Collection rates
what happened to money
received by City as part
of rate increase?

GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY

COST OF SERVICE STUDY

MARCH 31, 2011

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McGladrey

I. Letter of Transmittal

March 31, 2011

Mr. Gabriel Varca
Director of Finance and Administration
Greater New Haven Water Pollution Control Authority
260 East Street
New Haven, Connecticut 06511

Dear Mr. Varca:

RSM McGladrey, Inc. is pleased to submit our cost of service study for the Greater New Haven Water Pollution Control Authority (the "Authority"). The overall objective of our study was to produce a schedule of recommended sewer user rates for customers of the Authority's system which will be sufficient to meet the anticipated costs of operating the wastewater system for the fiscal year ending June 30, 2012.

This study was initiated in accordance with the requirements set forth in Section 42 of the Authority's sewer ordinance which requires that a cost of service study be conducted annually.

The specific objectives of our study are as follows:

1. Review and evaluate the proposed expense budget for FY2011-12, and prepare cost projections for the succeeding four fiscal years based on management's cost estimates;
2. Review and evaluate the proposed revenue budget for FY2011-12, and prepare revenue projections for the succeeding four fiscal years based on management's estimates;
3. Determine the projected annual estimated revenue requirement from user rates for FY2011-12 through FY2015-16;
4. Develop a schedule of recommended rates and charges sufficient to support the annual estimated revenue requirement from user rates for FY2011-12 through FY2015-16;
5. Analyze the Authority's historical collection rate, including the current fiscal year and management's estimate of the collection rate for FY2011-12; and
6. Prepare and present a report documenting recommendations, assumptions and methodology.

The major project worksteps we provided are summarized below, as follows:

1. Reviewed and analyzed relevant financial and operating information including the Authority's recent audit and financial reports, current and projected operating budgets, previous cost of service studies, and related documents;
2. Evaluated the sources of revenue available to finance projected costs, including a review of interlocal agreements (North Branford and North Haven), billings, collections, and water consumption data;
3. Prepared revenue requirements for wastewater operations for a five-year period corresponding to future fiscal years including estimated operating costs, debt service, capital costs, and miscellaneous revenues;

4. Analyzed customer collection rates based on historical collections and aged accounts receivable for purposes of evaluating management's estimate of receivable management costs for FY2011-12;
5. Developed a schedule of recommended rates and charges sufficient to support projected FY2011-12 Authority expenditures in accordance with federal, state and local governmental regulations; and
6. Prepared draft and final reports documenting assumptions and methodology used, developed rate recommendations including a printout of the computer rate model.

Recommended Rates

Based upon the methodology utilized to develop the cost projections and determine the revenue requirements for Fiscal Year 2011-2012 and future years, we recommend the following rates:

A. A sewer user charge of $3.06 per one hundred cubic feet of water consumption.
B. An administrative quarterly charge of $13.00 per bill.
C. A minimum quarterly charge of $58.90 (consisting of the service charge of $13.00 and charge of $45.90 for 15 CCF).

We have appreciated the opportunity to assist you with this important project and are available to discuss it further at your convenience.

RSM McGLADREY, INC.

Michael J. O'Neil
Director

II. Background

A. Introduction

Regional municipal wastewater collection and treatment services were provided by the Water Pollution Control Authority of the City of New Haven for many years on a retail basis to approximately 22,000 customers in the City of New Haven and, on a wholesale basis, to approximately 25,000 system users in the Towns of Hamden, East Haven and Woodbridge through interlocal agreements. The total population served by the system is approximately 229,000. (See Table 1 in Section III).

Beginning in 1996, a number of actions were undertaken to address certain issues related to the interlocal agreements. Those actions resulted in a series of cooperative efforts between the New Haven WPCA and the interlocal towns, which successfully addressed common goals associated with the provision of regional wastewater services. Included was an agreement to work cooperatively towards implementing a true regional wastewater authority.

Those efforts culminated in 2005 with approval by each of the municipalities of the creation of a new regional authority for the purpose of consolidating and streamlining services for the member municipalities, improving the overall wastewater system performance, and assuring the provision of adequate wastewater management and water pollution control services within the service area.

B. Creation of a Regional Public Utility

The Authority was created in August 2005 pursuant to §§22a-500 to 22a-519, inclusive, of the Connecticut General Statutes (herein the "Act"). Pursuant to the Act, the City of New Haven, and Towns of East Haven, Hamden and Woodbridge (the "Constituent Municipalities"), acting through their respective legislative bodies, adopted ordinances in June 2005 authorizing the creation of the regional entity to be known as the Greater New Haven Water Pollution Control Authority (the "Authority"). The Constituent Municipalities also prepared and submitted a preliminary plan of operation of the Authority for approval by the State Commissioner of Environmental Protection and the State Treasurer, by whom approval was granted on July 28, 2005. The adoption of the ordinances and the approval of the plan of operation resulted in the creation of a public body politic and corporate of the state, and a political subdivision of the state established and created for the performance of an essential public and governmental function.

The Authority was created to (a) operate the wastewater treatment plant and to (b) use, equip, re-equip, repair, maintain, supervise, manage, operate and perform any act pertinent to the collection, transportation, treatment and disposal of sewage with respect to the Constituent Municipalities. Currently, the daily flow at the treatment plant is approximately 29 million gallons per day ("MGD"). The treatment plant has an average daily design flow capacity of 40 MGD and provides primary and secondary treatment for all wastewater influent up to 60 MGD. During high flow events, all flow receives primary treatment; however, flow exceeding 60 MGD bypasses secondary treatment but receives disinfection along with the secondary effluent prior to discharge. The treatment plant provides the following unit processes: screening and grit removal, raw waste pumping, three primary clarifiers, four aeration trains, eight secondary clarifiers, gravity thickeners and chlorine disinfection prior to discharge. Thickened sludge is delivered to the on-site sewage sludge incinerator for processing.

The operation and maintenance of the treatment plant has been performed under contract by Operations Management International, Inc. ("OMI") since 1997. This contract has been assigned to the Authority and OMI has continued with its current responsibilities. OMI is also responsible for the operation and maintenance of the regional collection system, a role it performed previously with respect to the New Haven collection system. In addition, the Authority assumed a contract with Synagro-CT, Inc. ("Synagro") to dispose of the sludge resulting from the wastewater treatment process. Synagro has provided that service at the treatment plant since 1995.

C. Sewer Ordinance

General

The Authority's ordinance (the "Sewer Ordinance") governs the operation, maintenance and expansion of the regional wastewater system. In order to guarantee consolidated operation, maintenance and expansion of the regional wastewater system by the Authority, the Sewer Ordinance also acted to repeal similar ordinances of its Constituent Municipalities which previously served to govern operation, maintenance and expansion of their individual wastewater systems. Material provisions of the Sewer Ordinance that affect this study are as follows:

Assessment of Benefits; Benefit Charge
Pursuant to provisions contained in the Act, the Authority may levy and collect benefit assessments upon the lands and buildings within its jurisdiction, which, in its judgment, are especially benefited by a sanitary sewer, according to such rules as the Authority may adopt.

No assessment shall be made until after a public hearing before the Authority, at which time the owner of the property to be assessed shall have an opportunity to be heard concerning the proposed assessment.

Assessments, including any installment thereof, are due and payable at such time as fixed by the Authority, provided no assessment shall become due until the work, or particular portion thereof for which such assessment was levied, has been completed.

Any assessment of benefits, including any installment thereof, which is not paid within 30 days after the due date, is considered delinquent and will be subject to interest and will constitute a lien upon the property assessed and a charge upon the owner thereof.

