

# REPORT ON OPERATIONS FOR 2010

B&V PROJECT NO. 173382

PREPARED FOR

Sewerage and Water Board of New Orleans

21 NOVEMBER 2011

BRUNO & TERVALON  
JULIEN ENGINEERING AND CONSULTING



## **MISSION STATEMENT**

To be one of the best and most respected suppliers of sewer, water, and drainage services in the south-central United States by providing quality, reliable, and cost effective services to our Customers while maintaining fair and ethical treatment of our well-trained and highly motivated employees.

## **OUR VALUES**

Open, honest communication  
Trust and respect for each other  
Offering and encouraging education and opportunity to employees  
Fostering enthusiasm among employees through example of the managers/supervisors  
Providing direction and planning and encouraging interdepartmental team work  
Assuring reliability in providing services to customers

## **KEY RESULT AREAS**

Customer Satisfaction  
Cost Effectiveness  
Employee Satisfaction  
Capabilities Improvement through Training



November 21, 2011

Sewerage & Water Board of New Orleans  
625 St. Joseph Street  
New Orleans, LA 70165

Dear Board Members:

In accordance with our agreement, we are submitting this Report on Operations of the Water, Sewerage, and Drainage Departments for the year 2010. The report presents the findings of analysis to confirm compliance with covenants of the General Water Revenue Bond Resolution and the General Sewerage Revenue Bond Resolution.

The report also contains projections of expected future financial activity for the three departments for the period 2011 through 2015. These projections are based upon historical trends and the Board's operating and capital budgets. Projected costs include an allowance for anticipated future price inflation.

Bound separately is the Executive Summary for the Report on Operations for 2010.

We wish to acknowledge the cooperation and assistance of utility staff in providing guidance and information for the study.

We appreciate the opportunity to be of service to the Sewerage and Water Board.

Very truly yours,  
BLACK & VEATCH CORPORATION

A handwritten signature in blue ink, appearing to read 'John R. Kersten'.

John Kersten  
Vice President

Enclosure

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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, 2010. The report presents findings of studies made in compliance with covenants of the 1998 and Supplemental Water Revenue Bond Resolutions and the 1997 and Supplemental Sewerage 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 1998 and Supplemental Water Revenue Bond Resolution or the 1997 and Supplemental Sewerage Revenue Bond Resolutions.

“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. 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, 2010, \$34,635,000 remains outstanding on the 1998 and 2002 issues. As of September 30, 2011, the Board had withdrawn \$1,825,000 on the 2010 issue.

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. Outstanding principal on revenue bonds totaled \$172,800,000 as of December 31, 2010 and is summarized in the table on the following page.

### 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

### Outstanding Sewerage Utility Debt Issues

Description	Issue Amount	Amount Outstanding (a)
	\$	\$
<b>Revenue Bonds</b>		
Series 1997	30,000,000	14,460,000
Series 1998	25,000,000	13,040,000
Series 2000A	26,800,000	17,195,000
Series 2000B	20,300,000	13,060,000
Series 2001	37,720,000	21,530,000
Series 2002	57,000,000	41,105,000
Series 2003	5,500,000	4,025,000
Series 2004	33,000,000	25,690,000
Series 2009	23,375,000	22,695,000
Total	258,695,000	172,800,000
<b>Bond Anticipation Notes</b>		
2004 BANs (b)	25,200,000	
2004 Refunding BANs (b)	111,800,000	
2005A BANs	137,000,000	
2006 BANs (c)	24,030,000	
Total	298,030,000	0

(a) As of December 31, 2010

(b) Paid in full by 2005A BANs.

(c) Paid in full by 2009 Refunding Bonds in July 2009.

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 2010.

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 2010. 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, 2010, the outstanding balance was \$5,155,000. 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, 2010 to \$15,135,000.

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 2010. A reassessment occurred in 1999, which effectively increased millage receipts by approximately 10 percent.

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

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 are scheduled to begin in July 2012, but a request for a five year extension has been filed. The Cooperative Endeavor Agreement provides for one five-year extension.

The Board provides free water and sewer 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 2010, the Board provided 832,724,300 gallons of water free of charge to agencies of the City of New Orleans. The value of this free water, at current rates, is \$2,203,417.79. The value of the sewerage charges is \$3,320,226.53.

The three revenue-generating public agencies - the New Orleans Museum of Art, City Park, and Audubon Park - continued to receive free water under "caps", or maximum annual limits, established by the Legislature in 1982. The Museum of Art used 2,786,600 gallons or 232,800 above its annual "cap" of 2,553,800 gallons. City Park used 112,923,200 gallons or 112,400,200 below its annual "cap" of 235,323,400 gallons. Audubon Park used 123,879,900 gallons or 116,120,100 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 2010. 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 2010 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 2010 have complied with the requirements set forth in the 1998 and Supplemental Water Revenue Bond Resolutions.

#### Summary of 2010 Operations

Based upon a tabulation of water bills rendered during the year, the Water Department provided water service to an average of 116,426 regular billed customers and 922 governmental accounts, the

latter of which are served without charge. According to the December 31, 2010 Comprehensive Annual Financial Report, of the 54,146.7 million gallons of water pumped by the Department during the year, 13,744.8 million gallons were sold, 832.7 million gallons were metered to customers without charge, treatment plant process water totaled 911.7 million gallons, and unmetered uses accounted for the remaining 38,657.5 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 \$69,551,122 in 2009 to \$65,131,445 in 2010. In 2010, the Board received \$6,251,855 in operating and maintenance grants from Federal Emergency Management Agency (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) increased from \$51,889,761 in 2009 to \$52,348,178 in 2010. After adding claims of \$813,654 and debt service payments of \$3,886,267, a balance of \$8,083,346 was available for capital related expenditures in 2010, unadjusted for depreciation.

### Ability to Finance Future Operations and Proposed Improvements

A summary of projected financial operations of the Water Department for the period 2011 through 2015 is shown in Table 11 of the report. Revenues shown on Line 1 of Table 11 are based on rates that became effective July 1, 2010. A *Report on Revenue Requirements, Costs of Service and Rates for Water Service* was issued in April of 2005. The series of revenue increases proposed in that study were approved by the City Council on October 4, 2007. The last remaining revenue increase approved by the City Council is shown on Line 2 of Table 11. A *Financial Plan and Rate Study 2011-2020* (2011 Rate Study) was issued in September of 2011. Board staff intends to present a resolution to the Board of Directors which will allow the Board to provide notice to the City Council and the Board of Liquidation that the Board intends to approve the revenue increases proposed in the 2011 Rate Study and schedule public hearings. Per direction by Board staff, the proposed revenue increases presented in the 2011 Rate Study are reflected in this report. Future annual water system revenue increases of 15 percent effective July 1, of 2012 through 2015 are shown on Lines 3 through 6 of Table 11.

Additional long term debt financing of \$56,000,000 in 2012, \$23,500,000 in 2013, \$38,000,000 in 2014, and \$2,900,000 in 2015 is indicated to fund the proposed capital improvement program.

It is anticipated that the capital projects in 2011 will exceed the amount of funding available and some projects will need to be deferred until 2012. Assuming that these projects are deferred as shown on Line 38 of Table 11, 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 during the 2011-2015 study period examined herein.

## Sewerage Department

### Sewerage Service Revenue Bond Resolution Requirements

Sewerage and Water Board financial operations for 2010 have complied with the requirements set forth in the 1997 and Supplemental Sewer Revenue Bond Resolutions.

### Summary of 2010 Operations

The total revenue from sewer charges, delinquent fees, interest income and other income increased from \$70,038,076 in 2009 to \$73,386,257 in 2010. In 2010, the Board received \$2,957,463 in operating and maintenance grants from FEMA for operating expenses incurred from sewer repairs performed by Board crews. This amount is included in other income. Operation and maintenance expenses (excluding claims paid) decreased from \$49,401,760 in 2009 to \$43,777,876 in 2010. After adding claims of \$583,421 and debt service payments of \$20,212,006, a balance of \$8,812,954 was available for capital related expenditures in 2010, unadjusted for depreciation.

### Ability to Finance Future Operations and Proposed Improvements

A summary of projected financial operations of the Sewerage Department for the period 2011 through 2015 is shown in Table 21 of the report. Revenues shown on Line 1 of Table 21 are based on rates that became effective July 1, 2006. Proposed revenue increases, as presented in the 2011 Rate Study, are shown on Lines 3-6 and reflect annual increase of 14 percent effective July 1, of 2012 through 2015.

In November of 2011, the Louisiana Department of Environmental Quality (LADEQ) provided a \$9,000,000 subordinate loan to the Board. Additional long term debt financing of \$34,000,000 in 2012, \$34,000,000 in 2013, and \$70,000,000 in 2014 is indicated to fund the proposed capital improvement program.

The Board's ability to issue additional debt is restricted due to the requirements of the additional bonds test as described later in this report. As a result, it is anticipated that the capital projects in 2011, 2012, and 2013 will exceed the amount of funding available and some projects will need to be deferred past the 2011-2015 study period. Assuming that these projects are deferred as shown on Line 37 of 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 2011-2015 study period examined herein.

## Drainage Department

### Summary of 2010 Operations

Total revenues received from all sources including interest income and two-mill ad valorem tax receipts totaled \$37,912,872 in 2010, a decrease of approximately 1 percent from \$38,377,827 reported for the same sources in 2009. Total operation and maintenance expenses decreased about 5 percent from \$32,917,502 in 2009 to \$31,242,040 in 2010. After adding claims of \$1,789,639 and debt service payments of \$2,182,739, a balance of \$2,698,454 was available for capital related expenditures in 2010.

### Ability to Finance Future Operations and Proposed Improvements

An analysis of financial operations projected for the Drainage Department for the period 2011 through 2015 is summarized in Table 31 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 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; however, current revenue sources are not adequate to fund the capital projects. As indicated in the 2011 Rate Study additional operating revenue is needed to help fund the capital program. The alternative source of operating revenue is shown on Line 6 of Table 31 and reflects the amount proposed in the 2011 Rate Study.

Additional long term debt financing of \$67,000,000 in 2012, \$81,000,000 in 2013, \$71,000,000 in 2014, and \$38,000,000 in 2015 is indicated to fund the proposed capital improvement program.

It is anticipated that even with the additional operating revenue and bond issues, the capital projects projected for the study period will exceed the amount of funding available. As a result, some projects will need to be deferred until a funding source can be identified. This deferral is shown on Line 30 of Table 31.

### 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 2010, approximately 70.3 million kilowatt hour (kWh) of power was purchased and 39.1 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 19.7¢ per kWh in 2006 to about 15.8¢ per kWh in 2010. During the same period, the Board's unit cost for generated power has decreased from about 34¢ per kWh to about 27.3¢ per kWh. The cost of Board generated power is almost 1.7 times higher than that of purchased power. The cost of fuel to generate power in 2010 amounted to approximately 24.1¢ per kWh.

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.

Subject to the limitations set forth herein, this report is based on information not within the control of Black & Veatch. Black & Veatch has not been requested to make an independent analysis, to verify the information provided to us, or to render independent judgment of the validity of information provided by others. As such, Black & Veatch cannot, and does not, guarantee the accuracy thereof to the extent that such information, data, or opinions were based on information provided by others.



## Facilities Evaluation - Operation, Maintenance, and Reconstruction

This evaluation summarizes the findings of the onsite inspections of the Sewerage and Water Board of New Orleans (Board) facilities conducted by the Black & Veatch and Julien Engineering team (team) from May 2 to May 6, 2011. Site visits were conducted at the water and wastewater treatment plants, Carrollton power plant facilities, Central Yard facilities, and a majority of the aboveground water, sewer, and drainage facilities to evaluate their condition and operational capabilities. Interviews were conducted with management and supervisory level Board personnel to assess the current status of the operations 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 the City's residents. The Carrollton plant currently purifies approximately 140 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 a few customers in adjacent parishes.

The Board also owns two sewage treatment plants, one on the East Bank and one on the West Bank. 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. The East Bank Sewage Treatment Plant has a treatment capacity of 122 mgd (dry weather) and treats sewage from the East Bank community. 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 Veolia Water.

The collection system includes several miles of lateral sewers, trunk sewers, and 84 electrically operated pump stations. 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.

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 A are also powered by 25 cycle power. The following sections summarize each operation department within the Board.

## STAFFING ISSUES

Adequate staffing continues to be an issue for the Board in some departments. As equipment ages, or more equipment is added, more maintenance is required for the Board facilities. Staffing levels have decreased as the system has aged and expanded within the facilities owned by the Board. 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, laboratory, and operations.

The Board suspended the Domicile Policy, which required Board employees to live in the City of New Orleans, following Hurricane Katrina. This action allows personnel hired by the Board to live outside city limits, as well as permits the Board to recruit from a wider base, thus providing employees with a greater sense of stability. The City Council initially waived the Domicile Policy for a period of 3 years in 2005, but decided in 2008 to waive the policy for an additional 3 years. This policy is to be reviewed again in 2011. Departments within the Board continue to actively recruit from local college campuses, career job fairs, and trade schools to fill vacancies.

## WATER PURIFICATION PLANTS

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

The staffing levels at the 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 a need to hire and train now for 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.

The clarified water is disinfected by adding chlorine. Anhydrous ammonia is then added to aid 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 chemical storage at each site.

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 out to the distribution network.



L4 Sedimentation Basin at Carrollton

New Sodium Hypochlorite Facility at Carrollton

### Figure 1. Carrollton Water Purification Plant

The Carrollton plant is currently treating approximately 140 mgd of water in spite of serving only 80 percent of the pre-Katrina population due to leaks in the water distribution system. Leaks in the distribution network are a source of persistent problems in maintaining adequate pressure in the distribution system. Normal system pressure is 70 pounds per square inch (psi), but has been limited to 65 psi to control the loss of water through leaks in the distribution system. The water delivery pressure has been consistent throughout the last year at 65 psi.

Improvements completed during 2010 at the Carrollton WPP are listed below:

- The G3 basin rehabilitation is complete and is expected to be placed back in service in 2011. Issues with settling of the grounds have affected the concrete floor and walls of the G3 basin.
- A new storage and feed facility for sodium hypochlorite is under construction, along with a second chlorine and ammonia addition point. This work is expected to be completed by the end of 2011.
- The Board has rented a dredging unit to remove sediment in the disinfection basins in order to avoid taking a basin offline for cleaning. This installation will help reduce long-term maintenance costs to the Board.

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 is to be installed at the plant to control and monitor chemical feed and raw water pumping. Currently, this project is under construction, and is scheduled for completion by the end of 2011.
- Completion of the re-installation of headloss pressure cells on the filters to monitor pressure loss through the filters. Currently, most of the filters have been retrofitted with headloss pressure cells. Pressure cells for the remaining functional filters are to be installed by the end of 2011.

- Repairs from Katrina related damage are to be completed on the Carrollton Chemical Building and Filter Galleries pending FEMA funding.
- Resumption of the filter rehabilitation program is needed. Valves, actuators, corroded piping supports, and corroded pipes associated with the filters need to be repaired or replaced. 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 are nearing the end of their service life.
- Continuation 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 may be 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 onsite hypochlorite generating system, which was commissioned in April of 2009, has been operating well and, with some minor modifications this year, is now fully supporting plant needs. 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 the year. Other improvements needed or ongoing at the plant include the following:

- 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. The Board believes there is insufficient mixing within the finished water tanks. New mixers should be installed in the tanks to promote tank turnover and eliminate nitrification in the tanks.
- One EIMCO clarifier needs to be refurbished. A second EIMCO clarifier serves as a standby unit after some minor in-house repairs.
- 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, including new metering pumps and accessories, and a State mandated day storage tank.
- Improvements to the anhydrous ammonia feed system to replace the existing chemical feeders, which are near the end of their service life.

