

PROJECT REPORT

FOR

**ROCHELLE MUNICIPAL UTILITIES,
CITY OF ROCHELLE
OGLE COUNTY, ILLINOIS
WATER RECLAMATION DIVISION**

**Water Reclamation Rate Analysis Report
November 2013**

Revised: March 11, 2014



WILLETT HOFMANN
& ASSOCIATES INC
ENGINEERING ARCHITECTURE LAND SURVEYING

809 EAST 2ND STREET, DIXON, IL 61021-0367
T: 815-284-3381 DESIGN FIRM: #184-000918

George M. Hansen, P.E.
Illinois Licensed Professional Engineer
License No. 062-050717
Expires: 11/30/2015
WHA # 1105D13

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PURPOSE

The purpose of this Water Reclamation Rate Analysis report is to provide Rochelle Municipal Utilities (RMU) Water Reclamation Division with the following analysis:

1. Evaluate the current expenses and revenues.
2. Develop a new Water Reclamation Division budget for FY 2014/15.
3. Develop a new Water Reclamation Division rate schedule based on the recommended budget expenditures.

The wastewater reclamation rate modifications recommended in this report will provide the Water Reclamation Division the necessary revenue to be self-sufficient.

WATER RECLAMATION DIVISION RATE SCHEDULE

The current Water Reclamation Division rate schedule consists of the following components:

1. **Fixed Charge:** Includes all contractual service administrative expenses. These services include Network Administration, Financial Administrative Services, Insurance, Customer Accounting and Collection, Administrative Expenses, contractual laboratory services and GIS.
2. **Basic User Rate:** Includes all the operation and maintenance expenses of the system such as personnel salaries and benefits, purchase power, chemicals, materials and supplies and the general fund transfer.
3. **Equipment Replacement:** Includes the replacement costs for the water reclamation plant, lift stations and SCADA system. This fund sets the money aside to draw on when the equipment has to be upgraded and/or replaced.
4. **Non-Debt Funded Projects:** The Non-Debt Funded Projects are smaller capital improvements that do not require bonding or loans to complete. They include the sanitary sewer replacements, manhole replacements, sewer point repairs, water reclamation plant improvements and vehicle and equipment replacements.
5. **Capital Recovery Rate:** Includes the payment of bonds and/or loans to finance large water reclamation improvement projects.

CURRENT EXPENDITURES AND REVENUES

The Water Reclamation Division had a net income of \$249,836 in FY 2010/11 and \$132,215 in FY 2011/12. The Water Reclamation Division has a net loss of \$50,771 in FY 2012/13. A detailed analysis of the Water Reclamation Division expenditures and revenues is included in Exhibit 'A'. A summary of the expenditures and revenues is detailed in the table below.

Rochelle Municipal Utilities
Water Reclamation Division Expenditures and Revenues

	Fiscal Year		
	FY 2010/11	FY 2011/12	FY 2012/13
Expenditures			
Fixed Charge Expenses	\$ 312,719	\$ 271,118	\$ 283,423
Basic User Expenses	\$1,250,370	\$1,329,550	\$1,363,904
Equipment Replacement Expenses	\$ 120,000	\$ 120,000	\$ 120,000
Non-Debt Funded Projects Expenses	\$ 161,705	\$1,111,259	\$ 411,647
Capital Recovery Expenses – Debt Service	\$ 973,363	\$ 980,109	\$ 949,623
Total Expenditures	\$2,818,157	\$3,812,036	\$3,128,597
Revenues			
Residential	\$ 995,190	\$ 994,667	\$1,014,442
Commercial	\$ 817,666	\$ 842,561	\$ 917,585
Industrial	\$ 877,858	\$ 842,257	\$ 803,977
Interdepartmental	\$ 4,174	\$ 3,832	\$ 3,921
Surcharges	\$ 112,397	\$ 118,497	\$ 154,606
Other Operating Revenues	\$ 89,216	\$ 39,967	\$ 55,465
Interest	\$ 15,286	\$ 13,146	\$ 11,574
Capital Contributions (Grants)	\$ 126,814	\$1,060,137	\$ 87,128
IEPA RFL Revenues For Askvig Subdivision Sewer	\$ 29,392	\$ 29,187	\$ 29,128
Total Revenue	\$3,067,993	\$3,944,251	\$3,077,826
Net Income/(Loss)	\$ 249,836	\$ 132,215	(\$ 50,771)

The Fixed, Basic User, Equipment Replacement and Capital Recovery expenses have remained steady over the last three (3) years. The Non-Debt Funded Projects expenses vary significantly from year to year based on the amount of money available for infrastructure improvements. On the revenue side, Residential revenue has remained steady, Commercial has increased and Industrial has decreased over the past three (3) years. The Capital Contributions varies from year to year based on the amount of grant funds the City receives to pay for sanitary sewer infrastructure improvements.

WATER RECLAMATION DIVISION BUDGET

A. FIXED CHARGE

The Fixed Charge includes the contractual services provided to the Water Reclamation Division by City Administrative Services and RMU Customer Service. The services provided include meter reading and billing, scheduling appointments, answering and dispatching service calls, human resources, purchase order processing and payments, and invoicing customers for services. Also included is support for the network and computer software and hardware used to monitor the lift stations and water reclamation plant.

The Water Reclamation Division and Water Division are developing a Geographic Information System (GIS) for the wastewater reclamation plant and sanitary sewer collection system facilities and the water system facilities. The recommended FY2104/15 budget includes \$25,000 for the development of the GIS system for the Water Reclamation Division. The development of the GIS system will be a multi-year program that, once it's completed, will require annual management and maintenance of the system.

The past three (3) fiscal year expenses and the recommended budget are detailed in the table below.