Rates Established
Charges for sanitary sewer services furnished by the Authority for residential, commercial, industrial and institutional users are to be established and revised from time to time by the Authority.

Sewer use charges are to reflect a proportional distribution of costs among all users in accordance with the Act, §7-255 of the Connecticut General Statutes, as amended, and the United States Code.

Rates for Property Located Outside the Authority's Service Territory
The charges to be made by the Authority for sewer service to property outside the limits of the Authority's service territory are to be established on the basis of a formal contract with the Authority, the charges established in the contract to be not more than the actual costs to the Authority to provide the sewer service, and the contract is to be approved by the Authority.

No Reduced Rates or Free Service Permitted

All persons owning, renting, leasing or having management or control of property or premises that produce waste that is discharged into the regional wastewater system, including domestic waste, and subject to the provisions of the Sewer Ordinance, shall be charged the rates established by the Authority, and no reduced rates or free sanitary sewer services are to be furnished to any such person, property or premises.

Billing and Collection

Billing for sewer services is made to the Authority's customers monthly or quarterly. All sewer user charges are due and payable in full on receipt. Any charges not paid in full within 30 days of the billing date are considered delinquent and bear interest from the due date at the rate provided by the Connecticut General Statutes for delinquent property taxes.

Cost of Service Study; Proposed Rates

The Executive Director of the Authority is to ensure that a cost of service study is performed at least annually. The Executive Director reviews the results of the study and shall submit the study on or before the third Monday in April to the Authority for consideration and public hearing. If the Executive Director's recommendations as to the proposed rates and charges are not disapproved, or approved with modifications by the Authority by the first day of the next fiscal year, the Executive Director's recommended rates and charges will automatically become effective until such time as they are superseded by a renewal of the above procedure. Billings for services are to be rendered as the Authority determines. In the period intervening between cost of service studies, the Authority may amend user charges so long as such charges are based upon the anticipated cost of operating the system and such charges are presented to the general public at a public hearing in accordance with the Connecticut General Statutes.

III. Description of the Greater New Haven Water Pollution Control Authority

A. Regional System Profile

Table 1 below presents a summary of the residential population and number of customers of the Constituent Municipalities.

Table 1
Population and Customers of the Authority

		/---------- Active Authority Customer Accounts[2] ----------/				
Municipality	**Population[1]**	**Residential**	**Commercial**	**Industrial**	**Public Auth.**	**Total**
New Haven	129,779	20,418	2,123	77	231	22,849
Hamden	60,960	14,602	846	39	61	15,548
East Haven	29,257	10,139	307	7	31	10,484
Woodbridge	8,990	404	104	-	3	511
Total	228,986	45,563	3,380	123	326	49,392

(1) 2010, U.S. Census Bureau.
(2) Authority billing data as of March 17, 2011.

Wastewater treated by the Authority at the wastewater treatment plant is discharged into Long Island Sound and must meet both federal and state effluent quality standards. The Authority was organized to ensure the necessary professional technical and skilled personnel, specialized facilities and equipment, and financial resources are available to allow it to carry its mission: "*To provide reliable municipal wastewater services in compliance with applicable laws, in a cost efficient and effective method, and with the intent and desire to protect the environment and public health of the constituent municipalities.*" Furthermore, its operations are expected to be financially self-sufficient.

The wastewater systems of the Constituent Municipalities include any device, equipment, appurtenance, plant facility and method for receiving, collecting, transporting, reducing, treating, reclaiming, disposing, separating or discharging sewage or the residue from the treatment of sewage. The wastewater systems may also include the purchase and/or lease of real estate and improvements thereto deemed necessary or desirable by the Authority for the purpose of establishing and providing wastewater management and water pollution control services.

Table 2 presents a brief summary of the Wastewater Systems of the Authority.

Table 2
Summary of GNHWPCA Wastewater System

Service Area	53,000 acres
Treatment Plant Capacity	40 mgd
Average Daily Flow	29 mgd
Pump Stations	30
Siphons	8
Sewer Collection System	510 miles
Combined Sanitary/Storm Sewers	50 miles
Manholes	14,000
Average Age of Collection System	40 Years

Source: GNHWPCA management.

B. Organization and Management

1. Governance

The business of the Authority is managed by or under the direction of a Board of Directors, which may exercise all such powers of the Authority and perform all such lawful acts and activities as are allowed by the Connecticut General Statutes, as amended, and by its bylaws and ordinances.

According to provisions of the Sewer Ordinance and Section 2.2 of its bylaws, the Authority is to be governed by a qualified Board of Directors, comprised as follows:

> The Authority has nine (9) Directors, each of whom shall have one vote. Four (4) Directors have been appointed from New Haven by the Mayor of New Haven, with the approval of the Board of Aldermen of New Haven. Two (2) Directors have been appointed from East Haven by the Mayor of East Haven, with the approval of the Town Council of East Haven. Two (2) Directors have been appointed from Hamden by the Mayor of Hamden, with the approval of the Town Council of Hamden. One Director has been appointed from Woodbridge by the First Selectman of Woodbridge, with the approval of the Board of Selectmen of Woodbridge.

The Directors are appointed for three year staggered terms as outlined in detail in the bylaws and ordinance. In any single year, no more than three (3) Directors' terms are scheduled to expire at one time, thereby designed to institutionalize a continuity of governance.

All business of the Authority is managed and directed by the Board of Directors, as allowed by Connecticut General Statutes and the Authority's bylaws.

The Authority's bylaws may be revised by the affirmative vote of no less than two-thirds of the Directors in accordance with C.G.S. § 22a-501(a) (1), as amended. However, the bylaws provide that any amendment to include new constituent municipalities shall require a unanimous affirmative vote of the Board of Directors.

The current membership of the Board is as follows:

Table 3
Current Board of Directors

Name/Title	Appointed By	Term Expires
Alphonse Paolillo, Jr., Chairman	New Haven	12/31/11
Russell N. Cyr, Director	Hamden	12/31/11
Samuel Giglio, Director	East Haven	12/31/11
Gennaro Ruocco, Director	East Haven	12/31/12
Jeffrey D. Ginzberg, Director	Woodbridge	12/31/12
Michael Fimiani, Director	New Haven	12/31/12
Stephen A. Mongillo, Vice Chairman	Hamden	12/31/13
Joyce Alton, Director	New Haven	12/31/13
Vikki Cooper, Director	New Haven	12/31/13

According to the bylaws, a majority vote of the Directors is required to approve all business transactions of the Authority. Certain matters, such as entering into an agreement with respect to the distribution of rights and properties of the Authority upon the termination of its corporate existence, entering into or approving any sludge agreement, entering into any inter-local agreement, entering into any agreement with respect to the sale or lease of assets of the Authority which would leave the Authority without a significant continuing business activity, removal of a Director, awarding of a contract by negotiation without public bidding, amending, modifying, restating or replacing the Sewer Ordinance, and increasing the permitted processing capacity of the Authority's treatment plant, each would require a 2/3rds vote of the Directors.

The Board establishes insurance, health care, retirement, and other employee benefits as it deems necessary and convenient for the effective administration of the Authority. Key management positions are designed in each function area under the major divisions of administration, engineering and operations to address the operation, maintenance and management of the regional wastewater system by the Authority.