### 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 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, and chlorine residual at different stages of treatment. The solids are analyzed for total suspended solids 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 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 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 minimally staffed with one supervisor, one microbiologist, three chemists, and three technicians. Much of the instrumentation and equipment in the lab is reaching or has reached the end of its service life and is in need of replacement [analytical instruments such as a total organic carbon (TOC) analyzer, new gas chromatograph/mass spectrometer (GC/MS), and equipment such as autoclaves for the microbiology lab, and fume hoods in the chemistry lab]. Other instruments have remained idle due to reduced staffing levels. Additional staffing would allow for the resumption of discontinued water quality testing regiments, as well as provide additional operational and quality control oversight.

## **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 provide 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.

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

The current capacity of the Carrollton power plant is presently 43 MW, less than the 61 MW design capacity. Turbine 4 was repaired following Hurricane Katrina, but has since been de-rated and is only permitted to be used during emergencies. Turbine 4 is scheduled to be rehabbed to its full design capacity in by 2013.



**Figure 2. Turbine No. 4**

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. Entergy 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 plant and raw water intake stations and provide additional drainage station capacity. This project is currently under construction, and scheduled to be finished by the end of 2011.

Two steam-driven distribution pumps are located at the power plant. Both pumps (A and B) will be rebuilt by 2012. 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 25 or 60 Hz motor, and the other 25 Hz motor), are typically adequate for pumping finished water to the distribution network. Pumps at the Panola Station typically serve as a backup.

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 walls and roofing systems. The Board is also repairing valves and piping at the Old and New River Intake structures. Some debris has been removed from the intake structure at the Old River Station. Contractors will continue to remove debris as they work on the various parts of each intake structure.

All water intake and effluent pumping stations are currently operational.

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 design stages. The Water Pumping and Power Department has 70 current employees, with 49 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.

## SEWAGE TREATMENT PLANTS

The team, accompanied by the Plant Superintendent, visited both the East Bank and West Bank Wastewater Treatment Plants (WWTP). Operations and maintenance of both plants has 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.

### East Bank Wastewater Treatment Plant

The East Bank WWTP has a treatment capacity of 122 mgd (dry weather). Due to the efforts of inflow and infiltration mitigation by the Board, the plant is currently receiving approximately 93 mgd of flow which is 7 percent less than the amount of flow received in 2007. 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. The Board is proposing a sludge dryer as an alternative sludge treatment system to supplement the fluid bed incinerator (FBI).

The following list summarizes the improvements and recommendations at the East Bank WWTP:

- The Board should assign an employee to work with the contract operator and review their operations at the site on a routine basis.
- The plant experienced salt water damage to structures and equipment due to Hurricane Katrina. Most equipment has been repaired and is operational. The final clarifiers show corrosion to the skimmer arms caused by salt water. All final clarifiers were repaired by the end of 2010. This repair work was funded by the Board.
- Eight mixers in Reactor 2 were refurbished in 2010.
- A new Venturi scrubber was installed in the FBI system in the spring of 2011.
- A waste heat recovery system for the FBI has been evaluated. Waste heat from the FBI will be used in the new sludge dryer system, which is currently under design.
- The oxygen generation system has been installed and was brought online at the end of May 2011; fine tuning of the unit is ongoing. The plant uses approximately 33 tons of oxygen per day. The new oxygen generation system is rated for 70 tons of oxygen per day.
- A new 4 MW diesel driven generator has been purchased to power the effluent pumps in the event of a power outage. Currently the building set to house the generator is under construction and is expected to be completed by the end of 2012.
- In 2011, the Board will be bidding a project to raise the height of the berm (barrier) that protects the plant from flooding. This project, with an estimated cost of \$31 million, will be reimbursed by FEMA.
- A new onsite Administration Building is under construction.
- A new return activated sludge line header has been installed to replace the line which was leaking.



**Figure 3. Site of New Generator Building**



**Figure 4. Site of Oxygen Plant**

- Two diesel tanks and a biodiesel tank are to be constructed onsite to support the new generator package and FBI. The use of biodiesel will provide a cost savings to the Board as the biodiesel is \$1 per gallon cheaper than regular diesel.
- The ash from the FBI has been approved for industrial use as a supplement to filler in cement or soil amendment and has been used at the West Bank plant as filler to minimize drainage problems at the site.



At present, the influent total suspended solids (TSS) and biochemical oxygen demand (BOD) concentration are approximately 148 milligrams per liter (mg/L) and 103 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 20 mg/L and an average effluent BOD concentration of 18 mg/L. No permit violations were reported at the plant in 2010.

### West Bank Wastewater Treatment Plant

The West Bank facility has a treatment capacity of 20 mgd (dry weather). Currently the plant is receiving approximately 10.5 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 drainage pumps were replaced in 2010.
- Effluent Pump 4 was refurbished in 2010 and Effluent Pump 3 is planned to be refurbished in the summer of 2011.
- The distribution arms on both trickling filters were refurbished in 2010.
- Influent Screen 1 was refurbished in 2010.
- The turbidity meter at the effluent sampler was not working properly during the site visit and needs to be cleaned and placed back in service.



**Figure 5. Repaired Equipment**

The monthly average TSS and BOD influent concentrations are approximately 150 mg/L and 120 mg/L, respectively. The monthly average effluent TSS and BOD concentrations have been approximately 7 mg/L and 9 mg/L, respectively.

## SEWAGE AND DRAINAGE PUMPING STATIONS

The team visited each drainage pump station (DPS) and sewerage lift station (SLS) located in the East and West Banks. DPS No. 6 is presently undergoing repairs to strengthen the ability of the facility to handle greater intensity storms, including additional roof and wall bracing. Elevated generator buildings are being constructed at DPS Nos. 5, 7 and 13, and DPS Amid. Construction at DPS Dwyer is complete and the station will be placed in service once construction of the inlet canal is complete. The pumps at Dwyer have undergone dry testing and are ready to be placed online. All East Bank and West Bank facilities are in good condition and, aside from normal maintenance requirements, there are no major concerns.

The majority of SPS damaged in Hurricane Katrina have been repaired. Six East Bank stations and one West Bank station are currently undergoing storm-related repairs and are anticipated to be in service within a year. The electrical controls for the can-type stations have been placed on elevated structures at least 3 feet above grade. The repairs to the SPS have indicated the progress S&WB has made toward placing the stations back in service and mitigating possible damage from future events. Refer to Appendix A for a summary of conditions at each DPS and SPS.

## FACILITY MAINTENANCE

The Facility Maintenance Division provides meter repairs, removals, and installations, major electrical, welding, and fabrication, as well as mechanical maintenance for all Board facilities throughout the system except the 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, and 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.

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 59 positions are currently staffed with most of the highly skilled positions remaining vacant. Overtime is necessary to compensate for the limited work force and more work is being contracted out to subcontractors than previously. The Division is currently facing a lack of qualified personnel to adequately supervise or oversee subcontractors. Currently, 22 percent of the Facility Maintenance employees are eligible for retirement, with an additional 18 percent eligible 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 of the contracts, administered through the Engineering Division are listed below:

- Contracts issued for repairing roofs of non-critical facilities.
- Construction oversight of the sodium hypochlorite storage and pumping system at the Carrollton WPP. This is a \$2.8 million project and has recently provided a notice to proceed to the contractor.
- Currently the Board plans on adding a sludge dryer at the East Bank plant. The Board wishes to have a cost effective comprehensive solids treatment plan to treat biosolids at the East and West Bank facilities.
- Refurbishment of steam driven pumps (A and B) in the Power Generation Facility.
- Installation of a new steam turbine and natural gas compressor located in the Power Building.
- New screen and rake mechanisms at drainage pump station (No. 14).
- Flood mitigation for 10 sewerage pump stations will go to bid by the end of 2011.

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 10 storm-proofing projects have been identified and are in various stages of design at present. The following is a list of the most critical projects and projects to be completed as funding becomes available from the Corps:

- A 15 MW generator package is currently in construction at the Carrollton facility to provide additional power to the Carrollton WPP and power plant.
- The provision of an underground electrical feeder power line from the Carrollton power plant to Drainage Pump Station No. 1. Currently this project is in the preliminary stages of design.
- Storm-proofing of the Power Building and river pumping stations which supply water to the Carrollton plant. The project has been awarded and is valued at approximately \$30 million.
- Drainage Pump Station No. 5 will have additional pumps and emergency power generation installed; additional storm-proofing of the existing building will protect the building from water infiltration. The project has been awarded and will begin construction in 2011.
- Another Corps project will provide storm-proofing of buildings and/or backup generator power for Drainage Pump Stations Nos. 3, 6, and 20.
- A new backup generator and storm-proofing of Drainage Pump Stations No. 7 will occur under one storm-proofing project. This project is currently in construction.
- Drainage Pumping Station No. 13 will receive storm-proofing, as well as backup power generation under a Corp project. This project is currently under construction.

## NETWORKS

The Networks Division 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 140 mgd of water despite serving almost 80 percent of the pre-Katrina population.

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, with the aid of contractors, is currently conducting a system evaluation of the piping system to detect leaks. The Board has planned an evaluation of a leak detection system for over 40 miles of pipeline using acoustic leak detection techniques. At this time, approximately 20 miles of leak detection have been completed. A contractor, Ecologic, has been hired to use acoustic technology to determine leaks in larger water mains (those exceeding 20 inches in diameter). Over 13,000 leaks have been repaired in the last year. Manholes are also being inspected as an ongoing inspection of the sewer system. In addition, over 1,800 sewer repairs were completed in 2010. A Phase II assessment of the system has been instituted to continue inspecting all reaches of the collection system.

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 hydrants in the City 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 3,800 paving projects in 2010, 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.

Staffing, in combination with overtime and FEMA funded contracts, has been able to perform the work required and address the needs of customers. However, approximately 10 percent of the staff within this division is eligible for retirement within the next 5 years including nearly all departmental management positions. This is not a unique problem for the Networks Division as all Divisions have similar staffing issues. These conditions demonstrate the need for an effective succession action plan for the division heads and supervisors.

## SUPPORT SERVICES

### Fleet Management

The Board owns 602 pieces of rolling stock, which includes trucks, backhoes, and sewer cleaning equipment. Approximately 140 pieces are at least 15 years old and will require replacement in the next few years. The Board is completing the final purchase of 70 pieces of equipment which will conclude the FEMA funded replacement of equipment needed following Hurricane Katrina. Some of this new rolling stock will replace the older pieces of equipment. The new equipment includes vacuum trucks, trailers, crew trucks, backhoes, etc. The available equipment is being assigned to the various divisions based on the needs of the Operations and Networks Divisions.

The Division has 135 total staff on their payroll and is inadequately staffed based on the current needs of the Board. Approximately 10 percent of the staff within this division is eligible for retirement within the next 5 years. This problem is not unique to the Support Services Division as all Divisions have similar staffing issues. These conditions demonstrate the need for an effective succession action plan for the Division heads and supervisors.

Large mechanical work and some ground maintenance functions have been contracted out to other firms. In particular, the ground maintenance contract extends for 2 years with an option for a third year. Currently, the contract is in its third year and, after the contract expires, the Board expects to resume performing those functions in-house.

The warehouse and Garages 1 and 2 are scheduled to be rehabilitated in 2012. Equipment and materials are limited for use in the garages to maintain heavy equipment and vehicles. FEMA will be reimbursing equipment and tools for each garage lost due to the hurricane in addition to replacing some of the buildings such as the Annex Building.

### 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. Some activities being undertaken by the department include those listed below:

- Taking the lead among other agencies to ensure wastes are disposed of in an environmentally friendly manner and assisting State agencies with environmental cleanup.
- Providing technical assistance to the pumping station crews.
- Permit compliance in water, wastewater, solid waste, and underground storage tanks.

The department head has recently retired and the duties of the department head are currently being performed by several individuals within the department. The interim plan is to use these individuals until the Board is able to hire a department head either through an internal promotion or by going outside the Board to hire a new person to fill the vacancy.

The Environmental Affairs Department was able to obtain a \$10 million grant from the state's Coastal Impact Assistance Program (CIAP) for construction of the first phase of the estimated \$65 million wetland assimilation project. Construction consists of a 20 acre demonstration project adjacent to the East Bank Sewage Treatment Plant. In addition, the evaluation of ferrate as an alternative disinfectant is included in the wetlands assimilation program. This evaluation shows promise not only as a disinfectant alternative but as a treatment for emerging pollutants of concern, such as trace pharmaceuticals in the wastewater.

Black & Veatch recommends the Environmental Affairs Department split samples on a quarterly basis with the contract operator at each WWTP. This method would help ensure proper sampling and testing techniques are performed at each Board facility.

### STATUS OF THE 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.

In January of 2010, the Board successfully completed negotiations for a modification of the Consent Decree. A phased approach in response to the Board's claim of unanticipated delays and violations of

the Decree due to the hurricane has been accepted. Some provisions outlined in the document 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.
- 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 2010.

## SUMMARY OF FINDINGS

- The Board has a clear understanding of the existing condition 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.
- The potable water distribution network and the sanitary sewer collection system present the two of the biggest challenges and are being addressed in a systematic manner with the aid of contractors to identify leaks within each system.
- The Board is servicing 100 percent of the population within the collection system. Eighty percent of the sewerage pump stations on the East Bank have been repaired and are operational while 90 percent of the West Bank sewerage pump stations have been repaired and are operational. The remaining stations will be completed in 2011 and 2012.
- The Corps has installed temporary drainage pumping systems at the Orleans, London, and 17<sup>th</sup> Street Canals near the mouth of Lake Ponchartrain to prevent storm surge from penetrating the City of New Orleans during a flood. The Corps intends to rely upon the existing drainage pump stations and install a permanent station at Lake Ponchartrain on each of these canals. Portions of the drainage canals will be strengthened to accommodate safe water elevation.
- In an effort to alleviate personnel issues, the Board has suspended the Domicile Policy which required Board employees to live in the City of New Orleans. This change in policy will allow personnel hired by the Board to live outside the City and retain the right to promotions. In addition, it would be beneficial if the Board would consider succession planning for key areas of the operations where personnel are close to retirement age to allow for easier transition of daily responsibilities once retirements are announced.
- A \$10 million pilot study was awarded by the Coastal Impact Assistance Program to the Board for additional work on the wetlands assimilation program. This pilot test includes planting 20 acres of cypress trees and pumping approximately 0.12 mgd of final effluent flow from the East Bank Wastewater Treatment Plant to the wetlands area.
- 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.

- The Board needs to assign staff to work directly with the contractor operator running the WWTPs to ensure smooth communication and oversight of the contract operator. In addition, the Board should split effluent samples with the contract operator and analyze those samples to compare to the contractor operator results. This practice will provide assurance of good sampling and testing procedures.
- The Board should continue efforts to storm-proof critical facilities as funding becomes available.
- The Board should proceed to build the new sludge dryer at the East Bank Sewage Plant as there is a potential for cost savings from using less fuel to incinerate the sludge.
- The Board should reinstate the filter rehabilitation program at the Carrollton WPP as the system is becoming critical due to valves, actuators, and filter media requiring replacement.
- Debris should be removed from the Old River Station intake for the water plant. In addition, critical valves and actuators should be replaced and/or repaired.

## 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 actively engaged in repairing or replacing 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 27 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.

## 2010 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 2010 Water Department operations are discussed in the following paragraphs.

### Water Use

According to statistics found in the December 31, 2010 Comprehensive Annual Financial Report, during the year, 54,146,650,000 gallons of water were pumped by the Water Department. Water sales accounts for 13,744,808,800 gallons and 832,724,300 gallons were metered to City departments without charge. Metered treatment plant process water totaled 911,705,500 gallons. The remaining 38,657,411,400 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 2006 through 2015. Based on year-end billing summaries, the number of monthly billed customers during 2010 averaged 116,426 compared with 109,640 for 2009. It is

projected that the Board will average approximately 118,755 open accounts in 2011 and that the number of accounts will continue to grow at approximately 2.0 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 2010 there were 922 connections in this group, compared with 906 for 2009.

