

# **Sewerage & Water Board of New Orleans**

**Louisiana R.S. 33:4091**

**Reports of the Board**



**December 2017**



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## **Section A.**

# **Financial Reports of Acts, Doings, Receipts, and Expenditures**

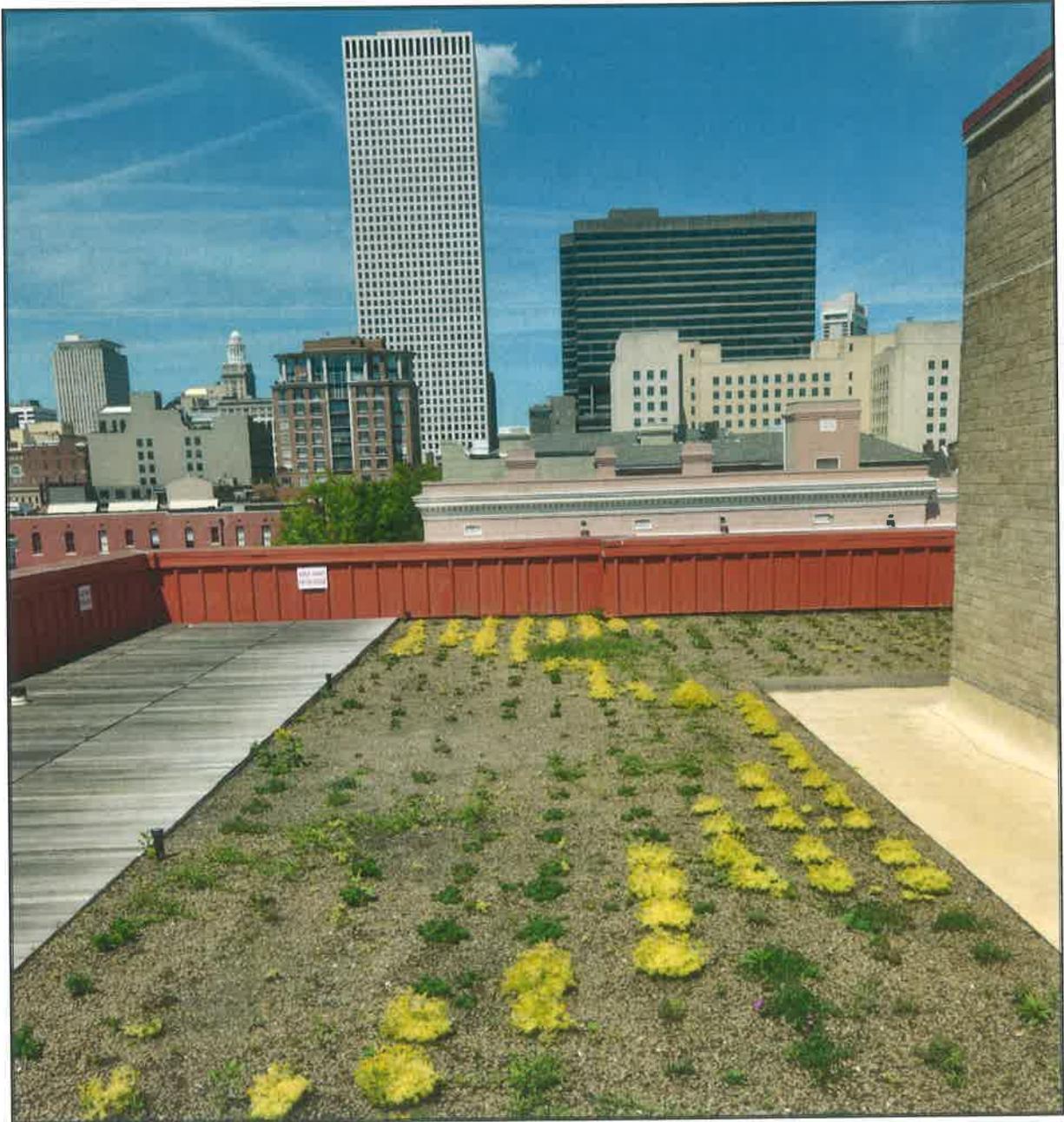
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## ***Comprehensive Annual Financial Report***





