

# REPORT ON OPERATIONS FOR 2012

BLACK & VEATCH PROJECT NO. 178949

PREPARED FOR

Sewerage and Water Board of New Orleans

28 OCTOBER 2013



## **MISSION STATEMENT**

Our mission is to provide safe drinking water to everyone in New Orleans;  
To remove waste water for safe return to the environment;  
To drain away storm water;  
To provide water for fire protection;  
To provide information about products and services;  
And to do all of this continuously at a reasonable cost to the community

## **VISION STATEMENT**

Our vision is to have the trust and confidence of our customers  
for reliable and sustainable water services

## **OUR VALUES**

We will focus on our customer and stakeholders  
We will teach each customer and employee with dignity and respect  
We will value each employee, their work, and their commitment  
We will be trustful, trustworthy and transparent  
We will be knowledgeable and diligent in the performance of our duties  
We will use financial resources prudently  
We will be accountable for our performance  
We will continuously improve our performance  
We will ensure that the systems that provide our services remain viable for future generations  
We will remain on the job and will be prepared for storms and other risks



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## Introduction

### PURPOSE AND SCOPE

This report covers operations of the Sewerage and Water Board of New Orleans for the year ended December 31, 2012. The report presents findings of studies made in compliance with covenants of the 1997 and Supplemental Sewerage Revenue Bond Resolutions and the 1998 and Supplemental Water Revenue Bond Resolutions. The report includes recommendations designed to assist the Sewerage and Water Board of New Orleans and its staff in planning future operational policies. Subjects covered include the following:

1. Adherence to covenants of the Water Revenue Bond Resolutions and the Sewerage Revenue Bond Resolutions.
2. Ability to finance projected revenue requirements including proposed capital improvements.
3. Operations of the water, sewerage, and drainage systems.

### DEFINITIONS

In this report, “Sewerage and Water Board of New Orleans,” “Sewerage and Water Board,” and “Board” are used synonymously. “General Resolution” refers to either the 1997 and Supplemental Sewerage Revenue Bond Resolutions or the 1998 and Supplemental Water Revenue Bond Resolution.

“Water Department” is the Sewerage and Water Board organization providing domestic water service to residents of the City of New Orleans. “Sewerage Department” is the organization providing wastewater service, and “Drainage Department” is the organization providing stormwater conveyance and pumping. The Board organization includes some groups who participate in two or more operational activities.

### HISTORY

The Sewerage and Water Board of New Orleans was created by Act No. 6 of the Louisiana Legislature in 1899 as a special board independent of City government to develop, operate, and maintain the water and sewerage systems in the City of New Orleans. In 1903, the Louisiana Legislature gave control of the City’s drainage system to the Board. Since that time, growth of the service area and increased service requirements have expanded the magnitude and complexity of operations.

Available sources of funds prior to 1958 for financing utility operations and improvements included ad valorem taxes, contributions-in-aid-of-construction, general obligation bonds of the City of New Orleans, and water revenues.

In 1974, the American Institute of Certified Public Accountants expanded their reporting guidelines for government operated utilities to include depreciation accounting. As a result, the Board initiated a preliminary system of accounting recognizing estimated historical investment as a basis for annual depreciation accruals. Implementation of the detailed plant accounting and record keeping required was started in 1979.

The Board’s computer based budget code system provides a method of identification of operation and maintenance expenses for the Water, Sewerage, and Drainage Departments. Allocation of

expenses is based upon actual or direct expenses of each Department together with an apportionment of joint expenses. The procedures permit utility plant accounting with annual costs charged to the appropriate property account instead of being charged to current Department income. In accounting for debt service, interest is charged to current year's income and principal and debt service reserve payments are charged to the respective account balances. Historical operating costs, discussed later in this report, reflect the functional classifications.

**Water Department**

Act No. 541 increased the Board's ability to finance needed water system improvements by authorizing the Board to issue water revenue bonds. Subsequently, water revenue bonds in the amounts of \$6,200,000 in 1960, \$1,500,000 in 1961, \$2,500,000 in 1964, \$4,000,000 in 1971, \$6,000,000 in 1978, \$17,000,000 in 1980, \$3,000,000 in 1981, and \$5,000,000 in 1982 were issued. All water system revenue bonds outstanding in 1986 were defeased by the \$31,350,000 Series 1986 Water Revenue Refunding bond issue. Additional revenue bonds in the amount of \$16,000,000 were issued in 1998 and \$34,000,000 were issued in 2002. As of December 31, 2012, \$30,090,000 remains outstanding on the 1998 and 2002 issues, as shown in the table below.

**Outstanding Water Utility Debt Issues**

DESCRIPTION	ISSUE AMOUNT	AMOUNT OUTSTANDING <sup>a</sup>
Series 1998	\$16,000,000	\$6,535,000
Series 2002	\$34,000,000	\$23,555,000
<b>Total</b>	<b>\$50,000,000</b>	<b>\$30,090,000</b>

<sup>a</sup> As of December 31, 2012

In February 2010, the Department of Health and Hospitals (DHH) provided a \$3,400,000 loan to the Board with a \$1,000,000 principal forgiveness. As of December 31, 2012, \$2,225,000 remains outstanding.

Act No. 566 reauthorized the Board to fix and administer a schedule of water rates to meet the operational and capital costs of the public water system, to issue water revenue bonds, and discontinue the free water allowance for sewerage purposes effective November 9, 1966.

**Sewerage Department**

Act No. 567 gave the Board authority to set and collect sewerage service charges, to be used for operational and capital costs of the Sewerage Department, and to issue sewerage service revenue bonds. This Act permitted the Board, for the first time in its history, to charge users of the sewerage system directly for related costs. Under the authority of Act No. 567, sewerage service charges were implemented May 1, 1967; and subsequently, sewerage service revenue bonds totaling \$33,000,000 were sold in 1968, 1976, 1982 (2 issues), and 1983. All sewerage system revenue bonds outstanding in 1986 were defeased by the \$21,280,000 Series 1986 Sewerage Service Revenue bonds. These bonds were fully retired in 1994. Sewerage system revenue bonds in the amount of \$30,000,000 were issued in 1997; \$25,000,000 in 1998; \$47,100,000 in 2000 (two issues); \$32,720,000 in 2001; \$57,000,000 in 2002; and \$5,500,000 in 2003. \$33,000,000 in revenue bonds, \$25,200,000 in Bond Anticipation Notes (BANs), and \$111,800,000 in Refunding BANs were issued in 2004. The 2004

BANs were defeased by the \$137,000,000 Refunding BANs Series 2005A. A portion of the 2005 BANs was refinanced with the Refunding BANs Series 2006. The remaining balance on the 2005 BANs were paid from funds on hand. The Refunding BANs Series 2006 were due July 15, 2009 and were paid in full by the issuance of Refunding Bonds Series 2009 in the amount of \$23,375,000.

In November 2011, the Board and Louisiana Department of Environmental Quality (LADEQ) entered into a loan agreement whereby \$9,000,000 of proceeds from the Revolving Loan Fund were borrowed through the issuance of Sewerage Service Subordinate Revenue Bonds, Series 2011. Debt service payments assume a 20-year term with a 0.45 percent interest rate plus an administrative fee of 0.5 percent. The first principal payment is due November 1, 2013. The Board began drawing down the funds during the first quarter of 2012 and as of December 31, 2012, had received a total of \$7,471,505 in disbursements. Outstanding principal on revenue bonds totaled \$156,036,000 as of December 31, 2012 and is summarized in the table below.

### Outstanding Sewerage Utility Debt Issues

DESCRIPTION	ISSUE AMOUNT	AMOUNT OUTSTANDING <sup>a</sup>
Series 1997	\$30,000,000	\$10,875,000
Series 1998	\$25,000,000	\$10,215,000
Series 2000A	\$26,800,000	\$14,505,000
Series 2000B	\$20,300,000	\$10,995,000
Series 2001	\$37,720,000	\$18,370,000
Series 2002	\$57,000,000	\$35,950,000
Series 2003	\$5,500,000	\$3,530,000
Series 2004	\$33,000,000	\$22,885,000
Series 2009	\$23,375,000	\$21,260,000
Series 2011 <sup>b</sup>	\$9,000,000	\$7,451,000
<b>Total</b>	<b>\$267,695,000</b>	<b>\$156,036,000</b>

<sup>a</sup> As of December 31, 2012

<sup>b</sup> The LADEQ has committed \$9,000,000, the actual amount outstanding will be based on the project costs incurred.

### Drainage Department

In 1966 three constitutional amendments, Acts No. 565, 566, and 567 were enacted by the Louisiana Legislature and subsequently approved by the State's voters. Act No. 565 authorized the City of New Orleans to levy a three-mill ad valorem tax, effective January 1, 1967, to be used solely for operations and capital costs of the drainage system. Provision for issuance of bonds repayable solely from the three-mill tax was also included in the Act. In 1967, the Board issued \$15,000,000 of three-mill tax bonds. These bonds were fully retired in 1992.

Under the Louisiana State Constitution, all assessments beginning in 1978 were equalized, with residential property assessed at 10 percent of its market value and commercial and personal property assessed at 15 percent of market value. The constitution also provides that no tax revenues shall be lost by reassessments; thus, it has been necessary to revise the millage rates in effect at

various times. If reassessment results in a lower tax base, the millage rate may be adjusted upward. If a larger tax base results, the millage rates must be rolled back. However, by state law, the City Council, upon request and after a public hearing, may increase the millage rates to the prior year's level. The three-mill tax rate, 6.01 mills since 1988, was increased to 6.40 mills in 1992 due to reassessment, and remained at that level through 2007. In 2007, it was reduced to 4.544 and in 2010 it was increased to the current rate of 4.66 mills.

Passage of a referendum in April 1977, authorized the collection of an additional six-mill, ad valorem tax for drainage purposes, effective January 1, 1978. The six-mill ad valorem tax was increased to 6.09 mills in 1988 and to 6.48 mills in 1992 due to reassessment and remained at that level through 2007. In 2007, it was reduced to 4.60 and in 2010 it was increased to the current rate of 4.71 mills. In 1978, the State Legislature authorized a debt limit of \$18,000,000 as sought by the Board of Liquidation, City Debt. That debt limit was eliminated by Legislative action in 2003. The Board issued \$18,000,000 in Series A, six-mill tax bond in November 1978. During 1994 the Board issued Drainage System Refunding Bonds, Series 1994, for the purpose of refunding the six-mill 1978 bonds. The 1994 bonds were considered to be an obligation of the six-mill ad valorem tax revenue and have been repaid.

In 1980, a constitutional amendment, Act No. 844, authorized an increase in the exemption of each homestead from ad valorem taxes from \$5,000 to \$7,500, and provided for periodic reassessment.

In 1981, a nine-mill ad valorem tax was approved and became effective January 1, 1982. The purpose of the nine-mill tax levy is to provide funds for the operation, maintenance, and construction of the drainage system. State law set the authorized debt limit for nine-mill bonds at \$68,000,000. That debt limit was eliminated by Legislative action in 2003. The Board sold nine-mill bond issues of \$22,000,000 in 1982 and \$30,000,000 in 1983. In 1986, \$12,525,000 Drainage System Bonds Series 1986A and \$15,755,000 Drainage System Bonds Series 1986B were authorized and sold for the purpose of refunding a portion the 1982 nine-mill bonds and a portion of the 1983 nine-mill bonds, respectively. In 1992 the Drainage System Bonds, Series 1982, was fully refunded, and beginning in 1993, debt service payments on the Drainage System Bonds, Series 1986A was paid from nine-mill tax revenue. In 1993, proceeds from the Drainage System Bonds, Series 1986B fully refunded the Drainage System Bonds, issue of 1983, and the debt service on these bonds became the obligation of nine-mill tax revenue. All Series 1986A and Series 1986B bonds have been retired. In 1998 nine-mill bonds in the amount of \$10,000,000 were issued and as of December 31, 2012, the outstanding balance was \$4,040,000. Additional nine-mill bonds in the amount of \$20,000,000 were issued in 2002, bringing the total of six-mill and nine-mill Drainage System Bonds outstanding as of December 31, 2012 to \$17,630,000 as shown in the table on the following page.

### Outstanding Drainage Utility Debt Issues

DESCRIPTION	ISSUE AMOUNT	AMOUNT OUTSTANDING <sup>a</sup>
Series 1998	\$10,000,000	\$4,040,000
Series 2002	\$20,000,000	\$13,590,000
<b>Total</b>	<b>\$30,000,000</b>	<b>\$17,630,000</b>

<sup>a</sup> As of December 31, 2012

In 1988, reassessment caused the nine-mill ad valorem tax to be increased to 9.13 mills, and it was increased due to reassessment again in 1992 to 9.71 mills, and remained at this level through 2007. In 2007, it was reduced to 6.89 and in 2010 it was increased to the current rate of 7.06 mills.

Collection of the three-mill ad valorem tax levy is authorized until the year 2017; six-mill tax until 2028; and nine-mill tax until 2032.

#### General

During January 2006, the Board entered into a long-term agreement with the Federal Emergency Management Agency (FEMA) under the Community Disaster Loan Act of 2005. The Board has drawn down \$61,956,747 of the funds available. In December 2010, the Board was granted a partial forgiveness in the amount of \$36,790,000 of principal and \$4,648,410 of accrued interest, leaving a balance of \$25,166,747 in principal. Payments are to begin in August 2016 with a 5-year term and a 2.93 percent interest rate.

In July of 2006 the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247, which was the total amount available to the Board. Of that amount, \$31,500,000 was used to make a partial payment on the Sewerage Service Refunding BANs Series 2005A that matured on July 26, 2006. The remainder was used to make debt service payments on the Drainage System special tax bonds, the Sewerage Service revenue bonds, and the Water revenue bonds that were due on December 1, 2006; June 1, 2007; December 1, 2007; and June 1, 2008. Principal payments on the bonds began in July 2012.

The Board is currently receiving funds from the U.S. Army Corps of Engineers (COE) sponsored and congressionally authorized Southeast Louisiana Urban Flood Control (SELA) Project. This funding will allow additional construction projects which were identified in the 1970's, but which have not been completed because of funding limitations. The identified projects are to be funded either 10 percent from federal funds or 65 percent from federal funds and 35 percent from local funds. The payback period for the local share is 30 years and is anticipated to begin in 2013.

The Board provides water and sewer for public services to the City of New Orleans and its public institutions as mandated by state law in accordance with R.S. 33:4096 and R.S. 33:4121, respectively. During 2012, the Board provided 672,837,900 gallons of water for public services to agencies of the City of New Orleans. The value of this water, at current rates, is \$2,157,018. The value of the sewerage charges is \$2,799,755.

The three revenue-generating public agencies - the New Orleans Museum of Art, City Park, and Audubon Park - continued to receive water for public services under "caps", or maximum annual limits, established by the Legislature in 1982. The Museum of Art used 695,800 gallons or 1,858,000 below its annual "cap" of 2,553,800 gallons. City Park used 34,896,200 gallons or 200,427,200 below its annual "cap" of 235,323,400 gallons. Audubon Park used 111,834,700 gallons or 128,165,300 gallons below its annual "cap" of 240,000,000 gallons.

The Sewerage and Water Board and the Orleans Parish School Board (OPSB) reached an agreement effective July 1, 1992, whereby the schools would be charged for any water exceeding an allowance of six gallons per day, for 365 days per year, for each student enrolled and any other person regularly assigned to that campus or facility. The allowance was lowered to four gallons per day effective July 1, 1993.

## **SOURCES OF FINANCIAL DATA**

Financial information included in this report is obtained from audited financial reports provided by the Board.

## **SUMMARY OF FINDINGS**

This section contains a summary of the financial operations of the Water, Sewerage, and Drainage Departments for the year 2012. Projections of future operations are also presented as a basis for determining the adequacy of present revenue sources to finance projected operating expenses and proposed capital program costs of the respective departments.

The statistical data maintained by the Board includes the compilation of detailed information on water sales and revenues. Information provided for 2012 includes a summary of the number of bills issued, billed volume, and revenues by customer class for both the Water and Sewerage Departments.

Under the current budget code system, costs are identified by general functional categories. Supplemental accounts are used for internal purposes to identify the cost in each functional category that is incurred for personal services, services and utilities, material and supplies, replacement and maintenance, and other special charges.

### **Water Department**

#### **Water Revenue Bond Resolution Requirements**

Sewerage and Water Board financial operations for 2012 have complied with the requirements set forth in the 1998 and Supplemental Water Revenue Bond Resolutions.

#### **Summary of 2012 Operations**

Based upon a tabulation of water bills rendered during the year, the Water Department provided water service to an average of 121,435 regular billed customers and 955 governmental accounts, the latter of which are served without charge. According to the December 31, 2012 Comprehensive Annual Financial Report, of the 54,722.8 million gallons of water pumped by the Department during the year, 13,802.0 million gallons were sold, 672.8 million gallons were metered to customers without charge, treatment plant process water totaled 622.4 million gallons, and unmetered uses accounted for the remaining 39,625.6 million gallons. Unmetered water uses include fire protection;



flushing streets, sewers, and drains; chlorinating and flushing new water mains; construction of streets; Sewerage and Water Board plant uses; and unaccounted for system losses.

The total revenue from water sales, delinquent fees, interest income and other income decreased from \$76,398,912 in 2011 to \$71,668,007 in 2012. In 2012, the Board received \$7,617,063 in operating and maintenance grants from FEMA for operating expenses incurred from water repairs performed by Board crews. This amount is included in other income. Operation and maintenance expenses (excluding claims paid) decreased from \$64,556,538 in 2011 to \$61,761,783 in 2012. After adding claims of \$226,441 and debt service payments of \$3,917,393, a balance of \$5,762,390 was available for capital related expenditures in 2012, unadjusted for depreciation.

### **Ability to Finance Future Operations and Proposed Improvements**

A summary of projected financial operations of the Water Department for the period 2013 through 2017 is shown in Table 11 of the report. Revenues shown on Line 1 of Table 11 are based on rates that became effective January 1, 2013. Revenue from future annual water system revenue increases of 10 percent effective January 1, 2014 through January 1, 2017 are shown on Line 2 of Table 11.

Additional long term debt financing of \$60,000,000 in 2013, \$21,000,000 in 2014, \$46,000,000 in 2015, \$24,500,000 in 2016, and \$7,000,000 in 2017 is indicated to fund the proposed capital improvement program.

It is anticipated that the capital projects in 2013 and 2014 will exceed the amount of funding available. It is anticipated that current revenue sources will not be adequate to readily finance both projected capital program requirements and estimated future operation expenses of the Water Department during the 2013-2017 study period examined herein. It is recommended that the Board defer capital projects in 2013 and 2014 until an adequate funding source has been identified.

## **Sewerage Department**

### **Sewerage Service Revenue Bond Resolution Requirements**

Sewerage and Water Board financial operations for 2012 have complied with the requirements set forth in the 1997 and Supplemental Sewer Revenue Bond Resolutions.

### **Summary of 2012 Operations**

The total revenue from sewer charges, delinquent fees, interest income and other income decreased from \$74,175,294 in 2011 to \$72,401,443 in 2012. Operation and maintenance expenses (excluding claims paid) increased from \$43,147,792 in 2011 to \$44,293,232 in 2012. After adding claims of \$577,065 and debt service payments of \$20,262,688, a balance of \$7,268,458 was available for capital related expenditures in 2012, unadjusted for depreciation.

### **Ability to Finance Future Operations and Proposed Improvements**

A summary of projected financial operations of the Sewerage Department for the period 2013 through 2017 is shown in Table 21 of the report. Revenues shown on Line 1 of Table 21 are based on rates that became effective January 1, 2013. Revenue from future annual wastewater system revenue increases of 10 percent effective January 1, 2014 through January 1, 2017 are shown on Line 2 of Table 11. Additional long term debt financing of \$22,000,000 in 2013, \$23,000,000 in 2014,

\$39,000,000 in 2015, and \$6,000,000 in 2016 is indicated to fund the proposed capital improvement program.

It is anticipated that current revenue sources will be adequate to readily finance both projected capital program requirements and estimated future operation expenses of the Sewerage Department during the 2013-2017 study period examined herein.

## Drainage Department

### Summary of 2012 Operations

Total revenues received from all sources including interest income totaled \$45,275,067 in 2012, an increase of approximately 12 percent from \$40,468,244 reported for the same sources in 2011. Total operation and maintenance expenses decreased about 0.8 percent from \$32,080,419 in 2011 to \$31,831,734 in 2012. After adding claims reflecting a credit of \$672,802 and debt service payments of \$2,206,048, a balance of \$11,910,087 was available for capital related expenditures in 2012.

### Ability to Finance Future Operations and Proposed Improvements

An analysis of financial operations projected for the Drainage Department for the period 2013 through 2017 is summarized in Table 30 of the report. Revenue from the three-mill, six-mill, and nine-mill ad valorem taxes may be used for operating expenses, debt service, and capital expenditures.

The analysis indicates that current revenue sources are not adequate to meet operation and maintenance expenses and total debt service on the existing 1998 and 2002 bond issues for each year of the study period. As indicated in the *Financial Plan and Rate Study 2011-2020* additional operating revenue is needed to help fund the capital program. The alternative source of operating revenue is shown on Line 6 of Table 30.

Additional long term debt financing of \$257,000,000 in 2013, \$127,000,000 in 2014, \$11,000,000 in 2015, and \$86,000,000 in 2016 is indicated to fund the proposed capital improvement program.

It is anticipated that current revenue sources will not be adequate to readily finance both projected capital program requirements as currently scheduled and estimated future operation expenses of the Drainage Department during the 2013-2017 study period examined herein and that an additional source of operating revenue will need to be identified.

### Other Findings

The Board operates a power plant at the Carrollton Water Purification Plant which provides power for the water purification process as well backup power in the event that commercial power fails or becomes unavailable. The Board's analysis of power purchased and produced is shown in the supplemental section of the 2010 Comprehensive Annual Financial Report. In 2012, approximately 63.9 million kilowatt hour (kWh) of power was purchased and 44.8 million kWh of power was generated.

On a unit cost basis, the average cost of purchased power has decreased over the past five years from about 11.3¢ per kWh in 2008 to about 9.3¢ per kWh in 2012. During the same period, the Board's unit

cost for generated power has decreased from about 39.2¢ per kWh to about 20.5¢ per kWh. The cost of Board generated power is almost 2.2 times higher than that of purchased power.

In conducting our analyses and in forming an opinion of the projection of future operations summarized in this report, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized by Black & Veatch in performing the analysis follows generally accepted practices for such projections. Such assumptions and methodologies are summarized in this report and are reasonable and appropriate for the purpose for which they are used. While Black & Veatch believes the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur.

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## Facilities Evaluation - Operation, Maintenance, and Reconstruction

This evaluation summarizes the findings of the onsite assessments of the Sewerage and Water Board of New Orleans (Board) facilities conducted by Black & Veatch (Black & Veatch) from February 25 to March 1, 2013. Site visits were conducted at the water and wastewater treatment plants, Carrollton power plant facilities, and Central Yard facilities to evaluate the condition and operational capabilities of these facilities. In addition, the sewer and drainage pump stations were inspected by a representative of Julien Engineering to evaluate the condition of those facilities. Interviews were conducted with management and supervisory level Board personnel during the site visit to assess the current operations statuses of the various facilities.

### INTRODUCTION

The Operations Division of the Board is comprised of four departments: (1) Water Purification, (2) Sewage Treatment, (3) Water Pumping and Power, and (4) Drainage and Sewage Pumping. The Board operates the Carrollton and Algiers Water Purification Plants (WPPs), which purify raw water from the Mississippi River and supply potable water to New Orleans residents. The Carrollton plant currently purifies approximately 138 million gallons per day (mgd) of water for the East Bank of Orleans Parish. The Algiers plant, which serves the predominantly residential West Bank portion of the parish, purifies roughly 11 mgd of water. The treated water from the two plants is pumped through approximately 1,610 miles of mains to the service connections within the City, as well as to several customers in adjacent parishes.

