	443,100,000	347,142,000	

*The FY 2006-07 budget included partial funding with additional funding needed in FY 2008-09

** The Mattabassett project includes the abandonment of the Middletown treatment facility

*** Budget for additional planning and design of nitrogen removal facilities beyond the above list of municipalities

**** The required CWF needs for nitrogen removal in FY 08-09 with require \$86,786,500 in General Obligation Bonds

Enfield	2,390,000	2,390,000	2004
Litchfield	4,000,000	1,000,000	2004
Jewett City	10,000,000	1,500,000	2005
Stamford Phase 2	97,223,000	59,500,000	2006
North Haven	1,000,000	1,000,000	2006
Wallingford	2,276,000	2,276,000	2006
East Hartford	1,965,000	1,965,000	2007
Cheshire	5,775,000	5,775,000	2007
Simsbury	21,231,000	4,044,000	2007
Shelton	21,642,000	4,293,000	2008
Westport Phase 2	37,131,000	8,253,000	2008
Winsted	1,100,000	1,100,000	2007
Stratford Phase 2	54,000,000	10,116,000	2009
Milford BB Phase 2	11,700,000	1,613,000	2009
Milford H Phase 2	34,900,000	10,038,000	2009
Total	655,959,000	198,308,000	

Attachment D

Nitrogen Removal Projects Financed by the CWF through 2006

<u>City or Town</u>	<u>Total Project Cost</u>	<u>Nitrogen Cost Portion</u>	<u>Year project placed in service</u>
Seymour	9,800,000	250,000	1993
East Windsor	10,000,000	1,000,000	1996
Fairfield Phase 1	4,700,000	4,700,000	1996
Greenwich	500,000	500,000	1996
Milford BB Phase1	1,000,000	1,000,000	1996
Milford H Phase 1	650,000	650,000	1996
Norwalk Phase 1	1,100,000	1,100,000	1996
Ridgefield	200,000	200,000	1996
Stratford Phase 1	800,000	800,000	1996
Univ. of Conn.	12,000,000	1,058,000	1996
West Haven Phase 1	750,000	750,000	1996
Westport Phase 1	400,000	400,000	1996
Ledyard	3,500,000	3,500,000	1997
New Haven Phase 1	8,200,000	8,200,000	1997
Newtown	12,000,000	1,058,000	1997
Stamford Phase 1	3,500,000	3,500,000	1997
Derby	2,763,000	2,763,000	2000
New Canaan	14,000,000	1,235,000	2000
Norwalk Phase 2	56,000,000	5,538,000	2000
Waterbury	120,000,000	17,359,000	2000
East Hampton	690,000	690,000	2001
Thomaston	9,313,000	1,164,000	2001
New London	\$3,069,000	2,889,000	2002
Portland	5,200,000	1,047,000	2002
Branford	21,542,000	3,158,000	2003
Fairfield Phase 2	40,551,000	12,046,000	2003
Windsor Locks	2,349,000	1,841,000	2003
Bridgeport E Phase 1	2,090,000	2,090,000	2004
Bridgeport W Phase 1	2,375,000	2,375,000	2004
Bristol Phase 1	584,000	584,000	2004

LIS Total Nitrogen Credit Exchange

Estimated Final Balance - 2006

SELLING Credits

Facility Name	
★ BRIDGEPORT WEST WPCF	-\$357,501
★ NORWALK WPCF	-\$345,005
★ STAMFORD WPCF	-\$342,567
★ WATERBURY WPCF	-\$286,732
★ GREENWICH WPCF	-\$202,371
★ NEW HAVEN EAST WPCF	-\$140,440
★ BRANFORD WPCF	-\$125,080
★ NEW CANAAN WPCF	-\$80,461
★ TORRINGTON WPCF	-\$60,711
★ NAUGATUCK TREATMENT Co.	-\$59,980
★ FAIRFIELD WPCF	-\$41,449
★ NEW LONDON WPCF	-\$41,035
★ DERBY WPCF	-\$31,038
★ BRIDGEPORT EAST WPCF	-\$23,833
★ SEYMOUR WPCF	-\$17,970
★ RIDGEFIELD SOUTH ST. WPCF	-\$17,067
★ MONTVILLE WPCF	-\$16,677
★ ENFIELD WPCF	-\$14,129
★ THOMASTON WPCF	-\$13,166
★ EAST WINDSOR WPCF	-\$12,971
★ NORTH HAVEN WPCF	-\$8,778
★ SOUTHBURY TR. SCHOOL WPCF	-\$7,290
★ BRISTOL WPCF	-\$6,144
★ WINDHAM WPCF	-\$5,669
★ KILLINGLY WPCF	-\$5,291
★ MILFORD BEAVER BROOK WPCF	-\$4,901
★ GROTON CITY WPCF	-\$4,389
★ JEWETT CITY WPCF	-\$2,487
★ STONINGTON PAWCATUCK WPCF	-\$2,487
★ PORTLAND WPCF	-\$2,438
★ LEDYARD WPCF	-\$878
★ SALISBURY WPCF	-\$427
TOTAL	-\$2,281,362