2. Management and Staff

The Authority is headed by an Executive Director, who is responsible for all technical and administrative operations of the Authority and the implementation of programs, policies and procedures at the direction of the Board. Key management staff members are as follows:

Sidney Holbrook, Executive Director. Mr. Holbrook is the Executive Director of the Authority. He has more than 30 years of wastewater, environmental and public management experience. He has served as Executive Director of the Authority since 2009. His responsibilities include managing and directing all administrative, operational and financial activities and programs of the Authority.

Gabriel Varca, Treasurer/Director of Finance and Administration. Mr. Varca is the Treasurer and Director of Finance and Administration. Over the last 25 years, Mr. Varca has held various operations and management positions with the Authority and previously, the New Haven WPCA. His responsibilities include planning and directing the Authority's budgeting, accounting, auditing, investing, treasury, debt management, human resources, purchasing, risk management and information systems operations.

Gary Zrelak, Director of Operations. Mr. Zrelak is the Director of Operations. He has over 24 years of experience in wastewater operations. His responsibilities include supervising and managing the performance of the Authority's contract operator.

Thomas Sgroi, P.E., Director of Engineering. Mr. Sgroi is the Director of Engineering. He has 20 years of engineering and construction management experience. His responsibilities include completion of executive management work for the Authority's planning and engineering programs.

Employees of the private entities responsible for the operations and sludge management contracts are not employees of the Authority. Currently, the staff of the Authority consists of 37 full and part-time employees. The operation and maintenance of the treatment plant and collection system and sludge incinerator are contracted to OMI (29 employees) and Synagro (11 employees), respectively. An organization chart for the Authority is included as Exhibit V.

3. OMI and Synagro

OMI

The comprehensive agreement with OMI provides for the operation, maintenance and management by OMI of the System, including the East Shore Treatment Plant, pump stations and collection systems. This agreement establishes performance and reporting requirements for the operation and maintenance of the system. The agreement requires the implementation of a maintenance management program to include preventive, predictive, and corrective maintenance for all components of the system, including:

- Buildings, grounds, and structures
- Electrical systems and instrumentation
- Mechanical equipment
- Odor control systems
- Sewers and manholes

- Storm sewers
- Vehicles and other related rolling stock
- Laboratory, monitoring and sampling equipment
- Heating, ventilation, and air conditioning
- Communication equipment (i.e., telephones, facsimiles, etc.)
- Computer systems (software and hardware)
- Chemical feed systems
- Pumping systems
- Auxiliary power facilities
- Air pollution control devices
- Supervisory Control and Data Acquisition (SCADA) facilities
- Other facilities, equipment, and systems contained within the system
- Other specialized tools and equipment

OMI is responsible for all utility costs, with the exception of electricity which is a pass-through cost subject to a maximum utilization limit. OMI is also required to deliver biosolids to a sludge holding tank in accordance with the provisions of the Synagro contract.

Denver-based OMI is a privately owned company and an affiliate of CH2M Hill Companies, Ltd. This international company provides services to approximately 130 million customers of government and industry throughout the world.

Synagro

The Synagro contract provides for the receipt and disposal of sludge generated at the East Shore Treatment Plant. The sludge is delivered by OMI and incinerated at the on-site multiple hearth facility. In accordance with the agreement, Synagro is allowed to solicit sludge from other entities (outside sludge), in addition to the sludge delivered by OMI, to utilize the capacity of the on-site incinerator. The Agreement provides for revenue sharing from the receipt of outside sludge between the Authority and Synagro. Synagro is responsible for the disposal of all ash and by-products generated by the incinerator in compliance with applicable laws and regulations. In addition, Synagro is responsible for odor control associated with the sludge incineration facilities.

C. Powers of the Authority

The Authority has the power to set rates, bill customers and take appropriate action for collection of delinquent accounts or non-conforming users. The Authority is a regional water pollution control authority formed in accordance with C.G.S. §§22a-500 to 519, which provides powers of municipalities to the Authority. C.G.S. §22a-501 sets forth in greater detail the powers of a regional water pollution control authority, including the authority to set rates.

1. Cost Allocation

The initial goal of the Authority was to have one uniform blended rate for all Constituent Municipalities. This study is being conducted to develop a schedule of recommended sewer user rates sufficient to support the estimated cost of service to all users in the regional wastewater system.

2. Procedures for Establishing Rates and Charges

The Authority is empowered to establish and impose just and equitable fees, rates, charges, and penalties and levy assessments of property benefited by the wastewater system for any services it performs. The Board of Directors is responsible for approval of all fees, rates, charges and penalties. Rates are based on metered water flow use and billed directly to the user on a quarterly basis unless otherwise specified.

Rates are determined based on the proposed budget and the annual cost of service study, to be considered by the Authority and the general public and noticed in accordance with state statutes and applicable ordinances and by-laws.

Such charges are to reflect a proportional distribution of costs among all users in accordance with C.G.S. §7-255, as amended from time to time, §204(b) of 33 USC, Section 1284(b) and the Act. No reduced rates or free service are to be permitted. Prior to the establishment of a fee, rate, charge, penalty or assessment, the Board of Directors must hold a public hearing at which all users of the wastewater system will have had an opportunity to be heard concerning any such proposed fee, rate, charge, penalty or assessment.

3. Budget Approval

In accordance with C.G.S. §§22a-500 to 519, and the Sewer Ordinance, the Authority must ensure a cost of service study is conducted at least annually. The study is to be reviewed by the Executive Director and submitted each year with a schedule of recommended rates and charges for the next fiscal year. In the period intervening cost of service studies, the Authority is authorized to amend user charges provided such charges are based upon the anticipated cost of operating the system and are presented at a public hearing, properly noticed.

The annual budget of the next fiscal year's projected revenue and expenditures and recommended sewer user charges are to be submitted to the Directors and filed with the City/Town Clerks in the City of New Haven and Towns of East Haven, Hamden, and Woodbridge by the Executive Director on or before the third Monday in April and, within ten calendar days after such submission, are to be published once in a daily newspaper having circulation in the City of New Haven and Towns of East Haven, Hamden, and Woodbridge. After such publication, but no earlier than ten calendar days after public notice thereof, the Authority is to hold a public hearing on such projected revenue and expenditures and recommended sewer user charges and consider and act on such projected revenues and expenditures and recommended sewer user charges on or before the first Monday in June.

The Executive Director is required to submit one copy of the annual operating budget of the Authority to the State of Connecticut Office of Policy and Management by July 1st of each year or within thirty calendar days after the adoption of the budget, whichever is later (C.G.S. §22a-502.). The budget and sewer use charge, if said charge is revised by the Authority, shall be filed with the City/Town Clerks and published in a daily newspaper having circulation in the City of New Haven and Towns of East Haven, Hamden, and Woodbridge no later than five calendar days after their filing.

D. Billing & Collection

All billing and collection is coordinated through the Customer Service Department of the Authority. The costs associated with the Authority's billing and collection activities and certain of its administrative and accounting costs are recovered through an administrative charge applied to each bill. The Authority estimates it will produce a total of 192,000 bills in FY12.

Billing Procedures

Customers of the Authority are classified according to the nature of their water consumption. All homes, dormitories and apartment buildings are classified as residential, all manufacturing enterprises in which water is used as part of the manufacturing process are classified as industrial, and all business and institutional enterprises other than those classified industrial are classified as commercial. Municipal and other public entities are classified as public authority. The wastewater customers are billed for wastewater services based on their metered water consumption, as determined by the RWA.

In general, customers are billed on a quarterly basis. Approximately 380 large volume customers are billed on a monthly basis. The billings to the approximately 22,800 customers in New Haven takes place in July, October, January and April. The billings to the approximately 26,500 customers in East Haven, Hamden and Woodbridge takes place in August, November, February and May.