The collection system includes several miles of lateral sewers, trunk sewers, and 84 electrically operated pump stations. Raw sewage is conveyed to the two treatment plants through a force main system. Sewage Pumping Stations (SPSs) A and D on the East Bank and SPS C on the West Bank are attended stations. SPS A houses a supervisory control and data acquisition (SCADA) system which monitors operation of all other sewage stations.

The Board also owns two sewage treatment plants, one on the East Bank and one on the West Bank. The East Bank Sewage Treatment Plant has a treatment capacity of 122 mgd (dry weather), and treats sewage from the East Bank community. The West Bank Sewage Treatment Plant has a treatment capacity of 20 mgd (dry weather) and serves the West Bank community of New Orleans, as well as a few customers in Plaquemine Parish. Both plants were built or expanded in the 1970s, and have been upgraded or expanded to increase reliability and meet the growing population demands within the community. The plants are currently operated and maintained by the contract operator, Veolia Water.

In addition, the Board is responsible for operating and maintaining the 24 major drainage pumping stations in New Orleans. The majority of those stations are manned 24 hours per day, 7 days per week. Each station is equipped with multiple pumps which are activated manually in response to increasing water levels. Personnel monitor these pumps and the numerous miles of drainage canals on a routine basis to ensure proper drainage of the area.

The 25 cycle power plant operated by the Board provides power for portions of the WPP and approximately 60 percent of the drainage pumps. Two large vertical sewage pumping units at Station

are also run on 25 cycle power. The following sections summarize key issues within each operation department of the Board.

## STAFFING ISSUES

Adequate staffing continues to be an issue for the Board in some departments. Additional maintenance is required for the Board facilities as equipment ages and more equipment is added at the facilities. Staffing levels have decreased as the system has aged and expanded within the Board owned facilities. Vacancies still exist in several departments, especially those departments requiring highly educated and skilled personnel. These shortages are reflected within the more technical disciplines such as engineering, mechanical maintenance, electrical maintenance, plant maintenance, welding and fabrication, and operations.

Following Hurricane Katrina, the Board suspended the Domicile Policy, which required Board employees to live in the City of New Orleans. This action allows personnel hired by the Board to live outside city limits, thus providing employees with more options for housing. The City Council reinstated the residency requirements as of January 1, 2013. This reinstated requirement has slowed the hiring of individuals with an interest in working for the Board but live outside City limits. Departments within the Board continue to actively recruit from local college campuses, career job fairs, and trade schools to fill vacancies.

In addition to those highly skilled positions, a significant portion of the Board's leadership will retire within the next 5 years. For those leadership positions facing retirement, very few potential successors have been identified to take over those positions.

All Divisions have staffing issues related to being inadequately staffed based on the current needs of the Board. The table below summarizes the number of staff on the payroll for each division and the percentage of staff eligible for retirement within the next 5 years. These conditions demonstrate the need for an effective succession action plan for the division heads and supervisors.

DIVISION	EMPLOYEES ON PAYROLL	ELIGIBLE FOR RETIREMENT	% ELIGIBLE FOR RETIREMENT
Water Purification Plants	59	28	47.5
Water Quality Laboratory at Carrollton Plant	11	3	27.3
Water Pumping and Power	79	30	38.0
Sewage Treatment Plants	1	1	100.0
Sewage and Drainage Pumping Stations	95	42	44.2
Facility Maintenance	65	30	46.2
Engineering	40	24	60.0
Networks	264	92	34.8
Support Services	75	45	60.0
Environmental Affairs	11	8	72.7
<b>Total</b>	<b>600</b>	<b>303</b>	<b>43.3</b>

## WATER PURIFICATION PLANTS

The WPP Superintendent accompanied the Black & Veatch representative on the facility tours of the Carrollton and Algiers WPPs. The Carrollton and Algiers WPPs are currently operational and producing water that meets Federal Drinking Water Standards. Treatment systems at both plants are functioning well, and continue to produce potable water for the East and West Banks.

The staffing levels at the Carrollton and Algiers WPPs have been able to consistently produce finished water that both complies with regulations and meets the needs of the service population. However, the Board is facing the industry-wide problem of an aging workforce; there is an immediate need to hire and train personnel for the future sustainability of plant operations. The Board is in the process of hiring utility service workers to begin addressing those long-term needs.

### Carrollton Water Purification Plant

The Carrollton WPP, which has a design capacity of 232 mgd, is currently treating approximately 140 mgd of water for the East Bank of Orleans Parish. The water treatment processes at the plant consist of flocculation with a polymer and ferric sulfate, followed by pH adjustment with lime. The flocculated particles are allowed to settle in two sedimentation basins; traveling mechanical rakes remove the settled from the sedimentation basins for discharge to the Mississippi River.

Chlorine is used to disinfect the clarified water. Anhydrous ammonia is then added to aid in the formation of chloramines for residual disinfection. Additional settling time and disinfection contact time is achieved in the secondary settling basins. The clarified water is also treated with sodium hexametaphosphate for calcium sequestration and hydrofluorosilicic acid for fluoride addition. At present, the Board is feeding all chemicals at appropriate dosages and maintaining adequate chemical storage at each site.



**G4 Sedimentation Basin under Repair**



**Filters at Carrollton WPP**

Figure 1 Carrollton Water Purification Plant

Filtration is the final step in the treatment process, where the water is filtered through rapid sand filters. Finished water from the plant is then pumped to the community through the distribution network.



Due to leaks in the water distribution system, the Carrollton plant is currently treating approximately 140 mgd of water in spite of serving only 85 percent of the pre-Katrina population. Leaks in the distribution network are a source of persistent problems. The water delivery pressure has been consistent throughout the last year at 70 psi.

Improvements completed at the Carrollton WPP during 2012 are listed below:

- G4 sedimentation basin has been removed from service, and rehabilitation of motors, flocculators, and the sedimentation basin has commenced. G4 is scheduled to be fully rehabilitated by the end of 2013.
- A new storage and feed facility for sodium hypochlorite has been commissioned, and is currently providing chemical for disinfection for the plant.
- Katrina related damage repairs to the Carrollton Chemical Building and filter galleries have been completed.

Maintenance and/or improvement projects the Board has planned for existing facilities include the following:

- Investigation and mitigation of a hydraulic leak between Sedimentation Basin L4 and Chlorine Contact Basin C5.
- A SCADA system has been installed at the plant to control and monitor chemical feed and raw water pumping. The project was completed in March 2013.
- Resumption of the filter rehabilitation program is needed. Valves, actuators, corroded piping supports, and leaking pipes associated with the filters need to be repaired or replaced. In addition, the media within the filters has reached the end of its service life and requires replacement. These activities are being hampered due to limited funds.
- The recycle basin pumps need to be replaced. One of the four pumps is currently inoperable, and the other three pumps are nearing the end of their service life. The design for the pump replacement is complete, and the project is awaiting funds prior to sending the project to bid.
- Completion of the design for a new 30 to 36 inch sludge discharge line. This new line will provide for much needed capacity and redundancy improvements for the Carrollton Plant. Construction is delayed due to limited funds.

### Algiers Water Purification Plant

The Algiers plant has a design capacity of 40 mgd. The treatment process at the plant is similar to that of the Carrollton facility, which utilizes the same chemicals with a slightly modified application scheme in the upflow clarifiers. At present, the plant is treating approximately 11 mgd of water and is serving the predominantly residential West Bank portion of the Parish.

The facility has partially commissioned a new ferric storage and feed system for flocculation at the WTP. This equipment, along with the existing temporary ferric storage and feed equipment, is supporting the needs of the plant, with the goal of complete transition to the new facility by the end of 2013. Other improvements needed or ongoing at the plant include the following:



- The sodium hypochlorite generation system was currently not functioning due to equipment issues at the time of inspection. The manufacturer was contacted and the system is now operational and supporting the needs of the plant.
- The SCADA system is out of service, and its absence is impacting plant monitoring capabilities. Planned improvements to this system are on hold due to insufficient funding.
- One of the finished water tanks has been cleaned, disinfected, and placed back in service. The cleaning of the tank did not eliminate nitrification in the tank. One cause for nitrification in the tanks can be insufficient mixing within the finished water tanks. A new mixer was purchased and installed within one of the water storage tanks. However, this new mixer has not resolved the current nitrification issues.
- EIMCO Clarifier No. 1 needs to be refurbished. Clarifier components to be fixed include sludge trough, valves, and steel structure. EIMCO Clarifier No. 2 has been repaired and serves as a standby unit.
- The raw water pumping and piping systems need to be improved to provide redundancy to the intake system.
- Improvements to the fluorosilicic acid storage and feed system will be completed by the end of 2013. These improvements include new metering pumps and accessories, and a State mandated day storage tank.
- All ammonia feed systems have been replaced and are operational.

## **WATER QUALITY LABORATORY AT THE CARROLLTON PLANT**

The water quality laboratory conducts daily analyses of river water quality and purified water at the Carrollton WPP. Water samples from the distribution network are also analyzed at the laboratory facility. The lab continues to meet the State/Federal mandated analytical requirements of the water plants, and is certified by the Louisiana Department of Health and Hospitals for analysis of coliform bacteria.

In addition to coliform analysis, the lab collects samples for protozoan analysis. Other regular analyses include hardness, turbidity, fluoride, ammonia, pH, alkalinity, total organic carbon (TOC), dissolved organic carbon (DOC), phosphorus, corrosion monitoring, and chlorine residual at different stages of treatment. The solids are analyzed for total suspended solids (TSS) and total dissolved solids concentrations. River water and finished water samples are analyzed for volatile organic compounds.

The laboratory continues to maintain its involvement in the Early Warning Organics Contamination Detection System (EWOCDS) run by the State Department of Environmental Quality (DEQ); however, several upstream stations have proved unreliable. The EWOCDS program has also been underfunded by the State of Louisiana, which has caused a reduction in sampling and analysis.

Monitoring stations connected by telecommunications notify DEQ if any of the 60 EPA listed pollutants are detected in the river water samples. The DEQ disseminates the information to the program participants, allowing an early warning of possible problems. The DEQ maintains EWOCDS equipment at all participating locations; the program participants provide the manpower to collect and analyze the samples.

The laboratory is currently adequately staffed with one supervisor, one microbiologist, four chemists, and four technicians. Much of the lab instrumentation and equipment is reaching or has reached the end of its service life and is in need of replacement. Analytical instruments and equipment, such as a new gas chromatograph/mass spectrometer (GC/MS), autoclaves for the microbiology lab, and fume hoods in the chemistry lab are needed to perform other analysis. Currently, the lab staff is working toward certification of TOC analysis in order for TOC analysis to be performed at the Board facility.

## **WATER PUMPING AND POWER**

The primary function of the Water Pumping and Power Department is steam production and the generation of 25 hertz power, as well as the provision of potable water to the City of New Orleans. The facilities at the Carrollton power plant include three steam turbines and one gas turbine for a total theoretical capacity of 61 megawatts (MW). The steam required for the turbines is generated in the six boilers at a total capacity of 650,000 pounds of steam per hour. In addition to the 25 Hz turbine, Turbine No. 6 produces 15 MWs of 60 Hz power.

The generating station at the Algiers facility is capable of generating 60 cycle power using diesel generators. The power generation facility can generate enough power to support operations at the Algiers plant. This station is also capable of performing a frequency change from 25 Hz power supplied from the Carrollton power plant to 60 Hz power.

The current capacity of the Carrollton power plant is presently 40 MW, which is less than the 61 MW design capacity. Turbine No. 4 is currently out of service and being repaired and is scheduled to be back in service by 2014. Boiler No. 6 and its associated pumps are currently being rehabbed and should be back in service by June 2013.

One major improvement at the Carrollton power plant includes the installation of a new 200 psi high pressure natural gas line to supply fuel for the new 15 MW 60 cycle, dual fuel generator turbine package (Turbine No. 6), and the existing Turbine No. 5. Entergy, Inc. completed installation of the new natural gas line in 2010, and is currently procuring supplies of natural gas to feed the new generator. The Army Corps of Engineers (Corps) is installing a new 15 MW, 60 Hz generator facility to supplement the current commercial power available from Entergy in order to provide power redundancy and continued service in the event of a commercial power loss due to storms, hurricanes, etc. The generator will serve the majority of the plant and raw water intake stations, and provide additional drainage station capacity. Construction is currently finished and awaiting final approvals prior to the Board personnel taking over the facility.



**Steam Driven Water Distribution Pump A Turbine 4 Rehabilitation**

Figure 2 Power Plant

Two steam-driven distribution pumps are located at the power plant. Both pumps (A and B) will be rehabilitated. Pump A will be completed by August 2013, and Pump B will be completed in 2014. The Claiborne Pumping Station, consisting of four water distribution pumps (two 60 Hz drive and two 25 Hz drive), and Panola Station, consisting of two pumping units (one with a 25 or 60 Hz motor, and the other 25 Hz motor), are typically adequate for pumping finished water to the distribution network. The 25 Hz pump at Panola Station is currently being converted to operate on both 25 Hz and 60 Hz power for more redundancy in the pumping operation. Pump No. 4 at the Claiborne Station is currently out of service. The check valve for pump No. 4 was repaired and installed in March 2013.

The Board has begun investigating the effects of water hammer on the distribution system. The water hammer program will provide for the replacement of pumps at the Panola and Claiborne pumping stations. In addition, two low lift pumps in the power plant would be replaced under the hazard mitigation funding.

Storm-proofing projects for critical Board facilities, including the power buildings by the Corps, are currently under construction. Improvements for the power buildings include reinforcing the wall, roofing, doors, and windows. Additional hurricane damage related work primarily includes valve replacement and repair to electrical components and controls. Related items for the Water Pumping and Power Department are in various stages of design or construction.

Additional work currently in progress at the Power Generating Facility includes installation of pre-heaters for Boilers Nos. 1 and 3. In addition to the work on the boilers, two new emergency feed water pumps to supply water to Boilers No. 1 through No 6 will be installed.

The Water Pumping and Power Department has 79 current employees, with 42 vacancies. Power for continued operations of the water, drainage, and sewage systems requires staffing 24 hours per day, 7 days a week. Given the current levels of staffing, overtime is required to cover all the necessary areas within the Pumping and Power Department, although the amount of overtime hours have been reduced this past year. In addition, there are approximately 10 senior operators or supervisors set to retire in 5 years or less.

## SEWAGE TREATMENT PLANTS

Black & Veatch, accompanied by the Plant Superintendent, visited both the East Bank and West Bank Wastewater Treatment Plants (WWTP). Operations and maintenance activities of both plants have been contracted to Veolia Water. Currently there is no onsite representative from the Board to oversee the contractor operator. Both WWTPs were operational at the time of the site visits and were meeting the discharge limits, according to treatment plant personnel. The contract for operating the plants is up for bid in 2013. The current contract operator will be a part of the bidding process.

### East Bank Wastewater Treatment Plant

The East Bank WWTP has a treatment capacity of 122 mgd (dry weather). The plant is currently receiving approximately 93 mgd of flow, which is approximately 10 percent more than the flow received in 2011. The higher flow is attributed to more rainfall during the past year. The treatment facilities at the plant include bar screens, grit removal, a pure oxygen activated sludge system, final clarification, and disinfection. The solids generated during sewage treatment are thickened, dewatered in belt filter presses, and incinerated. A new sludge dryer is currently under design as an alternative sludge treatment system to supplement the fluid bed incinerator (FBI).

The following items summarize the improvements that will be or have been performed at the East Bank WWTP:

- Eight mixers in Reactor No. 1 were refurbished in 2012. Mixers in Reactor No. 4 will be rehabbed in 2013.
- A waste heat recovery system for the FBI will be used in the new sludge dryer to improve energy efficiency at the plant.
- The oxygen generation system has been installed, and has been online since July 2011. The plant uses approximately 33 tons of oxygen per day. The new oxygen generation system is rated for 70 tons of oxygen per day.
- At the time of the inspections, the FBI was out of service due to repairs of the refractory within the FBI. Repairs were completed in March 2013. The sludge is hauled to the landfill for disposal.
- A new 4 MW diesel driven generator has been installed and is operational.
- The height of the existing berm surrounding the plant will be raised to 18 feet from the current 14 feet to protect the plant from a future storm surge. This project, with an estimated cost of \$31 million, will be reimbursed by FEMA. This project started in 2012 and will be finished in 2014.
- A new Administration Building to replace the one damaged by Hurricane Katrina is under construction. The building will be occupied by June 2013.
- Effluent Pump No. 2 was rebuilt in 2012.
- The North return activated sludge header will be rehabbed in 2013.
- Components for Bar Screens Nos. 3 and 6 and grit screws will be replaced in 2013.
- Electrical Gears Nos. 5 and 6 will be replaced during the upcoming year.
- The plant began accepting septage from truck haulers starting in May 2012, which has increased revenues for the Board. Testing and tracking of haulers will be performed by the contract operator.

- The ash from the FBI has been approved for industrial use as a supplement to fillers in cement or soil amendment, and has been used at the West Bank plant as filler to minimize drainage problems at the site. Currently, the ash is stockpiled on the site to be used in the new wetland development at the plant site.
- The new wetlands project is currently under construction at the East Bank WWTP. Two cells have been constructed and, currently, the project is waiting for the disinfection chemical to be delivered prior to the start of discharging to the wetlands.

At present, the influent TSS and BOD concentration are approximately 115 milligrams per liter (mg/L) and 87 mg/L, respectively. These concentrations are significantly lower than normal, which is likely the result of a significant increase in the amount of inflow and infiltration in the collection system requiring treatment at the plant. Effluent quality has been adequate over the last year, with an average effluent TSS concentration of 13 mg/L and an average effluent BOD concentration of 21 mg/L. No permit violations were reported at the plant in 2012.

### West Bank Wastewater Treatment Plant

The West Bank facility has a treatment capacity of 20 mgd (dry weather). Currently, the plant is receiving approximately 9.25 mgd flow. The West Bank treatment facility consists of bar screens, primary clarifiers, trickling filters, final clarifiers, and disinfection. Primary and secondary solids are co-thickened in a gravity thickener and hauled to the East Bank facility for further dewatering using belt filter presses. A summary of findings for the West Bank treatment plant follows below:

- The center well and arms for Final Clarifiers Nos. 1 and 2 have been replaced in 2012.
- The walkway for Primary Clarifier No. 1 will be replaced in 2013.
- The scum trough in Primary Clarifier No. 2 will be replaced in 2013.
- The weirs and center feed well will be replaced for each primary clarifier in 2013.
- Effluent pump No. 4 will be rehabbed in 2013.
- Recycle Pump No. 1 was rebuilt in 2012.
- The Board would like to convert the current disinfection chemical from gaseous chlorine to sodium hypochlorite to improve safety. Currently, this conversion is in design, but, with limited funds, the project will not be constructed at this time.
- Corrosion was noted on the trickling filter structure located to the west. This will be fixed in 2013.

The monthly average TSS and BOD influent concentrations are approximately 104 mg/L and 102 mg/L, respectively. The monthly average effluent TSS and BOD concentrations for the last year have been approximately 8 mg/L and 9 mg/L, respectively.

### SEWAGE AND DRAINAGE PUMPING STATIONS

Each drainage pump station (DPS) and sewerage lift station (SLS) located on the East and West Banks was inspected during the site visits. All DPSs have completed or will complete storm related mitigation repair, thus increasing the probability the stations will remain functional in the event of a major storm of power loss. The repairs include, but are not limited to, installation of industrial capacity generators, fuel storage tanks, electrical transformers and storm proofing of pump motors.



Several DPSs have also undergone structural related storm proofing measures. Storm windows and doors have been installed, and the roofs and wall framing have been reinforced to provide greater wind gust resistance.



Figure 3 Primary Clarifier Weirs to be Refurbished in 2013

A few of the DPS and SLS stations have not been fully repaired. Repairs to all East Bank Sewerage Stations have been completed, with the exception of Station 15. Portable pumps are being used to maintain service at this station until the repairs are complete. The permanent pumps at the Boulevard X station in eastern New Orleans are out of service but sewer service continues via portable pumps installed and operating outside of the station. . A solicitation for repair service is currently in progress, but the bid has not been awarded at this time. All East and West Bank facilities are in good condition, and there are no major concerns with the equipment. See the Appendix for a summary of the condition assessment at each DPS and SLS. Staffing continues to be an issue. Current staffing levels are lower than one would expect for the size and scope of the sewer and drainage stations due to retirements and lack of qualified candidates.



Figure 4 Gorman-Rupp Self Priming Centrifugal Pumps at Blvd X Station

## FACILITY MAINTENANCE

The Facility Maintenance Division consists of four Divisions; Plant Maintenance, Welding & Fabrication, Electrical Maintenance and Mechanical Maintenance that provide meter repairs, removals and installations, major electrical, welding, and fabrication, as well as mechanical maintenance for all Board facilities throughout the system, with the exception of Veolia Water operated WWTPs. The Facility Maintenance Division possesses the specialized equipment and technology necessary to maintain the plant process equipment, drainage pumping stations, sewage pump stations, power generation equipment, and water meter servicing. Automated lathes and mills located in the machine shop and break press, as well as shear and other specialized repair equipment located in the welding and fabrication shop, provide the ability to fabricate parts when replacement parts are excessively expensive or no longer available due to equipment vintage.

In addition, new facilities are being built within the S&WB system, such as Turbine No. 6, which will require additional staff to not only operate, but maintain. While the Facility Maintenance Division is well equipped, the lack of adequate numbers of trained personnel has hindered the Division's ability to perform in-house repairs. The Facility Maintenance Division has 80 authorized positions; however, only 62 positions are currently staffed, with most of the highly skilled positions remaining vacant. Overtime is necessary to compensate for the limited workforce and, more work is currently being contracted out to subcontractors than what was done prior to Hurricane Katrina. The Division is presently facing a lack of qualified personnel to adequately supervise or oversee subcontractors. Currently, 48 percent of the Facility Maintenance employees are eligible for retirement or will be eligible to retire within 5 years. The Division is actively recruiting at job fairs and trade schools to hire additional personnel.

## ENGINEERING

The Engineering Division includes Mechanical Engineering, Electrical Engineering, Civil Engineering, Construction Administration and Inspection, and Networks Engineering. The Division administers major contracts throughout the Board facilities, and coordinates with other agencies for the design and construction activities impacting Board maintained facilities. There is a critical shortage of licensed Professional Engineers at this time.

The present status of some contracts administered through the Engineering Division is itemized in the following list:

- Contracts issued for repairing roofs of non-critical facilities.
- Currently, the Board plans on adding a sludge dryer at the East Bank plant. The sludge dryer project is currently going out to bid in April 2013.
- Refurbishment of steam driven pumps (A and B) in the Power Generation Facility by the end of 2014.
- Flood mitigation for nine sewerage pump stations will go to bid by the end of 2013. A couple of the stations may be delayed due to access and/or funds deficiencies to complete the flood mitigation. This will not impede the function of the station, only the facilities' storm proofing.

Currently, the Engineering Division is in the process of working with the Corps on storm proofing projects for the most critical drainage pump stations. Approximately nine storm proofing projects

have been identified, and are presently in various stages of design. The following is a list of the most critical projects and projects to be completed as funding becomes available from the Corps:

- The provision of an underground electrical feeder power line from the Carrollton power plant to Drainage Pump Station No. 1. This project is 70% designed and has been delivered to the Board for completion of design. The Corps was unable to complete design and construction due to lack of funding.
- Storm proofing of the Power Building and river pumping stations which supply water to the Carrollton plant. The project is under construction and is valued at approximately \$30 million.
- New screens will be added to Drainage Pump Station No. 14.
- Two new vertical pumps will be added to Drainage Pump Station No. 5. The expected completion date will be June 2013.