BUYING Credits

Facility Name	
HARTFORD WPCF	\$996,005
DANBURY WPCF	\$832,206
SOUTHINGTON WPCF	\$284,940
SHELTON WPCF	\$256,474
WALLINGFORD WPCF	\$168,236
EAST HARTFORD WPCF	\$131,565
NORWICH WPCF	\$129,688
ROCKY HILL WPCF	\$92,895
ANSONIA WPCF	\$89,848
★ MILFORD HOUSATONIC WPCF	\$89,848
MERIDEN WPCF	\$83,630
MANCHESTER WPCF	\$75,048
VERNON WPCF	\$73,426
WINDSOR POQUONOCK WPCF	\$68,794
GROTON TOWN WPCF	\$54,860
FARMINGTON WPCF	\$43,229
★ WESTPORT WPCF	\$37,304
PLAINVILLE WPCF	\$36,427
GLASTONBURY WPCF	\$35,842
★ WEST HAVEN WPCF	\$35,110
★ STRATFORD WPCF	\$33,489
SOUTH WINDSOR WPCF	\$32,428
MIDDLETOWN WPCF	\$31,209
WINSTED WPCF	\$28,527
NEW MILFORD WPCF	\$28,039
CHESHIRE WPCF	\$25,686
PUTNAM WPCF	\$21,334
BEACON FALLS WPCF	\$21,237
CANTON WPCF	\$16,897
SIMSBURY WPCF	\$16,458
★ EAST HAMPTON WPCF	\$16,336
PLAINFIELD NORTH WPCF	\$12,118
SUFFIELD WPCF	\$7,180
NORFOLK WPCF	\$5,547
★ NEWTOWN WPCF	\$5,047
STAFFORD SPRINGS WPCF	\$4,572
STONINGTON BOROUGH WPCF	\$4,389
PLAINFIELD VILLAGE WPCF	\$3,755
STONINGTON MYSTIC WPCF	\$3,511
MATTABASSETT WPCF	\$3,413
THOMPSON WPCF	\$3,292
PLYMOUTH WPCF	\$2,414
SPRAGUE WPCF	\$2,341
★ UCONN WPCF	\$1,829
★ LITCHFIELD WPCF	\$1,707
NORTH CANAAN WPCF	\$1,280
★ WINDSOR LOCKS WPCF	\$463
TOTAL	\$3,949,873

★ = Clean Water Fund Nitrogen Project Facility

TOTAL \$3,949,873

Difference: Selling - Buying = \$1,668,511

The final balance (annual dollar amount) for each facility was calculated by subtracting the facility's 2006 TN loading as reported to DEP, from the facility's General Permit 2006 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 (\$3.34) to calculate the annual balance shown above.

Detailed invoices will be mailed by March 31, 2007

Table 2

E Pounds Reduced by Project Facilities - 2006

Project Facilities	Baseload	Average TN	EOP Reduced	E Factor	E Pounds Reduced
BRANFORD WPCF	526	103	423	0.60	253.80
BRIDGEPORT EAST WPCF	991	468	523	0.85	444.55
BRIDGEPORT WEST WPCF	2852	1145	1707	0.85	1,450.95
BRISTOL WPCF	1091	575	516	0.18	92.88
DERBY WPCF	195	65	130	0.67	87.10
EAST HAMPTON WPCF	148	140	8	0.20	1.60
EAST WINDSOR WPCF	163	32	131	0.19	24.89
FAIRFIELD WPCF	1113	530	583	0.85	495.55
GREENWICH WPCF	1313	520	793	1.00	793.00
LEDYARD WPCF	20	7	13	0.18	2.34
LITCHFIELD WPCF	64	39	25	0.35	8.75
MILFORD BEAVER BROOK WPCF	258	130	128	0.67	85.76
MILFORD HOUSATONIC WPCF	844	574	270	0.67	180.90
NEW CANAAN WPCF	175	30	145	1.00	145.00
NEW HAVEN EAST WPCF	4294	2271	2023	0.60	1,213.80
NEW LONDON WPCF	1057	423	634	0.18	114.12
NEWTOWN WPCF	45	36	9	0.46	4.14
NORFOLK WPCF	30	29	1	0.35	0.35
NORWALK WPCF	1967	755	1212	1.00	1,212.00
PORTLAND WPCF	86	34	52	0.20	10.40
RIDGEFIELD SOUTH ST. WPCF	80	28	52	1.00	52.00
SEYMOUR WPCF	167	66	101	0.67	67.67
STAMFORD WPCF	2536	1029	1507	1.00	1,507.00
STRATFORD WPCF	974	537	437	0.67	292.79
THOMASTON WPCF	114	44	70	0.60	42.00
UCONN WPCF	120	94	26	0.15	3.90
WALLINGFORD WPCF	737	522	215	0.60	129.00
WATERBURY WPCF	2766	1001	1765	0.60	1,059.00
WEST HAVEN WPCF	967	546	421	0.60	252.60
WESTPORT WPCF	238	153	85	0.85	72.25
WINDSOR LOCKS WPCF	180	98	82	0.19	15.58