# Sewerage and Water Board OF NEW ORLEANS, LOUISIANA



COMPREHENSIVE ANNUAL  
FINANCIAL REPORT  
FOR THE YEARS ENDED  
DECEMBER 31, 2016 and 2015

### **About The Cover**

*Sewerage and Water Board's main office on St. Joseph Street has a new roof. It is a green or vegetated roof that will catch and hold rainwater to help reduce flooding and improve storm water quality. The roof will also provide additional insulation for the building and lower temperatures in the surrounding area. This project is part of the Board's Green Infrastructure Program.*

*The Sewerage and Water Board (S&WB) developed and implemented the Green Infrastructure Plan as a formal commitment to address a consent decree from the Environmental Protection Agency and the Department of Justice. This includes green infrastructure demonstration projects, education, outreach, tours and science programming. The S&WB works closely with various departments, City agencies and many community stakeholders to implement the new program.*

**SEWERAGE AND WATER BOARD  
OF NEW ORLEANS**

**Comprehensive Annual Financial Report  
For The Year Ended  
December 31, 2016 and 2015**

**Prepared by:  
Finance Administration  
Rosita P. Thomas  
Finance Administrator**

## **Mission, Vision, and Values**

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

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

***We believe in these values*** as the foundation for how we will perform our mission and pursue our vision:

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

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

Comprehensive Annual Financial Report  
Year ended December 31, 2016 and 2015

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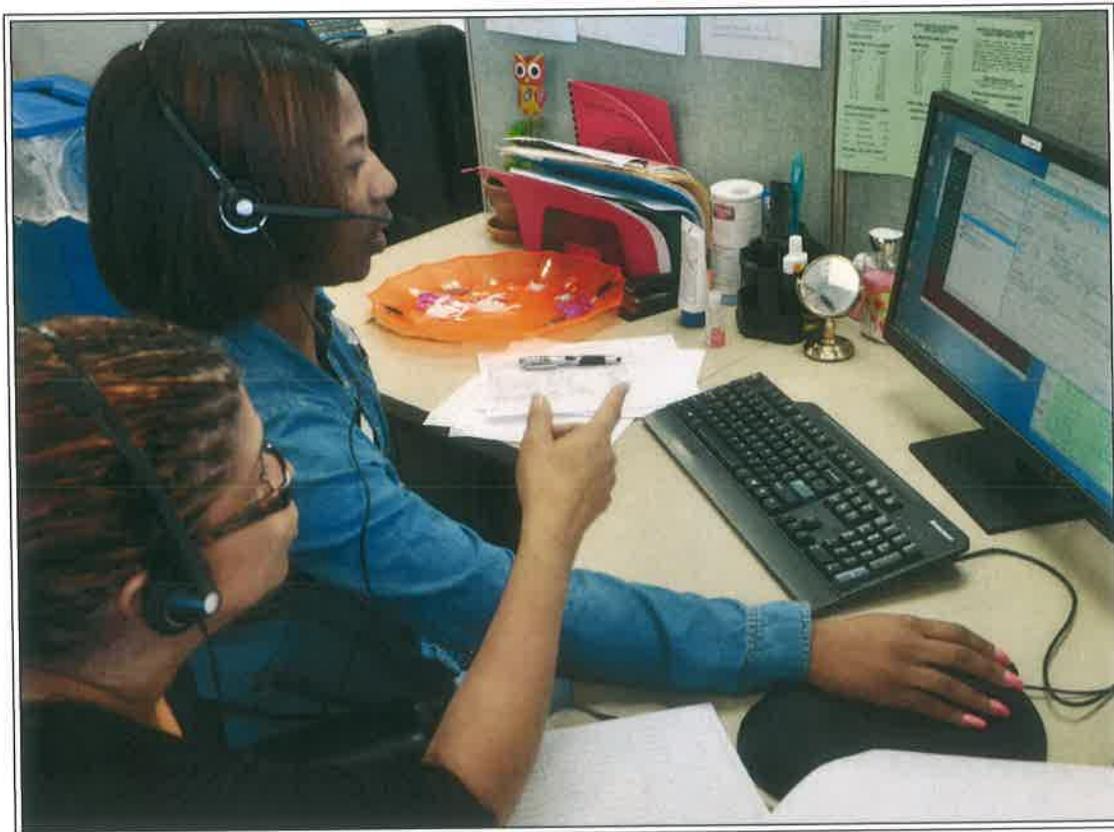
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*The Water Quality Laboratory is located within the Carrollton Water Purification Plant. It monitors river water and finished water from both the East Bank and Algiers. The Water Quality Master Plan for the Water Purification Division was finalized and approved in 2016. The Water Quality Laboratory assures the safety and purity of the city's water by testing for organic, inorganic and microbiological compounds.*