Additional projects planned by the engineering department include the following:

- Levy repairs and frontal protection are currently under construction at Drainage Pump Stations Nos. 11, 13, and 15.
- All sewerage pump stations are operational; construction at Sewerage Pump Station No. 15 will be completed by April 2013.
- A new intake structure is to be designed to replace the Old River Intake. There will be four new 25 Hz intake pumps, for a total capacity of 80 mgd per pump.
- Major electrical feeders will be replaced throughout the Board facilities.

In addition to contract administration, the engineering department has added geographical information system (GIS) technology to further enhance capabilities in tracking water distribution and sewer piping. The FEMA funded water main replacement and emergency sewer system assessment require GIS to identify and fix broken or leaking pipes in the water distribution and collection system.

## NETWORKS

The Networks Department is charged with maintaining the sanitary sewer system and the potable water distribution system. The water distribution network damaged by uprooted trees and other debris during Katrina still has not been fully repaired. Consequently, the Carrollton plant is currently purifying approximately 138 mgd of water despite serving almost 85 percent of the pre-Katrina population.

The Networks department is divided into seven zones. Zone 2 performs preventive maintenance activities such as exercising valves and fire hydrant maintenance. Zone 7 comprises the after hour crews which respond to emergency calls. Zones 1, 3, 4, 5, and 6 represent geographical areas in New Orleans which provide repair services for their respective areas. Each zone has a staff of approximately 20 to 35 persons responsible for repairs within the designated areas. Typically, a three-man crew will complete a work order. More complex work orders may require additional crews on a single work order. Contractors are used to supplement repair work performed within each of the areas if sufficient manpower within the Board is not available to perform necessary repairs.



According to Board personnel, the biggest challenge in restoring normal operations at the water purification plants has been the detection and repair of leaks in the distribution system. The Board is currently conducting a system evaluation of the piping system to detect leaks. A contractor, Ecologic, has been hired to use acoustic technology to determine leaks in larger water mains (those exceeding 16 inches in diameter). Over 14,200 leaks have been repaired in the last year. Manholes are also being inspected as an ongoing inspection of the sewer system. In addition, over 1,500 sewer repairs were completed in 2012. Identification of leaks is ongoing, and will continue to incorporate identified leaks into the water main replacement program funded by FEMA.

The Networks Division works in conjunction with the Fire Department to monitor and maintain all fire hydrants located in the Board's service area. The Networks Division inspects all fire hydrants within the system. All City hydrants have been assigned an identification number and have been mapped. The fire hydrants program requires the 16,500 fire hydrants in the database to be inspected once every 2 years to supplement the biannual inspection cycle of the Fire Department.

The Networks Division completed over 5,100 paving projects in 2012, both in-house and in cooperation with contractors. This Division has several maintenance contracts to assist with the maintenance of the water distribution, wastewater collection, and drainage stations. These contracts have subsequently increased the amount of work accomplished within the division.

## **SUPPORT SERVICES**

The Board owns 721 pieces of rolling stock, which includes trucks, backhoes, and sewer cleaning equipment. Approximately 15 pieces are at least 15 years old, and will require replacement in the next few years. The available equipment is being assigned to the various divisions based on the needs of all departments.

Tire repair and some ground maintenance functions have been contracted out to other firms in the past. This work is now being planned to be performed by the Support Services department within the Board in the near future.

Garages 1 and 2 are scheduled to be rehabilitated in 2013 and 2014. FEMA will be reimbursing equipment and tools for each garage lost to the hurricane in addition to replacing some of the buildings, such as the Annex Building that will be used to house locker rooms, shower facilities, training rooms, etc. A new Site Relocation Facility will be constructed to house personnel until the garage renovations are completed. The Site Relocation Building will also be used to house the Body Repair Shop of Garage 2.

## **ENVIRONMENTAL AFFAIRS DEPARTMENT**

The Environmental Affairs Department oversees the consent decree and all administrative orders. This department also undertakes special projects for the Executive Director's office and reports sewer bypasses and overflow to the Region 6 Environmental Protection Agency (EPA). Some activities being undertaken by the department include those listed below:

- Monitoring progress of the wetlands assimilation project.
- Continuing to monitor industrial users through the Pretreatment Program.

- Permit compliance in air, water, wastewater, storm water management, solid waste, and underground fuel storage tanks.

The East Bank Sewerage Treatment Plant Wetlands Assimilation Project site neared completion in 2012. The two demonstration cells adjacent to the East Bank Plant were constructed. The effluent piping and the ferrator treating the effluent will be installed by June 2013. The design phase has started to extend the wetlands program at the A-2 site and part of the St. Bernard Parish Marsh Restoration Project bordering Orleans Parish. During 2012, the contractor completed installing the vegetation, soil and water sampling for the ecological baseline study in the Central Wetlands Unit, including the A-2 site. The water sampling data was analyzed, and a final report was completed and submitted to the Board in October 2012.

The components of the Pretreatment Program include the discharge monitoring of the East and West Bank Sewerage Treatment Plants in addition to other Significant Industrial Users during the year. An annual report is also submitted to DEQ to demonstrate pretreatment performance.

In addition, yearly revenue has been received from the following sources associated with the Pretreatment Program:

- Industrial users billed monthly for Excess Strength Surcharges
- Sanitary sewerage discharged to the wastewater plant from Special Events
- The Sewerage & Water Board of New Orleans Septage Disposal Program

The total revenue received in 2012 from these sources was approximately \$517,000.

In 2012, air permits for 18 Sewerage and Water Board of New Orleans' facilities containing 50 emergency engines and generators were obtained. The use of diesel powered units to provide emergency power to drainage pump stations and other SWB facilities required these facilities to meet air quality regulations.

On September 24, 2012, the Board entered into a contract with an engineering consultant to provide engineering services to the Environmental Affairs Department for the Air Quality Program. The scope of work includes conducting environmental compliance audits for 23 Board facilities, preparing all required air compliance reports, developing an Environmental Management System, developing a web-based compliance system, and training the Board on air compliance procedures and the compliance tools developed. The cost of the project is \$200,000, and will take 10 months to complete.

On November 27, 2012, the Louisiana Department of Environmental Quality proposed to reissue the Louisiana Pollutant Discharge Elimination System (LPDES) Permit No. LAS000301 issued for discharge from the regulated Municipal Separate Storm Sewer Systems (MS4) within Orleans Parish owned or operated by the Board. The Permit was issued for Public Notice February 13, 2013 and the public comment period ended March 20, 2013. The new storm water permit is expected to go into effect shortly after the comment period has ended and comments have been addressed.

The Environmental Affairs Department finalized Section 16.1, Rules Governing Discharges into the Public Drain System MS4, (Municipal Separate Storm Sewer System) on December 11, 2011. To streamline Section 16 of the Sewerage and Water Board of New Orleans Plumbing Code, the Environmental Affairs Department incorporated the four sections of Section 16 into one document to

make the enforcement of the Plumbing Code easier. The code is posted on the Sewerage and Water Board's website to make it easier for commercial and industrial users to access.

In July 2012, the Board contracted with an engineering consulting firm to produce the Spill Prevention Control and Counter Measure Plan (SPCCs) for all of the large drainage pump stations that store more than 1300 gallons of diesel fuel and petroleum products onsite in aboveground storage tanks. As of March 2013, the following Drainage Pump station SPCCs have been completed: 1, 2, 3, 4, 5, 6, 7, I-10, 11, 13, 14, 15, 16, 19, 20, Pritchard, and Dwyer.

The Environmental Affairs department has a new department head to fill the vacancy left by the retired department head. The department seems to have adequate staffing to perform the tasks necessary to maintain compliance with all the various rules and regulations which apply to the Board. The department is in the process of obtaining training and software systems to better track compliance within the Board facilities.

## **STATUS OF CONSENT DECREE**

The Board is complying with the Environmental Protection Agency (EPA) Region 6 and Department of Justice Consent Decree, which requires cessation of unauthorized discharges and the development of a schedule for repairs to both the collection system and the treatment plant.

Some provisions outlined in the consent decree include those listed below:

- Quarterly and annual reporting requirements are to be submitted to the regulatory agency.
- Preventive maintenance requirements of the Consent Decree will be met by the Board.
- Repair to the collection systems will begin once the sewage pump stations have been repaired from hurricane damage.

The Board is in compliance with the EPA Consent Decree, as it has met every construction and reporting deadline in the decree and has had no fines relative to construction or reporting schedules in 2012.

## **SUMMARY OF FINDINGS**

The following is a summary of findings during the site inspections for year 2013.

- The Board has a clear understanding of the existing conditions of the water and sewage treatment facilities, and is aware of the immediate needs within each division and area. However, funding is needed for the Board to address these issues. A customer rate increase has been approved and, currently, the Board is prioritizing the immediate needs of the Board such as filter rehabilitation at the Carrollton WWP.
- The Board should initiate the filter rehabilitation program at the Carrollton WPP, as the filter system is in need of extensive repairs due to leaking pipes, broken valves, broken actuators, and filter media at the end of its expected service life.
- The recycle basin pumps at the Carrollton WPP need to be replaced; however, replacement is hampered by limited funding.

- The potable water distribution network and the sanitary sewer collection system present the two biggest challenges, and are being addressed in a systematic manner with the aid of contractors to identify leaks within each system. Continuation of the water main replacement program through FEMA will reduce the number of major leaks in the water system.
- The Board is servicing 100 percent of the population within the collection system. Most of the sewerage pump stations on the East and West Banks have been repaired and are operational. The remaining stations were completed in April of 2013.
- The wetlands assimilation program is nearing the completion of the first phase, which will treat 0.12 mgd of effluent from the East Bank Treatment Plant. Effluent is scheduled to begin flowing to the wetlands by June of 2013. Expansion of the program will continue as funding becomes available.
- The Board should continue efforts to storm proof critical facilities as funding becomes available.
- It is important that the Board concentrate on filling vacancies of highly skilled technical positions such as engineers, machinists, and electricians, especially during this economic downturn, as it may be easier to recruit staff with the required skills.

## Water Department

### ADHERENCE TO WATER REVENUE BOND RESOLUTION REQUIREMENTS

In 1998, the Sewerage and Water Board sold \$16,000,000 of Water Revenue Bonds. The sale of these bonds, as well as the 2002 Series Water Revenue bonds, has obligated the Board to fulfill the covenants of the current bond resolutions. The covenants are designed to protect the interests of the bond holders. Particular covenants of the Board in the General Water Revenue Bond Resolution pertain to the power to issue bonds and the pledge of system revenues; the extension of payment of bonds; the establishment of rates and charges; the sale, lease, and encumbrance of the system; the operation, maintenance, and reconstruction of the system; insurance; the preparation of an annual operating budget; the preparation of the capital improvements budget; the maintenance of accounts and reports; further assurances; and the issuance of additional bonds. The Requirements of the 1998 General Water Revenue Bond Resolution and Supplemental Resolutions adopted on August 21, 2002, (hereafter collectively called the General Resolution) are discussed in this section. Water Department tables are included at the end of this section.

The Board is in compliance with the 1998 General Water Revenue Bond Resolution and subsequent amendments.

#### Powers as to Bonds and Pledge

The General Resolution gives the Board the power to issue bonds and to pledge the revenues according to the resolution. The Resolution state that "... the revenues and other monies, securities and funds so pledged are and will be free and clear of any pledge, lien, charge or encumbrance thereon with respect thereto prior to, or of equal rank with, the pledge created by the resolution except to the extent expressly permitted hereby. The Board shall at all times, to the extent permitted by law, defend, preserve and protect the pledge of the revenue and other monies, securities and lands pledged under the resolution and all the rights of the bondholders under the resolution against all claims and demands of all persons whomsoever."

#### The Extension of Payment of Bonds

The Board is obligated not to extend the maturity of the bonds. The Board still has the right to issue refunding bonds because the issuance of refunding bonds shall not constitute an extension of maturity of the bonds.

#### The Establishment of Rates and Charges

The General Resolution obligates the Board to establish and maintain rates and charges at levels sufficient so that total revenues over and above the amount required for operation and maintenance of the system be at least one hundred thirty percent (130%) of the bond debt service requirement.

The Board must engage a Consulting Engineer to annually review the adequacy of the rates and charges to satisfy the requirements of the resolution for the next succeeding year.

In addition, "...the Board shall not... furnish or supply any facilities, services or commodities afforded by it in connection with the system free of charge (except as required by law). The Board will promptly enforce in the manner and to the extent provided by law the payment of any and all

delinquent accounts except when the Board determines that such enforcement is no longer practicable or economically justified.”

### **The Sale, Lease, and Encumbrance of the System**

The General Resolution requires that, with exceptions, “... no part of the System shall be sold, mortgaged, leased (with the Board as lessor) or otherwise disposed of or encumbered.” However, the Board may sell, mortgage, or lease any property that has become worn out or that is not useful.

### **The Operation, Maintenance, and Reconstruction of the System**

The Board is obligated to “... operate, or cause to be operated, the System properly and in a sound, efficient and economical manner and shall maintain, preserve, and keep the same or cause the same to be maintained, preserved, and kept in good repair, working order and condition, and shall from time to time make, or cause to be made, all necessary and proper repairs, replacements and renewals so that the operation of the System may be properly and advantageously conducted ...” The Board must reconstruct damaged or destroyed parts of the system, except in those cases where the market value of that part of the system is more than \$100,000 and a Consulting Engineer certifies that the abandonment is economically justified and is not prejudicial to the interest of the bond owners and that failure to reconstruct the part will not impair the Board’s ability to comply with the requirements of the rates and charges covenant in the current or any future fiscal year. The Board is continuing to repair or replace facilities damaged in 2005 by Hurricane Katrina.

### **Insurance and Condemnation**

The Board agrees to “... keep all property which is a part of the System and which is of an insurable nature and of the character usually insured by operating systems similar to the Board insured against loss or damage by fire and from other causes customarily insured against and in such relative amounts as are customary. The Board will also at all times maintain insurance against loss or damage from such hazards and risks to the persons and property of others as are usually insured against by those operating systems similar to the Board.”

The Board also agrees that all insurance proceeds shall be applied to the restoration of the lost or damaged facilities, unless the Board determines not to replace the facilities according to the previous covenant. Any excess proceeds not applied to the reconstruction of facilities or remaining after the work is complete shall be deposited into the Water System Account.

The Board may also elect to insure itself if it determines that any policies required are not reasonably obtainable or may not be obtained at a reasonable cost.

The Board carries fire and extended coverage insurance on buildings connected with the treatment and supplying of water, and the collection and treatment of sewage. In addition, the Board carries the generally accepted coverage for water and wastewater utilities. This coverage consists of personal liability and property damage liability coverage; forgery, money, and securities dishonesty and disappearance coverage; and employees’ faithful performance bonds. The Board also carries coverage on vehicles and equipment used in the operation of the water, sewerage and drainage systems. A summary of the insurance program of the Board is shown in Table 1.

The Board is self-insured for worker's compensation and comprehensive general liability. In addition, the Board maintains a self-insurance program of hospitalization benefits. Anticipated expenditures are budgeted annually.

### **The Preparation of an Annual Operating Budget**

The Board agrees to prepare and adopt an annual operating budget not less than one day prior to the beginning of each fiscal year. The Board may adopt an amended or supplemental budget from time to time but not more than once a month. The Board is required not to "... incur aggregate Operating Expenses in any Fiscal Year in excess of the aggregate amount of Operating Expenses shown in the Annual Budget as amended and supplemented for such Fiscal Year except in case of emergency or as required by law."

The Board agrees that the "... amounts expended by the Board in any Fiscal Year for Current Expenses shall not exceed the reasonable and necessary amounts thereof and such amounts so expended in any Fiscal Year from Revenues shall not exceed the amounts provided therefore in the Annual Budget for such Fiscal Year as amended and supplemented from time to time."

### **The Preparation of the Capital Improvement Budget**

The Board is required to prepare a proposed program of Capital Improvements for the current and next two fiscal years prior to the beginning of each fiscal year. The program must identify the capital improvements to be carried out, the estimated costs of the improvements, the period of construction and a proposed budget for the capital improvements to be undertaken in the first fiscal year of the budget period. The capital improvements budget is to be prepared showing projected quarterly requirements and can be amended or supplemented from time to time, but not more than once a month for the fiscal year in progress.

### **Employment of Consulting Engineer**

The General Resolution requires the Board to employ a Consulting Engineer no later than the last day of each third full fiscal year following the delivery of the initial bonds to report on the properties and operations of the System. However, any report prepared by the Consulting Engineers for the issuance of additional bonds within a three year period will satisfy this requirement.

### **The Maintenance of Accounts and Reports**

The Board is required to "... maintain its books and accounts in accordance with generally accepted accounting principles and in accordance with such other principles of accounting as the Board shall deem appropriate."

The Board is also required to file with the Board of Liquidation, City Debt an annual report with financial statements audited by and containing the report of a nationally recognized independent public accountant. The auditor's report is to include a statement that during their examination, made in accordance with generally accepted auditing standards, nothing came to their attention that would lead them to believe that a default had occurred under the resolution, or to state the nature of the default.

The Board engaged the firms of Postlethwaite & Netterville and Bruno & Tervalon to comply with this covenant. Financial reports with the Accountants' Certificate have been furnished to the Board of



Liquidation, City Debt and have been reproduced for public distribution. The Government Finance Officers Association (GFOA) has awarded to the Board the “Certificate of Achievement for Excellence in Financial Reporting” for their annual financial reports for 28 years.

### Issuance of Additional Bonds

Additional bonds may be issued, but only after certain conditions have been met. These conditions are described in the following paragraphs.

The Board must deliver to the Board of Liquidation, City Debt a certificate of an authorized officer stating that the Resolution has not been repealed, and a certified copy of every supplemental resolution previously adopted by the Sewerage and Water Board.

The Board must deliver to the Board of Liquidation, City Debt the documents and monies, if any, required by this resolution and any applicable supplemental resolution.

The Board must provide to the Board of Liquidation, City Debt a certificate of an authorized officer stating that as of the delivery of the additional bonds no event of default has occurred.

The Board of Liquidation, City Debt is required to have a certificate of an authorized officer stating that for the two full fiscal years prior to the year of issuance, the average net revenues were equal to at least (1) the amount required by Louisiana law, and (2) 110 percent of the average bond debt service requirement on all bonds outstanding plus the average bond debt service requirement on the additional bonds.

The Board must provide to the Board of Liquidation, City Debt a certificate of the Consulting Engineer stating that projected net revenues for each of the five fiscal years following issuance of the additional bonds will be at least 130 percent of the debt service reserve fund requirement.

## 2012 WATER DEPARTMENT OPERATIONS

Funds for the operation and maintenance of Water Department properties were derived from sales of water, delinquent fees, plumbing inspection and license fees, charges for disconnections and reconnections, and from interest earned on available funds. Analyses of the 2012 Water Department operations are discussed in the following paragraphs.

### Water Use

According to statistics found in the December 31, 2012 Comprehensive Annual Financial Report, during the year, 54,722,820,000 gallons of water were pumped by the Water Department. Water sales accounts for 13,801,965,200 gallons and 672,837,900 gallons were metered to City departments without charge. Metered treatment plant process water totaled 622,443,400 gallons. The remaining 39,625,573,500 gallons resulted from unmetered uses, such as fire protection; flushing streets, sewers, drains, and gutters; and unaccounted for system losses.

### Number of Customers

Table 2 presents a summary of the historical and projected average number of treated water customers for the period 2008 through 2017. Based on year-end billing summaries, the number of monthly billed customers during 2012 averaged 121,435 compared with 118,745 for 2011. It is



projected that the Board will average approximately 122,893 open accounts in 2013 and that the number of accounts will continue to grow at approximately 1.20 percent each year.

In addition to regular customers, water is sold to construction contractors and other customers on an irregular basis. The Board, by law, also provides water service free of charge to certain municipal and public connections including the Board itself. In 2012 there were 955 connections in this group, compared with 944 for 2011.

### **Billed Water Usage**

Table 2 also presents a summary of historical and projected treated water sales. Based on year-end billing summaries, a total of 13,752 million gallons of water sales were billed on a monthly basis in 2012, compared with a total of 13,925 million gallons in 2011. Projected water sales assume a growth rate of approximately 1.20 percent per year.

### **Operating Revenues**

The 2013 schedule of rates for retail treated water service is presented in Table 3. The rates consist of monthly service charges, which vary by meter size, plus a 4-step declining block volume charge, with the exception of the first block, which is a life-line related charge. Current rates for flat rate fire service are also shown in Table 3. Separate rate schedules, not shown, are used for billing water sold to construction projects and other purposes.

A summary of historical treated water billings and other Water Department revenue is presented in Table 4 for the period 2008 through 2012. The historical revenues shown in Table 4 were developed from detailed records provided by Board Staff. Operating revenues are derived from charges for sale of water and delinquent fees. Sales of water in 2012 were \$59,208,198 which, when compared with \$58,804,719 for 2011, shows an increase of approximately 0.7 percent. Delinquent fee revenues were \$1,048,106 in 2012 which represent a 3.5 percent decrease over 2011 delinquent fees.

### **Non-Operating Revenues**

Also shown in Table 4, non-operating revenue of the Water Department includes interest earned on invested funds, and other income from miscellaneous sources. During 2012, non-operating revenue included \$92,849 of interest earned from the investment of available funds in the Water System Fund and the Water Revenue Bond Account and \$11,318,854 from other sources.

In 2012, the Board received \$7,617,063 in operating and maintenance grants from FEMA for operating expenses incurred from water repairs performed by Board crews. This revenue is included as Other Income in Table 4.

### **Operation and Maintenance Expenses**

The Sewerage and Water Board uses a system of accounts for budget purposes which groups expenses by water system function. Under the present system of accounts, expenses are categorized under the general classifications of management and general, operations expenses, and other expenses. Management and general expenses include wages, materials and supplies, services, and other costs of the Executive Director, Deputy Director, Office of the Management Services Director, Personnel Administration, Finance Department, Information Systems, Purchasing Administration, Customer Services Department, and Legal Department. Operations expenses encompass the costs of

source of supply, treatment, and delivery of potable water. Other expenses include such items as general insurance, outside services employed, social security, pension and medical insurance contributions, and miscellaneous expenditures.

Table 5 presents a summary of historical expenses as recorded under the present system of accounts by the Sewerage and Water Board. Expenditures in 2012 decreased about 4.3 percent from 2012 expenditures and increased about 18 percent from 2010 expenditures. Historical operation and maintenance expenses shown in Table 5 do not include the non-cash portion of Provision for Claims as recorded in the Comprehensive Annual Financial Report. Estimates of future Water Department claims are included on Line 16 of Table 11.

**Capital Budget and Expenditures**

Capital expenditures of the Water Department include the cost of replacements and improvements to waterworks facilities, the water distribution system, and the Water Department pro rata share of power projects and general budget costs.

The Water Department’s 2012 capital expenditures, exclusive of prorated interest expense, totaled \$32,610,835. The Water Department’s capital improvement expenditures for the year are shown in Table 6.

**Summary of Operations**

The following tabulation shows a summary of the receipts and expenditures of the Water Department during 2012:

Total Revenues <sup>a</sup>	\$71,668,007
Operation and Maintenance Expense	61,761,783
Claims	226,441
Debt Service Payments	3,917,393
<b>Revenue Primarily Available for Capital Expenditures <sup>b</sup></b>	<b>\$5,762,390</b>

<sup>a</sup> Includes operating and maintenance grant of \$7,617,063.

<sup>b</sup> Excludes depreciation.