### 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 13,653 million gallons of water sales were billed on a monthly basis in 2010, compared with a total of 13,309 million gallons in 2009. Projected water sales assume a growth rate of approximately 2.0 percent per year.

### Operating Revenues

The 2010 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 2006 through 2010. 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 2010 were \$54,013,282 which, when compared with \$49,689,747 for 2009, shows an increase of approximately 8.7 percent. Delinquent fee revenues were \$1,066,491 in 2010 which represent an 8 percent decrease over 2009 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 2010, non-operating revenue included \$32,383 of interest earned from the investment of available funds in the Water System Fund and the Water Revenue Bond Account and \$10,019,289 from other sources.

In 2010, the Board received \$6,251,855 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 2010 increased about 0.9 percent from 2009 expenditures and decreased about 21.2 percent from 2008 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 2010 capital expenditures, exclusive of prorated interest expense, totaled \$32,014,967. 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 2010:

Total Revenues <sup>a</sup>	\$65,131,445
Operation and Maintenance Expense	52,348,178
Claims	813,654
Debt Service Payments	3,886,267
<b>Revenue Primarily Available for Capital Expenditures<sup>b</sup></b>	<b>\$8,083,346</b>

<sup>a</sup> Includes operating and maintenance grant of \$16,660,790.

<sup>b</sup> Excludes depreciation.

### PROPOSED CAPITAL IMPROVEMENT PROGRAM

Table 7 presents a summary of the projected major capital improvement program for the period 2011 through 2015. Table 7 is based on the Board's 2011 adopted Capital Budget and the 2011-2015 proposed Capital Program. The five-year major capital improvement program costs are estimated to total \$357,307,000. About 55.2 percent of this amount, or \$197,177,000, is for recurring annual capital improvements, with the remaining \$160,130,000 for major improvements. The proposed routine annual capital expenditures for water system improvements and extensions include \$11,720,000 for the Water Department's share of power projects, and \$38,837,000 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 2011 through 2015 are shown in Table 8. These estimates reflect the rate schedule effective July 1, 2010 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.

## 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 \$387,200 per year and \$124,300 for three-mill revenue sharing. Operating and maintenance grants are projected at an average of about \$15,305,000 per year.

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 2011 through 2015 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 2011 reflect the Board's adopted 2011 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 2011.

## 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, 2010, outstanding debt obligations consisted of \$8,345,000 Water Revenue Bonds, Series 1998 and \$26,290,000 Water Revenue Bonds Series 2002. 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 September 30, the Board has withdrawn a total of \$1,825,000. Repayment of the amount withdrawn starts within 1 year of completion of project which is currently estimated to be in 2013.

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 2010 rates as previously presented in Table 8.

Lines 2 through 6 show any indicated increases in water revenues associated with rate increases assumed to be in effect the number of months shown. The rate increase shown for 2011 reflects the increase proposed in our *Report on Revenue Requirements, Costs of Service and Rates for Water Service* that was issued in April of 2005. The series of revenue increases proposed in that study were approved by the City Council on October 4, 2007. A *Financial Plan and Rate Study 2011-2020* (2011 Rate Study) was issued in September of 2011. Board staff intends to present a resolution to the Board of Directors which will allow the Board to provide notice to the City Council and the Board of Liquidation that the Board intends to approve the revenue increases proposed in the 2011 Rate Study and schedule public hearings. Per direction by Board staff, the proposed revenue increases presented in the 2011 Rate Study are reflected in this report. Future annual water system revenue increases of 15 percent effective July 1, of 2012 through 2015 are shown on Lines 3 through 6 of Table 11.

Other revenue available for system operations, shown on Lines 9 through 15, consist of Interest Income on operating funds, Three-Mill Revenue Sharing, Plumbing Inspection and License Fees, Other Miscellaneous Income, Operating and Maintenance Grants, Interest from Bond Reserve Fund, and FEMA Assistance Fees. Interest Income available to the operating fund, shown on Line 9, 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 has submitted Project Worksheets to FEMA for operating expenses incurred from water repairs performed by Board crews. Line 13 indicates the amount projected to be reimbursed by FEMA for these repairs during the study period. The Board has received funds from FEMA to assist with the expense associated with filing forms with FEMA. This reimbursement is shown on Line 15. Total Operating Revenue is shown on Line 16.

Operation and Maintenance expense, previously projected in Table 9, is shown on Line 17 of Table 11. Line 18 shows the estimated allowance for claims. Bad debt expense is assumed to be 2 percent of projected revenue and is shown on Line 19. Projected Net Operating Revenue from system operations is shown on Line 20.

Lines 21 through 23 present debt service requirements on currently outstanding and proposed revenue bonds. Additional revenue bond debt financing of \$56,000,000 in 2012, \$23,500,000 in 2013, \$38,000,000 in 2014, and \$2,900,000 in 2015 is assumed. This debt is assumed to be 20 year, 6.0 percent fixed interest rate bonds issued in October, with 3 years of capitalized interest and equal annual payments of principal and interest.

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 repayment to the DPW and Sewerage and Drainage Departments.

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 the year 2011, shown on Line 27, is comprised of the current cash assets and reflects a deficit of \$8,247,900.

The End of Year Balance is shown on Line 28. It is intended that, in all years of the period 2011 through 2015, 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 29 through 42 of Table 11. The amount of Funds Available at Beginning of Year, shown on Line 29, is \$20,405,900. 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 \$50,500,000 of operating revenue 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 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 33. Line 34 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2010, the Board had \$11,250,700 obligated for open contracts and capital jobs as shown on Line 35 of Table 11. Lines 36 and 37 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 2011 will exceed the amount of funding available and some projects will need to be deferred until 2012. This deferral is shown on Line 38.



Estimated issuance costs related to the proposed bond issue amounts are shown on Line 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 be adequate to readily finance both projected capital program requirements as currently scheduled and estimated future operation expenses of the Water Department during the 2011-2015 study period examined herein.

### **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 beginning in 2011.

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 beginning in 2011 with the proposed revenue increases.

While Table 11 indicates that the Board will meet the minimum requirements to issue additional revenue bonds beginning in 2011, 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.

**Table 1**  
**Insurance in Force as of December 31, 2010**

Coverage	Kind and / or Location	Amount of Coverage \$	Policy Period	
			From	To
Travelers/St. Paul Fire	Primary Fleet Liability	Limit: \$1,000,000 (\$200,000 Deductible)	06/20/10	06/20/11
RSUI Indemnity Company	Excess Fleet Liability	Limit \$5,000,000 (\$1,200,000 Deductible)	06/20/10	06/20/11
Westport/Lancashire/RSUI Indemnity	Property - Building and Contents	\$46,401,255 Building \$22,114,000 Contents (\$100,000 Deductible)	09/01/08	03/20/10
Great American	Fleet Physical Damage	\$15,000,000 (\$250,000 Deductible)	03/20/10	03/20/11
Max Specialty Insurance Co.	Replacement Fleet Physical Damage	\$16,956,469 (\$250,000 Deductible)	07/30/10	03/20/11
National Flood Insurance	Flood	\$29,634,300 (\$404,000 Deductible)	08/06/09	08/06/10
Fidelity & Deposit Company of Maryland	Commercial Crime and Employee Theft	\$525,000 (\$10,500 Deductible)	05/01/07	05/01/10
National Union Fire Insurance Co.	Public Officials and Employees Liability	\$5,000,000 (\$100,000 Deductible)	11/20/09	11/20/10
Travelers Casualty & Surety	Fiduciary Liability	\$1,000,000 (\$50,000 Deductible)	08/01/07	08/01/10

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

	Historical							Projected				
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		
<b>Single Family Residential (b)</b>												
Customers	104,843	97,218	87,691	94,547	100,798	102,814	104,870	106,967	109,106	111,288		
Sales (1,000,000 gal.)	5,207	6,110	5,734	6,196	6,276	6,402	6,530	6,661	6,794	6,930		
Sales Per Customer (1,000 gal.)	50	63	65	66	62	62	62	62	62	62		
<b>Multi-family Residential</b>												
Customers	4,818	4,626	4,194	4,267	4,416	4,504	4,594	4,686	4,780	4,876		
Sales (1,000,000 gal.)	895	887	825	832	810	826	843	860	877	894		
Sales Per Customer (1,000 gal.)	186	192	197	195	183	183	183	183	183	183		
<b>Commercial</b>												
Customers	13,390	10,448	9,475	9,558	9,872	10,069	10,270	10,475	10,685	10,899		
Sales (1,000,000 gal.)	3,874	4,144	4,070	3,570	3,682	3,756	3,831	3,907	3,986	4,065		
Sales Per Customer (1,000 gal.)	289	397	430	374	373	373	373	373	373	373		
<b>Industrial</b>												
Customers	47	24	22	21	20	20	20	20	20	20		
Sales (1,000,000 gal.)	148	123	91	80	53	54	54	54	54	54		
Sales Per Customer (1,000 gal.)	3,157	5,086	4,222	3,771	2,674	2,675	2,675	2,675	2,675	2,675		
<b>Dual Service &amp; Metered Fire Service (c)</b>												
Customers	929	1,197	1,193	1,247	1,321	1,348	1,375	1,403	1,431	1,460		
Sales (1,000,000 gal.)	2,467	2,663	2,718	2,630	2,832	2,889	2,947	3,007	3,067	3,129		
Sales Per Customer (1,000 gal.)	2,656	2,225	2,278	2,109	2,144	2,143	2,143	2,143	2,143	2,143		
<b>Total</b>												
Customers	124,027	113,513	102,575	109,640	116,426	118,755	121,129	123,551	126,022	128,543		
Sales (1,000,000 gal.)	12,592	13,927	13,438	13,309	13,653	13,926	14,204	14,488	14,776	15,072		

(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 July 1, 2010)**

	General Service	Dual Service (a)
	\$	\$
<b>Monthly Water Service Charge</b>		
<u>Meter Size</u>		
Inches		
5/8	3.90	5.30
3/4	4.75	6.50
1	6.10	8.50
1-1/2	10.00	13.20
2	13.20	18.80
3	30.00	42.00
4	52.00	73.00
6	102.00	142.00
8	151.00	212.00
10	205.00	287.00
12	240.00	337.00
16	320.00	448.00

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

First	3,000 gallons	2.59	2.59
Next	17,000 gallons	4.42	4.42
Next	980,000 gallons	3.48	3.48
Over	1,000,000 gallons	2.92	2.92

**Flat Rate Fire Service**

<u>Meter Size</u>	
Inches	
2	8.80
3	12.00
4	22.00
6	38.00
8	51.00
10	81.00
12	105.00
16	144.00

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

Table 4

### Water Department Statement of Historical Revenue

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
	\$	\$	\$	\$	\$
<b>Operating Revenue</b>					
Sales of Water	33,718,910	36,198,631	42,913,744	49,689,747	54,013,282
Delinquent Fee	<u>80,850</u>	<u>1,596,891</u>	<u>1,081,988</u>	<u>987,307</u>	<u>1,066,491</u>
Total Operating Revenue	33,799,761	37,795,522	43,995,732	50,677,054	55,079,773
<b>Nonoperating Revenue</b>					
Interest Earned	834,088	493,003	302,558	84,560	32,383
Plumbing Inspection and License Fees	295,122	271,170	295,302	242,224	373,213
Revenue Sharing	282,273	197,190	229,502	165,098	148,528
Other Income (a)	<u>2,283,384</u>	<u>1,281,819</u>	<u>974,578</u>	<u>18,382,186</u>	<u>9,497,548</u>
Total Nonoperating Revenue	3,694,867	2,243,181	1,801,940	18,874,068	10,051,672
Total Revenue	37,494,628	40,038,704	45,797,672	69,551,122	65,131,445

(a) Includes \$16,600,790 in operating and maintenance grants in 2009 and \$6,251,855 in 2010.

**Table 5**  
**Water Department**  
**Historical Operation and Maintenance Expenses (a)**

	2006	2007	2008	2009	2010
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	1,290,870	2,056,157	3,696,400	(1,754,217)	4,063,842
Management Services Director	75,410	26,676	31,034	24,121	23,226
Building and Grounds and Support Services	1,128,139	1,383,923	1,554,301	1,095,617	1,035,972
Personnel Administration	297,352	372,108	393,557	261,102	284,354
Finance Administration	691,849	741,562	835,575	713,007	785,102
Information Systems	2,230,138	2,037,654	1,933,589	1,487,421	1,421,701
Revenue and Customer Service	2,325,713	2,746,344	3,482,268	3,774,758	4,072,735
Purchasing	216,849	235,090	269,051	206,955	225,852
Total Management and General	8,256,320	9,599,514	12,195,776	5,808,764	11,912,784
<b>Operations Expenses</b>					
General Superintendent	164,123	196,374	236,623	148,527	178,217
Chief of Operations	71,717	77,769	62,507	75,851	67,543
Water Pumping and Power	8,870,268	14,866,810	17,695,920	14,393,332	11,142,039
Central Control	470,418	431,312	573,855	619,641	670,229
Water Purification	7,026,675	8,199,532	10,313,493	9,566,964	9,955,835
Chief of Facilities Maintenance	61,042	66,631	76,786	94,029	92,316
Facilities Maintenance	2,990,353	3,326,563	3,846,125	3,086,098	2,904,614
Central Yard	1,995,190	2,499,556	2,511,570	1,617,507	1,789,058
Office of Chief of Networks	90,770	357,326	120,178	143,700	142,919
Networks	9,274,448	12,490,047	12,324,603	11,091,848	8,586,257
Engineering	1,051,807	1,184,106	1,401,279	1,038,809	1,014,126
Plumbing	400,927	441,830	499,622	477,796	469,925
Total Operations	32,467,738	44,137,856	49,662,562	42,354,102	37,013,077
<b>Other Expenses</b>					
Special Accounts	1,506,011	1,661,998	1,292,730	1,081,741	932,188
Payroll Related Expenses	3,090,892	7,629,127	8,002,409	5,725,534	5,548,877
Overhead Allocation	(3,535,924)	(4,271,666)	(4,374,549)	(3,080,380)	(3,058,748)
Total Other	1,060,979	5,019,459	4,920,590	3,726,895	3,422,317
Total Operation and Maintenance (b)	41,785,037	58,756,829	66,778,929	51,889,761	52,348,178

(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)**  
**2010**

C.P. #	Project	Actual Expenditures
		\$
	<b>Waterworks</b>	
110	Normal Extensions & Replacements	1,757
135	Improvements to Chemical System	20,759
156	Advanced Water Treatment	861,453
160	Hurricane Katrina Expense for Water	(95,281)
175	Water Hurricane Recovery Bonds	24,247,994
	Total Waterworks	25,036,682
	<b>Water Distribution</b>	
214	Normal Extensions & Replacements	1,507,287
215	Rehabilitation - Mains, Hydrants & Services	115
239	Mains DPW Contracts	135,499
	Total Water Distribution	1,642,901
	<b>Power Projects and General Budget</b>	
600	Water Share of Power Projects	10,327
800	Water Share of General Budget Items	5,325,057
	Total Water Department	32,014,967

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

Table 7

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

C.P. #	Project	2011	2012	2013	2014	2015	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
110	Normal Extension & Replacement	9,295,000	9,100,000	8,700,000	6,600,000	7,050,000	40,745,000
112	Modification to Oak St. Raw Water Intake Station	5,000,000	2,000,000	25,000	0	0	7,025,000
122	Filter Rehabilitation	1,500,000	3,900,000	3,000,000	6,500,000	5,000,000	19,900,000
214	Normal Extensions & Replacements	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	6,000,000
216	Water System Replacement Program	11,500,000	11,750,000	11,000,000	11,000,000	11,000,000	56,250,000
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	2,210,000	6,345,000	1,108,000	1,230,000	827,000	11,720,000
701	Water Reserve for Emergencies	700,000	0	0	0	0	700,000
800	Water Share of General Budget Items	9,554,000	7,384,000	5,748,000	8,454,000	7,697,000	38,837,000
	<b>Total Routine Capital Improvements</b>	<b>44,159,000</b>	<b>44,879,000</b>	<b>33,981,000</b>	<b>38,184,000</b>	<b>35,974,000</b>	<b>197,177,000</b>
<b>Major Capital Improvements</b>							
135	Improvements to Chemical System	500,000	1,800,000	500,000	1,100,000	250,000	4,150,000
156	Advanced Carrollton Water Treatment	200,000	7,500,000	5,000,000	4,560,000	120,000	17,380,000
157	Advanced Algiers Water Treatment	2,450,000	1,500,000	2,750,000	1,050,000	0	7,750,000
159	Water Plant Security Improvements	2,000,000	1,170,000	4,520,000	2,000,000	0	9,690,000
175	Water Hurricane Recovery Bonds	25,110,000	53,050,000	20,000,000	20,000,000	0	118,160,000
221	Feeder Main Extension, General	600,000	600,000	600,000	600,000	600,000	3,000,000
	<b>Total Major Capital Improvements</b>	<b>30,860,000</b>	<b>65,620,000</b>	<b>33,370,000</b>	<b>29,310,000</b>	<b>970,000</b>	<b>160,130,000</b>
	<b>Total Water Department Improvements</b>	<b>75,019,000</b>	<b>110,499,000</b>	<b>67,351,000</b>	<b>67,494,000</b>	<b>36,944,000</b>	<b>357,307,000</b>

(a) The improvements for the 2011-2015 are based on revisions of the 2011 Capital Budget and 2011-2015 Capital Program approved December 15, 2010. The revised budget was ratified by the Board on June 15, 2011.