Fixed Charge - Contractual Services Expenses

Budget Line Item	Audit Report			Recommended 2014/15 Budget
	FY 2010/11	FY 2011/12	FY 2012/13	
Network Administration	\$ 17,308	\$ 21,317	\$ 27,714	\$ 28,000
Financial Administrative Services	\$ 31,051	\$ 23,805	\$ 34,890	\$ 37,000
Telephone	\$ 2,325	\$ 2,640	\$ 3,403	\$ 4,000
Property and Liability Insurance	\$ 14,848	\$ 18,185	\$ 19,697	\$ 21,000
Engineering	\$ 47,745	\$ 502	\$ 0	\$ 10,000
Customer Accounting and Collection	\$ 85,964	\$ 94,385	\$ 77,918	\$120,000
Administration and General Expenses	\$ 32,614	\$ 23,805	\$ 29,017	\$ 27,000
Contractual Services - Laboratory	\$ 1,041	\$ 2,672	\$ 3,810	\$ 4,500
Contractual Services - Other	\$ 45,530	\$ 41,923	\$ 50,183	\$ 73,000
GIS	\$ 0	\$ 0	\$ 0	\$ 25,000
Transportation	\$ 18,761	\$ 25,567	\$ 21,525	\$ 29,500
Uncollectible Accounts	\$ 0	\$ 0	\$ 0	\$ 0
Miscellaneous Expenses	\$ 15,532	\$ 16,317	\$ 15,266	\$ 18,000
Total Contractual Services	\$312,719	\$271,118	\$283,423	\$397,000

B. BASIC USER EXPENSES

The Basic User Expenses include all the operation and maintenance expenses of the system such as personnel expenses, purchase power, sludge disposal, chemicals, materials and supplies and the general fund transfer.

The Water Reclamation Division staff includes the equivalent of 7.5 full-time personnel. The staff includes the following positions.

Superintendent: This person is responsible for overseeing the operation of the entire Water Reclamation Division. This same person is also responsible for overseeing the operation of the Water Division and Landfill. The prorated salary of the superintendent is 10% landfill, 40% water and 50% water reclamation. (Personnel Equivalent: 0.5)

Operations/Lead: Under the supervision of the Superintendent, the Lead Operator is responsible for directing the operations and maintenance of the water reclamation system. The Lead Operator oversees the operation and maintenance of the water reclamation plant and sanitary sewer collection system and assigns and directs the work of the water reclamation Operations/Maintenance personnel. The Water Reclamation Division has one (1) lead operator.

Operations/Maintenance: Under the supervision of the Lead Operator, the water reclamation Operation/Maintenance personnel maintain the water reclamation plant equipment, check and maintain the sewage lift stations, and televise, jet and clean the sanitary sewers. The Water Reclamation Division has five (5) operation/maintenance personnel.

Lab Technician: The lab technician performs all the routine daily sampling and testing required for preparation of the monthly DMR reports to the IEPA and operational sampling and testing to provide the superintendent and lead operators with data to provide efficient and optimum treatment of the wastewater. The lab technician is also responsible for the daily testing for the Water Division, and the testing, monitoring, reporting, and preparing the report for the Pretreatment Program, including the surcharges for Customer Accounting. The Water Reclamation Division has one full-time lab technician. (Personnel Equivalent: 1.0)

The proposed budget will not add or reduce any personnel to the Water Reclamation Division staff. The proposed budget increase accounts for normal salary, benefits and health insurance increases for the employees.

Personnel Expenses

Budget Line Item	Audit Report			Recommended 2014/15 Budget
	FY 2010/11	FY 2011/12	FY 2012/13	
Salaries	\$439,019	\$459,266	\$469,415	\$550,000
Social Security Taxes	\$ 36,052	\$ 40,024	\$ 30,108	\$ 42,600
Retirement	\$ 71,432	\$ 69,728	\$ 69,728	\$ 71,500
Health Insurance	\$ 90,410	\$ 93,087	\$134,340	\$140,000
Other Employee Benefits	\$ 8,237	\$ 9,068	\$ 10,976	\$ 10,000
Workmen's Compensation	\$ 14,327	\$ 16,706	\$ 17,898	\$ 18,000
Total Personnel	\$659,477	\$687,879	\$732,465	\$832,100

The Purchase Power is the power purchased from the Electrical Division for the operation of the water reclamation plant and sewage lift stations. The power required to operate the water reclamation plant and lift station is a function of flow and loading. The past three (3) fiscal years' expenses and the recommended budget are summarized below.

Purchase Power Expenses

Budget Line Item	Audit Report			Recommended 2014/15 Budget
	FY 2010/11	FY 2011/12	FY 2012/13	
Purchase Power	\$197,407	\$204,392	\$201,869	\$250,000

Sludge generated at the water reclamation plant is dewatered and hauled to the landfill for disposal. The Water Reclamation Division pays the City a per ton charge to dispose of the sludge at the landfill. The past three (3) fiscal years' expenses and the recommended budget for sludge disposal are summarized below.

Sludge Disposal Expenses

Budget Line Item	Audit Report			Recommended 2014/15 Budget
	FY 2010/11	FY 2011/12	FY 2012/13	
Sludge Disposal	\$105,475	\$107,650	\$106,250	\$110,000
Sludge Hauling	\$ 31,506	\$ 32,310	\$ 33,470	\$ 40,000
Total Sludge Disposal	\$136,981	\$139,960	\$139,720	\$150,000

The Water Reclamation Division Supplies include Chemicals, Materials and Supplies for the operation and maintenance of the water reclamation plant and sanitary sewer system. The Chemicals expenses include chlorine and sodium bisulfite for the disinfection and dechlorination of the water reclamation plant effluent and polymer for sludge dewatering and thickening. The Materials and Supplies includes various items needed for the operation and maintenance of the water reclamation plant, sewage lift stations and the sanitary sewer collection system and for fuel and natural gas for various facilities.

The chemical cost increased in FY2012/13 compared to the prior two (2) fiscal years. The Materials and Supplies cost increased in FY 2011/12 compared to FY 2010/11 and the cost remained at the FY 2011/12 level in FY 2012/13. The past three (3) fiscal years' expenses and the recommended budget are summarized below.