Key provisions of the Authority's billing and collections policy include:

- Bills not paid within 30 days from the billing date are subject to interest at a rate of 1.5 percent per month from the dated billed.
- A delinquent account is sent to a collection agency after the amount owed is $90 or greater than 90 days old.
- When an account is sent for collection it is tagged and the collection fee is added to the bill of the delinquent customer for reimbursement.
- Payments not received continue for further collection procedures under tax warrant or foreclosure proceedings.

The Authority also employs CheckFree payment services from Fiserv, Inc, which allows customers to pay their bills at several retail chains throughout the service area.

Collections - Analysis

The Authority commissioned an operational review of certain aspects of its billing and collection systems and procedures in 2007. As a result of that review, RWA developed a query of the Authority's sewer billing data to measure the amount of principal billed to customers during a current one year period, and the amount collected on those billings during the same period. With the implementation of a new customer information system ("CIS") by the Authority beginning on July 1, 2010, the RWA query was no longer available, and the new CIS system will not have a full year of historical data until June 30, 2011. Despite the lack of 12-month collection data until June, management has been able to utilize the CIS system to monitor billing and collections data on a monthly basis, and believes that the current collection rate is consistent with what has been observed in recent years.

what is it

IV. Financial Plan

In accordance with C.G.S. §§55b-111 to 112, the Authority operates as a municipality for the purpose of compliance with auditing and finance requirements. The Authority can establish eligibility to apply for financing from the Clean Water Fund under the provisions of C.G.S. §§ 22a-477 to 483. Tax-exempt bond issues serve as the primary capital funding mechanism for the Authority. The bonds are issued to fund capital improvements periodically, depending on the Authority's capital requirements. The issuance of the bonds is in accordance with the requirements and provisions of C.G.S. §22a-507.

A. Rate Covenants

At its inception, the Authority issued $91,290,000 in revenue bonds (Series 2005A) to purchase system assets, refund existing debt and fund reserves. The rate covenant entered into in conjunction with these bonds, and the ability to raise rates are the primary factors that provide the Authority with credit strength. As is the case with most utility financing, the Authority has entered rate covenants requiring management to set rates for service that will generate net revenues sufficient to provide a defined minimum level of cash flow in excess of debt service requirements. The Indenture of Trust for the Authority's bonds (the "Indenture") requires debt service coverage of 115% (i.e., excess cash flows equal to 15% of debt service must be incorporated into sewer rates). In addition, rates must cover operating and maintenance expenses, and contributions to reserve funds for future system improvements, expansions, or replacements. Sufficient revenues, or reserves, should also be available for unexpected emergencies such as flood damage or sewer main breaks. + 15%

Pursuant to the Indenture, the Authority covenants that it will fix, charge and collect rates, charges, rents, fees and assessments, including but not limited to use and connection charges and benefit assessments, which will produce revenues which shall be sufficient in each fiscal year to provide for the following:

- A debt service coverage ratio of at least 115% of the debt service cash requirements;
- Any amount necessary to restore any account within a debt service reserve fund to its required deposit level; and
- Any amount necessary to restore any debt service reserve fund for parity indebtedness to its required deposit level.

For purposes of calculating debt service coverage pursuant as required by the Indenture, it is necessary to incorporate two additional elements of cash flows that are not found in the Authority's statements of revenues and expenditures:

How reimbursed

- Reimbursements from the City of New Haven for its share of principal payments on Clean Water Fund ("CWF") notes related to sewer-separation projects. The Authority has established a receivable for the total that will be reimbursed by the City.
- Transfers from the Rate Stabilization Fund to subsidize the user charges for New Haven customers. This fund was depleted in the year ended June 30, 2010.

Table 4 below details the debt service coverage provided for the years ended June 30, 2008 through 2010.

Table 4
Debt Service Coverage

	FY08	FY09	FY10
Cash Flows from User Charges	27,598	31,623	33,264,000
Total operating revenues	$ 27,364,780	$ 28,091,156	$ 29,465,175
Depreciation	2,756,088	3,518,958	3,990,933
Total operating expenses	(22,422,025)	(22,984,592)	(23,712,433)
Interest income	1,046,354	634,521	293,192
Reimbursement - New Haven CWF interest	214,668	201,101	184,152
Reimbursement - New Haven CWF principal	842,399	842,198	853,937
Transfers from rate stabilization fund	1,337,213	763,406	825,237
Net cash flows from user charges	11,139,477	11,066,748	11,900,193
Debt Service			
Principal payments on debt	3,795,061	4,066,446	4,446,856
Interest paid on debt	4,990,997	5,409,721	5,498,087
Total debt service payments	8,786,058	9,476,167	9,944,943
Debt service coverage ratio	1.27	1.17	1.20

Source: GNHWPCA audited financial statements.

The Authority has provided a covenant that each fiscal year, it will budget for rates, charges, rents, fees and assessments, including but not limited to use and connection charges and benefit assessments, which will produce revenues which, together with amounts capitalized from proceeds of bonds or otherwise made available and reserved and not already taken into account by reduction of the obligations which are to be paid from revenues and the amount to be withdrawn from a surplus fund other than to pay capital costs for such fiscal year, will be sufficient in each fiscal year to provide for an amount equal to 100% of the aggregate debt service for such fiscal year with respect to subordinated indebtedness.

B. Reserve Accounts

A fully funded debt service reserve account provides an additional level of security for bondholders. When an unexpected budget shortfall occurs, the reserve fund will allow the Authority time to implement necessary adjustments before bondholders are adversely affected. The usual debt service reserve requirement is equal to the least of 125% of average annual debt service, 10% of aggregate bond debt service, or maximum annual debt service. A fully funded debt service reserve has an impact on the Authority's rating and may be essential for an investment grade rating. However, it is also understood that the debt service reserve is really a liquidity source and provides only limited additional security to bondholders.

Reserve accounts totaling approximately $14.5 million were funded by the Authority's initial bond issuance. They included a General Fund (operating reserves and funds identified to meet debt service coverage requirements), Clean Water Fund Debt Service Reserves (50% of maximum aggregate annual debt service on CWF notes) and the Debt Service Reserve Fund (100% of maximum aggregate annual debt service on revenue bonds). For utilities that consistently maintain high operating reserves and sustain high debt service coverage levels, the debt service reserve fund may be less relevant.

The Authority recently established an Infrastructure Renewal Fund, which will be used to accumulate reserves to fund ongoing capital projects in lieu of borrowing.

Consistent with prevailing credit rating criteria and its plan of operations, it is assumed that the Authority will consider the following factors when developing and managing its credit structure:

- **System Size and Assessment Base.** Since the Authority serves a diverse customer base already, it will seek expansion only when considered to be both operationally and financially appropriate.
- **Governance**. The Authority's operations are governed in accordance with its bylaws, which provides for the independent authority to establish rates, manage staff, and approve capital improvements, among other responsibilities.
- **Strategic Focus.** The Authority considers multi-year capital improvement programs that include current and anticipated capital needs that cover asset maintenance, upgrades, and system expansions.
- **Rates, Rate Structure, and Rate Making Flexibility.** The Authority will evaluate whether rates and revenues cover all financial commitments, inclusive of reserves for emergencies, and whether they are reasonable and affordable, which could affect asset maintenance and expansion of the user base.
- **Additional Considerations.**

  The Authority is in the process of reviewing or adopting policies in the following activities:

  - Investment management policies and practices.
  - Debt management policy in order to establish guidelines for the following:
    - Appropriate levels of leverage and debt service;
    - Mix of variable rate and fixed rate debt; and
    - Use of interest rate derivatives.