**Table 8**

**Water Department  
Projected Operating Revenue**

Year	(1)	(2)	(3)
	Revenue From Charges	Additional Revenue	Total Service Charge Revenue
	\$	\$	\$
2011	56,841,300	947,400	57,788,700
2012	57,537,300	6,041,400	63,578,700
2013	58,240,400	15,768,600	74,009,000
2014	58,949,900	27,197,300	86,147,200
2015	59,666,900	40,607,300	100,274,200

**Historical and Projected Operating Revenue**

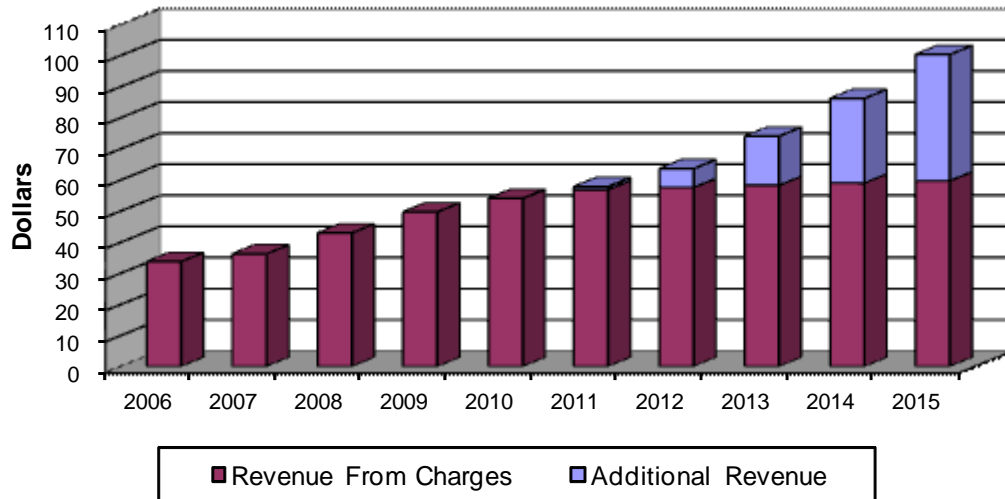
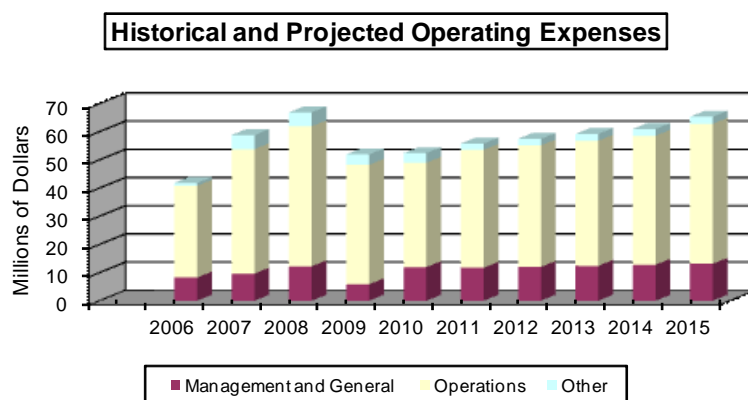


Table 9

### Water Department Projected Operation and Maintenance Expenses

	2011 (a)	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,663,700	2,743,600	2,825,900	2,910,700	2,998,000
Management Services Director	23,500	24,200	25,000	25,700	26,500
Building and Grounds and Support Services	1,138,100	1,172,300	1,207,400	1,243,700	1,281,000
Personnel Administration	397,000	408,900	421,200	433,800	446,800
Finance Administration	952,900	981,500	1,010,900	1,041,300	1,072,500
Information Systems	1,962,200	2,021,100	2,081,700	2,144,200	2,208,500
Revenue and Customer Service	4,226,700	4,353,500	4,484,100	4,618,600	4,757,200
Purchasing	298,200	307,100	316,400	325,800	335,600
Total Management and General	11,662,300	12,012,200	12,372,600	12,743,800	13,126,100
<b>Operations Expenses</b>					
General Superintendent	227,200	234,000	241,000	248,200	255,700
Chief of Operations	68,700	70,800	72,900	75,100	77,300
Water Pumping and Power	12,122,100	12,485,800	12,860,300	13,246,100	13,643,500
Central Control	284,200	292,800	301,600	310,600	319,900
Water Purification	10,498,400	10,813,300	11,137,700	11,471,900	11,816,000
Chief of Facilities Maintenance	80,400	82,800	85,300	87,800	90,500
Facilities Maintenance	4,378,300	4,509,700	4,645,000	4,784,300	4,927,800
Central Yard	1,897,700	1,954,600	2,013,200	2,073,600	2,135,900
Office of Chief of Networks	133,700	137,700	141,900	146,100	150,500
Networks	10,316,300	10,625,800	10,944,500	11,272,900	11,611,100
Engineering	1,403,600	1,445,700	1,489,100	1,533,800	1,579,800
Plumbing	427,000	439,900	453,000	466,600	480,600
Total Operations	41,837,600	43,092,900	44,385,500	45,717,000	47,088,600
<b>Other Expenses</b>					
Special Accounts	1,539,900	1,586,000	1,633,600	1,682,600	1,733,100
Payroll Related Expenses	3,500,800	3,605,800	3,714,000	3,825,400	3,940,200
Overhead Allocation	(2,800,000)	(2,884,000)	(2,970,500)	(3,059,600)	(3,151,500)
Total Other	2,240,700	2,307,800	2,377,100	2,448,400	2,521,800
Total Operation and Maintenance	55,740,600	57,412,900	59,135,200	60,909,200	62,736,500

(a) Represents the adopted operating budget as of December 15, 2010.



**Table 10**

**Water Revenue Bond  
Debt Service Requirements**

	2011	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Existing Bonds</b>					
Series 1998	1,283,500	1,283,400	1,281,000	1,284,500	1,281,500
Series 2002	2,623,100	2,634,900	2,646,600	2,633,300	2,621,900
Series 2010	169,500	167,300	168,300	170,100	167,500
Total Existing Debt Service	4,076,100	4,085,600	4,095,900	4,087,900	4,070,900
<b>Projected Bonds (a)</b>					
	Amount of Issue				
	\$				
2011	0	0	0	0	0
2012	56,000,000	0	0	0	1,440,300
2013	23,500,000		0	0	0
2014	38,000,000			0	0
2015	2,900,000				0
Total Projected Debt Service	0	0	0	0	1,440,300
Total Debt Service	4,076,100	4,085,600	4,095,900	4,087,900	5,511,200

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

Table 11

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

Line No.				2011	2012	2013	2014	2015
				\$	\$	\$	\$	\$
<b>Operating Fund</b>								
1	Revenue from Charges			56,841,300	57,537,300	58,240,400	58,949,900	59,666,900
	Additional Revenue Required							
		Revenue	Months					
	Year	Increase	Effective					
2	2011	4.0%	5.0	947,400	2,301,500	2,329,600	2,358,000	2,386,700
3	2012	15.0%	5.0		3,739,900	9,085,500	9,196,200	9,308,000
4	2013	15.0%	5.0			4,353,500	10,575,600	10,704,200
5	2014	15.0%	5.0				5,067,500	12,309,900
6	2015	15.0%	5.0					5,898,500
7	Total Additional Revenue			947,400	6,041,400	15,768,600	27,197,300	40,607,300
8	Total Service Charge Revenue			57,788,700	63,578,700	74,009,000	86,147,200	100,274,200
9	Interest Income			175,300	136,500	179,900	370,700	618,800
10	Three-Mill Revenue Sharing			124,300	124,300	124,300	124,300	124,300
11	Plumbing Insp. & License Fees			387,200	387,200	387,200	387,200	387,200
12	Other Miscellaneous Income			3,315,500	3,315,500	3,315,500	3,315,500	3,315,500
13	Operating & Maintenance Grants			10,482,900	10,266,800	9,942,600	9,726,400	9,186,100
14	Interest from Bond Reserve Fund			75,000	100,000	134,000	161,000	179,000
15	FEMA Federal Assistance Fees			74,100	0	0	0	0
16	Total Operating Revenue			72,423,000	77,909,000	88,092,500	100,232,300	114,085,100
17	Operation & Maintenance			(55,740,600)	(57,412,900)	(59,135,200)	(60,909,200)	(62,736,500)
18	Provision for Claims			(190,600)	(196,300)	(202,200)	(208,200)	(214,500)
19	Provision for Doubtful Accounts			(1,136,800)	(1,150,700)	(1,164,800)	(1,179,000)	(1,193,300)
20	Net Operating Revenue			15,355,000	19,149,100	27,590,300	37,935,900	49,940,800
Debt Service								
21	Existing			(4,076,100)	(4,085,600)	(4,095,900)	(4,087,900)	(4,070,900)
22	Projected			0	0	0	0	(1,440,300)
23	Total Debt Service			(4,076,100)	(4,085,600)	(4,095,900)	(4,087,900)	(5,511,200)
24	Transfer to Construction			(9,000,000)	(5,000,000)	(12,500,000)	(2,000,000)	(22,000,000)
25	Due from (to) Other Departments			(10,050,000)	(10,050,000)	(2,333,300)	(2,333,300)	(2,333,300)
26	Net Annual Balance			(7,771,100)	13,500	8,661,100	29,514,700	20,096,300
27	Beginning of Year Cash Balance			15,682,000	7,910,900	7,924,400	16,585,500	46,100,200
28	End of Year Balance			7,910,900	7,924,400	16,585,500	46,100,200	66,196,500
<b>Capital Projects Funding</b>								
29	Funds Available at Beginning of Year			20,405,900	401,800	362,600	745,200	937,700
30	Revenue Bond Proceeds			0	56,000,000	23,500,000	38,000,000	2,900,000
31	Operation Fund Transfers			9,000,000	5,000,000	12,500,000	2,000,000	22,000,000
32	Participation By Others			47,097,000	65,420,000	34,100,000	31,530,000	11,860,000
33	Interest Income			168,600	62,100	34,900	39,500	32,100
34	Total Funds Available			76,671,500	126,883,900	70,497,500	72,314,700	37,729,800
35	Obligated Contracts & Capital Jobs			(11,250,700)	0	0	0	0
36	Reinvestment in Assets			(44,159,000)	(44,879,000)	(33,981,000)	(38,184,000)	(35,974,000)
37	Major Capital Additions			(30,860,000)	(65,620,000)	(33,370,000)	(29,310,000)	(970,000)
38	Deferred Capital Improvements			10,000,000	(10,300,000)	0	0	0
39	Bond Issuance Expense			0	(840,000)	(352,500)	(570,000)	(43,500)
40	Revenue Bond Reserve Fund			0	(4,882,300)	(2,048,800)	(3,313,000)	(252,800)
41	Total Application of Funds			(76,269,700)	(126,521,300)	(69,752,300)	(71,377,000)	(37,240,300)
42	End of Year Balance			401,800	362,600	745,200	937,700	489,500
<b>Debt Service Coverage</b>								
43	Annual Test			377%	469%	674%	928%	906%
Additional Bonds Test								
44	Prior Two-Year Test			523%	204%	142%	145%	200%
45	Maximum Future Debt Service Test			379%	196%	226%	235%	304%
46	Coverage 5 Years after Sale			293%	289%	285%	281%	276%

## 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 2010. Sewerage Department tables are included at the end of this section.

### 2010 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 2010 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 2006 through 2015. Based on year-end billing summaries, the number of monthly billed customers during 2010 average 114,385 compared with 107,765 for 2009. It is projected that the Board will average approximately 116,672 open accounts in 2011 and that the number of accounts will continue to grow at approximately 2.0 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 11,270 million gallons of wastewater volume was billed in 2010, compared with a total of 11,050 million gallons in 2009.

## Operating Revenues

Sewerage Department operating revenue for 2010 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 2006 through 2010. 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 2010 were \$68,821,844 which, when compared with \$65,442,893 for 2009, shows an increase of approximately 5.2 percent. Delinquent fee revenues were \$712,935 in 2010 which represent an increase over 2009 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 2010 consisted of \$74,774 from investments in the Sewerage System fund, the capital projects and construction fund. Miscellaneous income was \$3,776,704 for 2010.

In 2010, the Board received \$2,957,463 in operating and maintenance grants from FEMA for operating expenses incurred from sewer repairs performed by Board crews. This revenue is included as Other Income in Table 14.

## 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 2006 through 2010 historical operation and maintenance expenses of the Sewerage Department. Expenditures for 2010 decreased about 11.4 percent from 2009 expenditures and increased about 3.3 percent from 2008 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 2010 capital expenditures, exclusive of prorated interest expense, totaled \$52,234,224. 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 2010:

Total Revenues <sup>a</sup>	\$73,386,257
Operation and Maintenance Expense	43,777,876
Claims	583,421
Debt Service Payments	20,212,006
<b>Revenue Primarily Available for Capital Expenditures<sup>b</sup></b>	<b>\$8,812,954</b>

<sup>a</sup> Includes operating and maintenance grant of \$2,772,395.

<sup>b</sup> Excludes depreciation.

### PROPOSED CAPITAL IMPROVEMENT PROGRAM

Table 17 presents a summary of the projected major capital improvement program for the period 2011 through 2015. Table 17 is based on the Board's 2011 adopted Capital Budget and the 2011-2015 proposed Capital Program. The five-year major capital improvement program costs are estimated to total \$446,366,100. Of the projected total, \$374,872,100 is considered to be for recurring annual capital improvements. The remaining \$71,494,000 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 2011 through 2015 total \$3,631,100 and \$38,735,000, 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 2011 through 2015 in Table 18. Future revenues reflect the existing rate schedule, which became effective July 1, 2006 applied to the projected number of customers and water usage.

### 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 \$387,200 per year. Additionally, about \$155,100 is currently anticipated for three-mill revenue sharing. Operating and maintenance grants are projected at an average of about \$6,056,000 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 2011 through 2015 is shown in Table 20 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 2011 reflect the Board's adopted 2011 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 2011.