Supplies Expenses

	Audit Report			Recommended 2014/15 Budget
	FY 2010/11	FY 2011/12	FY 2012/13	
Chemicals	\$ 43,035	\$ 46,690	\$ 56,622	\$ 65,000
Material and Supplies	\$ 88,350	\$109,773	\$104,975	\$110,000
Total Supplies	\$131,385	\$156,463	\$161,597	\$175,000

The transfer expenditure to the General Fund is based on Water Reclamation Division revenue. The transfer amount to the General Fund is equal to 4.5% of the prior year audited revenue. The transfer to the General Fund will be approximately \$10,000 less than the previous three (3) due to a projected decrease in revenue.

Transfer Expenses

Budget Line Item	Audit Report			Recommended 2014/15 Budget
	FY 2010/11	FY 2011/12	FY 2012/13	
General Fund	\$125,156	\$127,427	\$128,253	\$117,000

The Basic User Rate expenses are summarized in the table below.

Basic User Rate Expenses

	Recommended Budget
Personnel	\$ 832,100
Purchase Power	\$ 250,000
Sludge Disposal	\$ 150,000
Supplies	\$ 175,000
Transfers-General Fund	\$ 117,000
Total Basic User Expenses	\$1,524,100

C. EQUIPMENT REPLACEMENT

The Equipment Replacement fund was established as a requirement for receiving grant money to finance the water reclamation plant and is used to pay for replacement of water reclamation plant and lift station equipment at the end of its useful life. The Equipment Replacement fund has a balance of \$1,786,592 as of March 10, 2014. The Water Reclamation Division is currently working on a project to replace the centrifuges. They are also planning to replace the blowers, both of which are costly but critical pieces of equipment at the water reclamation plant. The centrifuge replacement project has an estimated cost of \$2,200,000.

The Equipment Replacement budget is detailed on Exhibit 'B'. The Water Reclamation Division staff has updated the equipment replacement list and the current replacement cost of the equipment so the next 20 year life cycle cost of the water reclamation plant and lift stations can be determined. The annual Equipment Replacement budget is \$311,272. The original Equipment Replacement budget was \$150,000 per year. The recommended Equipment Replacement budget will be used to establish a new Equipment Replacement rate so adequate revenue is being generated for the next 20 years of equipment replacement.

D. NON-DEBT FUNDED PROJECTS

The Non-Debt Funded Projects has been developed based on the capital improvement needs of the water reclamation system as described below and the cost detailed on Exhibit 'C'.

1. Lift Stations

RMU operates and maintains 12 lift stations. Two of the lift stations, Cleveland 2 and Hwy. 38 E Travel Plaza will be eliminated when gravity extensions are installed to serve new areas that are tributary to the lift stations.

The equipment in the lift stations are part of the operation and maintenance budget. Lift station equipment for the smaller lift stations (less than 20 hp pumps) are the pumps, pump controllers, and SCADA equipment. The equipment for the larger lift stations includes the pumps, pump controllers, SCADA, and flow meters. First Ave. lift station has a standby diesel pump to provide service during power outages. The other lift stations are serviced by portable pumps for bypass pumping during power outages.

No capital outlay improvements for the lift stations are required at this time.

2. Sanitary Sewer Collection System

The sanitary sewer system includes several miles of 8", 10", 12", 15", 18", 21", 24", 30" and 36" diameter sanitary sewers and sanitary manholes. The sanitary sewers constructed over the past 20 years were constructed using PVC pipe with gasketed joints, which should provide 60 - 80 years of useful life. Also the sanitary sewers constructed during this time period have been air tested for tightness to ensure there is a minimal amount of infiltration. The sanitary sewer system that was constructed before 1980 is typically either clay, concrete or truss pipe. In some parts of town the clay pipe is more than 100 years old, and will need to be replaced or rehabilitated by lining before failure of the sanitary sewer occurs and to eliminate infiltration. The replacement or lining of the old clay pipe should be coordinated with the Public Works Department and their street reconstruction plan. The budget includes \$200,000 per year for sanitary sewer replacement or lining. The collection system upgrades will require additional funding in the future.

The budget also includes the replacement of the System 1 sanitary sewer. The System 1 sanitary sewer is a 24" concrete sanitary sewer that carries the industrial waste from Rochelle Foods, the Cleveland 2 lift station basin, and the new Caron Road lift station. The pipe is classified as "poor" due to the deterioration caused by the industrial waste discharges over the past fifty years. The deterioration is so severe that collapses of the sewer have occurred, and there is a large amount of infiltration/inflow during wet weather events. In 2006, RMU lined approximately 1,100 feet of the System 1 sanitary sewer line and replaced five (5) manholes. There is approximately 4,700 feet of the System 1 sanitary sewer main that still needs to be replaced, at an estimated cost of \$750,000. The budget includes \$75,000 per year for the replacement of the remainder of the System 1 sanitary sewer.

3. Sanitary Sewer Collection System Expansion

The budget does not include any sanitary sewer collection system expansion projects. These projects are funded in part or in whole by developer contributions and/or grants.

4. Water Reclamation Plant (WRP)

The WRP improvements include the replacement of aging equipment and improvements to the WRP. When the WRP was constructed, the IEPA required that an equipment replacement fund be established. The annual equipment replacement budget was \$150,000, and the revenue from the IEPA Replacement Fund rate was deposited into the IEPA Replacement Fund account to be used when equipment fails and requires replacement. The WRP is twenty years old, and the major process equipment will require replacement in the next five to ten years. The replacement fund account will be used to finance the equipment replacement. As of March 1, 2014, the Replacement Fund had a balance of \$1,786,592.

The anaerobic lagoon has not been cleaned since it was put into service in 1991, and the level of sludge in the lagoon is being monitored to determine when it will have to be cleaned. The loading to the anaerobic lagoon has changed because Rochelle Foods is no longer slaughtering, and the lagoon is no longer acting as a digester, but rather a primary clarifier. This process change has caused the sludge level to increase faster than if it were acting as a digester.