**PROPOSED CAPITAL IMPROVEMENT PROGRAM**

Table 7 presents a summary of the projected major capital improvement program for the period 2013 through 2017. Table 7 is based on the Board’s 2013 -2022 proposed Capital Program. The five-year major capital improvement program costs are estimated to total \$502,600,000. About 43 percent of this amount, or \$213,958,000, is for recurring annual capital improvements, with the remaining \$288,642,000 for major improvements. The proposed routine annual capital expenditures for water system improvements and extensions include \$2,265,000 for the Water Department’s share of power projects, and \$41,530,000 for its share of general budget items.

**ABILITY TO FINANCE PROPOSED CAPITAL EXPENDITURES**

This section of the report analyzes the adequacy of projected revenues to finance the proposed capital improvements shown in Table 7.

## Operating Revenues

Operating revenues of the Water Department consist of revenues from water sales. Projected operating revenues for the years 2013 through 2017 are shown in Table 8. These estimates reflect the rate schedule effective January 1, 2013 applied to the projected number of customers and water usage and are projected to increase, on average, about 1.2 percent per year throughout the study period due to growth in the customer base. Projected revenue from proposed revenue increases is also shown in Table 8.

## Other Revenue Sources

Based upon past practices, the Water Department can expect to obtain revenues or funds from non-operating sources. These include interest earned on available funds, participation by others, house connection charges, fire connections, fire hydrant relocations, and various other income sources. Also, by Board policy, the Water Department receives one-half of the plumbing inspection and license fees currently projected at \$379,000 per year. Operating and maintenance grants are projected at an average of about \$9,600,000 per year from 2013 through 2015.

Interest income from the investment of funds held for future use depends upon the level of water revenue available for investment and the amount of revenue accrued towards payment of future capital expenditures.

Projections of other revenue sources are presented in a subsequent table, which summarizes the Department's financial position during the financing of projected operating and capital requirements.

## Operation and Maintenance Expenses

A summary of projected operation and maintenance expense for the period 2013 through 2017 is shown in Table 9. Expenses are categorized by system function as now reflected in the accounting system of the Sewerage and Water Board. Estimates of future expenses are based on anticipated future operating conditions and allowances for inflationary factors.

Projected expenses shown for 2013 reflect the Board's adopted 2013 operating budget. Based on historical trends and conversations with utility staff, all costs are projected to increase 3.0 percent per year from the Board's recommended budget for 2013.

## Debt Service Requirements

Future debt service requirements of the Water Department are made up of principal, interest, and reserve fund payments for currently outstanding and future water revenue bond issues. As of December 31, 2012, outstanding debt obligations consisted of \$6,535,000 Water Revenue Bonds, Series 1998 and \$23,555,000 Water Revenue Bonds Series 2002 for a total of \$30,090,000. In February 2010, the Department of Health and Hospitals (DHH) provided a \$3,400,000 loan to the Board with a \$1,000,000 principal forgiveness. As of December 31, 2012, the Board had withdrawn \$1,824,164 on the 2010 issue, excluding principal forgiveness. Payment on the Series 2010A bonds has not begun.

To adequately fund the proposed capital improvements, additional revenue bonds are indicated as shown in Table 10. Projected bonds that are shown in Table 10 are assumed to be sold at an average annual interest rate of 6.0 percent for a term of 20 years with 3 years of capitalized interest.

The Water Department has borrowed \$7,000,000 from the City of New Orleans Department of Public Works (DPW), \$8,400,000 from the Sewerage Department, and \$4,700,000 from the Drainage Department. It is anticipated that these funds will be reimbursed during the study period.

### Adequacy of Revenues to Finance Proposed Capital Improvements

Total revenue requirements for the Water Department recognized for purposes of this report include operation and maintenance expense, allowance for claims, debt service costs on major capital improvements financed through the sale of bonds, and expenditures for capital improvements not financed from bond proceeds. Table 11 summarizes the financing of operation and maintenance expense, debt service costs on outstanding and proposed bonds, and the transfer of operating funds for major capital improvement financing. It also examines the financing of the major capital improvement program.

### Operating Fund

Line 1 of Table 11 shows projected Revenue from Charges under 2013 rates as previously presented in Table 8. Revenue from future annual revenue increases of 10 percent effective January 1, 2014 through January 1, 2017 is shown on Line 2.

Other revenue available for system operations, shown on Lines 4 through 9, consist of Interest Income on operating funds, Plumbing Inspection and License Fees, Other Miscellaneous Income, Additional Revenue, Operating and Maintenance Grants and Interest from Bond Reserve Fund. Interest Income available to the operating fund, shown on Line 4, is estimated to be 1.0 percent of the average of the beginning and end of year Net Annual Balance, except as the average is affected by identifiable nonrecurring major receipts, transfers, or expenditures during the year. The Board began conducting field account reviews in 2012 to determine whether meters are working accurately and bills are being computed correctly. Projected revenue from these reviews is shown on Line 7 of Table 11.

The Board has submitted Project Worksheets to FEMA for operating expenses incurred from water repairs performed by Board crews. Line 8 indicates the amount projected to be reimbursed by FEMA for these repairs during the study period. Total Operating Revenue is shown on Line 10.

Operation and Maintenance expense, previously projected in Table 9, is shown on Line 11 of Table 11. Based on the *Financial Plan and Rate Study 2011-2020* report, additional operating costs required to achieve desired benchmarking levels is shown on Line 12 and projected operating cost savings due to efficiencies resulting from achieving these benchmarks are shown on Line 13. Line 14 shows the estimated allowance for claims. Bad debt expense is assumed to be 2 percent of projected revenue and is shown on Line 15. Projected Net Operating Revenue from system operations is shown on Line 16.

Lines 17 through 19 present debt service requirements on currently outstanding and proposed revenue bonds. Additional revenue bond debt financing of \$60,000,000 in 2013, \$21,000,000 in 2014, \$46,000,000 in 2015, \$24,500,000 in 2016, and \$7,000,000 in 2017 is assumed. This debt is assumed to be 20 year, 6.0 percent fixed interest rate bonds issued in December, with 3 years of capitalized interest and equal annual payments of principal and interest.

In July of 2006, the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247 on this agreement. No principal or interest was payable during the initial five-year period of the loan, but after that period, the loan began to bear an interest rate of 4.64 percent. Payments for the water portion of principal and interest began in July 2012 and are shown on Line 20 of Table 11.

During January 2006, the Board entered into a long-term agreement with FEMA under the Community Disaster Loan Act of 2005. The Board has drawn down \$61,956,747 of the funds available. In December 2010, the Board was granted a partial forgiveness in the amount of \$36,790,000 of principal and \$4,648,410 of accrued interest, leaving a balance of \$25,166,747 in principal. Payments are to begin in August 2016 with a 5-year term and a 2.93 percent interest rate. The water portion of the payments is shown on Line 21. Total debt service is shown on Line 22.

Line 23 reflects the projected transfer of accumulated net earnings from system operations to assist in major capital financing. Typically, such accumulated net earnings may be used to help recover portions of the annual costs of system operations or to assist in major capital improvement financing. Line 24 reflects repayment to the DPW and Sewerage and Drainage Departments.

Line 25 indicates the estimated Net Annual Balance from operations remaining at the end of each year.

The balance of operating funds available at the beginning of the year 2013, shown on Line 26, is comprised of the current cash assets and reflects a negative balance of \$911,900.

The End of Year Balance is shown on 27. It is intended that, in all years of the period 2013 through 2017, the End of Year Balance should equal or exceed the assumed adequate emergency capital reserve of 45 days operation and maintenance expense. It is anticipated that the End of Year Balance will be equal to or greater than the targeted emergency capital reserve beginning in 2014.

### Capital Projects Funding

Major capital improvement financing is examined in Lines 28 through 42 of Table 11. The amount of Funds Available at Beginning of Year, shown on Line 28, is \$28,789,000. This amount is based on audited data provided by the Board.

Projected revenue bond proceeds are shown on Line 29. The amounts and years of issue are developed considering capital program needs, current policies, other sources of major capital improvement financing, and the debt service coverage requirements of the bond covenants regarding the issuance of parity revenue bonds.

Financing of the major capital improvement program anticipates the transfer of a total of \$52,000,000 of operating revenue as shown on Line 30. Other sources of funds available to meet major capital improvement expenditures are Participation by Others and interest income. Participation by Others, as shown on Line 31 includes anticipated funding by the EPA, U.S. Army Corps of Engineers (COE), the Department of Health and Hospitals, and FEMA. Interest earnings

recognize an assumed 1.0 percent average annual interest rate and are shown on Line 32. Line 33 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2012, the Board had \$5,064,000 obligated for open contracts and capital jobs as shown on Line 34 of Table 11. Lines 35 and 36 show the projected Reinvestment in Assets and Major Capital Additions to be funded as shown in Table 7. It is anticipated that the capital projects in 2013 and 2014 will exceed the amount of funding available and some projects will need to be deferred until 2015. This deferral is shown on Line 37 and assumes 3 percent inflation each year the projects are deferred. Estimated issuance costs and capitalized interest related to the proposed bond issue amounts are shown on Lines 38 and 39. Line 40 shows the required deposits into the Revenue Bond Reserve Fund associated with proposed bond issues.

The Total Application of Funds is shown on Line 41 of Table 11. The net End of Year Balance is shown on Line 42.

As demonstrated in Table 11, it is anticipated that current revenue sources will not be adequate to readily finance both projected capital program requirements as currently scheduled and estimated future operation expenses of the Water Department during the 2013-2017 study period examined herein. It is recommended that the Board defer capital projects in 2013 and 2014 until an adequate funding source has been identified.

### **Bond Coverage Requirements**

A requirement of the Water Bond Resolution provides that rates must be adopted that will provide revenues in excess of operation and maintenance expense of at least 130 percent of the current year's Bond Debt Service Requirement. As shown on Line 43 of Table 11, the indicated revenue increases will provide sufficient net revenues to meet coverage requirements during the study period.

The results of the Additional Bonds Test, described in an earlier section of this report, are shown on Lines 44 through 46 of Table 11. All of these tests will be met during the study period with the proposed revenue increases.

While Table 11 indicates that the Board will meet the minimum requirements to issue additional revenue bonds, it is not clear whether the Board will be able to meet the increased key performance indicators that the market is currently requiring. Without a strong service area economy, healthy debt service coverage, and strong liquidity, the Board may be required to pay a premium to issue additional debt.

### **Summary of Findings**

- As demonstrated in Table 11, it is anticipated that the capital projects in 2013 and 2014 will exceed the amount of funding available. Assuming that these projects are deferred until a funding source is identified, it is anticipated that current revenue sources will be adequate to readily finance both projected capital program requirements and estimated future operation expenses of the Water Department through the 2013-2017 study period examined herein.

**Table 1**  
**Insurance in Force as of December 31, 2012**

Coverage	Kind and / or Location	Amount of Coverage \$	Policy Period	
			From	To
Travelers/St. Paul Ins. Co.	Primary Fleet Liability	Limit: \$1,000,000 (\$200,000 Deductible)	06/20/13	06/20/14
RSUI Indemnity Company	Excess Fleet Liability	Limit \$5,000,000	06/20/13	06/20/14
	Property - Building, Contents, Mobile Equipment, Boiler/Machinery/ Business Interruption	\$100,000,000 Building and Contents \$6,568,829 Mobile Equipment, \$25,000 Boiler/Machinery, \$9,000,000 Business Interruption (\$100,000 Deductible)		
Westport/RSUI Indemnity/Sompo Japan Ins. Co.			05/20/13	05/20/2014
Lexington Insurance Company	Fleet Physical Damage	\$18,989,253 (\$250,000 Deductible)	03/20/13	03/20/14
Travelers/NFIP	Flood	\$1,000,000,000	08/01/2013	08/01/2014
Zurich	Employee Theft	\$1,000,000 (\$5,000 Deductible)	05/01/11	05/01/14
Fidelity & Deposit Company of Maryland	Computer Crime and 3-D (Money and Securities)	\$5,000,000 Computer Crime, \$5,000,000 3-D (\$5,000 Deductible)	05/01/11	05/01/14
National Union Fire Ins. Co. of PA	Public Officials D & O	\$5,000,000 (\$100,000 Deductible)	11/20/13	11/20/14
Travelers Casualty & Surety Co. of America	Pension Fund Liability	\$2,000,000 (\$50,000 Deductible)	08/01/13	08/01/16



**Table 2**  
**Water Department**  
**Historical and Projected Sales and**  
**Average Number of Customers (a)**

	Historical						Projected				
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>Single Family Residential (b)</b>											
Customers	87,691	94,547	100,798	102,979	105,537	106,804	108,086	109,383	110,696	112,024	
Sales (1,000,000 gal.)	5,734	6,196	6,276	6,592	6,461	6,539	6,617	6,697	6,777	6,858	
Sales Per Customer (1,000 gal.)	65	66	62	64	61	61	61	61	61	61	
<b>Multi-family Residential</b>											
Customers	4,194	4,267	4,416	4,439	4,467	4,521	4,575	4,630	4,686	4,742	
Sales (1,000,000 gal.)	825	832	810	788	767	776	786	795	805	814	
Sales Per Customer (1,000 gal.)	197	195	183	177	172	172	172	172	172	172	
<b>Commercial</b>											
Customers	9,475	9,558	9,872	9,918	9,969	10,089	10,210	10,333	10,457	10,582	
Sales (1,000,000 gal.)	4,070	3,570	3,682	3,683	3,694	3,738	3,783	3,829	3,875	3,921	
Sales Per Customer (1,000 gal.)	430	374	373	371	371	371	371	371	371	371	
<b>Industrial</b>											
Customers	22	21	20	17	19	19	19	19	19	19	
Sales (1,000,000 gal.)	91	80	53	42	44	45	45	45	45	45	
Sales Per Customer (1,000 gal.)	4,222	3,771	2,674	2,407	2,343	2,342	2,342	2,342	2,342	2,342	
<b>Dual Service &amp; Metered Fire Service (c)</b>											
Customers	1,193	1,247	1,321	1,392	1,443	1,460	1,478	1,496	1,514	1,532	
Sales (1,000,000 gal.)	2,718	2,630	2,832	2,821	2,786	2,819	2,854	2,888	2,923	2,958	
Sales Per Customer (1,000 gal.)	2,278	2,109	2,144	2,027	1,931	1,931	1,931	1,931	1,931	1,931	
<b>Total</b>											
Customers	102,575	109,640	116,426	118,745	121,435	122,893	124,368	125,861	127,372	128,899	
Sales (1,000,000 gal.)	13,438	13,309	13,653	13,925	13,752	13,917	14,084	14,253	14,424	14,596	

(a) Excludes customers receiving free service.

(b) Includes duplex.

(c) Does not include flat rate fire protection customers.

**Table 3**  
**Water Department**  
**Existing Water Rates**  
**(Effective January 1, 2013)**

	General Service	Dual Service (a)
	\$	\$
<b>Monthly Water Service Charge</b>		
<u>Meter Size</u>		
Inches		
5/8	4.46	6.05
3/4	5.45	7.37
1	6.93	9.68
1-1/2	11.44	15.07
2	15.07	21.56
3	34.10	47.85
4	59.40	83.60
6	116.60	162.80
8	172.70	242.00
10	234.30	327.80
12	275.00	385.00
16	366.30	512.30

**Monthly Water Quantity Charge - per 1,000 Gallons**

First	3,000 gallons	2.96	2.96
Next	17,000 gallons	5.06	5.06
Next	980,000 gallons	3.98	3.98
Over	1,000,000 gallons	3.34	3.34

**Flat Rate Fire Service**

	Meter Size
	Inches
2	10.12
3	13.75
4	25.30
6	44.00
8	58.30
10	92.40
12	119.90
16	165.00

(a) Includes Dual Service and all metered fire services.

**Table 4****Water Department  
Statement of Historical Revenue**

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
	\$	\$	\$	\$	\$
<b>Operating Revenue</b>					
Sales of Water	42,913,744	49,689,747	54,013,282	58,804,719	59,208,198
Delinquent Fee	<u>1,081,988</u>	<u>987,307</u>	<u>1,066,491</u>	<u>1,085,593</u>	<u>1,048,106</u>
Total Operating Revenue	43,995,732	50,677,054	55,079,773	59,890,312	60,256,304
<b>Nonoperating Revenue</b>					
Interest Earned	302,558	84,560	32,383	44,752	92,849
Plumbing Inspection and License Fees	295,302	242,224	373,213	379,036	343,903
Revenue Sharing	229,502	165,098	148,528	140,655	123,885
Other Income (a)	<u>974,578</u>	<u>18,382,186</u>	<u>9,497,548</u>	<u>15,944,157</u>	<u>10,851,066</u>
Total Nonoperating Revenue	<u>1,801,940</u>	<u>18,874,068</u>	<u>10,051,672</u>	<u>16,508,600</u>	<u>11,411,703</u>
Total Revenue	45,797,672	69,551,122	65,131,445	76,398,912	71,668,007

(a) Includes 16,600,790 in operating and maintenance grants in 2009, \$6,251,855 in 2010, \$11,514,936 in 2011 and \$7,617,063 in 2012.

Table 5

### Water Department Historical Operation and Maintenance Expenses (a)

	2008	2009	2010	2011	2012
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	3,696,400	(1,754,217)	4,063,842	4,432,935	3,086,750
Management Services Director	31,034	24,121	23,226	23,619	24,351
Building and Grounds and Support Services	1,554,301	1,095,617	1,035,972	1,146,187	1,145,004
Personnel Administration	393,557	261,102	284,354	276,123	349,217
Finance Administration	835,575	713,007	785,102	847,924	829,391
Information Systems	1,933,589	1,487,421	1,421,701	1,491,718	1,429,881
Revenue and Customer Service	3,482,268	3,774,758	4,072,735	3,990,470	4,028,447
Purchasing	269,051	206,955	225,852	212,508	204,325
Total Management and General	12,195,776	5,808,764	11,912,784	12,421,483	11,097,366
<b>Operations Expenses</b>					
General Superintendent	236,623	148,527	178,217	172,673	182,266
Chief of Operations	62,507	75,851	67,543	68,776	137,430
Water Pumping and Power	17,695,920	14,393,332	11,142,039	12,092,473	11,422,585
Central Control	573,855	619,641	670,229	651,457	673,444
Water Purification	10,313,493	9,566,964	9,955,835	9,192,313	10,386,299
Chief of Facilities Maintenance	76,786	94,029	92,316	130,206	252,134
Facilities Maintenance	3,846,125	3,086,098	2,904,614	2,997,107	3,234,867
Central Yard	2,511,570	1,617,507	1,789,058	1,935,170	2,234,033
Office of Chief of Networks	120,178	143,700	142,919	255,061	179,573
Networks	12,324,603	11,091,848	8,586,257	19,866,368	18,062,377
Engineering	1,401,279	1,038,809	1,014,126	1,080,169	1,105,298
Plumbing	499,622	477,796	469,925	450,070	523,151
Total Operations	49,662,562	42,354,102	37,013,077	48,891,843	48,393,458
<b>Other Expenses</b>					
Special Accounts	1,292,730	1,081,741	932,188	897,154	926,912
Payroll Related Expenses	8,002,409	5,725,534	5,548,877	5,759,876	4,984,381
Overhead Allocation	(4,374,549)	(3,080,380)	(3,058,748)	(3,413,817)	(3,640,334)
Total Other	4,920,590	3,726,895	3,422,317	3,243,212	2,270,958
Total Operation and Maintenance (b)	66,778,929	51,889,761	52,348,178	64,556,538	61,761,783

(a) Historical operation and maintenance expenses do not include the non-cash portion of provision for claims as recorded in the Comprehensive Annual Financial Report. Estimates of future Water Department claims payable are

(b) Source: Expenditure Analysis by Group Report.

**Table 6**

**Water Department  
Capital Expenditures (a)  
2012**

C.P. #	Project	Actual Expenditures
		\$
	<b>Waterworks</b>	
110	Normal Extensions & Replacements	538,567
135	Improvements to Chemical System	3,555
156	Advanced Water Treatment	1,005,975
175	Water Hurricane Recovery Bonds	22,866,526
	Total Waterworks	24,414,623
	<b>Water Distribution</b>	
214	Normal Extensions & Replacements	1,848,698
215	Rehabilitation - Mains, Hydrants & Services	(1,008)
239	Mains DPW Contracts	717,133
	Total Water Distribution	2,564,823
	<b>Power Projects and General Budget</b>	
800	Water Share of General Budget Items	5,631,389
	Total Water Department	32,610,835

(a) Expenditures do not include proration of interest expense.

**Table 7**  
**Water Department**  
**Projected Capital Improvements (a)**

C.P. #	Project	2013	2014	2015	2016	2017	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
110	Normal Extension & Replacement	15,348,000	14,745,000	7,620,000	13,595,000	7,645,000	58,953,000
112	Modification to Oak St. Raw Water Intake Station	40,500,000	0	0	0	0	40,500,000
122	Filter Rehabilitation	6,700,000	6,800,000	6,500,000	10,200,000	10,000,000	40,200,000
214	Normal Extensions & Replacements	1,400,000	1,430,000	1,430,000	1,450,000	1,450,000	7,160,000
216	Water System Replacement Program	2,650,000	1,000,000	1,000,000	1,000,000	1,000,000	6,650,000
239	Mains In Streets Department Contracts	3,200,000	3,200,000	3,200,000	3,200,000	3,200,000	16,000,000
600	Water Share of Power Projects	1,145,000	280,000	280,000	280,000	280,000	2,265,000
701	Water Reserve for Emergencies	700,000	0	0	0	0	700,000
800	Water Share of General Budget Items	11,548,000	6,074,000	7,171,000	9,136,000	7,601,000	41,530,000
	Total Routine Capital Improvements	83,191,000	33,529,000	27,201,000	38,861,000	31,176,000	213,958,000
<b>Major Capital Improvements</b>							
135	Improvements to Chemical System	2,150,000	1,250,000	100,000	150,000	0	3,650,000
156	Advanced Carrollton Water Treatment	12,200,000	4,560,000	620,000	5,120,000	12,000	22,512,000
157	Advanced Algiers Water Treatment	3,000,000	9,200,000	0	0	0	12,200,000
159	Water Plant Security Improvements	3,170,000	4,900,000	2,000,000	2,000,000	2,000,000	14,070,000
175	Water Hurricane Recovery Bonds	88,210,000	45,000,000	45,000,000	45,000,000	10,000,000	233,210,000
221	Feeder Main Extension, General	600,000	600,000	600,000	600,000	600,000	3,000,000
	Total Major Capital Improvements	109,330,000	65,510,000	48,320,000	52,870,000	12,612,000	288,642,000
	Total Water Department Improvements	192,521,000	99,039,000	75,521,000	91,731,000	43,788,000	502,600,000

(a) The improvements for 2013-2017 are based on the 2013-2022 Capital Program approved January 11, 2013.