### 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, 2009 outstanding debt obligations consisted of \$14,460,000 Sewerage Revenue Bonds Series 1997, \$13,040,000 Sewerage Revenue Bonds Series 1998, \$17,195,000 Sewerage Revenue Bonds Series 2000A, \$13,060,000 Sewerage Revenue Bonds Series 2000B, \$21,530,000 Sewerage Revenue Bonds Series 2001, \$41,105,000 Sewerage Revenue Bonds Series 2002, \$4,025,000 Sewerage Revenue Bonds Series 2003, \$25,690,000 Sewerage Revenue Bonds Series 2004, and \$22,695,000 Sewerage Revenue Bonds Series 2009.

In November 2011, the Louisiana Department of Environmental Quality (LADEQ) provided a \$9,000,000 loan to the Board for funding of three SSERP projects. Debt service payments will begin



approximately 1 year after the projects are complete and assumes a 2 percent interest rate and a 20 year term. To adequately fund the proposed capital improvements, additional revenue bonds are indicated as shown in Table 19. It is assumed that the terms of the new debt incurred will be 6.0 percent for a term of 30 years with 3 years of capitalized interest.

The Sewerage Department has borrowed \$7,000,000 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 2010 rates as previously presented in Table 18.

Lines 2 through 6 show indicated increases in sewer revenues associated with rate increases assumed to be in effect the number of months shown. Proposed revenue increases, as presented in the 2011 Rate Study, are shown on Lines 3-6 and reflect annual increase of 14 percent effective July 1, of 2012 through 2015.

Other revenue available for system operations, shown on Lines 9 through 14, consist of Interest Income on operating funds, Three-Mill Revenue Sharing, Plumbing Inspection and License Fees, Miscellaneous Revenue, Operating and Maintenance Grants, and Interest from Bond Reserve Fund. Interest Income available to the operating fund, shown on Line 9, 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 has submitted Project Worksheets to FEMA for operating expenses incurred from sewer repairs performed by Board crews. Line 13 indicates the amount projected to be reimbursed by FEMA for these repairs during the study period. Total Operating Revenue is shown on Line 15.

Operation and Maintenance expense, previously projected in Table 19, is shown on Line 16 of Table 21. Line 17 shows the estimated allowance for claims. Bad debt expense is assumed to be 2 percent of projected revenue and is shown on Line 18. Projected Net Operating Revenue from system operations is shown on Line 19.

Lines 20 through 22 present debt service requirements on currently outstanding and proposed revenue bonds. Additional revenue bond debt financing of \$9,000,000 in 2011, \$34,000,000 in 2012, \$34,000,000 in 2013, and \$70,000,000 in 2014 is assumed. Debt service requirements for the 2011 bonds reflect a 2.0 percent interest rate and a 20-year term. All other debt is assumed to be 30 year,

6.0 percent fixed interest rate bonds issued in October, with 3 years of capitalized interest and equal annual payments of principal and interest.

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.

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 year 2011, shown on Line 26, is comprised of the current cash assets and reflects a deficit of \$1,682,600.

The End of Year Balance is shown on Line 27. It is intended that, in all years of the period 2011 through 2015, 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 28 through 41 of Table 21. The amount of Funds on Hand, shown on Line 28, is \$20,680,200. 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 \$137,000,000 of operating reserves 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 COE and FEMA. Interest earnings recognize an assumed 1.0 percent average annual interest rate. Line 33 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2010, the Board had \$21,338,500 obligated for open contracts and capital jobs as shown on Line 34 of Table 21. Lines 35 and 36 show the projected Reinvestment in Assets and Major Capital Additions to be funded. The projected capital projects shown on Lines 35 and 36 for 2011, 2012, and 2013 exceed the amount of funding available shown on Line 33; therefore, \$128,500,000 in capital projects will need to be deferred. This deferral is shown on Line 37 and assumes 3 percent inflation each year the projects are deferred.

Estimated issuance costs related to the proposed bond issue amounts is shown on Line 38. Line 39 shows the required deposits into the Revenue Bond Reserve Fund associated with proposed bond issues.

The Total Application of Funds is shown on Line 40 of Table 21. The net End of Year Balance is shown on Line 41.

As demonstrated in Table 21, 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 Sewerage Department during the 2011-2015 study period examined herein. It is recommended that the Board defer capital projects until an adequate funding source has been identified.

### **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 42 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 43 through 45 of Table 21. All of these tests will be met with the proposed revenue increases.

While Table 21 indicates that the Board will meet the minimum requirements to issue additional revenue bonds beginning in 2012, 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.

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

	Historical					Projected				
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Single Family Residential (b)</b>										
Customers	104,312	96,611	87,079	93,901	100,108	102,110	104,152	106,235	108,360	110,527
Sales (1,000,000 gal.)	4,316	5,096	4,770	5,145	5,203	5,307	5,413	5,522	5,632	5,745
Sales Per Customer (1,000 gal.)	41	53	55	55	52	52	52	52	52	52
<b>Multifamily Residential</b>										
Customers	4,811	4,616	4,187	4,260	4,406	4,494	4,584	4,676	4,770	4,865
Sales (1,000,000 gal.)	766	747	703	710	693	706	721	735	750	765
Sales Per Customer (1,000 gal.)	159	162	168	167	157	157	157	157	157	157
<b>Commercial</b>										
Customers	13,623	10,513	9,514	9,574	9,841	10,038	10,239	10,444	10,653	10,866
Sales (1,000,000 gal.)	5,368	5,529	5,393	5,109	5,304	5,410	5,519	5,629	5,742	5,857
Sales Per Customer (1,000 gal.)	394	525	566	533	538	538	538	538	538	538
<b>Industrial</b>										
Customers	71	35	32	30	29	30	31	32	33	34
Sales (1,000,000 gal.)	67	94	287	87	70	73	75	77	80	82
Sales Per Customer (1,000 gal.)	937	2,675	8,889	2,847	2,417	2,417	2,416	2,419	2,418	2,418
<b>Total</b>										
Customers	122,817	111,775	100,812	107,765	114,385	116,672	119,006	121,387	123,816	126,292
Sales (1,000,000 gal.)	10,517	11,466	11,152	11,050	11,270	11,496	11,727	11,963	12,203	12,448

(a) Excludes customers receiving free service.

(b) Includes duplex.

**Table 13**

**Sewerage Department  
Existing Sewer Rates  
(Effective July 1, 2006)**

**Monthly Sewerage Service Charge**

<u>Meter Size</u>	<u>Total Monthly Charge</u>
Inches	\$
5/8	11.60
3/4	16.50
1	23.50
1-1/2	43.25
2	63.25
3	150.00
4	250.00
6	500.00
8	750.00
10	1,000.00
12	1,150.00
16	1,550.00

**Monthly Quantity Charge**

Per 1,000 Gallons 4.04

**Excessive Strength Charge per Pound**

BOD 0.2619  
TSS 0.1494

Table 14

### Sewerage Department Statement of Historical Revenue

	2006	2007	2008	2009	2010
	\$	\$	\$	\$	\$
<b>Operating Revenue</b>					
Sewerage Service Charges	62,603,447	67,236,089	61,154,472	65,442,893	68,821,844
Delinquent Fee	54,189	1,068,458	722,775	660,053	712,935
Total Operating Revenue	62,657,636	68,304,547	61,877,246	66,102,946	69,534,779
<b>Nonoperating Revenue</b>					
Interest Income	4,568,292	1,273,048	1,094,327	326,075	74,774
Plumbing Inspection and License Fees	295,122	271,170	295,302	242,224	373,213
Revenue Sharing	352,048	245,933	286,233	205,908	185,243
Other Income (a)	58,556	266,798	288,674	3,160,923	3,218,248
Total Nonoperating Revenue	5,274,017	2,056,949	1,964,536	3,935,130	3,851,478
Total Revenue	67,931,653	70,361,496	63,841,782	70,038,076	73,386,257

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

Table 15

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

	2006	2007	2008	2009	2010
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,630,861	2,341,636	2,710,619	5,635,970	2,332,598
Management Services Director	54,986	19,451	22,630	23,641	23,225
Building and Grounds and Support Services	833,341	1,020,976	1,148,020	1,063,852	1,035,972
Personnel Administration	216,821	271,329	286,969	255,645	284,354
Finance Administration	525,451	546,981	617,079	701,627	785,102
Information Systems	1,626,143	1,485,788	1,409,909	1,479,827	1,421,701
Revenue and Customer Service	2,325,703	2,746,331	3,482,253	3,774,740	4,072,717
Purchasing	158,120	171,419	196,183	203,652	225,851
Total Management and General	<u>8,371,426</u>	<u>8,603,911</u>	<u>9,873,660</u>	<u>13,138,954</u>	<u>10,181,521</u>
<b>Operations Expenses</b>					
General Superintendent	119,672	143,189	172,537	136,268	178,217
Drainage Pumping and Central Control	210,012	333,390	335,881	253,466	284,458
Sewerage Pumping	2,018,413	2,962,907	3,530,071	2,991,929	2,994,092
Chief of Operations	52,294	56,706	45,578	70,309	67,543
Water Pumping and Power	3,023,657	342,093	1,931,804	351,013	897,824
Sewerage Treatment	8,091,279	9,989,978	10,001,042	12,384,026	11,219,427
Chief of Facilities Maintenance	44,510	48,584	55,990	87,943	92,316
Facilities Maintenance	2,342,667	2,607,184	3,035,342	2,915,271	2,904,608
Central Yard	1,467,353	1,876,880	1,879,518	1,591,341	1,789,445
Office of Chief of Networks	66,186	260,551	87,629	104,781	104,212
Networks	5,741,081	7,494,584	7,713,092	9,881,454	8,514,449
Engineering	766,945	863,407	1,021,766	962,712	1,014,125
Plumbing	400,924	441,827	499,620	477,792	469,921
Total Operations	<u>24,344,993</u>	<u>27,421,280</u>	<u>30,309,870</u>	<u>32,208,305</u>	<u>30,530,637</u>
<b>Other Expenses</b>					
Special Accounts	1,393,262	1,420,981	937,175	1,081,546	932,188
Payroll Related Expenses	1,818,997	4,815,145	4,823,058	6,301,921	5,522,151
Overhead Allocation	(2,890,799)	(3,492,313)	(3,576,413)	(3,328,966)	(3,388,621)
Total Other	<u>321,460</u>	<u>2,743,813</u>	<u>2,183,819</u>	<u>4,054,501</u>	<u>3,065,718</u>
Total Operation and Maintenance (b)	<u>33,037,879</u>	<u>38,769,004</u>	<u>42,367,349</u>	<u>49,401,760</u>	<u>43,777,876</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)  
2010**

C.P. #	Project	Actual Expenditures
		\$
<b>Sewerage Systems</b>		
313	Extensions & Replacements - Sewer Force Mains EPA Consent D	274,975
317	Normal Extensions & Replacement of Gravity Mains	11,577,758
318	Rehabilitation Gravity Sewer System	5,088,793
326	Extensions & Replacements to Sewer Pumping Stations	699,806
339	Mains in Street Dept. Contracts	46,726
348	Normal Extensions & Replacements	1,849,902
368	Wetlands Assimilation Project	176,476
375	Sewerage Hurricane Recovery Bonds	27,377,451
381	Modification & Extension of WBSTP to 20/50 MGD	2,330
	Total Sewerage System	47,094,217
<b>Power Projects and General Budget</b>		
600	Sewerage Share of Power Projects	2,582
800	Sewerage Share of General Budget Items	5,137,425
	Total Sewerage Department	52,234,224

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



Table 17

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

C.P. #	Project	2011	2012	2013	2014	2015	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
317	Extensions and Replacements - Gravity Mains	14,146,000	51,069,000	91,985,000	2,500,000	200,000	159,900,000
318	Rehabilitation Gravity Sewer System	6,300,000	6,300,000	6,300,000	6,600,000	6,600,000	32,100,000
319	Extension and Replacements - Sanitary Sewer Mains Algi	500,000	500,000	10,650,000	10,725,000	500,000	22,875,000
326	Extensions and Replacements to Pumping Stations	2,300,000	3,850,000	10,857,000	5,650,000	1,000,000	23,657,000
339	Mains in Streets Department Contracts	10,000,000	10,000,000	10,000,000	5,300,000	0	35,300,000
348	Extensions and Replacements - Treatment Plants	46,307,000	2,272,000	2,423,000	3,930,000	3,742,000	58,674,000
600	Sewer Share of Power Projects	511,100	345,000	1,932,000	450,000	393,000	3,631,100
800	Sewer Share of General Budget Items	8,954,000	6,884,000	8,748,000	7,454,000	6,695,000	38,735,000
	<b>Total Routine Annual Improvements</b>	<b>89,018,100</b>	<b>81,220,000</b>	<b>142,895,000</b>	<b>42,609,000</b>	<b>19,130,000</b>	<b>374,872,100</b>
<b>Major Capital Improvements</b>							
300	Engineering/Inspection of Developer Installations	10,000	10,000	10,000	10,000	15,000	55,000
313	Extensions and Replacements - Sewer Force Mains	0	0	0	0	2,250,000	2,250,000
368	Wetland Assimilation	3,500,000	6,500,000	0	0	0	10,000,000
375	Sewerage Hurricane Recovery Bonds	10,660,000	10,000,000	10,000,000	10,000,000	10,000,000	50,660,000
381	Modification and Expansion of WBSTP to 20/50 MGD	513,000	3,394,000	469,000	343,000	3,810,000	8,529,000
	<b>Total Major Improvements</b>	<b>14,683,000</b>	<b>19,904,000</b>	<b>10,479,000</b>	<b>10,353,000</b>	<b>16,075,000</b>	<b>71,494,000</b>
	<b>Total Sewerage System Improvements</b>	<b>103,701,100</b>	<b>101,124,000</b>	<b>153,374,000</b>	<b>52,962,000</b>	<b>35,205,000</b>	<b>446,366,100</b>

(a) The improvements for the 2011-2015 are based on revisions of the 2011 Capital Budget and 2011-2015 Capital Program approved December 15, 2010. The revised budget was ratified by the Board on June 15, 2011.