  The Authority is seeking to build fund balances over time to establish reliable operating reserves and fund an appropriate share of the ongoing capital improvements from operating funds.

  The Authority is intent on establishing the best credit rating it can attain in order to minimize the impact of borrowing costs.

V. Determination of Rates

A. Scope and Methodology

In providing adequate wastewater treatment services to its customers, the Authority must receive sufficient total revenue to ensure the following objectives:

- Meet legal and contractual requirements, including the terms of the Indenture:
- Maintain current service levels;
- Meet new demands for service;
- Adequately maintain the existing collection and treatment systems; and
- Plan for future needs in an orderly manner.

Regulations established by the U.S. Environmental Protection Agency and Connecticut Department of Environmental Protection require user fee systems for pollution abatement facilities to produce revenues sufficient to support the operations, maintenance and replacement of facilities. This is the key element in the determination of the rates to be charged to users, since it is intended that the operation of such facilities should be self-supporting. The State and Federal governments have mandated that the viability of such operations should not be compromised. Accordingly, sewer user rates should be set at levels sufficient to recover all costs necessary to finance adequate wastewater treatment and disposal.

B. Cost Projections and Determination of Revenue Requirement

The first step to developing appropriate rates is to determine the costs associated with planned future operations. Based on these cost projections and any projected miscellaneous revenues (other than those that will be generated from rates), an annual revenue requirement is established. This represents the amount that must be generated from sewer user rates.

For purposes of this study, the total cost estimates used for FY2011-12 through FY2015-2016 were based upon the proposed operating budget for FY2011-12, historical and anticipated trends, and a review of individual budget line-items. The average annual growth rate of costs was developed by management based upon projected needs and historical experience. We also considered those developments in the current year that may affect cost estimates on a significant scale going forward.

This cost of service study incorporates the following cost components:

1. Operations and Maintenance Costs

Operations and maintenance costs include all costs necessary to deliver wastewater collection and treatment services. It includes not only the technical operation of the plant facilities, but also the administrative resources employed to ensure efficient operations as well as fixed administrative resources employed to administer the Authority.

2. Debt Service

In recognizing costs, cash outlay is the determinant used for cost recovery. Rather than using depreciation, the debt service requirement resulting from the purchase of assets is used. According to EPA guidelines on establishing cost recovery systems, this is an acceptable method for recognizing costs. Therefore, principal and interest payments are among the costs to be recovered by user fees. Exhibit III details the debt service costs for FY2011-12 through FY2015-2016.

3. Estimated Future Debt Service

The cost estimates include a provision for estimated debt service associated with future bond issues to finance planned capital improvements. Based on the Authority's capital improvement plan for FY2011-12 through FY2015-2016 (see Exhibit IV), we have estimated future debt service using the following assumptions:

- Management's assessment of the portion of costs to be financed by Clean Water Fund grants and notes.
- Management's assessment of the project costs that will be shared with the City of New Haven (i.e., 40% of each sewer separation project).
- Revenue bonds to be issued in the year that projects are initiated, at a rate of 5% for 30 years, and amortization with level payments.
- Projects financed with Clean Water Fund notes are financed with an Interim Funding Obligation (IFO) for two years from project initiation. IFO's convert to Permanent Loan Obligations (PLO) two years after project initiation with payment of 5% of principal outstanding and amortization of the remaining balance over 20 years at 2% with level payments. Interest accrued prior to conversion to PLO is assumed to be included in the amount borrowed under the IFO.

4. Miscellaneous Revenues

Miscellaneous revenues (i.e., revenues from all sources other than sewer user rates) are deducted from the total cost of services to determine the net revenue requirement. Miscellaneous revenues for FY2011-12 are based on management's proposed budget. The average annual growth rate of revenues was determined by management based upon projected needs and historical experience.

5. Debt Service Coverage Requirement

As detailed in Section IV.A. of this report, the Authority is required under the Indenture of Trust for the Series 2005A bonds to include a provision for additional revenues in its user charges equal to 15% of annual debt service. This provision does not apply, however, to the extent that management has identified and restricted existing reserves equal to all or part of this amount that are not otherwise restricted. Notwithstanding this exception, the Authority includes the full 15% requirement in its budget each year and provides for an offsetting use of reserves as applicable. We have followed the same approach for purposes of this study.

6. Use of Reserve Funds

Maintenance of reserve funds may increase or reduce the Authority's revenue requirement in any given year. Management has not planned to incorporate any use or funding of reserves in its FY11-12 budget.

7. Receivable Management Costs

Receivable management costs are the estimated portion of billings to customers each year that are not collected during the period. As noted in Section III.D. above, the Authority implemented a new customer information system on July 1, 2010, and the new CIS system will not have a full year of historical data until June 30, 2011. Despite the lack of 12-month collection data until June, management has been able to utilize the CIS system to monitor billing and collections data on a monthly basis, and believes that the current collection rate is consistent with what has been observed in recent years.

C. Development and Design of Rates and Charges

1. Objectives

The primary objective in the recommendation of rates is to establish rates that will generate sufficient revenues to meet the total revenue requirements. Billing is based on water consumption using data provided by the RWA stated in 100 cubic foot units ("CCF's"). For purposes of recommending a user rate for FY12, we have assumed billable consumption of 9,000,000 CCF which is lower than the estimate used in past years (9,500,000 CCF) based on management's assessment of consumption trends.

2. Recommended Rates

As detailed further in Table 5, based upon our assessment of the cost projections for FY2011-12 through FY2015-16, we recommend a quarterly administrative charge of $13.00 and a CCF rate of $3.06 for FY2011-12.

Table 5
FY12 Recommended Rate
FY13 through FY16 Projected Rates

Fiscal Year	Estimated Consumption	Admin Fee	CCF Rate	% Change in CCF Rate	Estimated Billings
FY12	9,000,000	$ 13.00	$ 3.06 X12	7.7%	$ 30,034,000
FY13	9,000,000	13.00	3.25	6.1%	31,709,000
FY14	9,000,000	13.00	3.47	7.0%	33,757,000
FY15	9,000,000	13.00	3.79	9.2%	36,620,000
FY16	9,000,000	13.00	4.05	6.9%	38,984,000

3. Flat Rates for Well Users

The Authority currently has sewer customers who are not customers of the RWA (i.e., customers whose water supply is from wells), and therefore have no basis for sewer billing. We recommend that customers of the Authority, who are not customers of the RWA, continue to be billed on the basis used in previous years. Customers who are well users were asked to complete a survey that collects information about their respective dwellings and inhabitants. Based upon the results of this survey, the customer is billed a flat amount each quarter based on consumption of 15, 20 or 24 CCF's.