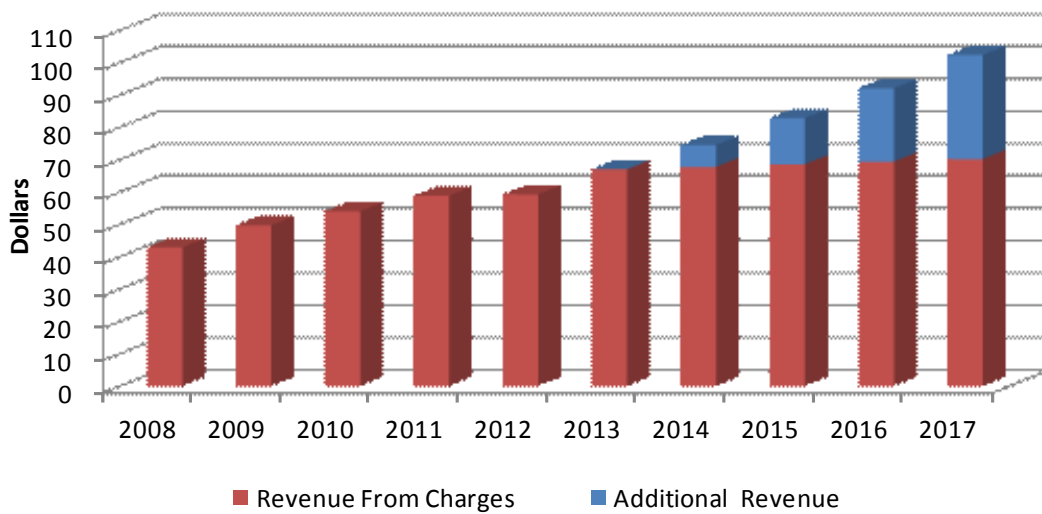
**Table 8**

**Water Department  
Projected Operating Revenue**

Year	(1)	(2)	(3)
	Revenue From Charges	Additional Revenue (a)	Total Service Charge Revenue
	\$	\$	\$
2013	66,953,300	0	66,953,300
2014	67,743,900	6,707,400	74,451,300
2015	68,543,100	14,256,400	82,799,500
2016	69,350,100	22,672,700	92,022,800
2017	70,162,500	32,136,900	102,299,400

(a) Reflects additional revenue from proposed revenue increases.

**Historical and Projected Operating Revenue**





**Table 9**

### Water Department Projected Operation and Maintenance Expenses

	2013 (a)	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,529,900	2,605,800	2,684,000	2,764,500	2,847,400
Management Services Director	24,300	25,100	25,800	26,600	27,400
Building and Grounds and Support Services	1,123,300	1,157,000	1,191,700	1,227,400	1,264,300
Personnel Administration	423,800	436,500	449,600	463,100	477,000
Finance Administration	1,151,600	1,186,200	1,221,800	1,258,400	1,296,200
Information Systems	1,909,800	1,967,100	2,026,100	2,086,900	2,149,500
Revenue and Customer Service	3,857,100	3,972,800	4,092,000	4,214,800	4,341,200
Purchasing	297,400	306,300	315,500	325,000	334,700
<b>Total Management and General</b>	<b>11,317,200</b>	<b>11,656,800</b>	<b>12,006,500</b>	<b>12,366,700</b>	<b>12,737,700</b>
<b>Operations Expenses</b>					
General Superintendent	245,000	252,400	260,000	267,800	275,800
Chief of Operations	71,800	73,900	76,100	78,400	80,800
Water Pumping and Power	12,068,100	12,430,200	12,803,100	13,187,200	13,582,800
Central Control	284,200	292,800	301,600	310,600	319,900
Water Purification	10,985,200	11,314,700	11,654,200	12,003,800	12,363,900
Chief of Facilities Maintenance	138,900	143,100	147,400	151,800	156,300
Facilities Maintenance	4,315,300	4,444,800	4,578,100	4,715,500	4,856,900
Central Yard	2,261,300	2,329,100	2,399,000	2,471,000	2,545,100
Office of Chief of Networks	173,300	178,500	183,800	189,400	195,000
Networks	21,608,400	22,256,700	22,924,400	23,612,100	24,320,500
Engineering	1,557,400	1,604,100	1,652,300	1,701,800	1,752,900
Plumbing	549,100	565,600	582,600	600,000	618,000
<b>Total Operations</b>	<b>54,258,000</b>	<b>55,885,900</b>	<b>57,562,600</b>	<b>59,289,400</b>	<b>61,067,900</b>
<b>Other Expenses</b>					
Special Accounts	1,722,700	1,774,400	1,827,600	1,882,500	1,938,900
Payroll Related Expenses	3,839,100	3,954,300	4,072,900	4,195,100	4,321,000
Overhead Allocation	(3,471,000)	(3,575,100)	(3,682,400)	(3,792,900)	(3,906,700)
<b>Total Other</b>	<b>2,090,800</b>	<b>2,153,600</b>	<b>2,218,100</b>	<b>2,284,700</b>	<b>2,353,200</b>
<b>Total Operation and Maintenance</b>	<b>67,666,000</b>	<b>69,696,300</b>	<b>71,787,200</b>	<b>73,940,800</b>	<b>76,158,800</b>

(a) Represents the adopted operating budget as of December 19, 2012.

### Historical and Projected Operating Expenses

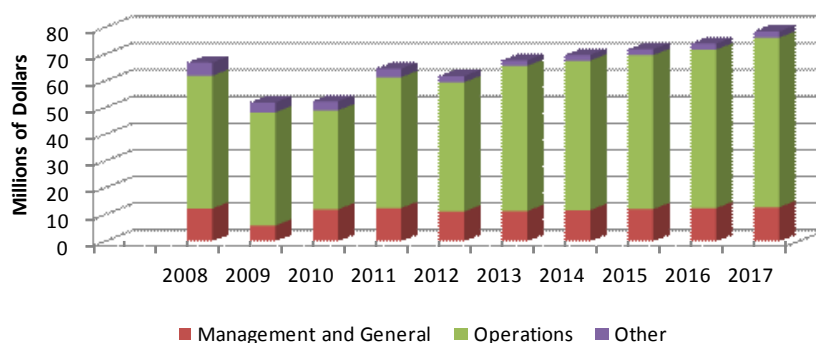


Table 10

### Water Revenue Bond Debt Service Requirements

	2013	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Existing Bonds</b>					
Series 1998	1,281,000	1,284,500	1,281,500	1,280,800	1,281,700
Series 2002	2,646,600	2,633,300	2,621,900	2,612,300	2,604,200
Total Existing Debt Service	3,927,600	3,917,800	3,903,400	3,893,100	3,885,900
<b>Projected Bonds (a)</b>					
	Amount of Issue				
	\$				
2013	60,000,000	0	0	435,925	5,231,100
2014	21,000,000	0	0	0	180,033
2015	46,000,000		0	0	0
2016	24,500,000			0	0
2017	7,000,000				0
Total Projected Debt Service	0	0	0	435,925	5,411,133
Total Debt Service	3,927,600	3,917,800	3,903,400	4,329,025	9,297,033

(a) Projected bonds are assumed to be issued in December of indicated year.

Table 11

**Water Department  
Analysis of Ability of Forecasted Revenue to  
Finance Projected Revenue Requirements**

Line No.	2013	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Operating Fund</b>					
1 Revenue from Charges	66,953,300	67,743,900	68,543,100	69,350,100	70,162,500
2 Total Additional Revenue	0	6,707,400	14,256,400	22,672,700	32,136,900
3 Total Service Charge Revenue	66,953,300	74,451,300	82,799,500	92,022,800	102,299,400
4 Interest Income	66,300	112,300	155,500	162,900	165,400
5 Plumbing Insp. & License Fees	379,000	379,000	379,000	379,000	379,000
6 Other Miscellaneous Income	4,429,200	4,429,200	4,429,200	4,429,200	4,429,200
7 Additional Revenue	1,436,500	1,574,700	1,726,300	1,900,900	2,093,100
8 Operating & Maintenance Grants	9,942,600	9,726,400	9,186,100	0	0
9 Interest from Bond Reserve Fund	101,000	137,000	166,000	197,000	211,000
10 Total Operating Revenue	83,307,900	90,809,900	98,841,600	99,091,800	109,577,100
11 Operation & Maintenance	(67,666,000)	(69,696,300)	(71,787,200)	(73,940,800)	(76,158,800)
12 Additional Operating & Maintenance	(419,900)	(839,800)	(1,259,600)	(1,679,500)	(2,099,400)
13 Operating & Maintenance Savings	1,104,700	1,499,600	1,924,300	1,991,300	2,061,700
14 Provision for Claims	(231,800)	(238,700)	(245,900)	(253,200)	(260,800)
15 Provision for Doubtful Accounts	(1,339,100)	(1,354,900)	(1,370,900)	(1,387,000)	(1,403,300)
16 Net Operating Revenue	14,755,800	20,179,800	26,102,300	23,822,600	31,716,500
<b>Debt Service</b>					
17 Existing	(3,927,600)	(3,917,800)	(3,903,400)	(3,893,100)	(3,885,900)
18 Projected	0	0	0	(435,900)	(5,411,100)
19 Subtotal	(3,927,600)	(3,917,800)	(3,903,400)	(4,329,000)	(9,297,000)
20 Gulf Opportunity Zone Act Loan	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)
21 Special Community Disaster Loan Payable	0	0	0	(2,440,200)	(2,440,200)
22 Total Debt Service	(4,567,500)	(4,557,700)	(4,543,300)	(7,409,100)	(12,377,100)
23 Transfer to Construction	0	0	(18,500,000)	(14,500,000)	(19,000,000)
24 Due from (to) Other Departments	(8,300,000)	(8,300,000)	(1,750,000)	(1,750,000)	0
25 Net Annual Balance	1,888,300	7,322,100	1,309,000	163,500	339,400
26 Beginning of Year Cash Balance	(911,900)	976,400	8,298,500	9,607,500	9,771,000
27 End of Year Balance	976,400	8,298,500	9,607,500	9,771,000	10,110,400
<b>Capital Projects Funding</b>					
28 Funds Available at Beginning of Year	28,789,000	20,053,000	13,697,800	32,639,400	15,525,000
29 Revenue Bond Proceeds	60,000,000	21,000,000	46,000,000	24,500,000	7,000,000
30 Operation Fund Transfers	0	0	18,500,000	14,500,000	19,000,000
31 Participation By Others	134,534,000	52,433,000	48,762,000	48,450,000	14,110,000
32 Interest Income	246,100	176,700	181,100	260,100	120,100
33 Total Funds Available	223,569,100	93,662,700	127,140,900	120,349,500	55,755,100
34 Obligated Contracts & Capital Jobs	(5,064,000)	0	0	0	0
35 Reinvestment in Assets	(83,191,000)	(33,529,000)	(27,201,000)	(38,861,000)	(31,176,000)
36 Major Capital Additions	(109,330,000)	(65,510,000)	(48,320,000)	(52,870,000)	(12,612,000)
37 Deferred Capital Improvements	11,000,000	25,000,000	(6,000,000)	(6,180,000)	(6,365,400)
38 Bond Issuance Expense	(900,000)	(315,000)	(690,000)	(367,500)	(105,000)
39 Capitalized Interest Requirement	(10,800,000)	(3,780,000)	(8,280,000)	(4,410,000)	(1,260,000)
40 Revenue Bond Reserve Fund	(5,231,100)	(1,830,900)	(4,010,500)	(2,136,000)	(610,300)
41 Total Application of Funds	(203,516,100)	(79,964,900)	(94,501,500)	(104,824,500)	(52,128,700)
42 End of Year Balance	20,053,000	13,697,800	32,639,400	15,525,000	3,626,400
<b>Debt Service Coverage</b>					
43 Annual Test	323%	443%	575%	322%	256%
<b>Additional Bonds Test</b>					
44 Prior Two-Year Test	129%	119%	110%	126%	131%
45 Maximum Future Debt Service Test	165%	181%	164%	130%	166%
46 Coverage 5 Years after Sale	161%	154%	147%	132%	171%

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## Sewerage Department

### ADHERENCE TO SEWERAGE SERVICE REVENUE BOND RESOLUTION

In 1997, the Board issued \$30,000,000 Sewerage Service Revenue Bonds. Issuance of these bonds obligated the Board to adhere to the covenants of the Bond Resolution. Briefly, the covenants are concerned with:

- Powers as to bonds and pledge.
- Extension of payment of bonds.
- Establishment of rates and charges.
- Sale, lease, and encumbrance of the system.
- Operation, maintenance, and reconstruction of the system.
- Insurance and condemnation.
- Preparation of an annual operating budget.
- Preparation of the capital improvement budget.
- Employment of Consulting Engineer
- Maintenance of accounts and reports.
- Issuance of additional bonds.

The provisions of the Sewerage Service Revenue Bond Resolution are virtually identical to those of the Water Revenue Bond Resolution described in the preceding section of this report. The Board is in compliance with these covenants with the exception of debt service coverage in 2012. Sewerage Department tables are included at the end of this section.

### 2012 SEWERAGE DEPARTMENT OPERATIONS

Funds for the operation, maintenance, and debt service requirements of the Sewerage Department are obtained from sewerage service charges. The balance of revenue remaining after meeting these costs may be used for cash financing capital improvements as required. Other fund sources include participation by others, interest earned on invested funds, and other minor sources.

Revenues and expenditures related to the 2012 operations of the Sewerage Department are discussed in the following paragraphs.

#### Wastewater Volumes

##### Number of Customers

Table 12 presents a summary of the historical and projected average number of sewer customers for the period 2008 through 2017. Based on year-end billing summaries, the number of monthly billed customers during 2012 average 119,162 compared with 116,581 for 2011. It is projected that the Board will average approximately 120,591 open accounts in 2013 and that the number of accounts will continue to grow at approximately 1.20 percent each year.

##### Billed Wastewater Volume

Table 12 also presents a summary of historical and projected billed wastewater volumes. Based on year-end billing summaries, a total of 11,491 million gallons of wastewater volume was billed in 2012, compared with a total of 11,454 million gallons in 2011.

## Operating Revenues

Sewerage Department operating revenue for 2012 consisted of sales revenues based on the schedule of sewerage service charges shown in Table 13. The rates consist of monthly service charges, which vary by meter size, plus a volume charge. Quantity charges for single family residential and multi-residential customers are based on 85 percent of the metered water consumption to allow 15 percent for lawn watering and other uses, which contribute no flow to the sanitary sewer. All other classes are based on 100 percent of water consumption. Water from private wells or other non-Board sources that is discharged to the sanitary sewer system is to be metered and the consumption included in computing sewerage service charges. Any customer who can show that only a portion of his metered water usage is discharged to the sanitary sewer system is to be charged for only that portion of the total water quantity. A residential customer may have either the 15 percent allowance or a special exemption, but not both.

A summary of historical sewer billings and other Sewerage Department revenue is presented in Table 14 for the period 2008 through 2012. The historical revenues shown in Table 14 were developed from detailed records provided by Board staff. Operating revenues are derived from sewerage service charge revenue, which includes excess strength charges, and delinquent fees. Sewerage service charge revenues in 2012 were \$70,707,230 which, when compared with \$69,632,459 for 2011, shows an increase of approximately 1.5 percent. Delinquent fee revenues were \$700,605 in 2012 which represent a decrease of 3.4 percent over 2011 delinquent fees.

## Non-Operating Revenues

Also shown in Table 14, Sewerage Department non-operating revenue includes interest earned on the investment of available funds and other minor items of revenue. Interest earned in 2012 consisted of \$198,790 from investments in the Sewerage System fund, the capital projects and construction fund. Miscellaneous income was \$794,818 for 2012.

## Operation and Maintenance Expenses

As previously discussed in the section of this report covering Water Department Operation and Maintenance Expenses, the Sewerage and Water Board utilizes a system of accounts designed to group expenses by function for budget purposes. Under the present system of accounts, expenses are categorized under the general classifications of management and general, operations expenses, and other expenses. Management and general expenses include wages, materials and supplies, services, and other costs of operating the Office of the Management Services Director, Personnel Administration, Finance Department, Information Systems, Purchasing Administration, Customer Services Department, and other administrative services including the Deputy Director, Executive Director, and Legal Department. Operations expenses encompass the costs of collecting, transporting, treating, and disposing of wastewater. Other expenses include such items as general insurance, outside services employed, social security, worker's compensation insurance, pension and medical insurance contributions, and miscellaneous expenditures.

Table 15 presents a summary of 2008 through 2012 historical operation and maintenance expenses of the Sewerage Department. Expenditures for 2012 increased about 2.7 percent from 2011 expenditures and about 1.2 percent from 2010 expenditures. Historical operation and maintenance expenses shown in Table 15 do not include the non-cash portion of Provision for Claims as recorded

in the Comprehensive Annual Financial Report. Estimates of future Sewerage Department claims are shown on Line 16 in Table 21.

### Capital Budget and Expenditures

Capital expenditures of the Sewerage Department include the cost of replacements and improvements to wastewater treatment and collection facilities and the Sewerage Department pro rata share of power projects and general budget costs.

The Sewerage Department's 2012 capital expenditures, exclusive of prorated interest expense, totaled \$52,214,586. Capital improvement expenditures for the year are shown in Table 16.

### Summary of Operations

The following tabulation shows a summary of the receipts and expenditures of the Sewerage Department during 2012:

Total Revenues	\$72,401,443
Operation and Maintenance Expense	44,293,232
Claims	577,065
Debt Service Payments	20,262,688
<b>Revenue Primarily Available for Capital Expenditures<sup>b</sup></b>	<b>\$7,268,458</b>

<sup>b</sup> Excludes depreciation.

### PROPOSED CAPITAL IMPROVEMENT PROGRAM

Table 17 presents a summary of the projected major capital improvement program for the period 2013 through 2017. Table 17 is based on the Board's 2013-2022 proposed Capital Program. The five-year major capital improvement program costs are estimated to total \$308,266,000. Of the projected total, \$199,932,000 is considered to be for recurring annual capital improvements. The remaining \$117,334,000 is for proposed major capital expenditures. Costs of power projects and general budget items are prorated between the Water, Sewerage and Drainage Departments on the basis of relative use. The projected Sewerage Department pro rata share of power project and general budget item costs for the five-year period 2013 through 2017 total \$2,437,000 and \$37,335,000, respectively.

The Board is currently complying with the EPA Region 6 Administrative Order. In January of 2010, the Board successfully completed negotiations for a modification of the Consent Decree. The Capital Improvement Program shown in Table 17 represents the schedule for complying with the modified Consent Decree.

### ABILITY TO FINANCE PROPOSED CAPITAL EXPENDITURES

This section of the report analyzes the adequacy of projected revenues to finance the proposed capital improvements shown in Table 17.

#### Operating Revenues

Future operating revenues of the Sewerage Department consist of sewerage service charge revenues which are summarized for 2013 through 2017 in Table 18. These estimates reflect the rate schedule effective January 1, 2013 applied to the projected number of customers and contributed wastewater



flow and are projected to increase, on average, about 1.2 percent per year throughout the study period due to growth in the customer base. Projected revenue from proposed revenue increases is also shown in Table 18.

### Other Revenue Sources

Based upon past practices, the Sewerage Department can expect to obtain revenues or funds from non-operating sources. These include interest earned from the investment of available funds, participation by others, and miscellaneous other income. By Board policy, the Sewerage Department receives one-half of the plumbing inspection and license fees, currently projected at \$379,000 per year.

Interest income from the investment of funds held for future use depends upon the level of sewerage revenue available for investment and the amount of revenue accrued towards payment of future capital expenditures.

Projections of other revenue sources are presented in a subsequent table, which summarizes the Department's financial position during the financing of projected operating and capital requirements.

### Operation and Maintenance Expense

A summary of projected operation and maintenance expense for the period 2013 through 2017 is shown in Table 19 and is categorized by the present system of accounts. Estimates of future expenses are based on anticipated future operating conditions and allowances for inflationary factors.

Projected expenses shown for 2013 reflect the Board's adopted 2013 operating budget. Based on historical trends and conversations with utility staff, all costs are projected to increase 3.0 percent per year from the Board's recommended budget for 2013.

### Debt Service Requirements

Future debt service requirements of the Sewerage Department are made up of principal, interest, and reserve fund payments for currently outstanding and future sewerage revenue bond issues. As of December 31, 2012 outstanding debt obligations consisted of \$10,875,000 Sewerage Revenue Bonds Series 1997, \$10,215,000 Sewerage Revenue Bonds Series 1998, \$14,505,000 Sewerage Revenue Bonds Series 2000A, \$10,995,000 Sewerage Revenue Bonds Series 2000B, \$18,370,000 Sewerage Revenue Bonds Series 2001, \$35,950,000 Sewerage Revenue Bonds Series 2002, \$3,530,000 Sewerage Revenue Bonds Series 2003, \$22,885,000 Sewerage Revenue Bonds Series 2004, and \$21,260,000 Sewerage Revenue Bonds Series 2009.

In November 2011, the Board and Louisiana Department of Environmental Quality (LADEQ) entered into a loan agreement whereby \$9,000,000 of proceeds from the Revolving Loan Fund were borrowed through the issuance of Sewerage Service Subordinate Revenue Bonds, Series 2011. Debt service payments assume a 20-year term with a 0.45 percent interest rate plus an administrative fee of 0.5 percent. The first principal payment is due November 1, 2013. The Board began drawing down the funds during the first quarter of 2012 and as of December 31, 2012, had received a total of \$7,450,876 in disbursements.

To adequately fund the proposed capital improvements, additional revenue bonds are indicated as shown in Table 20. It is assumed that the terms of the new debt incurred will be 6.0 percent for a term of 20 years with 3 years of capitalized interest.

The Sewerage Department has borrowed \$9,700,000 from the City of New Orleans Department of Public Works (DPW). It is anticipated that this amount will be reimbursed during the study period.

### Adequacy of Revenues to Finance Proposed Capital Improvements

Total revenue requirements for the Sewer Department recognized for purposes of this report include operation and maintenance expense, allowance for claims, debt service costs on major capital improvements financed through the sale of bonds, and expenditures for capital improvements not financed from bond proceeds. Table 21 summarizes the financing of operation and maintenance expense, debt service costs on outstanding and proposed bonds, and the transfer of operating funds for capital improvement financing. It also examines the financing of the major capital improvement program.

### Operating Fund

Line 1 of Table 21 shows projected Revenue from Charges under 2013 rates as previously presented in Table 18. Revenue from future annual revenue increases of 10 percent effective January 1, 2014 through January 1, 2017 is shown on Line 2.

Other revenue available for system operations, shown on Lines 4 through 9, consists of Interest Income on operating funds, Plumbing Inspection and License Fees, Miscellaneous Revenue, Additional Revenue, Operating and Maintenance Grants, and Interest from Bond Reserve Fund. Interest Income available to the operating fund, shown on Line 4, is estimated to be 1.0 percent of the average of the beginning and end of year Net Annual Balance, except as the average is affected by identifiable nonrecurring major receipts, transfers, or expenditures during the year. The Board began conducting field account reviews in 2012 to determine whether meters are working accurately and bills are being computed correctly. Projected revenue from these reviews is shown on Line 7 of Table 21.

The Board has submitted Project Worksheets to FEMA for operating expenses incurred from sewer repairs performed by Board crews. Line 8 indicates the amount projected to be reimbursed by FEMA for these repairs during the study period. Total Operating Revenue is shown on Line 10.

Operation and Maintenance expense, previously projected in Table 19, is shown on Line 11 of Table 21. Based on the *Financial Plan and Rate Study 2011-2020* report, additional operating costs required to achieve desired benchmarking levels is shown on Line 12 and projected cost savings due to efficiencies resulting from achieving these benchmarks are shown on Line 13. Line 14 shows the estimated allowance for claims. Bad debt expense is assumed to be 2 percent of projected revenue and is shown on Line 15. Projected Net Operating Revenue from system operations is shown on Line 16.

Lines 17 through 19 present debt service requirements on currently outstanding and proposed revenue bonds. Additional revenue bond debt financing of \$22,000,000 in 2013, \$23,000,000 in 2014, \$39,000,000 in 2015 and \$6,000,000 in 2016 is assumed. Debt service requirements for the proposed bonds reflect a 20-year term and 6.0 percent fixed interest rate. It is assumed the proposed bonds

will be issued in December with 3 years of capitalized interest and equal annual payments of principal and interest.

Payments on the Series 2011 subordinate revenue bonds issued in November of 2011 are shown in Line 20.

In July of 2006, the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247 on this agreement. No principal or interest was payable during the initial five-year period of the loan, but after that period, the loan began to bear an interest rate of 4.64 percent. Payments for the sewerage portion of principal and interest began in July 2012 and are shown on Line 21 of Table 21.