**Table 18**

**Sewerage Department  
Projected Operating Revenue**

Year	(1)	(2)	(3)
	Revenue From Charges	Additional Revenue	Total Service Charge Revenue
	\$	\$	\$
2011	70,400,400	0	70,400,400
2012	71,265,800	4,157,200	75,423,000
2013	72,140,000	14,896,900	87,036,900
2014	73,026,300	27,414,800	100,441,100
2015	73,922,400	41,985,400	115,907,800

**Historical and Projected Operating Revenue**

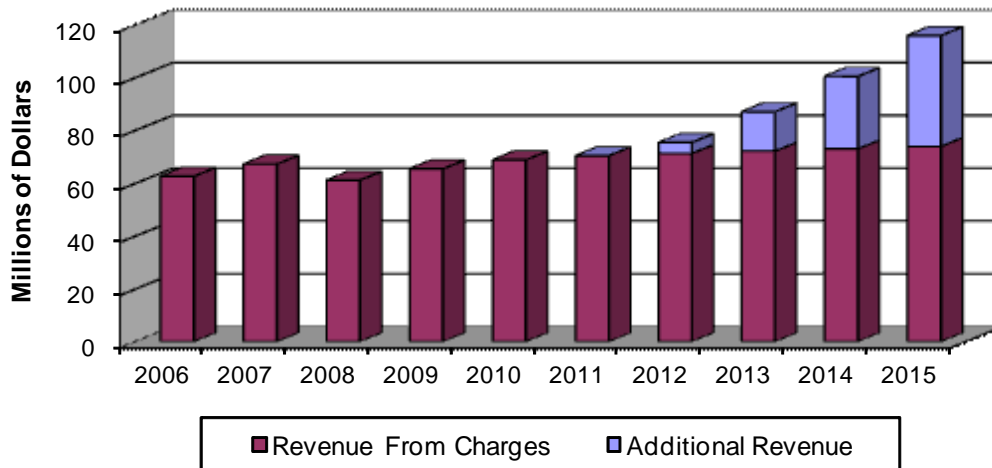
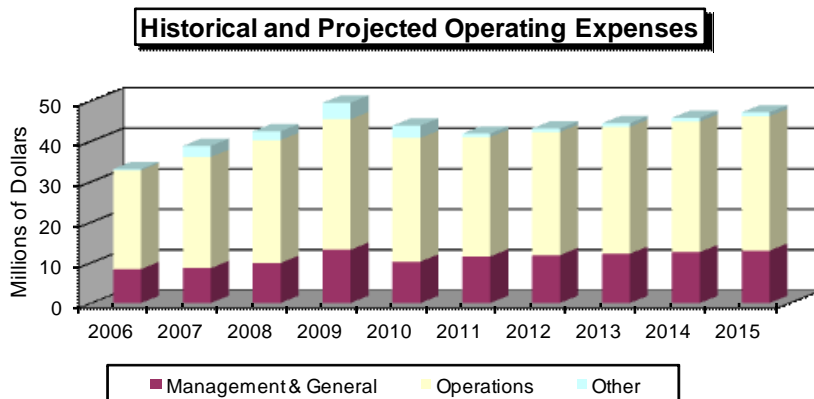


Table 19

### Sewerage Department Projected Operation and Maintenance Expenses

	2011 (a)	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,873,200	2,959,400	3,048,200	3,139,600	3,233,800
Management Services Director	23,500	24,200	25,000	25,700	26,500
Building and Grounds and Support Services	1,138,500	1,172,700	1,207,800	1,244,100	1,281,400
Personnel Administration	252,900	260,500	268,400	276,400	284,700
Finance Administration	717,700	739,300	761,400	784,300	807,800
Information Systems	1,955,300	2,013,900	2,074,300	2,136,600	2,200,700
Revenue and Customer Service	4,251,400	4,378,900	4,510,300	4,645,600	4,784,900
Purchasing	248,300	255,800	263,400	271,300	279,500
Total Management and General	11,460,800	11,804,700	12,158,800	12,523,600	12,899,300
<b>Operations Expenses</b>					
General Superintendent	158,500	163,300	168,200	173,200	178,400
Drainage Pumping and Central Control	0	0	0	0	0
Sewerage Pumping	2,691,500	2,772,300	2,855,400	2,941,100	3,029,300
Chief of Operations	68,700	70,800	72,900	75,100	77,300
Water Pumping and Power	483,200	497,700	512,600	528,000	543,900
Sewerage Treatment	12,145,500	12,509,900	12,885,200	13,271,700	13,669,900
Chief of Facilities Maintenance	80,400	82,800	85,300	87,800	90,500
Facilities Maintenance	1,809,200	1,863,400	1,919,300	1,976,900	2,036,200
Central Yard	1,907,700	1,965,000	2,023,900	2,084,600	2,147,200
Office of Chief of Networks	93,300	96,100	99,000	102,000	105,000
Networks	8,685,000	8,945,600	9,214,000	9,490,400	9,775,100
Engineering	937,700	965,900	994,800	1,024,700	1,055,400
Plumbing	427,000	439,900	453,000	466,600	480,600
Total Operations	29,487,700	30,372,700	31,283,600	32,222,100	33,188,800
<b>Other Expenses</b>					
Special Accounts	1,423,100	1,465,800	1,509,700	1,555,000	1,601,700
Payroll Related Expenses	2,230,400	2,297,400	2,366,300	2,437,300	2,510,400
Overhead Allocation	(2,800,000)	(2,884,000)	(2,970,500)	(3,059,600)	(3,151,400)
Total Other	853,500	879,200	905,500	932,700	960,700
Total Operation and Maintenance	41,802,000	43,056,600	44,347,900	45,678,400	47,048,800

(a) Represents the adopted operating budget as of December 15, 2010.



**Table 20**

**Sewerage Service Revenue Bond  
Debt Service Requirements**

	2011	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Existing Bonds</b>					
Series 1997	2,519,000	2,522,400	2,528,600	2,537,700	2,543,400
Series 1998	2,007,400	2,007,500	2,009,100	2,007,700	2,005,800
Series 2000A	2,245,100	2,252,400	2,261,300	2,269,800	2,279,200
Series 2000B	1,703,900	1,709,900	1,717,500	1,725,600	1,731,100
Series 2001	2,612,800	2,609,600	2,603,700	2,597,600	2,594,900
Series 2002	4,570,800	4,582,200	4,596,500	4,613,400	4,629,200
Series 2003	408,100	405,500	402,700	401,600	401,700
Series 2004	2,457,200	2,461,900	2,463,500	2,453,700	2,452,800
Series 2009	2,078,300	2,021,100	2,023,500	2,026,200	2,029,400
Total Existing Debt Service	20,602,600	20,572,500	20,606,400	20,633,300	20,667,500
<b>Projected Bonds</b>					
	Amount of Issue				
	\$				
2011	9,000,000	0	0	550,410	550,410
2012	34,000,000		0	0	874,450
2013	34,000,000		0	0	0
2014	70,000,000			0	0
2015	0				0
Total Projected Debt Service		0	0	550,410	550,410
Total Debt Service		20,602,600	20,572,500	21,156,810	21,183,710
				21,183,710	22,092,360

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

Table 21

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

Line No.		2011	2012	2013	2014	2015
		\$	\$	\$	\$	\$
<b>Operating Fund</b>						
1	Revenue from Charges	70,400,400	71,265,800	72,140,000	73,026,300	73,922,400
	Additional Revenue Required					
	Year	Revenue Increase	Months Effective			
2	2011	0.0%	3.0	0	0	0
3	2012	14.0%	5.0	4,157,200	10,099,600	10,349,100
4	2013	14.0%	5.0		4,797,300	11,655,000
5	2014	14.0%	5.0			5,536,100
6	2015	14.0%	5.0			6,388,600
7	Total Additional Revenue	0	4,157,200	14,896,900	27,414,800	41,985,400
8	Total Service Charge Revenue	70,400,400	75,423,000	87,036,900	100,441,100	115,907,800
9	Interest Income	75,900	112,300	113,800	115,700	126,500
10	Three-Mill Revenue Sharing	155,100	155,100	155,100	155,100	155,100
11	Plumbing Insp. & License Fees	387,200	387,200	387,200	387,200	387,200
12	Other Miscellaneous Income	179,300	179,300	179,300	179,300	179,300
13	Operating & Maintenance Grants	6,399,300	6,267,400	6,069,400	5,937,500	5,607,600
14	Interest from Bond Reserve Fund	255,000	270,000	300,000	345,000	376,000
15	Total Operating Revenue	77,852,200	82,794,300	94,241,700	107,560,900	122,739,500
16	Operation & Maintenance	(41,802,000)	(43,056,600)	(44,347,900)	(45,678,400)	(47,048,800)
17	Provision for Claims	(154,500)	(159,100)	(163,900)	(168,800)	(173,900)
18	Provision for Doubtful Accounts	(1,408,000)	(1,508,500)	(1,740,700)	(2,008,800)	(2,318,200)
19	Net Operating Revenue	34,487,700	38,070,100	47,989,200	59,704,900	73,198,600
<b>Debt Service</b>						
20	Existing	(20,602,600)	(20,572,500)	(20,606,400)	(20,633,300)	(20,667,500)
21	Projected	0	0	(550,400)	(550,400)	(1,424,900)
22	Total Debt Service	(20,602,600)	(20,572,500)	(21,156,800)	(21,183,700)	(22,092,400)
23	Transfer to Construction	(11,000,000)	(21,500,000)	(23,500,000)	(35,000,000)	(46,000,000)
24	Due from (to) Other Departments	4,200,000	4,200,000	(3,233,300)	(3,233,300)	(3,233,400)
25	Net Annual Balance	7,085,100	197,600	99,100	287,900	1,872,800
26	Beginning of Year Cash Balance	(1,682,600)	5,402,500	5,600,100	5,699,200	5,987,100
27	End of Year Balance	5,402,500	5,600,100	5,699,200	5,987,100	7,859,900
<b>Capital Projects Funding</b>						
28	Funds Available at Beginning of Year	20,680,200	515,800	528,400	290,500	1,019,326
29	Revenue Bond Proceeds	9,000,000	34,000,000	34,000,000	70,000,000	0
30	Operation Fund Transfers	11,000,000	21,500,000	23,500,000	35,000,000	46,000,000
31	Participation by Others	72,761,000	20,600,000	11,100,000	11,530,000	1,860,000
32	Interest Income	114,200	10,900	10,400	22,100	9,700
33	Total Funds Available	113,555,400	76,626,700	69,138,800	116,842,600	48,889,026
34	Obligated Contracts & Capital Jobs	(21,338,500)	0	0	0	0
35	Reinvestment in Assets	(89,018,100)	(81,220,000)	(142,895,000)	(42,609,000)	(19,130,000)
36	Major Capital Additions	(14,683,000)	(19,904,000)	(10,479,000)	(10,353,000)	(16,075,000)
37	Deferred Capital Improvements	12,000,000	28,500,000	88,000,000	(55,708,374)	(12,730,800)
38	Bond Issuance Expense	0	(510,000)	(510,000)	(1,050,000)	0
39	Revenue Bond Reserve Fund	0	(2,964,300)	(2,964,300)	(6,102,900)	0
40	Total Application of Funds	(113,039,600)	(76,098,300)	(68,848,300)	(115,823,274)	(47,935,800)
41	End of Year Balance	515,800	528,400	290,500	1,019,326	953,226
<b>Debt Service Coverage</b>						
42	Annual Test	167.4%	185.1%	226.8%	281.8%	331.3%
<b>Additional Bonds Test</b>						
43	Prior Two-Year Test	150%	160%	130%	132%	165%
44	Maximum Future Debt Service Test	248%	224%	247%	235%	289%
45	Coverage 5 Years after Sale	330%	408%	510%	641%	801%

## Drainage Department

### 2010 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.

Water entering the City in the form of rain or underground flow must be continually removed by pumping to minimize the danger of flooding, and pumping costs are significantly impacted by rainfall events. Rainfall in 2006 and 2007 was 13.43 inches and 6.11 inches, respectively, below average annual rainfall. Rainfall in 2008 and 2009 was 2.27 inches and 5.11 inches, respectively, above average annual rainfall while rainfall in 2010 was 10.72 inches below average annual rainfall. A summary of rainfall for 2005 through 2009 is shown in Table 22 at the end of this section.

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 23 for the period 2006 through 2010. The historical revenue shown in Table 23 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 24 presents a summary of 2006 through 2010 operation and maintenance expenses of the Drainage Department. Expenditures for 2010 decreased about 5.1 percent from 2009 expenditures. Operation and maintenance expenses have increased an average of 8 percent per year over the five-

year period shown. Historical operation and maintenance expenses shown in Table 24 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 9 in Table 31.

### 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 2009, exclusive of prorated interest expenses totaled \$18,149,339. The Drainage Department's capital improvement expenditures for the year are shown in Table 25.

### Summary of Operations

The following tabulation shows a summary of receipts and expenditures of the Drainage Department during 2010:

Total Revenues	\$37,912,872
Operation and Maintenance Expense	31,242,040
Claims	1,789,639
Debt Service Payments	2,182,739
<b>Revenue Primarily Available for Capital Expenditures <sup>a</sup></b>	<b>\$2,698,454</b>

<sup>a</sup> Excludes depreciation.

### PROPOSED CAPITAL IMPROVEMENT PROGRAM

Table 26 presents a summary of the projected major capital improvement program for the period 2011 through 2015. Table 26 is based on the Board's 2011 adopted Capital Budget and the 2011-2015 proposed Capital Program. The five-year major capital improvement program costs are expected to total \$2,218,404,000. 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 27, future revenues from these sources are estimated by the Board in the 2011 through 2015 Capital Budget according to capital project and amount to \$1,610,754,000, 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 2010, 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 28. 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 2011 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 2011 through 2015 is based on 6.40, 6.48, and 9.71 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 29. 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 2011 reflect the Board's adopted 2011 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 2011.

### Debt Service Requirements

Nine-mill bonds in the amount of \$10,000,000 were issued in 1998, and as of December 31, 2010, \$5,155,000 remained outstanding. Additional nine-mill bonds in the amount of \$20,000,000 were issued in 2002, and as of December 31, 2010, \$15,135,000 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 30. 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 31 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 31.

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 2011 Rate Study proposes 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 31.

Operation and Maintenance expense, previously projected in Table 29, is shown on Line 8 of Table 31. Line 9 shows the estimated allowance for claims. Projected Net Operating Revenue from system operations is shown on Line 10.

Lines 11 through 13 present debt service requirements on currently outstanding and proposed revenue bonds. Additional debt financing as shown in Table 30 is assumed to fund proposed capital improvements. These bonds are assumed to be 30 year, 6.0 percent fixed interest rate bonds issued in October of each year, with equal annual payments of principal and interest. Line 14 reflects the estimated SELA repayments that will begin in 2013.

Line 16 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 17 reflects repayment from the Water Department and repayment to the DPW.

Line 18 indicated the estimated Net Annual Balance from operations remaining at the end of each year. The \$3,833,900 net balance of operating funds available at the beginning of the year 2011, shown on Line 19, is comprised of the current cash assets.

The End of Year Balance is shown on Line 20. It is intended that, in all years of the period 2011 through 2015, 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 21 through 34 of Table 31. The amount of Funds on Hand, shown on Line 20, is \$58,554,900. This amount is based on audited data provided by the Board.

Bond issue amounts for a total of \$257,000,000 are projected and shown on Line 22 of Table 31. 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 \$65,500,000 of operating reserves as shown on Line 23. 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 24 and 25 indicate the estimated annual funds from each of these sources. Line 26 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2010, the Board had \$30,927,500 obligated for open contracts and capital jobs as shown on Line 27 of Table 31. Lines 28 and 29 show the projected Reinvestment of Assets and Major Capital Additions to be funded. The projected capital projects shown on Lines 28 and 29 exceed the amount of funding available shown on Line 26; therefore, capital projects will need to be deferred until a funding source can be identified. This deferral is shown on Line 30.

Estimated issuance costs related to the proposed bond issue amounts are shown on Line 31. Line 32 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 34.

As demonstrated in Table 31, 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 2011-2015 study period examined herein. It is recommended that the Board defer capital projects until an adequate funding source has been identified.

**Table 22**  
**Drainage Department**  
**Rainfall**

Year	Year to Date (inches)												Deviation from Average
	January	February	March	April	May	June	July	August	September	October	November	December	
2006	2.60	5.32	5.57	8.73	9.49	11.65	20.05	26.45	29.34	32.37	35.31	45.86	(13.43)
Average (a)	4.58	9.23	14.33	19.24	24.01	69.69	36.22	42.13	47.74	50.90	54.64	59.29	
2007	4.12	5.93	7.31	9.12	17.63	22.06	29.72	31.36	35.78	47.40	48.61	53.13	(6.11)
Average (a)	4.58	9.20	14.27	19.15	23.95	29.63	36.16	42.04	47.64	50.87	54.58	59.24	
2008	6.32	11.96	14.53	22.41	30.17	36.69	40.60	48.37	56.24	57.60	59.66	61.52	2.27
Average (a)	4.60	9.22	14.27	19.18	24.01	29.69	36.20	42.09	47.71	50.93	54.63	59.25	
2009	5.16	8.13	14.30	15.51	17.96	20.36	24.18	28.80	36.25	43.82	44.60	64.41	5.11
Average (a)	4.60	9.21	14.27	19.15	23.95	29.61	36.09	41.98	47.61	50.87	54.54	59.30	
2010	1.75	7.66	10.40	13.37	19.49	26.73	32.35	41.93	44.19	44.58	46.90	48.49	(10.72)
Average (a)	4.58	9.20	14.24	19.10	23.92	29.58	36.06	41.98	47.58	50.82	54.48	59.21	

(a) Average of Year 1894 to Date.