The estimated cost for sludge removal is \$240,000, and the budget includes \$24,000 per year for the removal of the sludge.

The System 1 lift station pumps the flow to the anaerobic lagoon. The long range plan is to upgrade the lift station and install grit screening to reduce the amount of inorganic material that is sent to the anaerobic lagoon. The estimated cost for the System 1 project is \$1,500,000. At this time, the budget and rate structure does not include this project.

5. Replacement Items

The Water Reclamation Division has to make sanitary sewer point repairs and replace/repair sanitary manholes when failures occur. The Water Reclamation Division also shares in the cost of the water meters, as they are used for wastewater billing. The recommended budget includes \$47,500 for replacement items.

6. Vehicles and Equipment

The Water Reclamation Division uses the following vehicles and equipment to operate and maintain the water reclamation plant, lift stations and sanitary sewers.

- Vactor Truck
- Ford F350
- Chevy 4x4
- Ford Explorer

- Camera Truck
- GMC Canyon (2)
- Portable Pumps and Generators

The vactor truck is a critical piece of equipment for maintaining the sanitary sewer system; it is used for jetting and cleaning the sanitary sewers. The estimated cost for replacement of the vactor truck is \$375,000. The camera truck is also a critical piece of equipment used to televise sanitary sewer lines to determine the condition of the sewers and to investigate problems when they occur. The estimated cost for replacement of the camera truck is \$100,000. The portable pumps and generators are used to provide bypass pumping at the lift stations when pump and/or power failure occurs or when there is a plugged sanitary sewer line.

The recommended budget includes \$59,450 for replacement of vehicles and maintenance equipment.

The Non-Debt Funded Projects budget is summarized below and detailed on Exhibit 'C'.

Non-Debt Funded Projects Budget

Item	Budget
Lift Stations	\$ 0
Sanitary Sewer Replacement/Rehabilitation	\$275,000
Sanitary Sewer Expansion	\$ 0
Water Reclamation Plant	\$ 24,000
Replacement Items	\$ 47,500
Vehicles and Equipment	\$ 59,450
Total Non-Funded Projects Budget	\$405,950

E. CAPITAL RECOVERY - DEBT SERVICE

The debt service expense of the Water Reclamation Division includes a 1999 revenue bond for the construction of the water reclamation plant, a 1999 IEPA revolving fund loan for the construction of the Northwest sanitary sewer project and a 2008 IEPA revolving fund loan for the Askvig subdivision sanitary sewer project. The annual principal and interest and retirement date of the bonds and IEPA revolving fund loans are as follows:

Annual Principal and Interest

Bond/Loan	Principal and Interest	Retirement Date
1999 Revenue Bond	\$721,000	May 1, 2014
1999 IEPA RFL	\$245,210	August 1, 2017
2008 IEPA RFL ⁽¹⁾	\$ 39,000	May 1, 2027

⁽¹⁾ Askvig Subdivision customers are reimbursing RMU for principal and interest expenses on the 2008 IEPA RFL.

Also included in the Debt Service expenses are payments made into a Depreciation, Improvement & Extensions (D.I.E.) account and an IEPA Replacement Fund Account. The D.I.E. account is restricted to the replacement and extension of the water reclamation system. The IEPA Replacement Fund is restricted to the replacement of the mechanical equipment at the WRP during the life of the facility. The D.I.E. account has a balance of \$316,837 and the IEPA replacement fund has a balance of \$1,786,592 as of March 10, 2014.

The Water Reclamation Division also has a Bond Reserve account for the 1999 revenue bond for the WRP which has a balance of \$725,663 as of March 10, 2014 and a Bond Reserve account for the 1999 and 2008 IEPA revolving fund loans which has a balance of \$256,301 as of March 10, 2014.

When the 1999 revenue bond for the WRP is retired, the balances in the Bond Reserve account for the 1999 revenue bond for the WRP and the D.I.E. account will be transferred to the IEPA replacement fund account for the replacement of equipment at the WRP. This will increase the balance in the IEPA replacement fund to \$2,829,092.

The total Capital Recovery – Debt Service expenses are summarized in the table below.

Capital Recovery - Debt Service Expenses

Budget Line Item	Audit Report			Recommended Budget FY 2014/15
	FY 2010/11	FY 2011/12	FY 2012/13	
Principal (WRP Revenue Bond)	\$585,000	\$605,000	\$620,000	\$ 0
Interest	\$157,315	\$137,440	\$ 91,954	\$ 46,605
D.I.E. Payments	\$ 0	\$ 0	\$ 0	\$ 0
IEPA Revolving Fund Loan	\$231,048	\$237,669	\$237,669	\$237,669
Total Capital Recovery - Debt Service	\$973,363	\$980,109	\$949,623	\$284,274

The recommended budget includes the principal and interest payments for the two (2) IEPA Revolving Fund Loans.

When the 1999 IEPA Revolving Fund Loan is retired in August 2017, the Capital Recovery rate will be decreased and the Equipment Replacement rate will be increased to generate an additional \$215,700 per year, which is needed to adequately fund the Equipment Replacement Budget for the next 20 year life cycle of the water reclamation plant and lift stations.

WASTEWATER RATE MODIFICATIONS

A. EXISTING USERS AND WATER USAGE

The Water Reclamation Division revenues are based on the number of customers and the meter water volume used for each class of user plus any surcharges for higher than normal strength domestic wastewater. The users are classified as Residential, General Service, Creston and Industrial.

The table below details the number of users in each user category.

Water Reclamation Customers

User	# of Users
Residential	2,955
General Service	570
Creston	1
Industrial	1
Total	3,527

The basic user charge is based on the billable volume of water in each category of user. The total billable volume for Residential, General Service, Creston and Industrial in the table below is the average of the last three (3) fiscal years.