VI. Exhibits

EXHIBIT I

Estimated Cost of Service and Revenue Requirement
for the fiscal years ended June 30, 2012 through 2016

	FY12	ch.	FY13	ch.	FY14	ch.	FY15	ch.	FY16
A. OPERATIONS & MAINTENANCE									
Personnel	$ 4,149,912	5%	$ 4,366,000	5%	$ 4,591,000	5%	$ 4,832,000	5%	$ 5,090,000
Utilities	4,067,800	8%	4,393,000	8%	4,743,000	8%	5,123,000	8%	5,531,000
Contracted Operations - OMI	5,657,000	8%	6,110,000	8%	6,599,000	8%	7,127,000	8%	7,697,000
Contracted Sludge & Ash Disposal	4,500,000	5%	4,725,000	5%	4,961,000	5%	5,209,000	5%	5,469,000
Other Contracted Services	2,877,600	3%	2,963,000	3%	3,051,000	3%	3,142,000	3%	3,233,000
Payments In-lieu of Taxes (PILOT)	785,000	0%	785,000	0%	785,000	0%	785,000	0%	785,000
Equipment, Vehicles & Supplies	203,200	4%	211,000	3%	218,000	3%	225,000	3%	232,000
Contingency	250,000	0%	250,000	0%	250,000	0%	250,000	0%	250,000
Total Operations & Maintenance Costs	***22,490,512***	***6%***	***23,803,000***	***6%***	***25,198,000***	***6%***	***26,693,000***	***6%***	***28,287,000***
B. DEBT SERVICE									
Revenue Bonds:									
Principal	2,341,667	7%	2,511,924	4%	2,610,687	4%	2,714,638	8%	2,924,043
Interest	5,218,036	6%	5,522,806	-9%	5,019,186	3%	5,160,654	-2%	5,032,839
Clean Water Fund Notes:									
Principal	3,610,798	-15%	3,067,476	30%	3,992,529	16%	4,622,630	8%	4,994,798
Interest	937,615	-25%	707,501	12%	793,223	39%	1,103,056	22%	1,346,474
CWF Notes - New Haven Reimbursement:									
Principal	(1,308,232)	-28%	(940,063)	37%	(1,290,619)	16%	(1,498,457)	8%	(1,612,161)
Interest	(340,923)	-26%	(251,609)	-8%	(232,725)	47%	(343,190)	25%	(427,972)
Total Debt Service	***10,458,961***	***2%***	***10,618,035***	***3%***	***10,892,282***	***8%***	***11,759,332***	***4%***	***12,258,021***
TOTAL COST OF SERVICES	***32,949,473***	***4%***	***34,421,035***	***5%***	***36,090,282***	***7%***	***38,452,332***	***5%***	***40,545,021***
C. MISCELLANEOUS REVENUES									
Interest & Lien Fees	(1,090,000)	0%	(1,090,000)	0%	(1,090,000)	0%	(1,090,000)	0%	(1,090,000)
Aged Accounts Receivable	(2,400,000)	0%	(2,400,000)	0%	(2,400,000)	0%	(2,400,000)	0%	(2,400,000)
Investment Income	(275,000)	3%	(283,000)	3%	(291,000)	3%	(300,000)	3%	(309,000)
High Strength Surcharges	(1,000,000)	0%	(1,000,000)	0%	(1,000,000)	0%	(1,000,000)	0%	(1,000,000)
Grease Disposal	(300,000)	3%	(309,000)	3%	(318,000)	3%	(328,000)	3%	(338,000)
Nitrogen Credits	(300,000)	3%	(309,000)	3%	(318,000)	3%	(328,000)	3%	(338,000)
Outside Sludge	(1,200,000)	3%	(1,236,000)	3%	(1,273,000)	3%	(1,311,000)	3%	(1,350,000)
Interlocal Fees	(140,000)	3%	(144,000)	3%	(148,000)	3%	(152,000)	3%	(157,000)
Reimbursements - OMI/Synagro	(900,000)	-17%	(750,000)	-20%	(600,000)	-17%	(500,000)	0%	(500,000)
Other Revenues	(660,000)	3%	(680,000)	3%	(700,000)	3%	(721,000)	3%	(742,000)
Total Miscellaneous Revenues	***(8,265,000)***	***-1%***	***(8,201,000)***	***-1%***	***(8,138,000)***	***0%***	***(8,130,000)***	***1%***	***(8,224,000)***
D. SOURCE/(USE) OF RESERVES									
Transfer to GF for Debt Service Coverage	1,816,000		1,771,000		1,862,000		2,040,000		2,145,000
Use of Prior Year Surplus	-		-		-		-		-
Use of Unrestricted Reserves	-		-		-		-		-
Total Source/(Use) of Reserve Funds	***1,816,000***		***1,771,000***		***1,862,000***		***2,040,000***		***2,145,000***
NET REVENUE REQUIREMENT	***$ 26,500,473***	***6%***	***$ 27,991,035***	***7%***	***$ 29,814,282***	***9%***	***$ 32,362,332***	***7%***	***$ 34,466,021***
E. RECEIVABLE MANAGEMENT COSTS	3,534,000		3,718,000		3,943,000		4,258,000		4,518,000
Estimated collection rate	89%		89%		89%		89%		89%
REVENUE REQUIREMENT	***$ 30,034,473***	***6%***	***$ 31,709,035***	***6%***	***$ 33,757,282***	***8%***	***$ 36,620,332***	***6%***	***$ 38,984,021***

EXHIBIT II

Budgeted Operations & Maintenance Expenses by Department
For the Fiscal Year ended June 30, 2012
With Estimated Expenses for Fiscal Years 2013 through 2016