During January 2006, the Board entered into a long-term agreement with FEMA under the Community Disaster Loan Act of 2005. The Board has drawn down \$61,956,747 of the funds available. In December 2010, the Board was granted a partial forgiveness in the amount of \$36,790,000 of principal and \$4,648,410 of accrued interest, leaving a balance of \$25,166,747 in principal. Payments are to begin in August 2016 with a 5-year term and 2.93 percent interest rate. The sewerage portion of the payments is shown on Line 22. Total debt service is shown on Line 23.

Line 24 reflects the projected transfer of accumulated net earnings from system operations to assist in major capital financing. Typically, such accumulated net earnings may be used to help recover portions of the annual costs of system operations or to assist in major capital improvement financing. Line 25 reflects payments due to and from other department and includes repayment of \$9,700,000 to the DPW and repayment of \$8,400,000 from the Water Department.

Line 26 indicates the estimated Net Annual Balance from operations remaining at the end of each year.

The balance of operating funds available at the beginning of year 2013, shown on Line 27, is comprised of the current cash assets and reflects a balance of \$9,548,500.

The End of Year Balance is shown on Line 28. It is intended that, in all years of the period 2013 through 2017, the End of Year Balance should equal or exceed the assumed adequate emergency capital reserve of 45 days of operation and maintenance expense. It is anticipated that the End of Year Balance will be equal to or greater than the targeted emergency capital reserve for each year of the study period.

### **Capital Projects Funding**

Major capital improvement financing is examined in Lines 29 through 42 of Table 21. The amount of Funds on Hand, shown on Line 29, is \$19,545,900. This amount is based on audited data provided by the Board.

Projected revenue bond proceeds are shown on Line 30. The amounts and years of issue are developed considering capital program needs, current policies, other sources of major capital improvement financing, and the debt service coverage requirements of the bond covenants regarding the issuance of parity revenue bonds.

Financing of the major capital improvement program anticipates the transfer of a total of \$137,000,000 of operating reserves as shown on Line 31. Other sources of funds available to meet major capital improvement expenditures are Participation by Others and interest income. Participation by Others, as shown on Line 32 includes anticipated funding by the COE and FEMA. Interest earnings recognize an assumed 1.0 percent average annual interest rate. Line 34 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2012, the Board had \$14,192,300 obligated for open contracts and capital jobs as shown on Line 35 of Table 21. Lines 36 and 37 show the projected Reinvestment in Assets and Major Capital Additions to be funded.

Estimated issuance costs and capitalized interest requirements related to the proposed bond issue amounts are shown on Lines 38 and 39. Line 40 shows the required deposits into the Revenue Bond Reserve Fund associated with proposed bond issues.

The Total Application of Funds is shown on Line 41 of Table 21. The net End of Year Balance is shown on Line 42.

As demonstrated in Table 21, it is anticipated that current revenue sources will be adequate to readily finance both projected capital program requirements as currently scheduled and estimated future operation expenses of the Sewerage Department during the 2013-2017 study period examined herein.

### **Bond Coverage Requirements**

A requirement of the Sewerage Service Revenue Bond Resolution provides that rates must be adopted that will provide revenues in excess of operation and maintenance expense of at least 130 percent of the current year's Bond Debt Service Requirements. As shown on Line 43 of Table 21, the indicated revenue increases will provide sufficient net revenues to meet coverage requirements during the study period.

The results of the Additional Bonds Test, described in an earlier section of this report, are shown on Lines 44 through 46 of Table 21. All of these tests will be met during the study period with the proposed revenue increases.

While Table 21 indicates that the Board will meet the minimum requirements to issue additional revenue bonds, it is not clear whether the Board will be able to meet the increased key performance indicators that the market is currently requiring. Without a strong service area economy, healthy debt service coverage, and strong liquidity, the Board may be required to pay a premium to issue additional debt.

### **Summary of Findings**

- As demonstrated in Table 21, it is anticipated that current revenue sources will be adequate to readily finance both projected capital program requirements and estimated future operation expenses of the Sewerage Department during the 2013-2017 study period examined herein.

**Table 12**  
**Sewerage Department**  
**Historical and Projected Billed Volumes**  
**and Average Number of Customers (a)**

	Historical					Projected				
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Single Family Residential (b)</b>										
Customers	87,079	93,901	100,108	102,265	104,782	106,039	107,311	108,599	109,902	111,221
Sales (1,000,000 gal.)	4,770	5,145	5,203	5,433	5,374	5,438	5,503	5,569	5,636	5,704
Sales Per Customer (1,000 gal.)	55	55	52	53	51	51	51	51	51	51
<b>Multifamily Residential</b>										
Customers	4,187	4,260	4,406	4,429	4,455	4,508	4,562	4,617	4,672	4,728
Sales (1,000,000 gal.)	703	710	693	672	655	663	671	679	687	695
Sales Per Customer (1,000 gal.)	168	167	157	152	147	147	147	147	147	147
<b>Commercial</b>										
Customers	9,514	9,574	9,841	9,861	9,897	10,016	10,136	10,258	10,381	10,506
Sales (1,000,000 gal.)	5,393	5,109	5,304	5,292	5,312	5,375	5,440	5,505	5,571	5,638
Sales Per Customer (1,000 gal.)	566	533	538	536	536	536	536	536	536	536
<b>Industrial</b>										
Customers	32	30	29	27	28	28	28	28	28	28
Sales (1,000,000 gal.)	287	87	70	57	151	151	151	151	151	151
Sales Per Customer (1,000 gal.)	8,889	2,847	2,417	2,123	5,389	5,389	5,389	5,389	5,389	5,389
<b>Total</b>										
Customers	100,812	107,765	114,385	116,581	119,162	120,591	122,037	123,502	124,983	126,483
Sales (1,000,000 gal.)	11,152	11,050	11,270	11,454	11,491	11,627	11,765	11,904	12,045	12,188

(a) Excludes customers receiving free service.

(b) Includes duplex.

**Table 13**

**Sewerage Department  
Existing Sewer Rates  
(Effective January 1, 2013)**

**Monthly Sewerage Service Charge**

<u>Meter Size</u>	<u>Total Monthly Charge</u>
Inches	\$
5/8	12.76
3/4	18.15
1	25.85
1-1/2	47.58
2	69.58
3	165.00
4	275.00
6	550.00
8	825.00
10	1,100.00
12	1,265.00
16	1,705.00

**Monthly Quantity Charge**

Per 1,000 Gallons 4.44

**Excessive Strength Charge per Pound**

BOD 0.2900

TSS 0.1700

Table 14

### Sewerage Department Statement of Historical Revenue

	2008	2009	2010	2011	2012
	\$	\$	\$	\$	\$
<b>Operating Revenue</b>					
Sewerage Service Charges	61,154,472	65,442,893	68,821,844	69,632,459	70,707,230
Delinquent Fee	722,775	660,053	712,935	725,617	700,605
<b>Total Operating Revenue</b>	<b>61,877,246</b>	<b>66,102,946</b>	<b>69,534,779</b>	<b>70,358,076</b>	<b>71,407,835</b>
<b>Nonoperating Revenue</b>					
Interest Income	1,094,327	326,075	74,774	253,547	198,790
Plumbing Inspection and License Fees	295,302	242,224	373,213	379,036	343,903
Revenue Sharing	286,233	205,908	185,243	175,424	154,509
Other Income (a)	288,674	3,160,923	3,218,248	3,009,211	296,406
<b>Total Nonoperating Revenue</b>	<b>1,964,536</b>	<b>3,935,130</b>	<b>3,851,478</b>	<b>3,817,218</b>	<b>993,608</b>
<b>Total Revenue</b>	<b>63,841,782</b>	<b>70,038,076</b>	<b>73,386,257</b>	<b>74,175,294</b>	<b>72,401,443</b>

(a) Includes \$2,772,395 in operating and maintenance grants in 2009 , \$2,957,463 in 2010, and \$7,463 in 2012.



**Table 15**  
**Sewerage Department**  
**Historical Operation and Maintenance Expenses (a)**

	2008	2009	2010	2011	2012
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,710,619	5,635,970	2,332,598	1,602,429	2,604,097
Management Services Director	22,630	23,641	23,225	23,618	24,350
Building and Grounds and Support Services	1,148,020	1,063,852	1,035,972	1,146,188	1,145,005
Personnel Administration	286,969	255,645	284,354	276,123	349,216
Finance Administration	617,079	701,627	785,102	847,924	829,390
Information Systems	1,409,909	1,479,827	1,421,701	1,491,718	1,429,882
Revenue and Customer Service	3,482,253	3,774,740	4,072,717	3,990,453	4,028,431
Purchasing	196,183	203,652	225,851	212,508	204,325
Total Management and General	<u>9,873,660</u>	<u>13,138,954</u>	<u>10,181,521</u>	<u>9,590,960</u>	<u>10,614,697</u>
<b>Operations Expenses</b>					
General Superintendent	172,537	136,268	178,217	172,673	182,265
Drainage Pumping and Central Control	335,881	253,466	284,458	282,983	305,901
Sewerage Pumping	3,530,071	2,991,929	2,994,092	2,761,304	3,125,171
Chief of Operations	45,578	70,309	67,543	68,777	137,430
Water Pumping and Power	1,931,804	351,013	897,824	910,258	360,672
Sewerage Treatment	10,001,042	12,384,026	11,219,427	10,953,890	10,770,661
Chief of Facilities Maintenance	55,990	87,943	92,316	130,206	252,133
Facilities Maintenance	3,035,342	2,915,271	2,904,608	2,997,106	3,234,864
Central Yard	1,879,518	1,591,341	1,789,445	1,935,487	2,234,033
Office of Chief of Networks	87,629	104,781	104,212	185,982	130,939
Networks	7,713,092	9,881,454	8,514,449	8,767,792	9,388,251
Engineering	1,021,766	962,712	1,014,125	1,080,168	1,105,298
Plumbing	499,620	477,792	469,921	450,067	523,148
Total Operations	<u>30,309,870</u>	<u>32,208,305</u>	<u>30,530,637</u>	<u>30,696,692</u>	<u>31,750,766</u>
<b>Other Expenses</b>					
Special Accounts	937,175	1,081,546	932,188	897,154	926,912
Payroll Related Expenses	4,823,058	6,301,921	5,522,151	5,710,844	5,008,698
Overhead Allocation	(3,576,413)	(3,328,966)	(3,388,621)	(3,747,859)	(4,007,841)
Total Other	<u>2,183,819</u>	<u>4,054,501</u>	<u>3,065,718</u>	<u>2,860,139</u>	<u>1,927,769</u>
Total Operation and Maintenance (b)	<u>42,367,349</u>	<u>49,401,760</u>	<u>43,777,876</u>	<u>43,147,792</u>	<u>44,293,232</u>

- (a) Historical operation and maintenance expenses do not include the non-cash portion of provision for claims as recorded in the Comprehensive Annual Financial Report. Estimates of future Water Department claims payable are
- (b) Source: Expenditure Analysis by Group Report.

**Table 16**

**Sewerage Department  
Capital Expenditures (a)  
2012**

C.P. #	Project	Actual Expenditures
		\$
	<b>Sewerage Systems</b>	
313	Extensions & Replacements - Sewer Force Mains EPA Consent Decree	
317	Normal Extensions & Replacement of Gravity Mains	10,109,846
318	Rehabilitation Gravity Sewer System	1,009,949
326	Extensions & Replacements to Sewer Pumping Stations	40,029
339	Mains in Street Dept. Contracts	1,534,333
348	Normal Extensions & Replacements	1,593,234
368	Wetlands Assimilation Project	1,100,904
381	Modification & Extension of WBSTP to 20/50 MGD	3,575
	Total Sewerage System	46,625,221
	<b>Power Projects and General Budget</b>	
800	Sewerage Share of General Budget Items	5,589,365
	Total Sewerage Department	52,214,586

(a) Expenditures do not include proration of interest expense.

**Table 17**  
**Sewerage Department**  
**Projected Capital Improvements (a)**

C.P. #	Project	2013	2014	2015	2016	2017	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
317	Extensions and Replacements - Gravity Mains	2,200,000	200,000	8,160,000	19,867,000	9,825,000	40,252,000
318	Rehabilitation Gravity Sewer System	6,300,000	7,300,000	6,600,000	6,600,000	6,600,000	33,400,000
319	Extension and Replacements - Sanitary Sewer Mains Algi	0	10,650,000	10,225,000	0	0	20,875,000
326	Extensions and Replacements to Pumping Stations	2,553,000	5,170,000	2,570,000	7,000,000	1,000,000	18,293,000
339	Mains in Streets Department Contracts	3,800,000	5,300,000	5,300,000	5,300,000	5,300,000	25,000,000
348	Extensions and Replacements - Treatment Plants	2,093,000	2,009,000	2,448,000	3,695,000	3,095,000	13,340,000
600	Sewer Share of Power Projects	227,000	1,590,000	40,000	40,000	540,000	2,437,000
800	Sewer Share of General Budget Items	10,946,000	5,453,000	7,009,000	7,431,000	6,496,000	37,335,000
	Total Routine Annual Improvements	28,119,000	37,672,000	42,352,000	49,933,000	32,856,000	190,932,000
<b>Major Capital Improvements</b>							
313	Extensions and Replacements - Sewer Force Mains	0	2,000,000	2,000,000	2,250,000	2,250,000	8,500,000
368	Wetland Assimilation	9,100,000	3,000,000	0	0	0	12,100,000
375	Sewerage Hurricane Recovery Bonds	64,860,000	5,000,000	5,000,000	5,000,000	5,000,000	84,860,000
381	Modification and Expansion of WBSTP to 20/50 MGD	283,000	3,241,000	705,000	4,135,000	3,500,000	11,864,000
	Total Major Improvements	74,243,000	13,241,000	7,705,000	11,385,000	10,760,000	117,334,000
	Total Sewerage System Improvements	102,362,000	50,913,000	50,057,000	61,318,000	43,616,000	308,266,000

(a) The improvements for 2013-2017 are based on the 2013-2022 Capital Program approved January 11, 2013.

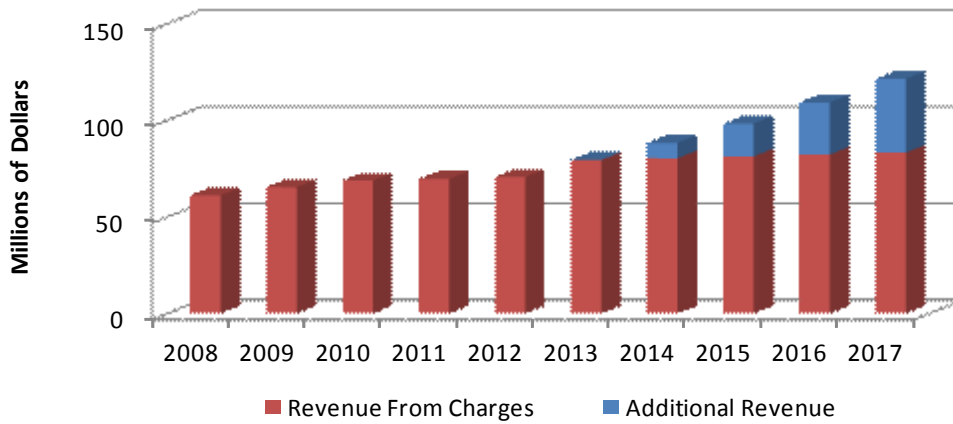
**Table 18**

**Sewerage Department  
Projected Operating Revenue**

Year	(1)	(2)	(3)
	Revenue From Charges	Additional Revenue (a)	Total Service Charge Revenue
	\$	\$	\$
2013	79,455,300	0	79,455,300
2014	80,399,100	7,907,900	88,307,000
2015	81,356,400	16,863,500	98,219,900
2016	82,325,300	26,940,200	109,265,500
2017	83,308,100	38,212,900	121,521,000

(a) Reflects additional revenue from proposed revenue increases.

**Historical and Projected Operating Revenue**



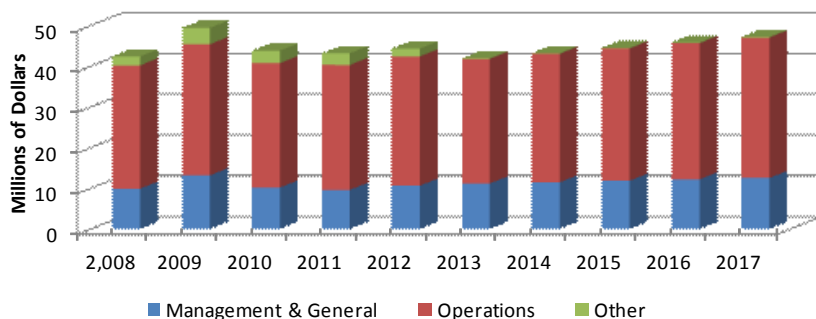
**Table 19**

### Sewerage Department Projected Operation and Maintenance Expenses

	2013 (a)	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,822,400	2,907,000	2,994,300	3,084,100	3,176,600
Management Services Director	24,300	25,100	25,800	26,600	27,400
Building and Grounds and Support Services	1,123,700	1,157,400	1,192,100	1,227,900	1,264,700
Personnel Administration	270,000	278,100	286,400	295,000	303,900
Finance Administration	876,200	902,500	929,600	957,400	986,200
Information Systems	1,897,700	1,954,600	2,013,200	2,073,600	2,135,800
Revenue and Customer Service	3,877,700	3,994,000	4,113,800	4,237,300	4,364,400
Purchasing	247,900	255,300	263,000	270,900	279,000
<b>Total Management and General</b>	<b>11,139,900</b>	<b>11,474,000</b>	<b>11,818,200</b>	<b>12,172,800</b>	<b>12,538,000</b>
<b>Operations Expenses</b>					
General Superintendent	171,000	176,100	181,400	186,900	192,500
Drainage Pumping and Central Control	0	0	0	0	0
Sewerage Pumping	2,690,200	2,770,900	2,854,100	2,939,700	3,027,900
Chief of Operations	71,800	73,900	76,100	78,400	80,800
Water Pumping and Power	472,600	486,800	501,400	516,500	532,000
Water Purification	230,400	237,400	244,500	251,800	259,400
Sewerage Treatment	12,144,000	12,508,300	12,883,600	13,270,100	13,668,200
Chief of Facilities Maintenance	138,900	143,100	147,400	151,800	156,300
Facilities Maintenance	1,805,400	1,859,600	1,915,400	1,972,800	2,032,000
Central Yard	2,271,400	2,339,500	2,409,700	2,482,000	2,556,400
Office of Chief of Networks	120,900	124,600	128,300	132,200	136,100
Networks	8,932,500	9,200,500	9,476,500	9,760,800	10,053,600
Engineering	1,045,100	1,076,400	1,108,700	1,142,000	1,176,200
Plumbing	549,100	565,600	582,600	600,000	618,000
<b>Total Operations</b>	<b>30,643,300</b>	<b>31,562,700</b>	<b>32,509,700</b>	<b>33,485,000</b>	<b>34,489,400</b>
<b>Other Expenses</b>					
Special Accounts	1,605,900	1,654,100	1,703,700	1,754,900	1,807,500
Payroll Related Expenses	2,446,000	2,519,400	2,595,000	2,672,800	2,753,000
Overhead Allocation	(3,909,000)	(4,026,300)	(4,147,100)	(4,271,500)	(4,399,600)
<b>Total Other</b>	<b>142,900</b>	<b>147,200</b>	<b>151,600</b>	<b>156,200</b>	<b>160,900</b>
<b>Total Operation and Maintenance</b>	<b>41,926,100</b>	<b>43,183,900</b>	<b>44,479,500</b>	<b>45,814,000</b>	<b>47,188,300</b>

(a) Represents the adopted operating budget as of December 19, 2012.

### Historical and Projected Operating Expenses



**Table 29**
**Drainage Department  
Debt Service Requirements**

	2013	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Nine-Mill Tax Bonds</b>					
Series 1998	793,400	795,000	794,900	793,300	794,300
Series 2002	1,423,400	1,425,100	1,425,800	1,430,000	1,436,200
Total Nine-Mill Debt Service	2,216,800	2,220,100	2,220,700	2,223,300	2,230,500
<b>Projected Bonds (a)</b>					
	Amount of Issue				
	\$				
2013	257,000,000	1,555,900	18,670,800	18,670,800	18,670,800
2014	127,000,000		768,900	9,226,400	9,226,400
2015	11,000,000			66,600	799,100
2016	86,000,000				520,700
2017	0				6,247,800
Total Projected Debt Service		1,555,900	19,439,700	27,963,800	29,217,000
Total Debt Service		3,772,700	21,659,800	30,184,500	31,440,300

(a) Projected bonds are assumed to be issued in December of indicated year.

Table 21

**Sewerage Department  
Analysis of Ability of Forecasted Revenue to  
Finance Projected Revenue Requirements**

Line No.	2013	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Operating Fund</b>					
1 Revenue from Charges	79,455,300	80,399,100	81,356,400	82,325,300	83,308,100
2 Total Additional Revenue	0	7,907,900	16,863,500	26,940,200	38,212,900
3 Total Service Charge Revenue	79,455,300	88,307,000	98,219,900	109,265,500	121,521,000
4 Interest Income	140,600	121,800	123,100	123,700	127,900
5 Plumbing Insp. & License Fees	379,000	379,000	379,000	379,000	379,000
6 Other Miscellaneous Income	3,044,500	3,044,500	3,044,500	3,044,500	3,044,500
7 Additional Revenue	2,057,600	2,195,800	2,347,900	2,519,000	2,706,800
8 Operating & Maintenance Grants	6,069,400	5,937,500	5,607,600	0	0
9 Interest from Bond Reserve Fund	288,000	307,000	335,000	354,000	357,000
10 Total Operating Revenue	91,434,400	100,292,600	110,057,000	115,685,700	128,136,200
11 Operation & Maintenance	(41,926,100)	(43,183,900)	(44,479,500)	(45,814,000)	(47,188,300)
12 Additional Operating & Maintenance	(2,430,900)	(4,861,800)	(7,292,600)	(9,723,500)	(12,446,100)
13 Operating & Maintenance Savings	691,100	952,200	1,230,100	1,271,300	1,314,000
14 Provision for Claims	(592,300)	(610,000)	(628,300)	(647,200)	(666,600)
15 Provision for Doubtful Accounts	(1,589,100)	(1,766,100)	(1,964,400)	(2,185,300)	(2,430,400)
16 Net Operating Revenue	45,587,100	50,823,000	56,922,300	58,587,000	66,718,800
<b>Debt Service</b>					
17 Existing	(20,609,100)	(20,636,500)	(20,669,900)	(20,716,900)	(19,267,400)
18 Projected	0	0	0	(188,600)	(2,460,500)
19 Subtotal	(20,609,100)	(20,636,500)	(20,669,900)	(20,905,500)	(21,727,900)
<b>Subordinate Revenue Bonds</b>					
20 Existing	(489,100)	(519,800)	(531,200)	(528,500)	(527,200)
21 Gulf Opportunity Zone Act Loan	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)
22 Special Community Disaster Loan Payable	0	0	0	(2,440,200)	(2,440,200)
23 Total Debt Service	(27,333,400)	(27,391,500)	(27,436,300)	(30,109,400)	(30,930,500)
24 Transfer to Construction	(24,000,000)	(25,000,000)	(27,000,000)	(26,000,000)	(35,000,000)
25 Due from (to) Other Departments	1,775,000	1,775,000	(2,425,000)	(2,425,000)	0
26 Net Annual Balance	(3,971,300)	206,500	61,000	52,600	788,300
27 Beginning of Year Cash Balance	9,548,500	5,577,200	5,783,700	5,844,700	5,897,300
28 End of Year Balance	5,577,200	5,783,700	5,844,700	5,897,300	6,685,600
<b>Capital Projects Funding</b>					
29 Funds Available at Beginning of Year	19,545,900	18,854,800	15,744,100	27,326,900	2,685,200
30 Revenue Bond Proceeds	22,000,000	23,000,000	39,000,000	6,000,000	0
31 Operation Fund Transfers	24,000,000	25,000,000	27,000,000	26,000,000	35,000,000
32 Participation by Others	75,943,000	6,186,000	6,543,000	6,236,000	6,860,000
33 Interest Income	128,300	106,500	102,000	133,400	18,300
34 Total Funds Available	141,617,200	73,147,300	88,389,100	65,696,300	44,563,500
35 Obligated Contracts & Capital Jobs	(14,192,300)	0	0	0	0
36 Reinvestment in Assets	(28,119,000)	(37,672,000)	(42,352,000)	(49,933,000)	(32,856,000)
37 Major Capital Additions	(74,243,000)	(13,241,000)	(7,705,000)	(11,385,000)	(10,760,000)
38 Bond Issuance Expense	(330,000)	(345,000)	(585,000)	(90,000)	0
39 Capitalized Interest Requirement	(3,960,000)	(4,140,000)	(7,020,000)	(1,080,000)	0
40 Revenue Bond Reserve Fund	(1,918,100)	(2,005,200)	(3,400,200)	(523,100)	0
41 Total Application of Funds	(122,762,400)	(57,403,200)	(61,062,200)	(63,011,100)	(43,616,000)
42 End of Year Balance	18,854,800	15,744,100	27,326,900	2,685,200	947,500
<b>Debt Service Coverage</b>					
43 Annual Test	166.8%	185.5%	207.5%	194.6%	215.7%
<b>Additional Bonds Test</b>					
44 Prior Two-Year Test	130%	161%	197%	214%	230%
45 Maximum Future Debt Service Test	345%	338%	318%	338%	394%
46 Coverage 5 Years after Sale	604%	685%	720%	730%	766%

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## Drainage Department

### 2012 DRAINAGE DEPARTMENT OPERATIONS

The Sewerage and Water Board has provided for the drainage needs of New Orleans since 1903. The City encompasses a saucer-shaped depression between the Mississippi River and Lake Pontchartrain on the East Bank and an area bordered by the river and adjoining wet lands on the West Bank. Prior to January 1, 1967, when the three-mill drainage tax became effective, the City of New Orleans was obligated to reimburse the Board for the cost of operating and maintaining drainage facilities.