*A new Customer Service Management System was launched October 24, 2016. This new system provides easier access to information needed to better serve customers. The system includes improved payment options, better internet access, and better "real time" information. Customers can also access their account balances by phone and make payments 24 hours a day.*





**"RE-BUILDING THE CITY'S WATER SYSTEMS FOR THE 21<sup>ST</sup> CENTURY"**

# **Sewerage & Water Board OF NEW ORLEANS**

**MITCHELL J. LANDRIEU, President**  
**SCOTT JACOBS, President Pro-Tem**  
**CEDRIC GRANT, Executive Director**

625 ST. JOSEPH STREET  
NEW ORLEANS, LA 70165 • 504-529-2837 OR 52-WATER  
[www.swbno.org](http://www.swbno.org)

June 27, 2017

TO: THE HONORABLE PRESIDENT AND MEMBERS OF  
SEWERAGE AND WATER BOARD OF NEW ORLEANS

We are pleased to present the Comprehensive Annual Financial Report of Sewerage and Water Board of New Orleans for the years ended December 31, 2016 and 2015. Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rest solely with the Board. It is our belief that the data, as presented, is accurate in all material aspects and is presented in a manner designed to fairly set forth the financial position, results of operations, and cash flows of the Board's Enterprise and Pension Trust Funds. All disclosures are necessary to enable the reader to gain an understanding of the Board's financial activities have been included.

## **COMPREHENSIVE ANNUAL FINANCIAL REPORT SECTIONS**

The Comprehensive Annual Financial Report is presented in four (4) major sections: Introductory, Financial, Statistical and Supplemental. The Introductory Section includes the transmittal letter and listings of the officers, members and committees of the Board of Directors. This section also includes the Board's organizational chart and a reproduction of the 2015 Certificate of Achievement for Excellence in Financial Reporting awarded by the Government Finance Officers Association. The Financial Section includes the independent auditors' report, along with the basic financial statements, required supplementary information, accompanying notes and other supplementary information. The individual fund statements for the Enterprise and Pension Trust Funds are included. Required supplementary includes management's discussion and analysis and a schedule of pension funding progress and contributions. The Statistical Section includes selected financial and demographic information, generally in a multi-year presentation. Additional information relative to the Board's operations is included in the Supplemental Section.

The independent audit of the financial statements of the Board was part of a broader, federally mandated "Single Audit" designed to meet the special needs of federal grantor agencies. The standards governing Single Audit engagements require the independent auditor to report not only on the fair presentation of the financial statements, but also on the audited government's internal controls and compliance with legal requirements, with special emphasis on internal controls and legal requirements involving the administration of federal awards. These reports are available in the Board's separately issued Single Audit Report. The Board's internal control over financial reporting is a process designed by, or under the supervision of, the Board's executive director and the chief financial officer and the finance administrator, and effected by the Board of Directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Board's internal control over financial

reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Board; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Board are being made only in accordance with authorizations of management and Board of Directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Board's assets that could have a material effect on the financial statements. Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Board meets the criteria for classification as an "other stand-alone government" as described in Governmental Accounting Standards Board Statement No. 61. The reporting entity includes the Enterprise Fund and the Pension Trust Fund. The Enterprise Fund is composed of three (3) independent systems: Water, Sewerage and Drainage.

GAAP require that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement MD&A and should be read in conjunction with it. The Sewerage and Water Board's MD&A can be found immediately following the report of the independent auditors.