TOTAL: 10,115.67

Projects Cost \$12,566,483

Credit Cost: \$3.40

LIS Total Nitrogen Credit Exchange

Final Balance - 2006

SELLING Credits

Facility Name	
☆ STAMFORD WPCF	-\$393,397
☆ BRIDGEPORT WEST WPCF	-\$389,240
☆ NORWALK WPCF	-\$358,649
☆ WATERBURY WPCF	-\$347,728
☆ GREENWICH WPCF	-\$219,657
☆ BRANFORD WPCF	-\$131,050
☆ NEW CANAAN WPCF	-\$78,183
NAUGATUCK TREATMENT Co.	-\$70,737
☆ FAIRFIELD WPCF	-\$64,346
TORRINGTON WPCF	-\$64,036
☆ BRIDGEPORT EAST WPCF	-\$61,181
☆ DERBY WPCF	-\$32,427
☆ NEW LONDON WPCF	-\$30,826
☆ SEYMOUR WPCF	-\$19,124
ENFIELD WPCF	-\$17,448
☆ RIDGEFIELD SOUTH ST. WPCF	-\$17,374
MONTVILLE WPCF	-\$16,307
☆ EAST WINDSOR WPCF	-\$12,968
☆ THOMASTON WPCF	-\$12,658
SOUTHBURY TR. SCHOOL WPCF	-\$6,850
KILLINGLY WPCF	-\$6,776
☆ NEW HAVEN EAST WPCF	-\$5,957
☆ MILFORD BEAVER BROOK WPCF	-\$5,820
GROTON CITY WPCF	-\$5,808
☆ NORTH HAVEN WPCF	-\$2,978
☆ PORTLAND WPCF	-\$2,978
WINDHAM WPCF	-\$2,978
MATTABASSETT WPCF	-\$2,730
☆ JEWETT CITY WPCF	-\$2,532
STONINGTON PAWCATUCK WPCF	-\$2,110
☆ BRISTOL WPCF	-\$894
☆ LEDYARD WPCF	-\$894
SALISBURY WPCF	-\$869

TOTAL -\$2,387,510

BUYING Credits

Facility Name	
HARTFORD WPCF	\$982,624
DANBURY WPCF	\$823,180
SOUTHINGTON WPCF	\$282,762
SHELTON WPCF	\$271,059
NORWICH WPCF	\$119,732
EAST HARTFORD WPCF	\$112,472
MERIDEN WPCF	\$105,808
☆ MILFORD HOUATONIC WPCF	\$104,765
ANSONIA WPCF	\$101,439
☆ WALLINGFORD WPCF	\$97,543
ROCKY HILL WPCF	\$92,579
MANCHESTER WPCF	\$78,046
VERNON WPCF	\$75,924
WINDSOR POQUONOCK WPCF	\$68,379
GROTON TOWN WPCF	\$55,175
FARMINGTON WPCF	\$40,655
GLASTONBURY WPCF	\$36,734
PLAINVILLE WPCF	\$34,401
SOUTH WINDSOR WPCF	\$34,190
NEW MILFORD WPCF	\$29,114
MIDDLETOWN WPCF	\$29,039
WINSTED WPCF	\$29,039
☆ WESTPORT WPCF	\$28,481
☆ WEST HAVEN WPCF	\$24,572
PUTNAM WPCF	\$22,239
BEACON FALLS WPCF	\$21,618
CANTON WPCF	\$17,424
STRATFORD WPCF	\$16,629
☆ EAST HAMPTON WPCF	\$15,140
CHESHIRE WPCF	\$13,378
PLAINFIELD NORTH WPCF	\$11,988
SIMSBURY WPCF	\$11,169
☆ NEWTOWN WPCF	\$6,850
NORFOLK WPCF	\$5,647
☆ UCONN WPCF	\$5,585
SUFFIELD WPCF	\$5,423
STAFFORD SPRINGS WPCF	\$4,840
PLYMOUTH WPCF	\$4,244
☆ STONINGTON BOROUGH WPCF	\$3,797
PLAINFIELD VILLAGE WPCF	\$3,301
THOMPSON WPCF	\$2,904
STONINGTON MYSTIC WPCF	\$2,681
SPRAGUE WPCF	\$2,184
☆ LITCHFIELD WPCF	\$2,172
NORTH CANAAN WPCF	\$1,737
☆ WINDSOR LOCKS WPCF	\$472

TOTAL \$3,839,134

Difference: Selling - Buying = **\$1,451,624**

☆ = Clean Water Fund Nitrogen Project Facility

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