Water Reclamation Division - Billed Volume

	Volume Billed (cf)	% of Total Volume Billed
Residential	19,801,400	34.2
General Service	17,443,000	30.1
General Service (Creston)	2,683,000	4.6
Industrial (Rochelle Foods)	18,000,000	31.1
Total	57,927,400	100.0

B. FIXED CHARGE

The Fixed Charge component of the Water Reclamation rate schedule generates revenue to cover the expenditures that are not dependent upon the quantity of water a customer uses. The Fixed Charge will cover the cost for the contractual services that support the Water Reclamation Division. The recommended Fixed Charge expenses will be shared equally by all customer classes and are projected to be \$397,000 in FY 2014/15. The Water Reclamation Division receives \$48,000 per year in rent from the Water Division for the use of their buildings for staff office space, equipment and material storage, maintenance and laboratory services. The rental revenue will be used to pay for Fixed Charge expenses, so the net Fixed Charge expenses which will have to be recovered by the Fixed Charge are \$349,000 (\$397,000 - \$48,000).

RMU charges customers with a sewage flow meter a monthly Fixed Charge of \$80.10 to cover additional administrative costs associated with the sewage flow meters. RMU currently has ten (10) sewer flow meters which generate an annual revenue of \$9,612.00. The recommended Fixed Charge for all other customers shall be \$8.05 per user per month as calculated below:

Fixed Charge: $(\$349,000 - \$9,612) \div 3,517 \text{ Users} \div 12 \text{ Months} = \$8.05/\text{User}/\text{Month}$

C. BASIC USER RATE

The Basic User Rate component of the Water Reclamation rate schedule generates revenue to cover operation and maintenance expenses of the water reclamation system which are dependent upon volume and loading a customer class generates. The Basic User Rate will cover the cost of the Personnel, Purchase Power, Sludge Disposal, Supplies and Transfers to the General Fund as summarized in the table below.

Basic User Rate Expenses

	Recommended Budget
Personnel	\$ 832,100
Purchase Power	\$ 250,000
Sludge Disposal	\$ 150,000
Supplies	\$ 175,000
Transfers - General Fund	\$ 117,000
Total Basic User Expenses	\$1,524,100

The basic user rate calculation for each customer class is a complex methodology. The water reclamation plant's individual processes and sanitary sewer system's key components are identified on the Basic User Rate Tabulation on Exhibit 'D'. The operation and maintenance expenses are allocated to each treatment plant process and sanitary sewer system component to determine the total operation and maintenance costs. The operation and maintenance cost of each treatment plant process and sanitary sewer system component is then allocated to each customer class based on their share of the BOD loading or flow use of the system.

The complex methodology to calculate the basic user rate is shown in Exhibit D. The elements of the exhibit are:

1. The equipment and/or processes at the treatment plant or in the sanitary sewer collection system that require O & M are listed.
2. The cost allocation of the O & M expense for personnel, purchase power, sludge disposal, chemicals, materials and supplies, and the general fund transfer for each equipment or process is detailed.
3. The O & M cost for each equipment or process is allocated based on flow, loading, and system use of each user class.
4. The industrial and certain commercial customers pay a surcharge for the treatment of high strength waste. The one (1) Industrial customer pays approximately \$50,000 per year for the treatment of high strength waste, and the commercial customers pay approximately \$80,000 per year for the treatment of high strength wastes. This surcharge revenue has been subtracted from the Basic User expenses when calculating the Basic User Rate.

- 5. The O & M cost allocation for each user class is divided by the total billable volume for each user class to determine the Basic User Rate.

The current and recommended Basic User rate for each customer class is summarized in the table below.

Basic User Rate Schedule

User Class	Current Rate FY2013/14	Proposed Rate FY2014/15
City	\$1.98/HCF	\$2.32/HCF
Rochelle Foods	\$1.78/HCF	\$2.44/HCF
Creston	\$1.66/HCF	\$1.92/HCF

D. EQUIPMENT REPLACEMENT

The Equipment Replacement fund was established as a requirement for receiving grant money to finance the water reclamation plant and is used to pay for replacement of water reclamation plant and lift station equipment at the end of its useful life. The annual equipment replacement expense is \$311,272 and is calculated by dividing the equipment replacement cost by the estimated life of the equipment as detailed on Exhibit 'B'. The Equipment Replacement budget has been revised and updated to reflect the next 20 year life cycle cost of the water reclamation plant and lift station equipment.

As detailed in Exhibit 'E', the Equipment Replacement rate calculation for each customer class uses a methodology similar to the Basic User rate. The water reclamation plant and lift station equipment costs are allocated to each customer class based on their use of the equipment using either volume or BOD loading for the allocation. The rate is computed by dividing the customer class portion of the equipment replacement cost by their billable flow.

The current Equipment Replacement rate will remain in place for the Residential and General Service customers until August 2017 when the NW Interceptor IEPA Revolving Fund Loan will be retired. The Equipment Replacement rate for Creston will be increased to the rate calculated on Exhibit 'E'. The Industrial Equipment Replacement rate will be phased in with the recommended rate for FY 2014/15 and will be \$0.43/HCF. The recommended Equipment Replacement rate will generate approximately \$162,000 annually for equipment replacement, which is well below our recommend budget of \$311,272. In FY 2018/19, it's recommended the Equipment Replacement rate be increased to generate an additional \$215,700 per year for Equipment Replacement expenses, which brings the total revenue for equipment replacement to \$355,700 per year. The Residential and General Service Equipment Replacement rate will be increased by \$0.39/HCF from \$0.15/HCF to \$0.54/HCF and the Industrial rate will increase by \$0.39/HCF from \$0.43/HCF to \$0.82/HCF. The calculation below shows that the recommended Equipment Replacement rate schedule will generate the equivalent amount of revenue over the next 20 year life cycle of the water reclamation plant and lift station.