**Table 23****Drainage Department  
Statement of Historical Revenue**

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
	\$	\$	\$	\$	\$
Three-mill Ad Valorem Tax	9,682,028	11,388,731	11,294,822	10,302,545	10,378,060
Six-mill Ad Valorem Tax	9,803,052	11,525,043	11,406,361	10,410,524	10,498,580
Nine-mill Ad Valorem Tax	13,686,249	17,271,271	17,001,253	15,485,030	15,672,791
Two-mill Ad Valorem Tax	3,699	120	0	0	0
Plumbing License and Inspection Fees	0	0	0	0	0
Interest Earned	3,571,415	4,663,955	2,148,679	475,088	167,166
Other	948,743	1,378,453	1,224,732	1,704,640	1,196,275
<b>Total Revenue</b>	<u>37,695,186</u>	<u>46,227,574</u>	<u>43,075,847</u>	<u>38,377,827</u>	<u>37,912,872</u>
<b>Total Less Interest</b>	34,123,771	41,563,618	40,927,168	37,902,739	37,745,706

Table 24

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

	2006	2007	2008	2009	2010
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	1,540,850	2,026,248	1,442,470	1,641,001	1,504,269
Management Services Director	26,708	9,447	10,991	22,977	23,226
Building and Grounds and Support Services	1,401,622	1,536,920	2,222,454	3,773,499	3,505,448
Personnel Administration	105,314	131,787	139,385	248,085	284,354
Finance Administration	217,596	254,449	285,726	677,215	785,102
Information Systems	789,841	721,668	684,813	1,469,310	1,437,571
Purchasing	76,801	83,257	95,289	199,076	225,852
Total Management and General	4,158,732	4,763,776	4,881,129	8,031,163	7,765,821
<b>Operations Expenses</b>					
General Superintendent	58,127	69,548	83,804	119,297	178,217
Drainage Pumping and Central Control	5,137,257	5,994,057	6,810,440	6,525,528	6,466,087
Chief of Operations	25,400	27,543	22,138	62,634	67,543
Water Pumping and Power	8,948,644	7,797,775	8,722,654	4,628,952	5,354,188
Chief of Facilities Maintenance	21,619	23,597	27,195	79,517	92,316
Facilities Maintenance	1,295,357	1,438,726	1,621,548	2,296,478	2,586,461
Central Yard	713,516	915,088	915,986	1,554,592	1,788,429
Office of Chief of Network	32,148	126,553	42,563	50,894	50,617
Networks	1,640,000	2,272,004	2,332,643	3,750,657	2,176,076
Engineering	618,892	626,482	743,445	1,198,838	1,352,670
Total Operations	18,490,960	19,291,373	21,322,417	20,267,387	20,112,603
<b>Other Expenses</b>					
Special Accounts	824,875	831,999	593,650	954,917	932,188
Payroll Related Expenses	1,129,437	3,471,996	3,350,223	6,583,416	5,509,813
Overhead Allocation	(1,335,750)	(1,617,116)	(1,655,889)	(2,919,381)	(3,078,386)
Total Other	618,562	2,686,879	2,287,984	4,618,952	3,363,616
Total Operation and Maintenance (b)	23,268,254	26,742,028	28,491,530	32,917,502	31,242,040

- (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 25

**Drainage Department  
Capital Expenditures (a)  
2010**

C.P. # Project	Actual Expenditures
	\$
<b>Canals</b>	
418 Normal Extensions & Replacements	855,086
439 Major Drainage Participation in DPW Projects	67,847
471 SELA Program Management	1,240,235
476 Hollygrove Canals (SELA-A)	19,611
478 S. Claiborne-Lowerline to Monticello Street	296,953
486 Napoleon Canal Improvements 9 SELA-B)	733,473
496 General DeGaulle Canal (SELA-C)	91,444
497 Florida Ave. Canal - DPS#19 to Peoples Ave. (SELA-D)	6,489,708
498 Dwyer Intake Canal (St. Charles to Dwyer DPS) (SELA-E)	370,934
499 Jefferson Avenue Canal	75,272
Total Drainage Canals	10,240,565
<b>Pumping Stations</b>	
511 Normal Extensions & Rep./Stations	2,302,559
554 Expansion of Dwyer DPS (SELA-A)	11,538
575 Drainage Hurricane Recovery Bonds	646,425
Total Drainage Pumping Stations	2,960,522
<b>Power Projects and General Budget</b>	
600 Drainage Share of Power Projects	147,075
800 Drainage Share of General Budget Items	4,801,177
Total Drainage Department	18,149,339

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

**Table 26**  
**Drainage Department**  
**Projected Capital Improvements (a)**

C.P.#	Project	2011	2012	2013	2014	2015	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
418	Normal Ext. & Replacements	1,055,000	650,000	3,450,000	350,000	350,000	5,855,000
511	Normal Ext. & Replacement - Stations	7,000,000	6,800,000	7,000,000	20,760,000	6,940,000	48,500,000
600	Drainage Share of Power Projects	5,874,000	20,310,000	8,485,000	7,095,000	6,780,000	48,544,000
800	Drainage Share of General Budget Items	7,971,000	4,205,000	3,235,000	5,829,000	5,186,000	26,426,000
	<b>Total Routine Capital Improvements</b>	<b>21,900,000</b>	<b>31,965,000</b>	<b>22,170,000</b>	<b>34,034,000</b>	<b>19,256,000</b>	<b>129,325,000</b>
<b>Major Capital Improvements</b>							
400	Eng. & Inspt. of Devlp. Installations	10,000	10,000	10,000	10,000	15,000	55,000
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	450,000	6,100,000	100,000			6,650,000
466	Louisiana Ave. Canal	140,000	100,126,000	3,848,000	1,924,000	0	106,038,000
471	SELA Program Management	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	7,500,000
472	Tchoupitoulas Corridor	0	0	250,000	12,000,000	0	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.	97,038,000	1,606,000	225,000	1,094,000	0	99,963,000
483	Airline & Monticello Canal Improvements	0	50,000	475,000	8,400,000	0	8,925,000
486	Napoleon Canal Improvements	75,104,000	47,801,000	1,903,000	0	0	124,808,000
492	Donner Canal Improvements	50,000	1,750,000	0	116,500,000	0	118,300,000
496	De Gaulle Canal	300,000	550,000	3,000,000	73,000,000	72,200,000	149,050,000
497	Florida Ave. Canal, DPS #19 to Peoples	420,000	111,390,000	9,272,000	118,013,000	2,358,000	241,453,000
498	Dwyer Canal - Lamb to Jourdan	750,000	250,000	0	0	0	1,000,000
499	Jefferson Ave. Canal	65,727,000	60,008,000	3,425,000	2,528,000	0	131,688,000
512	Expansion of DPS #15	1,500,000	0	15,000,000	0	0	16,500,000
535	DPS #6	400,000	0	0	0	13,500,000	13,900,000
546	Expansion of DPS #4 West	0	0	0	0	25,908,000	25,908,000
554	Expansion of Dwyer DPS	50,000	0	0	0	0	50,000
557	Flood Gate - DPS #16 Discharge Tunnel	0	0	1,000,000	0	0	1,000,000
573	DPS #13 Improvements	0	500,000	33,325,000	725,000	0	34,550,000
575	Drainage Hurricane Recovery Bonds	660,000	0	0	0	0	660,000
576	COE Storm Proofing Projects	77,872,000	79,849,000	9,510,000	0	0	167,231,000
578	Permanent Pump Stations at the Laek Elaine DPS Repair	800,000,000	0	0	0	0	800,000,000
	<b>Total Major Capital Improvements</b>	<b>1,126,371,000</b>	<b>415,790,000</b>	<b>87,143,000</b>	<b>339,994,000</b>	<b>119,781,000</b>	<b>2,089,079,000</b>
	<b>Total Drainage Department Improvements</b>	<b>1,148,271,000</b>	<b>447,755,000</b>	<b>109,313,000</b>	<b>374,028,000</b>	<b>139,037,000</b>	<b>2,218,404,000</b>

(a) The improvements for the 2011-2015 are based on revisions of the 2011 Capital Budget and 2011-2015 Capital Program approved December 15, 2010. The revised budget was ratified by the Board on June 15, 2011.

**Table 27**  
**Drainage Department**  
**Projected Participation by Others (a)**

C.P.#	Project	2011	2012	2013	2014	2015	Total
		\$	\$	\$	\$	\$	\$
418	Normal Extensions & Replacements	1,055,000	300,000	300,000	350,000	350,000	2,355,000
453	Improvements to Metairie Relief Canal	108,000	1,464,000	24,000			1,596,000
466	Louisiana Ave. Canal		105,525,000				105,525,000
477	S. Claib - Manifold-Louisiana Ave to Nashville				1,850,000		1,850,000
478	S. Claib - Lowerline to Monticello St.	94,747,000					94,747,000
483	Airline & Monticello Canal Improvements		114,000	2,016,000			2,130,000
490	Orleans Ave. Canal	69,080,000					69,080,000
492	Donner Canal Improvements			25,275,000	30,950,000		56,225,000
496	De Gaulle Canal		39,000,000	45,500,000			84,500,000
498	Dwyer Canal - Lamb to Jourdan		100,944,000				100,944,000
499	Jefferson Ave. Canal	65,727,000					65,727,000
520	DPS #19 Generators	750,000					750,000
535	DPS #6	128,000				4,320,000	4,448,000
554	Expansion of Dwyer DPS					20,726,000	20,726,000
572	Robert E. Lee DPS			1,000,000			1,000,000
573	DPS #13 Improvements		20,150,000	325,000			20,475,000
575	Hurricane Recovery Bonds	660,000					660,000
576	COE Storm Proofing Projects	77,871,000	64,604,000	7,863,000			150,338,000
600	Drainage Share of Power Projects	800,000,000					800,000,000
601	Earhart Corridor	800,000					800,000
613	Modifications to Power Generating System	3,827,000	18,500,000				22,327,000
807	Improvements to Central Yard and St. Joseph St	1,048,000			330,000		1,378,000
810	Major Equipment Purchases	2,701,000					2,701,000
843	Minor Equipment Purchases	472,000					472,000
	<b>Total</b>	<b>1,118,974,000</b>	<b>350,601,000</b>	<b>82,303,000</b>	<b>33,480,000</b>	<b>25,396,000</b>	<b>1,610,754,000</b>

(a) The improvements for the 2011-2015 are based on revisions of the 2011 Capital Budget and 2011-2015 Capital Program approved December 15, 2010. The revised budget was ratified by the Board on June 15, 2011.

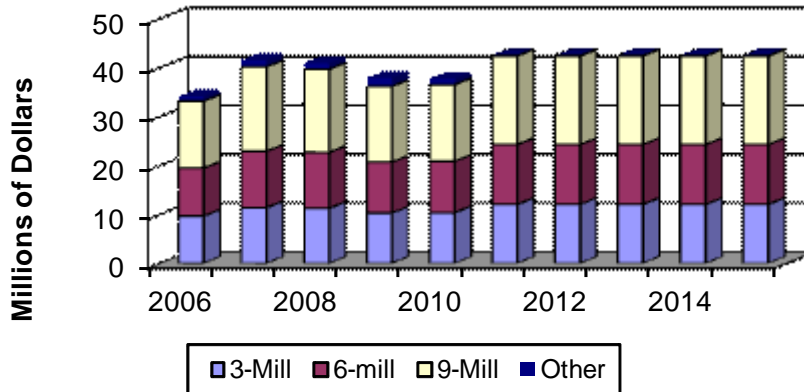


**Table 28**

**Drainage Department  
Projected Operating Revenue**

Year	Ad Valorem Tax Revenue				Total
	Three-Mill	Six-Mill	Nine-Mill	Other	
	\$	\$	\$	\$	
2011	11,594,200	11,729,400	17,388,200	145,632	40,857,432
2012	11,594,200	11,729,400	17,388,200	145,632	40,857,432
2013	11,594,200	11,729,400	17,388,200	145,632	40,857,432
2014	11,594,200	11,729,400	17,388,200	145,632	40,857,432
2015	11,594,200	11,729,400	17,388,200	145,632	40,857,432

**Historical and Projected Operating Revenue**

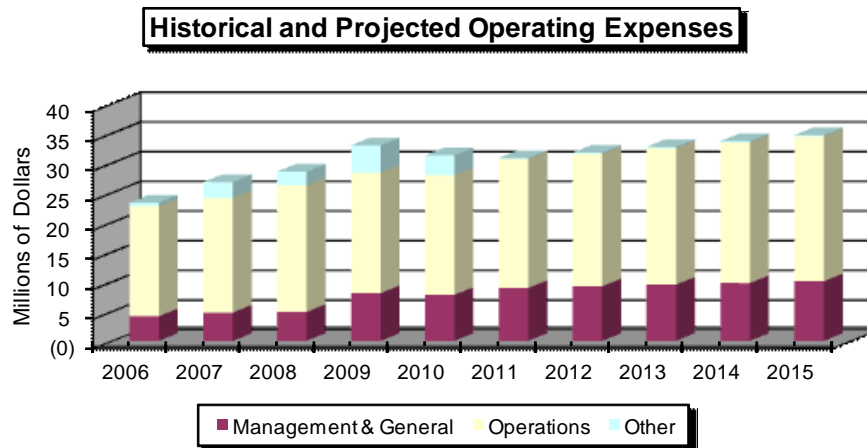


**Table 29**

**Drainage Department  
Projected Operation and Maintenance Expenses**

	2011 (a)	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Management and General Expenses</b>					
Administrative	2,357,200	2,427,900	2,500,800	2,575,800	2,653,100
Management Services Director	23,500	24,200	25,000	25,700	26,500
Building and Grounds and Support Services	3,658,900	3,768,700	3,881,700	3,998,200	4,118,100
Personnel Administration	200,100	206,100	212,300	218,600	225,200
Finance Administration	506,200	521,400	537,100	553,200	569,800
Information Systems	1,983,900	2,043,400	2,104,700	2,167,900	2,232,900
Purchasing	183,800	189,300	195,000	200,900	206,900
<b>Total Management and General</b>	<b>8,913,600</b>	<b>9,181,000</b>	<b>9,456,600</b>	<b>9,740,300</b>	<b>10,032,500</b>
<b>Operations Expenses</b>					
General Superintendent	117,700	121,200	124,900	128,600	132,500
Drainage Pumping and Central Control	7,898,300	8,135,200	8,379,300	8,630,700	8,889,600
Chief of Operations	68,700	70,800	72,900	75,100	77,300
Water Pumping and Power	7,784,800	8,018,300	8,258,900	8,506,600	8,761,800
Chief of Facilities Maintenance	80,400	82,800	85,300	87,800	90,500
Facilities Maintenance	2,894,900	2,981,800	3,071,200	3,163,400	3,258,300
Central Yard	1,244,800	1,282,200	1,320,600	1,360,300	1,401,100
Office of Chief of Network	69,300	71,400	73,500	75,700	78,000
Networks	455,700	469,400	483,500	498,000	512,900
Engineering	1,043,600	1,074,900	1,107,200	1,140,400	1,174,600
<b>Total Operations</b>	<b>21,658,200</b>	<b>22,308,000</b>	<b>22,977,300</b>	<b>23,666,600</b>	<b>24,376,600</b>
<b>Other Expenses</b>					
Special Accounts	1,239,600	1,276,800	1,315,100	1,354,500	1,395,200
Payroll Related Expenses	1,764,300	1,817,200	1,871,700	1,927,900	1,985,700
Overhead Allocation	(2,800,000)	(2,884,000)	(2,970,700)	(3,059,700)	(3,151,500)
<b>Total Other</b>	<b>203,900</b>	<b>210,000</b>	<b>216,100</b>	<b>222,700</b>	<b>229,400</b>
<b>Total Operation and Maintenance</b>	<b>30,775,700</b>	<b>31,699,000</b>	<b>32,650,000</b>	<b>33,629,600</b>	<b>34,638,500</b>

(a) Represents the adopted operating budget as of December 15, 2010.