In 1969, studies of projected capital improvement financing needs and revenue requirements indicated the need for additional sources of funds. Constitutional amendments, which would have provided the required funds from an additional three-mill ad valorem tax, were offered in 1970, and again in 1972. The State's electorate rejected both amendments. However, an additional six-mill ad valorem tax was approved April 16, 1977 and became effective January 1, 1978. Subsequently, a nine-mill property tax increase was approved May 16, 1981 and implemented January 1, 1982. The nine-mill tax is to be used for operation and maintenance, as well as funding of capital improvements.

The Board is charged with operating, maintaining, repairing, and expanding the major drainage system located throughout the City.

#### Revenues

Revenues that were available to the Drainage Department for operation and maintenance expenses, and capital additions, consisted of proceeds from the three-mill, six-mill, and nine-mill ad valorem tax, interest on investments, and miscellaneous income. Other revenues available for Drainage Department capital improvements included interest income and other miscellaneous sources.

A summary of historical revenues received by source is shown in Table 22 for the period 2008 through 2012. The historical revenue shown in Table 22 was developed from detailed records provided by Board Staff.

#### Operation and Maintenance Expenses

The present system of accounts categorizes expenses under the functional classifications of management and general expenses, operations expenses, and other expenses, including such items as general insurance, outside services employed, social security, worker's compensation insurance, pension and medical insurance contributions, and miscellaneous expenditures.

Table 23 presents a summary of 2008 through 2012 operation and maintenance expenses of the Drainage Department. Expenditures for 2012 decreased about 0.8 percent from 2011 expenditures. Operation and maintenance expenses have increased an average of 3.1 percent per year over the five-year period shown. Historical operation and maintenance expenses shown in Table 23 do not include the non-cash portion of Provision for Claims as recorded in the Comprehensive Annual Financial Report. Estimate of future Drainage Department claims are included on Line 10 in Table 30.

**Capital Budget and Expenditures**

Capital expenditures of the Drainage Department include the cost of replacements and improvements to pumping stations and canals and the Drainage Department’s pro rata share of power projects and general budget costs.

The Drainage Department capital improvement expenditures for 2012, exclusive of prorated interest expenses totaled \$22,844,623. The Drainage Department’s capital improvement expenditures for the year are shown in Table 24.

**Summary of Operations**

The following tabulation shows a summary of receipts and expenditures of the Drainage Department during 2012:

Total Revenues	\$45,275,067
Operation and Maintenance Expense	31,831,734
Claims	-672,802
Debt Service Payments	2,206,048
<b>Revenue Primarily Available for Capital Expenditures <sup>a</sup></b>	<b>\$11,910,087</b>

<sup>a</sup> Excludes depreciation.

**PROPOSED CAPITAL IMPROVEMENT PROGRAM**

Table 25 presents a summary of the projected major capital improvement program for the period 2013 through 2017. Table 25 is based on the Board’s 2013-2022 proposed Capital Program. The five-year major capital improvement program costs are expected to total \$2,067,044,000. Major budget items include extension and enlargement of canals plus increased pumping capacity.

Participation by others consists of monies collected from developers and individuals for the extension of drainage service to new customers and from governmental agencies for replacement and expansion of system facilities. As shown in Table 26, future revenues from these sources are estimated by the Board in the 2013 through 2017 Capital Budget according to capital project and amount to \$1,529,749,000, most of which is provided by the COE.

The Sewerage and Water Board is currently receiving funds from the COE sponsored and congressionally authorized Southeast Louisiana Urban Flood Control (SELA) Project. This funding will allow additional construction of projects which were identified in the 1970’s, but which have not been completed because of funding limitations. The identified projects are to be funded either 100 percent from federal funds or 65 percent from federal funds and 35 percent from local funds. The payback period for the local share is 30 years and is anticipated to begin in 2013.

**ABILITY TO FINANCE PROPOSED CAPITAL EXPENDITURES**

Drainage Department future operating and capital cost requirements are to be met by the revenue sources previously discussed. In 2012, the three-mill, six-mill, and nine-mill ad valorem taxes were the principal source of operating funds for the Drainage Department.

## Revenues

Projected operating income of the drainage system is shown in Table 27. Projections include proceeds from the three-mill, the six-mill, and the nine-mill ad valorem tax and other revenue and are based on the 2012 assessed taxable value.

Other sources of income include interest earned from the investment of funds held for future use; sales of three-mill, six-mill, and nine-mill ad valorem tax bonds; and participation by others. Projections of interest income, which vary according to the balance of funds held for future use, are shown in a later section of this report.

The projection of millage revenue for 2013 through 2017 is based on 4.66, 4.71, and 7.06 mills for three-mill, six-mill, and nine-mill taxes, respectively.

## Operation and Maintenance Expenses

A summary of projected operation and maintenance expenses is shown in Table 28. Expenses are categorized by system function as now reflected in the accounting system of the Sewerage and Water Board. Estimates of future expenses are based on anticipated future operating conditions and allowances for inflationary factors.

Projected expenses shown for 2013 reflect the Board's adopted 2013 operating budget. Based on historical trends and conversations with utility staff, all costs are projected to increase 3.0 percent per year from the Board's recommended budget for 2013.

## Debt Service Requirements

Nine-mill bonds in the amount of \$10,000,000 were issued in 1998, and as of December 31, 2012, \$4,040,000 remained outstanding. Additional nine-mill bonds in the amount of \$20,000,000 were issued in 2002, and as of December 31, 2012, \$13,590,000 remained outstanding.

Collection of the three-mill ad valorem tax levy is authorized until the year 2017; six-mill tax until 2028; and nine-mill tax until 2032.

To adequately fund the proposed capital improvements, additional revenue bonds are indicated as shown in Table 29. It is assumed that the terms of new debt incurred will be 6.0 percent for a term of 30 years.

The Drainage Department has borrowed \$5,100,000 from the City of New Orleans Department of Public Works (DPW). It is anticipated that this amount will be reimbursed during the study period.

## Adequacy of Revenues to Finance Proposed Capital Improvements

Total revenue requirements for the Drainage Department recognized for purposes of this report include operation and maintenance expense, allowance for claims, debt service costs on major capital improvements financed through the sale of bonds, and expenditures for capital improvements not financed from bond proceeds. Table 30 summarizes the financing of operation and maintenance expense, debt service costs on outstanding and proposed bonds, and the transfer of operating funds for major capital improvement financing. It also examines the financing of the major capital improvement program.

## Operating Fund

Money deposited in the Drainage System Fund is obtained primarily from the three-mill, six-mill, and nine-mill ad valorem tax as shown on Lines 1 through 3 of Table 30.

Other revenue available for system operations, shown on Lines 4 and 5, consist of other income and interest income. Interest Income available to the operating fund, shown on Line 5, is estimated to be 1.0 percent of the average of the beginning and end of year Net Annual Balance, except as the average is affected by identifiable nonrecurring major receipts, transfers, or expenditures during the year.

Additional operating revenue is needed to help fund the capital program. The *Financial Plan and Rate Study 2011-2020* proposed that a new Drainage Fee be considered as an alternate source of revenue. The estimated revenue from this alternative source of operating revenue is shown on Line 6 of Table 30.

Operation and Maintenance expense, previously projected in Table 28, is shown on Line 8 of Table 30. Based on the *Financial Plan and Rate Study 2011-2020* there will be additional operating costs associated with the Permanent Pump Stations and West Closure projects which are shown on Line 9. Line 10 shows the estimated allowance for claims. Projected Net Operating Revenue from system operations is shown on Line 11.

Lines 12 through 14 present debt service requirements on currently outstanding and proposed revenue bonds. Additional debt financing as shown in Table 29 is assumed to fund proposed capital improvements. These bonds are assumed to be 30 year, 6.0 percent fixed interest rate bonds issued in December of each year, with equal annual payments of principal and interest.

During January 2006, the Board entered into a long-term agreement with FEMA under the Community Disaster Loan Act of 2005. The Board has drawn down \$61,956,747 of the funds available. In December 2010, the Board was granted a partial forgiveness in the amount of \$36,790,000 of principal and \$4,648,410 of accrued interest, leaving a balance of \$25,166,747 in principal. Payments are to begin in August 2016 with a 5-year term and 2.93 percent interest rate. The drainage portion of the payments is shown on Line 15.

Line 16 reflects the estimated SELA repayments that will begin in 2013. Total debt service is shown on Line 17.

Line 18 reflects the projected transfer of accumulated net earnings from system operations to assist in major capital financing. Typically, such accumulated net earnings may be used to help recover portions of the annual costs of system operations or to assist in major capital improvement financing. Line 19 reflects repayment from the Water Department and repayment to the DPW.

Line 20 indicated the estimated Net Annual Balance from operations remaining at the end of each year. The net balance of operating funds available at the beginning of the year 2013, shown on Line 21, is comprised of current cash assets and reflects a negative balance of \$29,400.

The End of Year Balance is shown on Line 22. It is intended that, in all years of the period 2013 through 2017, the End of Year Balance should equal or exceed the assumed adequate emergency capital reserve of 45 days operation and maintenance expense. It is anticipated that the End of Year

Balance will be equal to or greater than the targeted emergency capital reserve for each year of the study period.

### **Capital Projects Funding**

Major capital improvement financing is examined in Lines 23 through 36 of Table 30. The amount of Funds on Hand, shown on Line 21, is \$39,198,800. This amount is based on audited data provided by the Board.

Bond issue amounts for a total of \$481,000,000 are projected and shown on Line 24 of Table 30. The amounts and year of issue are developed considering capital program needs, current policies, and other sources of major capital improvement financing.

Financing of the major capital improvement program anticipates the transfer of a total of \$73,000,000 of operating reserves as shown on Line 25. Other sources of funds available to meet major capital improvement expenditures are Participation by Others and Interest Income. Interest earnings recognize an assumed 1.0 percent average annual interest rate. Lines 26 and 27 indicate the estimated annual funds from each of these sources. Line 28 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2012, the Board had \$13,851,100 obligated for open contracts and capital jobs as shown on Line 29 of Table 30. Lines 30 and 31 show the projected Reinvestment of Assets and Major Capital Additions to be funded.

Estimated issuance costs related to the proposed bond issue amounts are shown on Line 33. Line 34 shows the required deposits into the Revenue Bond Reserve Fund associated with proposed bond issues. The net End of Year Balance is shown on Line 36.

As demonstrated in Table 30, it is anticipated that current revenue sources will not be adequate to readily finance both projected capital program requirements as currently scheduled and estimated future operation expenses of the Drainage Department during the 2013-2017 study period examined herein and that an additional source of operating revenue will need to be identified.

### **Summary of Findings**

It is anticipated that additional operating revenue will be needed to fund the operating expense and debt service requirements during the study period.

**Table 22**

**Drainage Department  
Statement of Historical Revenue**

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
	\$	\$	\$	\$	\$
Three-mill Ad Valorem Tax	11,294,822	10,302,545	10,378,060	11,129,376	12,497,723
Six-mill Ad Valorem Tax	11,406,361	10,410,524	10,498,580	11,242,927	12,630,977
Nine-mill Ad Valorem Tax	17,001,253	15,485,030	15,672,791	16,855,081	18,933,290
Two-mill Ad Valorem Tax	0	0	1,045	4,870	0
Plumbing License and Inspection Fees	0	0	0	0	0
Interest Earned	2,148,679	475,088	167,166	128,571	109,748
Other	1,224,732	1,704,640	1,196,275	1,107,419	1,103,330
Total Revenue	<u>43,075,847</u>	<u>38,377,827</u>	<u>37,913,917</u>	<u>40,468,244</u>	<u>45,275,067</u>

Table 23

**Drainage Department  
Historical Operation and Maintenance Expenses (a)**

	2008	2009	2010	2011	2012
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	1,442,470	1,641,001	1,504,269	2,374,723	2,787,387
Management Services Director	10,991	22,977	23,226	23,619	24,351
Building and Grounds and Support Services	2,222,454	3,773,499	3,505,448	3,608,126	3,111,286
Personnel Administration	139,385	248,085	284,354	276,123	349,217
Finance Administration	285,726	677,215	785,102	847,924	829,391
Information Systems	684,813	1,469,310	1,437,571	1,523,561	1,429,881
Purchasing	95,289	199,076	225,852	212,508	204,325
Total Management and General	4,881,129	8,031,163	7,765,821	8,866,583	8,735,837
<b>Operations Expenses</b>					
General Superintendent	83,804	119,297	178,217	172,673	182,266
Drainage Pumping and Central Control	6,810,440	6,525,528	6,466,087	6,047,653	6,190,023
Chief of Operations	22,138	62,634	67,543	68,776	137,430
Water Pumping and Power	8,722,654	4,628,952	5,354,188	5,319,545	5,157,859
Chief of Facilities Maintenance	27,195	79,517	92,316	130,206	252,134
Facilities Maintenance	1,621,548	2,296,478	2,586,461	2,614,209	2,881,080
Central Yard	915,986	1,554,592	1,788,429	1,934,652	2,234,033
Office of Chief of Network	42,563	50,894	50,617	90,334	63,599
Networks	2,332,643	3,750,657	2,176,076	2,074,839	2,250,380
Engineering	743,445	1,198,838	1,352,670	1,406,861	1,439,825
Total Operations	21,322,417	20,267,387	20,112,603	19,859,748	20,788,628
<b>Other Expenses</b>					
Special Accounts	593,650	954,917	932,188	897,176	901,912
Payroll Related Expenses	3,350,223	6,583,416	5,509,813	5,790,140	4,979,183
Overhead Allocation	(1,655,889)	(2,919,381)	(3,078,386)	(3,333,228)	(3,573,827)
Total Other	2,287,984	4,618,952	3,363,616	3,354,088	2,307,268
Total Operation and Maintenance (b)	28,491,530	32,917,502	31,242,040	32,080,419	31,831,734

- (a) Historical operation and maintenance expenses do not include the non-cash portion of provision for claims as recorded in the Comprehensive Annual Financial Report. Estimates of future Water Department claims payable are
- (b) Source: Expenditure Analysis by Group Report.

**Table 24**

**Drainage Department  
Capital Expenditures (a)  
2012**

C.P. # Project	Actual Expenditures
	\$
<b>Canals</b>	
418 Normal Extensions & Replacements	2,328,524
439 Major Drainage Participation in DPW Projects	829,573
471 SELA Program Management	1,554,062
476 Hollygrove Canals (SELA-A)	141,629
478 S. Claiborne-Lowerline to Monticello Street	2,202,525
486 Napoleon Canal Improvements 9 SELA-B)	3,439,176
496 General DeGaulle Canal (SELA-C)	115,910
497 Florida Ave. Canad - DPS#19 to Peoples Ave. (SELA-B)	676,737
498 Dwyer Intake Canal (St. Charles to Dwyer DPS) (SELA-A)	575,923
499 Jefferson Avenue Canal	3,129,032
Total Drainage Canals	14,993,089
<b>Pumping Stations</b>	
511 Normal Extensions & Rep./Stations	1,484,991
554 Expansion of Dwyer DPS (SELA-A)	516
575 Drainage Hurricane Recovery Bonds	748,820
Total Drainage Pumping Stations	2,234,327
<b>Power Projects and General Budget</b>	
600 Drainage Share of Power Projects	1,289,202
800 Drainage Share of General Budget Items	4,328,006
Total Drainage Department	22,844,623

(a) Expenditures do not include proration of interest expense.



**Table 25**  
**Drainage Department**  
**Projected Capital Improvements (a)**

C.P.#	Project	2013	2014	2015	2016	2017	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
418	Normal Ext. & Replacements	800,000	800,000	820,000	870,000	890,000	4,180,000
511	Normal Ext. & Replacement - Stations	11,063,000	9,670,000	24,660,000	6,940,000	2,000,000	54,333,000
600	Drainage Share of Power Projects	36,939,000	87,245,000	730,000	480,000	1,480,000	126,874,000
800	Drainage Share of General Budget Items	7,609,000	4,040,000	5,041,000	6,826,000	5,312,000	28,828,000
	<b>Total Routine Capital Improvements</b>	<b>56,411,000</b>	<b>101,755,000</b>	<b>31,251,000</b>	<b>15,116,000</b>	<b>9,682,000</b>	<b>214,215,000</b>
<b>Major Capital Improvements</b>							
439	Mains, Over 36" in Street Dept. Contracts	4,300,000	4,300,000	4,300,000	4,300,000	4,300,000	21,500,000
453	Improvements to Metairie Relief Canal	0	0	450,000	6,100,000	100,000	6,650,000
466	Louisiana Ave. Canal	0	119,000,000	4,000,000	0	0	123,000,000
471	SELA Program Management	1,500,000	1,500,000	1,500,000	1,500,000	0	6,000,000
472	Tchoupitoulas Corridor	0	0	0	250,000	12,000,000	12,250,000
474	Melpomene Street Canal	50,000	0	0	0	0	50,000
476	Hollygrove Canals	50,000	0	0	0	0	50,000
478	S. Claib - Lowerline to Monticello St.	54,964,000	0	0	0	0	54,964,000
483	Airline & Monticello Canal Improvements	0	0	50,000	475,000	8,400,000	8,925,000
486	Napoleon Canal Improvements	57,771,000	43,452,000	0	0	0	101,223,000
492	Donner Canal Improvements	0	0	50,000	1,750,000	124,700,000	126,500,000
496	De Gaulle Canal	550,000	550,000	2,500,000	63,700,000	72,200,000	139,500,000
497	Florida Ave. Canal, DPS #19 to Peoples	95,845,000	113,904,000	7,500,000	0	0	217,249,000
498	Dwyer Canal - Lamb to Jourdan	250,000	0	0	0	0	250,000
499	Jefferson Ave. Canal	116,727,000	3,500,000	0	0	0	120,227,000
512	Expansion of DPS #15	0	1,250,000	14,500,000	0	0	15,750,000
535	DPS #6	0	0	500,000	1,000,000	0	1,500,000
573	DPS #13 Improvements	0	1,500,000	0	0	0	1,500,000
575	Drainage Hurricane Recovery Bonds	3,660,000	0	0	0	0	3,660,000
576	COE Storm Proofing Projects	15,467,000	67,898,000	8,116,000	0	0	91,481,000
578	Permanent Pump Stations at the Laek Elaine DPS Repair	800,200,000	200,000	200,000	0	0	800,600,000
	<b>Total Major Capital Improvements</b>	<b>1,151,334,000</b>	<b>357,054,000</b>	<b>43,666,000</b>	<b>79,075,000</b>	<b>221,700,000</b>	<b>1,852,829,000</b>
	<b>Total Drainage Department Improvements</b>	<b>1,207,745,000</b>	<b>458,809,000</b>	<b>74,917,000</b>	<b>94,191,000</b>	<b>231,382,000</b>	<b>2,067,044,000</b>

(a) The improvements for 2013-2017 are based on the 2013-2022 Capital Program approved January 11, 2013.

Table 26

**Drainage Department  
Projected Participation by Others (a)**

C.P.#	Project	2013	2014	2015	2016	2017	Total
		\$	\$	\$	\$	\$	\$
418	Normal Extensions & Replacements	300,000	300,000	300,000	350,000	350,000	1,600,000
453	Improvements to Metairie Relief Canal	0	0	108,000	1,464,000	24,000	1,596,000
466	Louisiana Ave. Canal	0	65,082,000	0	0	0	65,082,000
472	Tchoupitoulas Corridor	0	0	0	0	1,850,000	1,850,000
478	S. Claib - Lowerline to Monticello St.	35,726,000	0	0	0	0	35,726,000
483	Airline & Monticello Canal Improvements	0	0	0	114,000	2,016,000	2,130,000
486	Napoleon Canal Improvements	35,829,000	29,966,000	0	0	0	65,795,000
492	Donner Canal Improvements	0	0	0	0	82,500,000	82,500,000
496	De Gaulle Canal	0	0	0	52,500,000	52,500,000	105,000,000
497	Florida Ave. Canal, DPS #19 to Peoples	65,549,000	0	75,504,000	0	0	141,053,000
499	Jefferson Ave. Canal	75,292,000	0	0	0	0	75,292,000
511	Normal Ext. & Replacement - Stations	750,000	0	0	0	0	750,000
535	DPS #6	0	0	128,000	320,000	0	448,000
575	Hurricane Recovery Bonds	3,660,000	0	0	0	0	3,660,000
576	COE Storm Proofing Projects	7,217,000	14,421,000	1,250,000	0	0	22,888,000
578	Permanent Pump Stations at the Laek Elaine DPS Repai	800,000,000	0	0	0	0	800,000,000
610	Additions & Replacement Underground Power Distrib	7,380,000	30,420,000	0	0	0	37,800,000
613	Modifications to Power Generating System	28,419,000	56,095,000	0	0	0	84,514,000
807	Improvements to Central Yard and St. Joseph St	1,048,000	0	330,000	0	660,000	2,038,000
810	Major Equipment Purchases	2,000	0	0	0	0	2,000
843	Minor Equipment Purchases	25,000	0	0	0	0	25,000
	<b>Total</b>	<b>1,061,197,000</b>	<b>196,284,000</b>	<b>77,620,000</b>	<b>54,748,000</b>	<b>139,900,000</b>	<b>1,529,749,000</b>

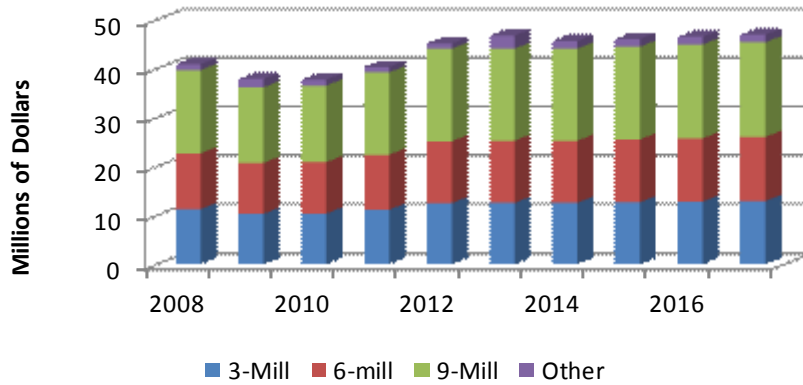
(a) The improvements for 2013-2017 are based on the 2013-2022 Capital Program approved January 11, 2013.