Total Equipment Replacement Revenue Based Annual Budget

$$\$311,272/\text{Year} \times 20 \text{ Years} = \$6,225,440$$

Total Equipment Revenue Based On Recommended Rate Increase Revenue

$$(\$140,000/\text{Year} \times 4 \text{ Years}) + (\$355,700/\text{Year} \times 16 \text{ Years}) = \$6,251,200$$

The Equipment Replacement fund has a balance of \$1,786,592 as of March 10, 2014. The 1999 Revenue Bond for the WRP has a Bond Reserve account and a D.I.E. account, which are restricted accounts until the WRP bond is retired. When the bond is retired, it's recommended the funds in the Bond Reserve and D.I.E. accounts be transferred into the Equipment Replacement account. The Bond Reserve and D.I.E. accounts currently have a balance of \$1,042,500, which would bring the Equipment Replacement account balance to \$2,829,092.

The current and recommended Equipment Replacement Rate is summarized in the table below. The recommended rate in FY 2018/19 is based in current billable volumes for all customer classes. The recommended rates in FY 2018/19 should be re-evaluated if there is a significant change in billable volume.

Equipment Replacement Rate Schedule

User Class	Current Rate FY2013/14	Recommended Rate FY2014/15	Recommended Rate FY2018/19
City	\$0.15/HCF	\$0.15/HCF	\$0.54/HCF
Rochelle Foods	\$0.28/HCF	\$0.43/HCF	\$0.82/HCF
Creston	\$0.15/HCF	\$0.26/HCF	\$0.26/HCF

E. NON-DEBT FUNDED PROJECTS

The Non-Debt Funded Projects are the annual improvements to the water reclamation plant and sanitary sewer system which do not require bonding or loan financing to complete. The Non-Debt Funded Projects rate is calculated by dividing the estimated cost of the projects by each of the benefiting customer class's portion of billable wastewater flow. The billable flow of each benefiting customer class is as follows:

Benefiting Customer Class	Billable Flow (HCF)
City	372,443
Rochelle Foods	180,000
Creston	26,830
Total Billable Flow	579,273

The Non-Debt Funded Projects improvements are listed in the table below as well as the cost allocation and rate calculation for each customer class.

Non-Debt Funded Projects Rate Tabulation

System Improvement	Annual Cost	City		Rochelle Foods		Creston	
		Benefit	Rate/HCF	Benefit	Rate/HCF	Benefit	Rate/HCF
System 1 Sewer Replacement	\$ 75,000	✓	\$0.060	✓	\$0.292		
Sanitary Sewer Replacements	\$200,000	✓	\$0.537				
Anaerobic Lagoon Sludge Disposal ⁽¹⁾	\$ 24,000	✓	\$0.019	✓	\$0.093		
Replacement Items	\$ 47,500	✓	\$0.086	✓	\$0.086		
Vehicle and Equipment	\$ 59,450	✓	\$0.108	✓	\$0.108		
	\$405,950		\$0.810		\$0.579		

⁽¹⁾ City pays 30% and Rochelle Foods pays 70% of the anaerobic lagoon sludge disposal cost based on their apportioned usage of the anaerobic lagoon.

The current and recommended Non-Debt Funded Projects rates are summarized below.

Non-Debt Funded Projects Rate Schedule

User Class	Current Rate FY 2013/14	Recommended Rate FY 2014/15
City	\$0.54/HCF	\$0.81/HCF
Rochelle Foods	\$0.38/HCF	\$0.58/HCF
Creston	No Charge	No Charge

F. CAPITAL RECOVERY - DEBT SERVICE

The Capital Recovery rate is required for payment of principal and interest on all outstanding bonds and loans. The current water reclamation debt includes the 1999 Revenue Bond for the construction of the water reclamation plant, the 1999 IEPA Revolving Fund Loan for the construction of the Northwest sanitary sewer, and the 2008 IEPA Revolving Fund Loan for the construction of the Askvig subdivision sanitary sewer system.

The 1999 Revenue Bond for the construction of the water reclamation plant will be retired on May 1, 2014. The Capital Recovery budget for FY 2014/15 includes the principal and interest payments of the 1999 and 2008 IEPA Revolving Fund Loans as detailed in the table below.

Debt Service Expenses

	Recommended Budget FY 2014/15
Interest	\$ 46,605
IEPA Revolving Fund Loan Principal	\$237,669
Total Debt Service	\$284,274

The current and recommended Capital Recovery rates are summarized below.

Capital Recovery Rate Schedule

User Class	Current Rate FY 2013/14	Recommended Rate FY 2014/15
City	\$1.60/HCF	\$0.66/HCF
Askvig Subdivision Customers	\$1.60/HCF \$42.67/User/Month	\$0.66/HCF \$42.67/User/Month
Rochelle Foods	\$25,132/Month	No Charge
Creston	\$0.76/HCF	No Charge

The recommended Capital Recovery rates are adequate to repay the annual principal and interest of \$284,274 as calculated below.

Capital Recovery Rate Revenue

User Class	Recommended Rate	Billable Units	Total Revenue
City	\$0.66/HCF	372,443 HCF	\$245,812
Askvig Subdivision Customers	\$42.67/User/Month	79 Users x 12 Months	\$ 40,451
Rochelle Foods	No Charge		\$ 0
Creston	No Charge		\$ 0
Capital Recovery Revenue			\$286,263
Annual Budget			\$284,274
Net Surplus/(Loss)			\$ 1,989

The Askvig subdivision is located in a Special Service Area (SSA) which was established by the City when the subdivision was annexed into the City. Only the customers in the Askvig subdivision SSA are being billed an additional capital recovery rate of \$42.67/User/Month for repayment of the IEPA revolving fund loan for the construction of the sanitary sewer system in the Askvig subdivision.

G. COST IMPACT TO USERS

The cost impact to the customers will obviously vary based on their water usage and the organic strength of their wastewater. The tables below summarize the current water reclamation rates and monthly bill cost and the recommended water reclamation rate modifications and monthly bill cost a typical residential user, a small and large general service user, the Village of Creston and Rochelle Foods.