**Table 30****Drainage Department  
Debt Service Requirements**

	2011	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Nine-Mill Tax Bonds</b>					
Series 1998	794,600	794,700	793,400	795,000	794,900
Series 2002	1,403,100	1,412,300	1,423,400	1,425,100	1,425,800
Total Nine-Mill Debt Service	2,197,700	2,207,000	2,216,800	2,220,100	2,220,700
<b>Projected Bonds</b>					
	Amount of Issue				
	\$				
2011	0	0	0	0	0
2012	67,000,000	1,216,900	4,867,500	4,867,500	4,867,500
2013	81,000,000		1,471,200	5,884,600	5,884,600
2014	71,000,000			1,289,500	5,158,100
2015	38,000,000				690,200
Total Projected Debt Service	0	1,216,900	6,338,700	12,041,600	16,600,400
Total Debt Service	2,197,700	3,423,900	8,555,500	14,261,700	18,821,100

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

Table 31

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

Line No	2011	2012	2013	2014	2015
	\$	\$	\$	\$	\$
<b>Operating Fund</b>					
1	Three-Mill Ad Valorem Tax Revenue (6.40 Mills)	11,594,200	11,594,200	11,594,200	11,594,200
2	Six-Mill Ad Valorem Tax Revenue (6.48 Mills)	11,729,400	11,729,400	11,729,400	11,729,400
3	Nine-Mill Ad Valorem Tax Revenue (9.71 Mills)	17,388,200	17,388,200	17,388,200	17,388,200
4	Other Miscellaneous Income	145,632	145,632	145,632	145,632
5	Interest Income	59,600	61,600	60,300	62,200
6	Alternative Source of Operating Revenue			13,950,000	27,900,000
7	Total Operating Revenue	40,917,032	40,919,032	54,867,732	68,819,632
8	Operation & Maintenance	(30,775,700)	(31,699,000)	(32,650,000)	(33,629,600)
9	Provision for Claims	(515,000)	(530,500)	(546,400)	(562,800)
10	Net Operating Revenue	9,626,332	8,689,532	21,671,332	34,627,232
<b>Debt Service</b>					
11	Existing	(2,197,700)	(2,207,000)	(2,216,800)	(2,220,100)
12	Projected	0	(1,216,900)	(6,338,700)	(12,041,600)
13	Subtotal	(2,197,700)	(3,423,900)	(8,555,500)	(14,261,700)
14	SELA Capital Repayment	0	0	(1,300,000)	(3,900,000)
15	Total Debt Service	(2,197,700)	(3,423,900)	(9,855,500)	(18,161,700)
16	Transfer to Construction	(9,000,000)	(8,000,000)	(10,000,000)	(14,500,000)
17	Due from (to) Other Departments	2,350,000	2,350,000	(1,700,000)	(1,700,000)
18	Net Annual Balance	778,632	(384,368)	115,832	265,532
19	Beginning of Year Cash Balance	3,833,900	4,612,532	4,228,164	4,343,996
20	End of Year Balance	4,612,532	4,228,164	4,343,996	4,609,528
<b>Capital Projects Funding</b>					
21	Funds Available at Beginning of Year	58,554,900	7,663,400	663,900	36,026,800
22	Revenue Bond Proceeds	0	67,000,000	81,000,000	71,000,000
23	Operation Fund Transfers	9,000,000	8,000,000	10,000,000	14,500,000
24	Participation by Others	1,118,974,000	350,601,000	82,303,000	33,480,000
25	Interest Income	333,000	27,000	102,500	98,500
26	Total Funds Available	1,186,861,900	433,291,400	174,069,400	155,105,300
27	Obligated Contracts & Capital Jobs	(30,927,500)	0	0	0
28	Reinvestment in Assets	(21,900,000)	(31,965,000)	(22,170,000)	(34,034,000)
29	Major Capital Additions	(1,126,371,000)	(415,790,000)	(87,143,000)	(339,994,000)
30	Deferred Capital Improvements	0	21,000,000	(21,630,000)	226,000,000
31	Bond Issuance Expense	0	(1,005,000)	(1,215,000)	(1,065,000)
32	Revenue Bond Reserve Fund	0	(4,867,500)	(5,884,600)	(5,158,100)
33	Total Application of Funds	(1,179,198,500)	(432,627,500)	(138,042,600)	(154,251,100)
34	End of Year Balance	7,663,400	663,900	36,026,800	854,200

## Assessment of East Bank Sewage Stations

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
1	05/13/2011	Chickasaw	A	Chickasaw at Metropolitan	Two pumps, both in service.
2	05/13/2011	K-Mart	A	Desire at Gentilly	Both pumps out of service, portable pump in use, all repairs to be complete this year.
3	05/13/2011	Station 23	A	4500 Mithra	Two pumps, both in service.
4	05/13/2011	Station 17	A	4975 Spain at Selma	Two pumps, both in service.
5	05/13/2011	Station 22	A	5705 Perlita	Two pumps, both in service.
6	05/13/2011	Station 19	A	3730 Jumonville at Milton	Two pumps, both in service.
7	05/13/2011	Station 21	A	6670 Memphis At Filmore	Two pumps, both in service.
8	05/13/2011	Station 18	A	Vicksburg at Florida	One pump out of service, two pumps total.
9	05/13/2011	City Park	A	5701 Marconi Drive	Two pumps, both in service.
10	05/13/2011	Station 20	A	328 37th Street	Two pumps, both in service.
11	05/13/2011	Station 4	A	5899 Fleur de Leis	Two pumps, both in service.
12	05/13/2011	Lakewood South	A	Country Club Drive near Marconi	Two pumps, both in service.
13	05/13/2011	Station 6	A	242 S Solomon at Palmyra	Both pumps out of service, portable pump in use
14	05/13/2011	Station 3	A	8720 Olive near Eagle	Both pumps out of service, portable pump in use
15	05/13/2011	Station 1	A	7336 Cohn	Both pumps out of service, portable pump in use
16	05/13/2011	Station 14	A	4000 Clara	Two pumps in service, the other three pumps have been removed.
17	05/13/2011	Station 5	A	3912 Erato St	Two pumps, both in service.
18	05/13/2011	Station 15	A	2431 Palmyra near Rocheblave	Three pumps out of service, four total pumps.
19	05/13/2011	Station 8	A	Corner of N Broad and Toulouse	Both pumps out of service, portable pump in use
20	05/13/2011	Station 9	A	2540 Annette at Law	Two pumps, both in service.
1	05/12/2011	Station 16	B	3751 N Miro at Pauline	Two pumps, both in service.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
2	05/12/2011	Station 24	B	5027 N Tonti at Forstall	Two pumps, both in service.
3	05/12/2011	Station 25	B	2245 Charbonnet	Two pumps, both in service.
4	05/12/2011	Station 26	B	2244 St Maurice at Tonti	Two pumps, both in service.
5	05/12/2011	Southern Scrap	B	Southern Scrap Rd Harbor Rd	Both pumps out of service, portable pump in use while new station is under construction.
6	05/12/2011	France and Florida	B	2701 France Road	Both pumps out of service, portable pump in use while new station is under construction.
7	05/12/2011	MECO-Mechanical Equipment Company	B	3855 France Road	Both pumps out of service, portable pump in use while new station is under construction.
8	05/12/2011	Victoria at Gentilly	B	3620 Victoria	Two pumps, both in service.
9	05/12/2011	American Marine	B	4045 Jourdan Rd	Both pumps out of service, portable pump in use while new station is under construction.
10	05/12/2011	Plum Orchard	B	7300 Chef Menteur Highway	Two pumps, both in service.
11	05/12/2011	Dotd	B	8118 Chef Menteur Highway	Two pumps, both in service.
12	05/12/2011	Castle Manor	B	4950 Gwain at Dwyer	Two pumps, both in service.
13	05/12/2011	Cerise	B	5001 Cerise	Two pumps, both in service.
14	05/12/2011	McCoy	B	McCoy at Gentilly	Two pumps, both in service.
15	05/12/2011	Amid	B	6800 Almonaster Road	Two pumps, both in service.
16	05/12/2011	Lakeland Terrace	B	5057 Warren Drive	Two pumps, both in service.
17	05/12/2011	Lake Forest	B	10451 Lake Forest Blvd	Two pumps, both in service.
18	05/12/2011	Wright Road	B	Wright Road at Lake Forest	Two pumps, both in service.
19	05/12/2011	Bullard	B	5501 Bullard Road	Two pumps, both in service.
20	05/12/2011	Wilson	B	7709 Wilson Avenue	Two pumps, both in service.
21	05/12/2011	America	B	6789 Dwyer Road at Westlake	Two pumps, both in service.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
22	05/12/2011	Pines Village	B	6155 Dwyer Road at Foch	Two pumps, both in service.
23	05/12/2011	Crowder	B	5500 Crowder Road	Two pumps, both in service.
24	05/12/2011	Station B	B	4725 St Claude Avenue	One pump out of service, two pumps total
25	05/12/2011	Station A Municipal Auditorium	B	1321 Orleans Avenue	6 pumps total, 1 out of service
1	05/16/2011	Venetian Isles # 2	C	20711 Old Spanish Trail	Both pumps out of service, portable pump in use while new station is under construction.
2	05/16/2011	Industrial Parkway	C	4200 Industrial Parkway	Two pumps, both in service.
3	05/16/2011	Folgers	C	14601 Gentilly Boulevard	Both pumps out of service, portable pump in use while new station is under construction.
4	05/16/2011	Michoud	C	4400 Michoud Boulevard	Two pumps, both in service.
5	05/16/2011	Bldv " X"	C	4433 Chef Menteur Highway	Both pumps out of service, 2 external pumps in use.
6	05/16/2011	Alcee Fortier	C	Alcee Fortier Blvd at the Levee	Two pumps, both in service.
7	05/16/2011	Village De Lest	C	11324 Dwyer	Both pumps out of service, portable pump in use while new station is under construction.
8	05/16/2011	Willow Brook	C	Willowbrook off of Michoud	Two pumps, both in service.
9	05/16/2011	Oak Island	C	14201 Michoud Blvd	Two pumps, both in service.
10	05/16/2011	Eastover	C	6051 Eastover Drive	Two pumps, both in service.
11	05/16/2011	Paris Road	C	Dwyer West of Paris Road	Two pumps, both in service.
12	05/16/2011	Shorewood	C	14441 Morrison Road	Two pumps, both in service.
13	05/16/2011	Briarwood Station	C	13701 Morrison Road	Two pumps, both in service.
14	05/16/2011	Liggett	C	12501 Morrison Road	Two pumps, both in service.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
15	05/16/2011	Berg	C	11501 Morrison Road	Two pumps, both in service.
16	05/16/2011	Weber	C	10141 Morrison Road	Two pumps, both in service.
17	05/16/2011	Burke	C	9001 Morrison Road	Both pumps out of service, portable pump in use while new station is under construction.
18	05/16/2011	Lawrence	C	7900 Morrison Road	Two pumps, both in service.
19	05/16/2011	Lamb	C	6450 Morrison Road	Two pumps, both in service.
20	05/16/2011	Gentilly Oaks	C	5000 Papania Road at Vienna	Two pumps, both in service.

### Assessment of West Bank Sewage Stations

	DATE	FACILITY NAME	LOCATION	STATUS
1	05/16/2011	Horace	3301 Lawrence Street	Two pumps, both in service.
2	05/16/2011	Holiday	2799 Holiday Drive	Two pumps, both in service.
3	05/16/2011	Huntlee	3201 Huntlee	Two pumps, both in service.
4	05/16/2011	Eton	3440 Eton Street	Two pumps, both in service.
5	05/16/2011	Aurora	6000 Carlisle Court	Two pumps, both in service.
6	05/16/2011	Blair	3800 Blair Street	Two pumps, both in service.
7	05/16/2011	Lower Coast	3700 Old Woodland	Two pumps, both in service.
8	05/16/2011	English Turn I	2201 Stanton Road	Two pumps, both in service.
9	05/16/2011	English Turn II	123-1/2 Oak Alley	Two pumps, both in service.
10	05/16/2011	English Turn III		Two pumps, both in service.
11	05/16/2011	Woodland	4150 Woodland Drive	Two pumps, both in service.
12	05/16/2011	Park Timbers	4100 Lennox Blvd	Two pumps, both in service.
13	05/16/2011	Tall Timbers	3800 Tall Pines Drive	Two pumps, both in service.
14	05/16/2011	Forest Isle	5631 West Forest Park Drive	Two pumps, both in service.
15	05/16/2011	Garden Oaks	3201 Memorial Park Drive	Two pumps, both in service.
16	05/16/2011	Memorial	2501 Memorial Park Drive	Two pumps, both in service.
17	05/16/2011	Bridge Plaza	2914 Vespasian Street	Two pumps, both in service.



## Assessment of East Bank Drainage Stations

	DATE	FACILITY NAME	LOCATION	STATUS
1	05/11/2011	Station 6	345 Orpheum	15 pumps total, 2 out of service.
2	05/11/2011	Station 4	5700 Warrington Drive	6 pumps total.
3	05/18/2011	Station 12	Robert E. Lee and Ponchartrain Boulevard	1 pump total, in service.
4	05/18/2011	I-10 Pump Station	I-10 Service Road	4 pumps total, 2 out of service.
5	05/13/2011	St. Charles Station 16	Danube Road at Wales	4 pumps total, all in service.
6	05/13/2011	Citrus Station 10	9600 Haynes Blvd	4 pumps total, all in service.
7	05/13/2011	Station 14	Oneida at Haynes	4 pumps total, one out of service.
8	05/16/2011	Maxent	Alcee Fortier	2 pumps total, both in service.
9	05/13/2011	Industrial Boulevard	Industrial Boulevard	3 pumps total, one out of service.
10	05/13/2011	Grand Street	Grant Street at Gentilly Boulevard	6 pumps total, two out of service.
11	05/13/2011	Amid Station 20	6300 Intercoastal Waterway at Terminal Road	2 pumps total, both in service (The construction of a Generator Building is ongoing.)
12	05/13/2011	Elaine		2 pumps total, both in service.
13	05/11/2011	Station 5	Florida Avenue	5 pumps total, all in service.
14	05/11/2011	Station 3	2251 N. Broad Street	7 pumps total, all in service.
15	05/11/2011	Station 7	5741 Orleans Avenue at Marconi Drive	5 pumps total, one out of service.
16	05/11/2011	Station 2	444 N. Broad Street	6 pumps total, all in service.
17	05/11/2011	Station 1	2501 S. Broad Street	9 pumps total, one out of service.
18	05/18/2011	Canal Boulevard	5500 Canal Boulevard	3 pumps total, all in service.
19	05/18/2011	Oleander	9400 Oleander	3 pumps total, all in service.
20	05/18/2011	Pritchard	2901 Monticello	2 pumps total, all in service.
21	05/11/2011	Station 19	4500 Florida Avenue	5 pumps total, all in service.
22	05/18/2011	Station 17	2801 Florida Avenue	5 pumps total, all in service.
23	05/18/2011	Dwyer	Dwyer Rd at Industrial Canal	3 pumps total, station will be place in service at a later date.

### Assessment of West Bank Drainage Stations

	DATE	FACILITY NAME	LOCATION	STATUS
1	05/11/2011	Station 11	5301 East Sixth Street	5 pumps total, 3 out of service.
2	05/11/2011	Station 13	4201 Tall Spruce Drive	7 pumps total, all in service.