	FY12	% ch.	FY13	% ch.	FY14	% ch.	FY15	% ch.	FY16
EXECUTIVE DIRECTOR									
Personnel	$ 336,090	3%	$ 345,000	2%	$ 353,000	3%	$ 362,000	2%	$ 371,000
Other Contracted Services	717,300	3%	738,000	3%	761,000	3%	785,000	3%	809,000
Equipment, Vehicles & Supplies	62,700	4%	65,000	3%	67,000	3%	69,000	3%	71,000
Contingency	250,000	0%	250,000	0%	250,000	0%	250,000	0%	250,000
Total EXECUTIVE DIRECTOR	***1,366,090***	***2%***	***1,398,000***	***2%***	***1,431,000***	***2%***	***1,466,000***	***2%***	***1,501,000***
FINANCE & ADMINISTRATION									
Personnel	561,392	4%	582,000	3%	602,000	3%	623,000	4%	645,000
Other Contracted Services	113,500	3%	117,000	3%	121,000	3%	125,000	3%	129,000
Total FINANCE & ADMINISTRATION	***674,892***	***4%***	***699,000***	***3%***	***723,000***	***3%***	***748,000***	***3%***	***774,000***
CUSTOMER SERVICE									
Personnel	651,000	4%	674,000	3%	697,000	3%	721,000	3%	746,000
Other Contracted Services	613,000	3%	633,000	3%	652,000	3%	672,000	3%	692,000
Equipment, Vehicles & Supplies	8,000	0%	8,000	0%	8,000	0%	8,000	0%	8,000
Total CUSTOMER SERVICE	***1,272,000***	***3%***	***1,315,000***	***3%***	***1,357,000***	***3%***	***1,401,000***	***3%***	***1,446,000***
EMPLOYEE BENEFITS									
Personnel	1,096,800	10%	1,207,000	10%	1,326,000	10%	1,457,000	10%	1,601,000
Total EMPLOYEE BENEFITS	***1,096,800***	***10%***	***1,207,000***	***10%***	***1,326,000***	***10%***	***1,457,000***	***10%***	***1,601,000***
ENGINEERING									
Personnel	712,990	4%	738,000	4%	764,000	3%	790,000	3%	817,000
Other Contracted Services	146,000	3%	150,000	3%	154,000	3%	158,000	3%	162,000
Total ENGINEERING	***858,990***	***3%***	***888,000***	***3%***	***918,000***	***3%***	***948,000***	***3%***	***979,000***
OPERATIONS									
Personnel	791,640	4%	820,000	4%	849,000	4%	879,000	4%	910,000
Utilities	4,007,000	8%	4,327,000	8%	4,672,000	8%	5,046,000	8%	5,448,000
Contracted Operations - OMI	5,657,000	8%	6,110,000	8%	6,599,000	8%	7,127,000	8%	7,697,000
Contracted Sludge & Ash Disposal	4,500,000	5%	4,725,000	5%	4,961,000	5%	5,209,000	5%	5,469,000
Other Contracted Services	954,000	3%	982,000	3%	1,010,000	3%	1,039,000	3%	1,068,000
Equipment, Vehicles & Supplies	78,000	3%	80,000	3%	82,000	2%	84,000	2%	86,000
Total OPERATIONS	***15,987,640***	***7%***	***17,044,000***	***7%***	***18,173,000***	***7%***	***19,384,000***	***7%***	***20,678,000***
GENERAL SERVICES									
Utilities	60,800	9%	66,000	8%	71,000	8%	77,000	8%	83,000
Other Contracted Services	333,800	3%	343,000	3%	353,000	3%	363,000	3%	373,000
Payments In-lieu of Taxes (PILOT)	785,000	0%	785,000	0%	785,000	0%	785,000	0%	785,000
Equipment, Vehicles & Supplies	54,500	6%	58,000	5%	61,000	5%	64,000	5%	67,000
Total GENERAL SERVICES	***1,234,100***	***1%***	***1,252,000***	***1%***	***1,270,000***	***1%***	***1,289,000***	***1%***	***1,308,000***
ALL DEPARTMENTS									
Personnel	4,149,912	5%	4,366,000	5%	4,591,000	5%	4,832,000	5%	5,090,000
Utilities	4,067,800	8%	4,393,000	8%	4,743,000	8%	5,123,000	8%	5,531,000
Contracted Operations - OMI	5,657,000	8%	6,110,000	8%	6,599,000	8%	7,127,000	8%	7,697,000
Contracted Sludge & Ash Disposal	4,500,000	5%	4,725,000	5%	4,961,000	5%	5,209,000	5%	5,469,000
Other Contracted Services	2,877,600	3%	2,963,000	3%	3,051,000	3%	3,142,000	3%	3,233,000
Payments In-lieu of Taxes (PILOT)	785,000	0%	785,000	0%	785,000	0%	785,000	0%	785,000
Equipment, Vehicles & Supplies	203,200	4%	211,000	3%	218,000	3%	225,000	3%	232,000
Contingency	250,000	0%	250,000	0%	250,000	0%	250,000	0%	250,000
Total ALL DEPARTMENTS	***$ 22,490,512***	***6%***	***$ 23,803,000***	***6%***	***$ 25,198,000***	***6%***	***$ 26,693,000***	***6%***	***$ 28,287,000***

Source: Annual budget for FY11-12, GNHWPCA management.

EXHIBIT III

Scheduled and Estimated Debt Service
For the Fiscal Years Ended June 30, 2012 through 2016

	FY12	% ch.	FY13	% ch.	FY14	% ch.	FY15	% ch.	FY16
Revenue Bonds:									
2005 Series A									
Principal	$ 1,805,000	4%	$ 1,885,000	4%	$ 1,965,000	4%	$ 2,050,000	5%	$ 2,160,000
Interest	4,089,994	-2%	4,011,281	-2%	3,928,541	-2%	3,841,676	-3%	3,736,426
2008 Series A/CREBs									
Principal	536,667	3%	551,667	3%	566,667	3%	581,667	3%	601,667
Interest	878,042	-2%	861,525	-2%	844,408	-2%	826,692	-2%	808,275
Estimated Future Series									
Principal	-	0%	75,257	5%	79,020	5%	82,971	96%	162,377
Interest	250,000	160%	650,000	-62%	246,237	100%	492,286	-1%	488,138
Total Revenue Bonds									
Principal	***2,341,667***	*7%*	***2,511,924***	*4%*	***2,610,687***	*4%*	***2,714,638***	*8%*	***2,924,043***
Interest	***5,218,036***	*6%*	***5,522,806***	*-9%*	***5,019,186***	*3%*	***5,160,654***	*-2%*	***5,032,839***
Total Debt Service - Revenue Bonds	***7,559,702***	*6%*	***8,034,730***	*-5%*	***7,629,873***	*3%*	***7,875,292***	*1%*	***7,956,882***
Clean Water Fund Notes:									
CSO Projects									
Principal	2,084,669	-20%	1,678,038	0%	1,674,611	-2%	1,639,221	-3%	1,583,692
Interest	376,898	-10%	338,881	-10%	305,235	-11%	272,238	-12%	239,300
Non-CSO Projects									
Principal	340,217	1%	342,319	2%	348,279	2%	355,309	-5%	337,652
Interest	85,309	-8%	78,478	-9%	71,585	-10%	64,555	-11%	57,404
Estimated Future Notes - CSO Projects									
Principal	1,185,912	-43%	672,119	131%	1,551,935	36%	2,106,921	16%	2,446,710
Interest	475,408	-39%	290,143	-5%	276,577	112%	585,736	42%	830,631
Estimated Future Notes - Non-CSO Projects									
Principal	-	0%	375,000	11%	417,704	25%	521,180	20%	626,744
Interest	-	0%	-	0%	139,827	29%	180,527	21%	219,140
Total CWF Notes									
Principal	***3,610,798***	*-15%*	***3,067,476***	*30%*	***3,992,529***	*16%*	***4,622,630***	*8%*	***4,994,798***
Interest	***937,615***	*-25%*	***707,501***	*12%*	***793,223***	*39%*	***1,103,056***	*22%*	***1,346,474***
Total Debt Service - CWF Notes	***4,548,413***	*-17%*	***3,774,978***	*27%*	***4,785,753***	*20%*	***5,725,687***	*11%*	***6,341,272***
City of New Haven Share of CSO Projects									
CSO Projects									
Principal	(833,868)	-20%	(671,215)	0%	(669,845)	-2%	(655,688)	-3%	(633,477)
Interest	(150,759)	-10%	(135,552)	-10%	(122,094)	-11%	(108,895)	-12%	(95,720)
Estimated Future Notes - CSO Projects									
Principal	(474,365)	-43%	(268,848)	131%	(620,774)	36%	(842,768)	16%	(978,684)
Interest	(190,163)	-39%	(116,057)	-5%	(110,631)	112%	(234,294)	42%	(332,252)
Total City Share of CSO Projects									
Principal	***(1,308,232)***	*-28%*	***(940,063)***	*37%*	***(1,290,619)***	*16%*	***(1,498,457)***	*8%*	***(1,612,161)***
Interest	***(340,923)***	*-26%*	***(251,609)***	*-8%*	***(232,725)***	*47%*	***(343,190)***	*25%*	***(427,972)***
Total Debt Service - New Haven Share	***(1,649,155)***	*-28%*	***(1,191,672)***	*28%*	***(1,523,344)***	*21%*	***(1,841,646)***	*11%*	***(2,040,133)***
Total Net Debt Service									
Principal	***4,644,232***	*0%*	***4,639,337***	*15%*	***5,312,597***	*10%*	***5,838,811***	*8%*	***6,306,681***
Interest	***5,814,728***	*3%*	***5,978,698***	*-7%*	***5,579,685***	*6%*	***5,920,521***	*1%*	***5,951,341***
Total Net Debt Service	***$ 10,458,961***	*2%*	***$ 10,618,035***	*3%*	***$ 10,892,282***	*8%*	***$ 11,759,332***	*4%*	***$ 12,258,021***