1. Residential User (Usage of 700 c.f./month)

	Current Rates		Recommended FY 2014/15 Rates	
	Rates	Monthly Bill	Rate	Monthly Bill
Fixed Charge	\$4.40/User/Month	\$ 4.40	\$8.05/User/Month	\$ 8.05
Basic User Rate	\$1.98/HCF	\$13.86	\$2.32/HCF	\$16.24
Equipment Replacement	\$0.15/HCF	\$ 1.05	\$0.15/HCF	\$ 1.05
Non-Debt Funded Projects	\$0.54/HCF	\$ 3.78	\$0.81/HCF	\$ 5.67
Capital Recovery	\$1.60/HCF	\$11.20	\$0.66/HCF	\$ 4.62
Total Monthly Bill		\$34.29		\$35.63
Percent Decrease				3.9%

2. Village of Creston (Usage of 223,583 c.f./month)

	Current Rate		Recommended FY 2014/15 Rates	
	Rates	Monthly Bill	Rates	Monthly Bill
Fixed Charge	\$80.10/User/Month	\$ 80.10	\$80.10/User/Month	\$ 80.10
Basic User Rate	\$1.66/HCF	\$3,711.76	\$1.92/HCF	\$4,293.12
IEPA Replacement	\$0.15/HCF	\$ 335.40	\$0.26/HCF	\$ 581.36
Non-Debt Funded Projects	No Charge	\$ 0.00	\$0.00/HCF	\$ 0.00
Capital Recovery	\$0.76/HCF	\$1,699.36	\$0.00/HCF	\$ 0.00
Total Monthly Bill		\$5,826.62		\$4,954.58
Percent Decrease				(15.0%)

3. Rochelle Foods (Usage of 1,500,000 c.f./month)

	Current Rate		Recommended FY 2014/15 Rates	
	Rates	Monthly Bill	Rates	Monthly Bill
Fixed Charge	\$80.10/User/Month	\$ 80.10	\$80.10/User/Month	\$ 80.10
Basic User Rate	\$1.78/HCF	\$26,700.00	\$2.44/HCF	\$36,600.00
IEPA Replacement	\$0.28/HCF	\$ 4,200.00	\$0.43/HCF	\$ 6,450.00
Non-Debt Funded Projects	\$0.38/HCF	\$ 5,700.00	\$0.58/HCF	\$ 8,700.00
Capital Recovery	\$25,132/Month	\$25,132.00	No Charge	\$ 0.00
Total Monthly Bill		\$61,812.10		\$51,830.10
Percent Decrease				(16.1%)

4. General Service (Usage of 3,500 c.f./month)

	Current Rates		Recommended FY 2014/15 Rates	
	Rates	Monthly Bill	Rate	Monthly Bill
Fixed Charge	\$4.40/User/Month	\$ 4.40	\$8.05/User/Month	\$ 8.05
Basic User Rate	\$1.98/HCF	\$ 69.30	\$2.32/HCF	\$ 81.20
Equipment Replacement	\$0.15/HCF	\$ 5.25	\$0.15/HCF	\$ 5.25
Non-Debt Funded Projects	\$0.54/HCF	\$ 18.90	\$0.81/HCF	\$ 28.35
Capital Recovery	\$1.60/HCF	\$ 56.00	\$0.66/HCF	\$ 23.10
Total Monthly Bill		\$153.85		\$145.95
Percent Decrease				(5.1%)

5. General Service With Sewer Flow Meter (Usage of 15,000 c.f./month)

	Current Rate		Recommended Rate	
	Rates	Monthly Bill	Rate	Monthly Bill
Fixed Charge	\$80.10/User/Month	\$ 80.10	\$80.10/User/Month	\$ 80.10
Basic User Charge	\$1.98/HCF	\$297.00	\$2.32/HCF	\$333.00
IEPA Replacement	\$0.15/HCF	\$ 22.50	\$0.15/HCF	\$ 22.50
Non-Debt Funded Projects	\$0.54/HCF	\$ 81.00	\$0.81/HCF	\$121.50
Capital Recovery	\$1.60/HCF	\$240.00	\$0.66/HCF	\$ 99.00
Total Monthly Bill		\$720.60		\$656.10
Percent Decrease				(9.0%)

CONCLUSIONS AND RECOMMENDATIONS

1. A detailed analysis of the Water Reclamation Division expenditures and revenues is included in Exhibit 'A'. A summary of the expenditures and revenues is detailed in the table below along with the recommended budget for FY 2014/15.

Rochelle Municipal Utilities
Water Reclamation Division
Past Expenditures and Revenues and Recommended Budget

	Fiscal Year			Recommended Budget
	FY 2010/11	FY 2011/12	FY 2012/13	FY 2014/15
Expenditures				
Fixed Charge Expenses	\$ 312,719	\$ 271,118	\$ 283,423	\$ 397,000
Basic User Expenses	\$1,250,370	\$1,329,550	\$1,363,904	\$1,524,100
Equipment Replacement Expenses	\$ 120,000	\$ 120,000	\$ 120,000	\$ 140,000
Non-Debt Funded Projects Expenses	\$ 161,705	\$1,111,259	\$ 411,647	\$ 405,950
Capital Recovery Expenses – Debt Service	\$ 973,363	\$ 980,109	\$ 949,623	\$ 284,274
Total Expenditures	\$2,818,157	\$3,812,036	\$3,128,597	\$2,751,324
Revenues				
Residential	\$ 995,190	\$ 994,667	\$1,014,442	\$1,065,600
Commercial	\$ 817,666	\$ 842,561	\$ 917,585	\$ 808,700
Industrial	\$ 877,858	\$ 842,257	\$ 803,977	\$ 622,000
Interdepartmental	\$ 4,174	\$ 3,832	\$ 3,921	\$ 0
Surcharges	\$ 112,397	\$ 118,497	\$ 154,606	\$ 130,000
Water Division Building Rental	\$ 0	\$ 0	\$ 0	\$ 48,000
Other Operating Revenues	\$ 89,216	\$ 39,967	\$ 55,465	\$ 50,000
Interest	\$ 15,286	\$ 13,146	\$ 11,574	\$ 10,000
Capital Contributions (Grants)	\$ 126,814	\$1,220,137	\$ 87,128	\$ 0
IEPA RFL Revenues For Askvig Subdivision Sewer	\$ 29,392	\$ 29,187	\$ 29,128	\$ 29,200
Total Revenue	\$3,067,993	\$3,944,251	\$3,077,826	\$2,763,500
Net Income/(Loss)	\$ 249,836	\$ 132,215	(\$ 50,771)	\$ 12,176

2. The Water Reclamation Division has added a GIS line item to the budget for the development of a Geographic Information System (GIS) for the water reclamation plant and sanitary sewer collection facilities. The recommended FY2104/15 budget includes \$25,000 for the development of the GIS system for the Water Reclamation Division. The development of the GIS system will be a multi-year program that once it's completed will require annual management and maintenance of the system.