**Table 27**

**Drainage Department  
Projected Operating Revenue**

Year	Ad Valorem Tax Revenue				Total
	Three-Mill	Six-Mill	Nine-Mill	Other	
	\$	\$	\$	\$	
2013	12,554,600	12,692,800	18,814,600	2,700,667	46,762,667
2014	12,554,600	12,692,800	18,814,600	1,577,671	45,639,671
2015	12,680,100	12,819,700	19,002,700	1,577,671	46,080,171
2016	12,806,900	12,947,900	19,192,700	1,577,671	46,525,171
2017	12,935,000	13,077,400	19,384,600	1,577,671	46,974,671

**Historical and Projected Operating Revenue**



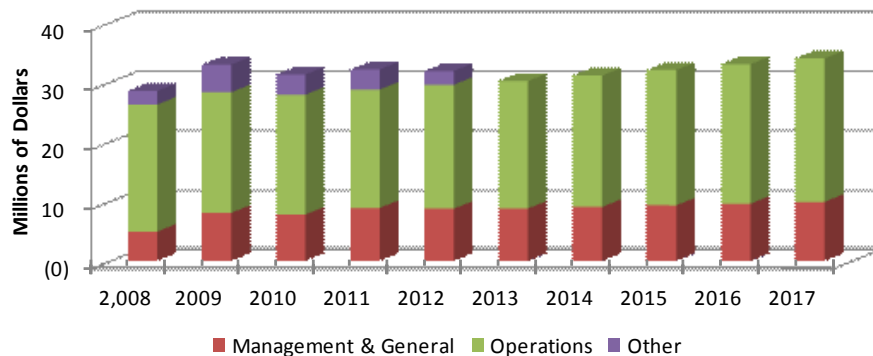
**Table 28**

**Drainage Department  
Projected Operation and Maintenance Expenses**

	2013 (a)	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,297,200	2,366,100	2,437,000	2,510,200	2,585,500
Management Services Director	24,300	25,100	25,800	26,600	27,400
Building and Grounds and Support Services	3,373,500	3,474,700	3,578,900	3,686,300	3,796,900
Personnel Administration	213,600	220,000	226,600	233,400	240,400
Finance Administration	607,500	625,800	644,500	663,900	683,800
Information Systems	1,960,300	2,019,100	2,079,700	2,142,100	2,206,400
Revenue and Customer Service	114,800	118,200	121,700	125,400	129,200
Purchasing	183,500	189,000	194,600	200,500	206,500
<b>Total Management and General</b>	<b>8,774,700</b>	<b>9,038,000</b>	<b>9,308,800</b>	<b>9,588,400</b>	<b>9,876,100</b>
<b>Operations Expenses</b>					
General Superintendent	127,000	130,800	134,700	138,700	142,900
Drainage Pumping and Central Control	7,113,100	7,326,500	7,546,300	7,772,700	8,005,900
Chief of Operations	71,800	73,900	76,100	78,400	80,800
Water Pumping and Power	7,681,200	7,911,700	8,149,000	8,393,500	8,645,300
Water Purification	171,100	176,200	181,500	187,000	192,600
Chief of Facilities Maintenance	138,900	143,100	147,400	151,800	156,300
Facilities Maintenance	2,871,100	2,957,200	3,045,900	3,137,300	3,231,400
Central Yard	1,431,900	1,474,900	1,519,100	1,564,700	1,611,700
Office of Chief of Network	89,800	92,500	95,300	98,100	101,100
Networks	570,300	587,400	605,100	623,200	641,900
Engineering	1,129,900	1,163,800	1,198,700	1,234,700	1,271,700
<b>Total Operations</b>	<b>21,396,100</b>	<b>22,038,000</b>	<b>22,699,100</b>	<b>23,380,100</b>	<b>24,081,600</b>
<b>Other Expenses</b>					
Special Accounts	1,438,800	1,482,000	1,526,500	1,572,300	1,619,400
Payroll Related Expenses	1,934,800	1,992,800	2,052,600	2,114,200	2,177,600
Overhead Allocation	(3,390,000)	(3,491,700)	(3,596,400)	(3,704,300)	(3,815,500)
<b>Total Other</b>	<b>(16,400)</b>	<b>(16,900)</b>	<b>(17,300)</b>	<b>(17,800)</b>	<b>(18,500)</b>
<b>Total Operation and Maintenance</b>	<b>30,154,400</b>	<b>31,059,100</b>	<b>31,990,600</b>	<b>32,950,700</b>	<b>33,939,200</b>

(a) Represents the adopted operating budget as of December 19, 2012.

**Historical and Projected Operating Expenses**



**Table 29****Drainage Department  
Debt Service Requirements**

	2013	2014	2015	2016	2017
	\$	\$	\$	\$	\$
<b>Nine-Mill Tax Bonds</b>					
Series 1998	793,400	795,000	794,900	793,300	794,300
Series 2002	1,423,400	1,425,100	1,425,800	1,430,000	1,436,200
Total Nine-Mill Debt Service	2,216,800	2,220,100	2,220,700	2,223,300	2,230,500
<b>Projected Bonds (a)</b>					
	Amount of Issue				
	\$				
2013	257,000,000	1,555,900	18,670,800	18,670,800	18,670,800
2014	127,000,000		768,900	9,226,400	9,226,400
2015	11,000,000			66,600	799,100
2016	86,000,000				799,100
2017	0			520,700	6,247,800
					0
Total Projected Debt Service		1,555,900	19,439,700	27,963,800	29,217,000
Total Debt Service		3,772,700	21,659,800	30,184,500	31,440,300
				31,440,300	37,174,600

(a) Projected bonds are assumed to be issued in December of indicated year.

**Table 30**

**Drainage Department  
Analysis of Ability of Forecasted Revenue to  
Finance Projected Revenue Requirements**

Line No		2013	2014	2015	2016	2017
		\$	\$	\$	\$	\$
<b>Operating Fund</b>						
1	Three-Mill Ad Valorem Tax Revenue (4.66 Mills)	12,554,600	12,554,600	12,680,100	12,806,900	12,935,000
2	Six-Mill Ad Valorem Tax Revenue (4.71 Mills)	12,692,800	12,692,800	12,819,700	12,947,900	13,077,400
3	Nine-Mill Ad Valorem Tax Revenue (7.06 Mills)	18,814,600	18,814,600	19,002,700	19,192,700	19,384,600
4	Other Miscellaneous Income	2,700,700	1,577,700	1,577,700	1,577,700	1,577,700
5	Interest Income	37,400	58,900	59,000	58,000	60,200
6	Alternative Source of Operating Revenue	11,750,000	23,500,000	35,250,000	49,350,000	54,778,500
7	<b>Total Operating Revenue</b>	<b>58,550,100</b>	<b>69,198,600</b>	<b>81,389,200</b>	<b>95,933,200</b>	<b>101,813,400</b>
8	Operation & Maintenance	(30,154,400)	(31,059,100)	(31,990,600)	(32,950,700)	(33,939,200)
9	Additional Operating & Maintenance	0	0	(2,000,000)	(2,075,000)	(4,152,800)
10	Provision for Claims	(367,700)	(378,700)	(390,100)	(401,800)	(413,900)
11	<b>Net Operating Revenue</b>	<b>28,028,000</b>	<b>37,760,800</b>	<b>47,008,500</b>	<b>60,505,700</b>	<b>63,307,500</b>
<b>Debt Service</b>						
12	Existing	(2,216,800)	(2,220,100)	(2,220,700)	(2,223,300)	(2,230,500)
13	Projected	(1,555,900)	(19,439,700)	(27,963,800)	(29,217,000)	(34,944,100)
14	<b>Subtotal</b>	<b>(3,772,700)</b>	<b>(21,659,800)</b>	<b>(30,184,500)</b>	<b>(31,440,300)</b>	<b>(37,174,600)</b>
15	Special Community Disaster Loan Payable	0	0	0	(2,440,200)	(2,440,200)
16	SELA Capital Repayment	(1,300,000)	(3,900,000)	(7,800,000)	(8,300,000)	(8,300,000)
17	<b>Total Debt Service</b>	<b>(5,072,700)</b>	<b>(25,559,800)</b>	<b>(37,984,500)</b>	<b>(42,180,500)</b>	<b>(47,914,800)</b>
18	Transfer to Construction	(20,000,000)	(13,000,000)	(8,000,000)	(17,000,000)	(15,000,000)
19	Due from (to) Other Departments	1,075,000	1,075,000	(1,275,000)	(1,275,000)	0
20	<b>Net Annual Balance</b>	<b>4,030,300</b>	<b>276,000</b>	<b>(251,000)</b>	<b>50,200</b>	<b>392,700</b>
21	Beginning of Year Cash Balance	(29,400)	4,000,900	4,276,900	4,025,900	4,076,100
22	End of Year Balance	4,000,900	4,276,900	4,025,900	4,076,100	4,468,800
<b>Capital Projects Funding</b>						
23	Funds Available at Beginning of Year	39,198,800	133,445,000	155,600	20,958,400	77,141,900
24	Revenue Bond Proceeds	257,000,000	127,000,000	11,000,000	86,000,000	0
25	Operation Fund Transfers	20,000,000	13,000,000	8,000,000	17,000,000	15,000,000
26	Participation by Others	1,061,197,000	196,284,000	77,620,000	54,748,000	139,900,000
27	Interest Income	171,100	367,000	63,900	164,300	393,500
28	<b>Total Funds Available</b>	<b>1,377,566,900</b>	<b>470,096,000</b>	<b>96,839,500</b>	<b>178,870,700</b>	<b>232,435,400</b>
29	Obligated Contracts & Capital Jobs	(13,851,100)	0	0	0	0
30	Reinvestment in Assets	(56,411,000)	(101,755,000)	(31,251,000)	(15,116,000)	(9,682,000)
31	Major Capital Additions	(1,151,334,000)	(357,054,000)	(43,666,000)	(79,075,000)	(221,700,000)
32	Bond Issuance Expense	(3,855,000)	(1,905,000)	(165,000)	(1,290,000)	0
33	Revenue Bond Reserve Fund	(18,670,800)	(9,226,400)	(799,100)	(6,247,800)	0
34	<b>Total Application of Funds</b>	<b>(1,244,121,900)</b>	<b>(469,940,400)</b>	<b>(75,881,100)</b>	<b>(101,728,800)</b>	<b>(231,382,000)</b>
35	<b>End of Year Balance</b>	<b>133,445,000</b>	<b>155,600</b>	<b>20,958,400</b>	<b>77,141,900</b>	<b>1,053,400</b>

## Assessment of East Bank Sewage Stations

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
1	03/15/2013	Chickasaw	A	Chickasaw at Metropolitan	Two pumps total; both working.
2	03/15/2013	K-Mart	A	Desire at Gentilly	Two pumps total; both working.
3	03/15/2013	Station 23	A	4500 Mithra	Two pumps total; both working.
4	03/15/2013	Station 17	A	4975 Spain at Selma	Two pumps total; both working.
5	03/15/2013	Station 22	A	5705 Perlita	Two pumps total; both working.
6	03/15/2013	Station 19	A	3730 Jumonville at Milton	Two pumps total; both working.
7	03/15/2013	Station 21	A	6670 Memphis At Filmore	Two pumps total; both working.
8	03/15/2013	Station 18	A	Vicksburg at Florida	Two pumps total; both working.
9	03/15/2013	City Park	A	5701 Marconi Drive	Two pumps total; both working.
10	03/15/2013	Station 20	A	328 37th Street	Two pumps total; both working.
11	03/15/2013	Station 4	A	5899 Fleur de Leis	Two pumps total; both working.
12	03/15/2013	Lakewood South	A	Country Club Drive near Marconi	Two pumps total; both working.
13	03/15/2013	Station 6	A	242 S Solomon at Palmyra	Two pumps total; both working.
14	03/15/2013	Station 3	A	8720 Olive near Eagle	Two pumps total; both working.
15	03/15/2013	Station 1	A	7336 Cohn	Two pumps total; both working.
16	03/15/2013	Station 14	A	4000 Clara	Two pumps total; both working.
17	03/15/2013	Station 5	A	3912 Erato St	Two pumps total; both working.
18	03/15/2013	Station 15	A	2431 Palmyra near Rocheblave	All pumps presently out of service; portable pumps in use.
19	03/15/2013	Station 8	A	Corner of N Broad and Toulouse	Two pumps total; both working.
20	03/15/2013	Station 9	A	2540 Annette at Law	Two pumps total; both working.
21	03/13/2013	Station 16	B	3751 N Miro at Pauline	Two pumps total; both working.
22	03/13/2013	Station 24	B	5027 N Tonti at Forstall	Two pumps total; both working.
23	03/13/2013	Station 25	B	2245 Charbonnet	Two pumps total; both working.
24	03/13/2013	Station 26	B	2244 St Maurice at Tonti	Two pumps total; one pump working.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
25	03/13/2013	Southern Scrap	B	Southern Scrap Rd Harbor Rd	Two pumps total; both working.
26	03/13/2013	France and Florida	B	2701 France Road	Two pumps total; both working.
27	03/13/2013	MECO-Mechanical Equipment Company	B	3855 France Road	Two pumps total; both working.
28	03/13/2013	Victoria at Gentilly	B	3620 Victoria	Two pumps total; both working.
29	03/13/2013	American Marine	B	4045 Jourdan Rd	
30	03/13/2013	Plum Orchard	B	7300 Chef Menteur Highway	Two pumps total; both working.
31	03/13/2013	Dodt	B	8118 Chef Menteur Highway	Two pumps total; both working.
32	03/13/2013	Castle Manor	B	4950 Gawain at Dwyer	Two pumps total; both working.
33	03/13/2013	Cerise	B	5001 Cerise	Two pumps total; both working.
34	03/13/2013	McCoy	B	McCoy at Gentilly	Two pumps total; both working.
35	03/13/2013	Amid	B	6800 Almonaster Road	Two pumps total; both working.
36	03/13/2013	Lakeland Terrace	B	5057 Warren Drive	Two pumps total; both working.
37	03/13/2013	Lake Forest	B	10451 Lake Forest Blvd	Two pump total; both working.
38	03/13/2013	Wright Road	B	Wright Road at Lake Forest	Two pumps total; both working.
39	03/13/2013	Bullard	B	5501 Bullard Road	Two pumps total; both working.
40	03/13/2013	Wilson	B	7709 Wilson Avenue	Two pumps total; both working.
41	03/13/2013	America	B	6789 Dwyer Road at Westlake	Two pumps total; both working.
42	03/13/2013	Pines Village	B	6155 Dwyer Road at Foch	Two pumps total; both working.
43	03/13/2013	Crowder	B	5500 Crowder Road	Two pumps total; both working.
44	03/13/2013	Station B	B	4725 St Claude Avenue	Two pumps total; both working.
45	03/13/2013	Station A Municipal Auditorium	B	1321 Orleans Avenue	Six pumps total; all working.
46	03/14/2013	Venetian Isles No.2	C	20711 Old Spanish Trail	Two pumps total; both working.
47	03/14/2013	Industrial Parkway	C	4200 Industrial Parkway	Two pumps total; both working.



	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
48	03/14/2013	Folgers	C	14601 Gentilly Boulevard	Two pumps total; both working.
49	03/14/2013	Michoud	C	4400 Michoud Boulevard	Two pumps total; both working.
50	03/14/2013	Blvd " X"	C	4433 Chef Menteur Highway	Portable pumps outside.
51	03/14/2013	Alcee Fortier	C	Alcee Fortier Blvd at the Levee	Two pumps total; both working.
52	03/14/2013	Village De Lest	C	11324 Dwyer	Two pumps total; both working.
53	03/14/2013	Willow Brook	C	Willowbrook off of Michoud	Two pumps total; both working.
54	03/14/2013	Oak Island	C	14201 Michoud Blvd	Two pumps total; both working.
55	03/14/2013	Eastover	C	6051 Eastover Drive	Two pumps total; both working.
56	03/14/2013	Paris Road	C	Dwyer West of Paris Road	Two pumps total; both working.
57	03/14/2013	Shorewood	C	14441 Morrison Road	Two pumps total; both working.
58	03/14/2013	Briarwood Station	C	13701 Morrison Road	Two pumps total; both working.
59	03/14/2013	Liggett	C	12501 Morrison Road	Two pumps total; both working.
60	03/14/2013	Berg	C	11501 Morrison Road	Two pumps total; both working.
61	03/14/2013	Weber	C	10141 Morrison Road	Two pumps total; both working.
62	03/14/2013	Burke	C	9001 Morrison Road	Two pumps total; both working.
63	03/14/2013	Lawrence	C	7900 Morrison Road	Two pumps total; both working.
64	03/14/2013	Lamb	C	6450 Morrison Road	Two pumps total; both working.
65	03/14/2013	Gentilly Oaks	C	5000 Papania Road at Vienna	Two pumps total; both working.

### Assessment of West Bank Sewage Stations

	DATE	FACILITY NAME	LOCATION	STATUS
1	03/20/2013	Horace	3301 Lawrence Street	Two pumps total; both working.
2	03/20/2013	Holiday	2799 Holiday Drive	Two pumps total; both working.
3	03/20/2013	Huntlee	3201 Huntlee	Two pumps total; both working.
4	03/20/2013	Eton	3440 Eton Street	Two pumps total; both working.
5	03/20/2013	Aurora	6000 Carlisle Court	Two pumps total; both working.
6	03/20/2013	Blair	3800 Blair Street	Two pumps working; both working.
7	03/20/2013	Lower Coast	3700 Old Woodland	Two pumps working; both working.

	DATE	FACILITY NAME	LOCATION	STATUS
8	03/20/2013	English Turn I	2201 Stanton Road	Two pumps working; both.
9	03/20/2013	English Turn II	123 ½ Oak Alley	Two pumps total; both working.
10	03/20/2013	English Turn III		Two pumps total; both working.
11	03/20/2013	Woodland	4150 Woodland Drive	Two pumps total; both working.
12	03/20/2013	Park Timbers	4100 Lennox Blvd	Two pumps total; both working.
13	03/20/2013	Tall Timbers	3800 Tall Pines Drive	Two pumps total; only one working.
14	03/20/2013	Forest Isle	5631 West Forest Park Drive	Two pumps total; both working.
15	03/20/2013	Garden Oaks	3201 Memorial Park Drive	Two pumps total; only one working.
16	03/20/2013	Memorial	2501 Memorial Park Drive	Two pumps total; leaking pipe.
17	03/20/2013	Bridge Plaza	2914 Vespasian Street	Two pumps total; both working.

### Assessment of East Bank Drainage Stations

	DATE	FACILITY NAME	LOCATION	STATUS	STORM RELATED UPGRADES
1	03/04/2013	Station 6	345 Orpheum	14 pumps total, all in service.	(2) 3,750 kW, 200 kW House Generator <sup>^</sup> ; new transformer.
2	03/04/2013	Station 4	5700 Warrington Drive	Six pumps total, all in service.	67 hp, 100 kW House Generator <sup>^</sup> not in service yet. Station has new roof.
3	03/06/2013	Station 12	Robert E Lee and Ponchartrain Boulevard	One pump total, in service.	
4	03/06/2013	I-10 Pump Station	I-10 Service Road	Four pumps total, all in service.	<sup>^</sup> 250 kW House Generator; (2) 2,435 kW.
5	03/05/2013	St. Charles Station 16	Danube Road at Wales	Four pumps total, all in service.	3,800 hp; 2,665 kW.
6	03/05/2013	Citrus Station 10		Four pumps total, only three in service.	Screen No. 1 is out; Pump No. 3 not in service.
7	03/05/2013	Station 14	Oneida at Haynes	Four pumps total, all in service.	3,800 hp; 2,665 kW; in operation.
8	03/05/2013	Maxent	Alcee Fortier	Two pumps total, both in service.	
9	03/05/2013	Industrial Boulevard	Industrial Boulevard	Three pumps total, all in service.	New wall built.
10	03/05/2013	Grant Street	Grant Street at Gentilly Boulevard		Station not in service.

	DATE	FACILITY NAME	LOCATION	STATUS	STORM RELATED UPGRADES
11	03/05/2013	Amid Station 20	6300 Intercoastal Waterway at Terminal Road	Two pumps total, both in service.	2,100 hp; 1,500 kW^200 kW House Generator; in use. This station has a brand new building.
12	03/05/2013	Elaine		Two pumps total, both in service.	New pumps.
13	03/05/2013	Station 5	Florida Avenue	Six pumps total, all in service.	4,023 hp; 3 mW^ 400 kW House Generator^, diesel blower, station under construction; new roof and other improvements are underway.
14	03/04/2013	Station 3	2251 N Broad Street	Nine pumps total, all in service.	67 hp, 125 kW House Generator^, 80 kW (mainly for 2-way radio); new rollup doors.
15	03/04/2013	Station 7	5741 Orleans Avenue at Marconi Drive	Five pumps total, all in service.	4,023 hp; 3 mW^; 400 kW House Generator^, not operational yet. New cameras installed around the building; new roof.
16	03/04/2013	Station 2	444 N Broad Street	Six pumps total, all in service.	67 hp, 250 kW House Generator^; not operational yet.
17	03/04/2013	Station 1	2501 S Broad Street	11 pumps total; No. 1 constant duty pump not in service.	67 hp, 250 kW House Generator, operational. New storm windows; new roof is presently under construction.
18	03/06/2013	Canal Boulevard	5500 Canal Boulevard	Three pumps total.	Pumps and motors are being refurbished one at a time.
19	03/06/2013	Oleander	9400 Oleander	Three pumps total, all in service.	
20	03/06/2013	Pritchard	2901 Monticello	Two pumps total, all in service.	1,720 hp; 1,285 kW.
21	03/05/2013	Station 19	4500 Florida Avenue	Five pumps total, all in service.	(2) 3,353 hp; (2) 2,500 kW; new water mains, east and west feed.
22	03/05/2013	Station 17	2801 Florida Avenue	Five pumps total, all in service.	

### Assessment of West Bank Drainage Stations

	DATE	FACILITY NAME	LOCATION	STATUS	NOTES
1	03/20/2013	Station 11	5301 East Sixth Street	5 pumps total, all in service; 4 screens; only one in use.	670 hp, 500 kW, 25 Hz 1,945 hp; 1,450 kW; Station has three broken screens.
2	03/20/2013	Station 13	4201 Tall Spruce Drive	7 pumps total, all in service.	(2) 4,023 hp, 3 mW <sup>^</sup> ; Pump No. 5, 2,000 hp, 1,492 kW; Pump No. 4, 2,000 hp, 1,492 kW; Engine No. 1, 349 hp, 260 kW; Engine No. 2, 349 hp, 260 kW.

**Notes:**

1. All 60 Hz Generators, except where shown otherwise.
2. All fuel tanks are aboveground, except where shown otherwise (^ =Currently under Construction)