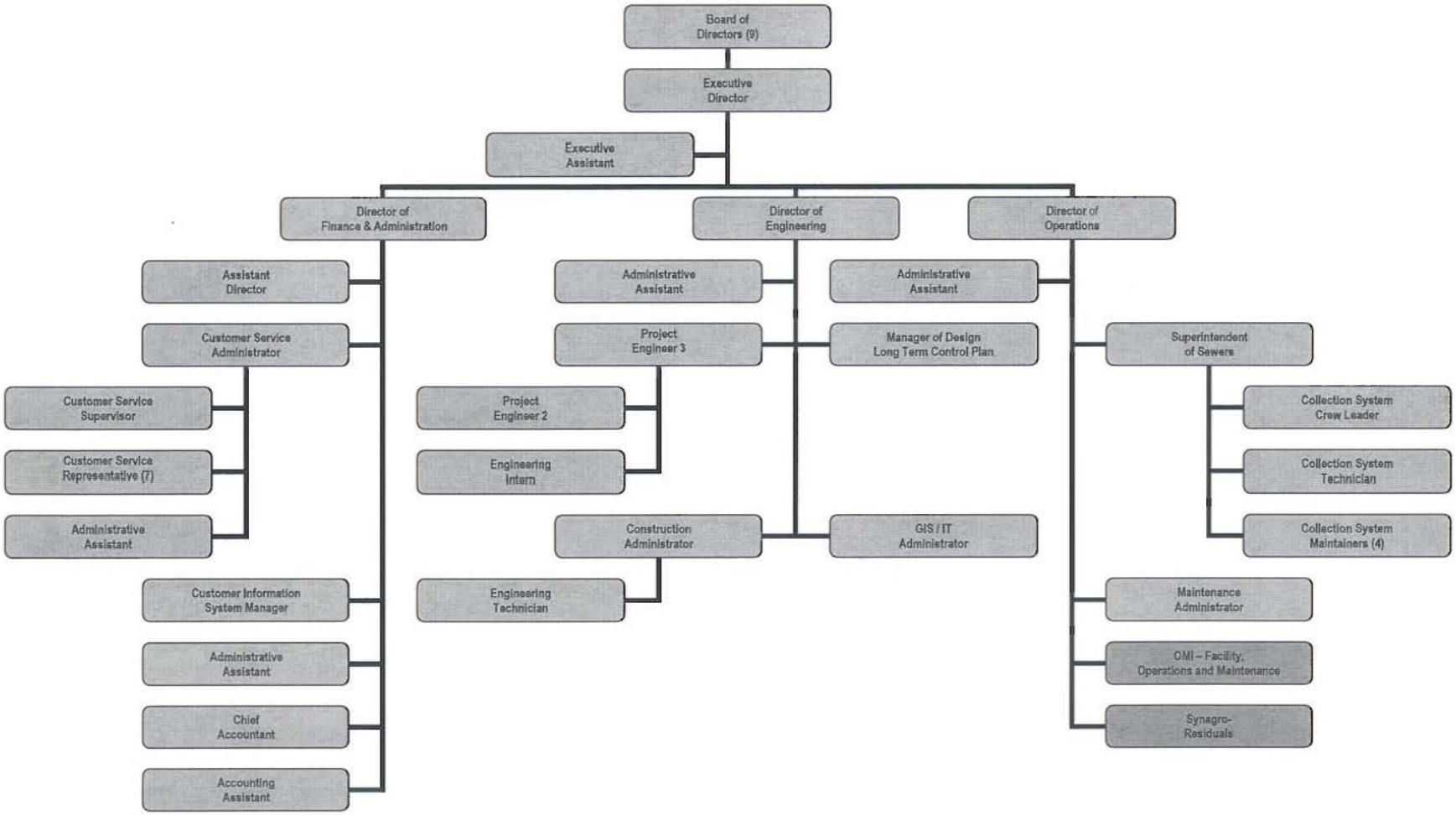
Source: GNHWPCA management.

EXHIBIT IV

Capital Improvement Plan
For the Years Ended June 30, 2012 through 2016

	FY12	FY13	FY14	FY15	FY16	Grand Total
CSO LONG TERM CONTROL PLAN						
Yale Trumbull Study/Design/Construction (Phase I)	$ 6,000,000	$ 6,000,000	-	-	-	$ 12,000,000
Yale Trumbull Study/Design/Construction (Phase II)	-	-	-	$ 1,000,000	$ 5,000,000	6,000,000
Wet Weather Improvements to the ESWPCF/Blvd. East St.	4,800,000	-	-	-	-	4,800,000
Wet Weather Improvements to the ESWPCF - Construction	-	8,000,000	$ 8,000,000	9,000,000	-	25,000,000
Wet Weather Improvements to the Boulevard Pump Station	-	3,750,000	3,750,000	-	-	7,500,000
Wet Weather Improvements to the East St. Pump Station	-	3,500,000	3,050,000	-	-	6,550,000
Wet Weather Improvements to the Union St. Pump Station	-	-	-	1,000,000	5,000,000	6,000,000
Total CSO Long Term Control Plan	***$10,800,000***	***$21,250,000***	***$14,800,000***	***$11,000,000***	***$10,000,000***	***$67,850,000***
EAST SHORE WPC FACILITY						
Fats Oils & Grease Infrastructure Upgrades	$ 700,000	-	-	-	-	$ 700,000
Total East Shore WPC Facility	***$ 700,000***	***$ -***	***$ -***	***$ -***	***$ -***	***$ 700,000***
COLLECTION SYSTEM, PUMP STATIONS & FORCE MAINS						
Sanitary Sewer Infrastructure Renewal Program	$ 1,500,000	$ 1,750,000	$ 1,750,000	$ 1,750,000	$ 2,000,000	$ 8,750,000
Pump Station Improvements	-	500,000	700,000	-	-	1,200,000
Collection System I/I Rehab. Program Section 3c	5,000,000	-	5,000,000	-	5,000,000	15,000,000
Fats Oils & Grease Infrastructure Upgrades	120,000	-	-	-	-	120,000
INC Emergency Water Project	80,000	-	-	-	-	80,000
HOMA Pump	25,000	-	-	-	-	25,000
Morris Cove Grinder	215,000	-	-	-	-	215,000
Total Coll. System, Pump Stations & Force Mains	***$ 6,940,000***	***$ 2,250,000***	***$ 7,450,000***	***$ 1,750,000***	***$ 7,000,000***	***$25,390,000***
TOTAL CAPITAL IMPROVEMENT PLAN	***$18,440,000***	***$23,500,000***	***$22,250,000***	***$12,750,000***	***$17,000,000***	***$93,940,000***
SOURCES OF FINANCING						
Clean Water Fund - Grants	$ 4,976,000	$ 8,225,000	$ 4,794,500	$ 3,880,000	$ 5,000,000	$ 26,875,500
Clean Water Fund - Notes	11,524,000	13,025,000	15,005,500	7,120,000	10,000,000	56,674,500
Total Clean Water Fund	16,500,000	21,250,000	19,800,000	11,000,000	15,000,000	83,550,000
Revenue Bonds	1,000,000	1,750,000	1,950,000	1,250,000	1,500,000	7,450,000
Renewal & Replacement	940,000	500,000	500,000	500,000	500,000	2,940,000
Total Sources of Financing	***$18,440,000***	***$23,500,000***	***$22,250,000***	***$12,750,000***	***$17,000,000***	***$93,940,000***

Source: GNHWPCA management

EXHIBIT V

Organization Chart