3. The Equipment Replacement fund has a balance of \$1,786,592 as of March 10, 2014. The Water Reclamation Division is currently working on a project to replace the centrifuges. They are also planning to replace the blowers, both of which are costly but critical pieces of equipment at the water reclamation plant. The centrifuge project has an estimated cost of \$2,200,000.

The Equipment Replacement budget has been revised and updated to reflect the next 20 year life cycle cost of the water reclamation plant and lift station equipment. The Equipment Replacement budget has been increased from \$150,000 per year when the water reclamation plant was constructed to \$311,272 per year in FY 2014/15 as detailed in Exhibit 'B'. The current Equipment Replacement rate is generating only \$120,000 per year. The recommendation is to keep the current Equipment Replacement rate for Residential and General Service customers through FY 2017/18, and then increase the rate in FY 2018/19 when the 1999 IEPA Revolving Fund Loan is retired. The Industrial and Creston Equipment Replacement rate will be increased to \$0.43/HCF and \$0.26/HCF respectively.

4. The Non-Debt Funded Project budget has been increased since the last Water Reclamation Rate report to \$405,950 per year. The projects listed in the budget are important investments in the water reclamation plant and sanitary sewer system to improve aging and inefficient systems. The Non-Debt Funded Project budget includes two (2) projects to rehabilitate the System 1 sanitary sewer and anaerobic lagoon, which are critical facilities utilized by Rochelle Foods. These projects have been identified as important projects so the Water Reclamation Division can continue to provide reliable and efficient service and treatment of the Rochelle Foods wastewater.
5. The 1999 Revenue Bond for the water reclamation plant will be retired on May 1, 2014. The 1999 Revenue Bond has restricted accounts for Bond Reserve and Depreciation, Improvement & Extensions (D.I.E.). The Bond Reserve account has a balance of \$725,663 and the D.I.E. account has a balance of \$316,837. When the 1999 revenue bond for the WRP is retired, the funds in the Bond Reserve account for the 1999 revenue bond for the WRP and the D.I.E. account will be transferred to the IEPA replacement fund account for the replacement of equipment at the WRP. This will increase the balance in the IEPA replacement fund to \$2,829,092.
6. The Capital Recovery rate is recommended to be reduced in FY 2014/15 when the 1999 Revenue Bond for the water reclamation plant is retired. The current and recommended Capital Recovery rates are summarized in the table below.

Capital Recovery Rate Schedule

User Class	Current Rate FY 2013/14	Recommended Rate FY 2014/15
City	\$1.60/HCF	\$0.66/HCF
Askvig Subdivision Customers	\$1.60/HCF \$42.67/User/Month	\$0.66/HCF \$42.67/User/Month
Rochelle Foods	\$25,132/Month	No Charge
Creston	\$0.76/HCF	No Charge

7. The current and recommended Water Reclamation Division rates for the various customer classes are detailed in the tables below.

Residential, General Service and Light Industrial

	Current Rates	Recommended Rate FY 2010/11
Fixed Charge	\$4.40/User/Month	\$8.05/User/Month
Basic User Charge	\$1.98/HCF	\$2.32/HCF
IEPA Replacement Fund	\$0.15/HCF	\$0.15/HCF
Non-Debt Fund Charge	\$0.54/HCF	\$0.81/HCF
Capital Recovery	\$1.60/HCF	\$0.66/HCF
Total Usage Charge	\$4.27/HCF	\$3.94/HCF

Village of Creston

	Current Rates	Recommended Rates FY 2014/15
Fixed Charge	\$80.10/User/Month	\$80.10/User/Month
Basic User Charge	\$1.66/HCF	\$1.92/HCF
IEPA Replacement Fund	\$0.15/HCF	\$0.26/HCF
Non-Debt Fund Charge	No Charge	No Charge
Capital Recovery	\$0.76/HCF	No Charge
Total Usage Charge	\$2.57/HCF	\$2.18/HCF

Industrial MIC Category I (Rochelle Foods)

	Current Rate	Recommended Rates FY 2014/15
Fixed Charge	\$80.10/User/Month	\$80.10/User/Month
Basic User Charge	\$1.78/HCF	\$2.44/HCF
IEPA Replacement Fund	\$0.28/HCF	\$0.43/HCF
Non-Debt Fund Charge	\$0.38/HCF	\$0.58/HCF
Capital Recovery	\$25,132/Month	No Charge
Total Usage Charge	\$2.44/HCF	\$3.45/HCF

8. The cost impact to a typical residential user, the Village of Creston and Rochelle Foods is detailed below.

Residential User (7 HCF)

Current Monthly Bill	FY 2014/15
\$34.29	\$35.63
Dollar Increase	\$ 1.34
Percent Increase	3.9%

Village of Creston (2,236 HCF)

Current Monthly Bill	FY 2014/15
\$5,826.62	\$4,954.58
Dollar Decrease	\$ 872.04
Percent Decrease	(15.0%)

Rochelle Foods (19,275 HCF)

Current Monthly Bill	FY 2014/15
\$61,812.10	\$51,830.10
Dollar Decrease	\$ 998.20
Percent Decrease	(16.1%)