## **PROFILE OF SEWERAGE AND WATER BOARD OF NEW ORLEANS**

Sewerage and Water Board of New Orleans is a political subdivision created in 1899 by Louisiana State Statutes. The Board is charged with construction, operation, and maintenance of Water, Sewerage and Drainage Systems for the City of New Orleans. By agreement, approximately 2,550 acres of adjoining Jefferson Parish is served by the Board's drainage facilities for which Jefferson Parish pays its pro rata share of expenses. In addition, the Board provides sewerage services to Jefferson Parish businesses the majority of which are restaurants located in the West End neighborhood near the Lakefront. Additionally, the Board provides water and sewerage services to the Plaquemines Parish Industrial Park. The Board was established as a "special board" operating independently of city government. Effective January 1, 2015, the Board's makeup changed to eleven members, including the Mayor to serve as the President of the Board of Directors, two (2) members of the Board of Liquidation, City Debt and eight (8) citizens, as designated by the State Statutes. The initial terms of office shall be staggered from one year to four years, as designated by State Statutes, as well.

## **ECONOMIC GROWTH AND OUTLOOK**

The history of the Sewerage and Water Board of New Orleans shows that its service area includes the Civil Parish of Orleans in the state of Louisiana which covers 364 square miles. Based upon the 2010 census, the population was 369,250. In 2016, the major industries were Health Care & Social Assistance and Leisure & Hospitality. In the Professional & Business Services, the Administrative, Support, & Waste Management had areas of growth as well.

According to the University of New Orleans (UNO) Metropolitan Report, Economic Indicators for the New Orleans Area – May 2017 below are some highlights from its data of information:

- During the calendar year 2016 overall 500 jobs (-0.1%) were lost between 2015 and 2016. There were employment gains in such areas as Health Care, Leisure and Hospitality and job losses in the areas of Government, Information and Construction (Table 1).

- Airport travel increased in 2016, suggesting more visitors are arriving and local residents are traveling as well (Figure 4).
- Gaming admissions and revenues weakened in 2016 (Figure 6) while hotel sales have increased since 2006 (Figure 7).
- Construction showed a substantial increase in residential, non-residential and non-building construction in 2016 (Figure 8).
- In 2016, visitation and spending increased by 7% over 2015 (Figure 9).
- Population in the metropolitan area during 2016 has grown to 92% of the pre-Katrina population numbers (Figure 10).

## METROPOLITAN STATISTICAL AREA (MSA) EMPLOYMENT

Table 1: New Orleans MSA Employment – Quarterly Actuals, 2015:4 – 2016:4

Sectors <sup>1</sup>	2015:4	2016:1	2016:2	2016:3	2016:4	2016:3 to 2016:4	2015:4 to 2016:4	2015FY to 2016FY
	Number of Jobs					Percent Change <sup>2</sup>		
<b>Total Nonfarm Employment</b>	<b>581,967</b>	<b>573,333</b>	<b>577,667</b>	<b>573,233</b>	<b>579,500</b>	<b>1.1</b>	<b>-0.4</b>	<b>-0.1</b>
Mining and Logging	6,400	5,867	5,533	5,467	5,300	-3.0	-17.2	-20.6
Construction	31,633	29,933	29,367	29,667	30,267	2.0	-4.3	-6.2
Manufacturing	30,633	30,033	30,133	29,900	30,033	0.4	-2.0	-2.0
Durable Goods	12,000	11,500	11,500	11,467	11,433	-0.3	-4.7	-5.5
Transportation Equipment	2,800	2,367	2,400	2,500	2,467	-1.3	-11.9	-13.4
Nondurable Goods	18,633	18,533	18,633	18,433	18,600	0.9	-0.2	0.3
Chemical Manufacturing	5,167	5,233	5,167	5,133	5,167	0.6	0.0	0.3
Wholesale Trade	23,367	23,233	23,167	23,233	23,567	1.4	0.9	-0.3
Retail Trade	65,767	63,867	64,200	63,900	66,067	3.4	0.5	0.5
Grocery Stores	10,400	10,233	10,267	10,100	10,333	2.3	-0.6	-1.6
General Merchandise Stores	14,433	13,600	13,800	13,933	15,133	8.6	4.8	1.9
Transp., Warehousing, and Utilities	29,533	28,800	28,433	28,467	28,433	-0.1	-3.7	-2.6
Information	9,467	8,233	7,400	7,367	6,867	-6.8	-27.5	-16.9
Financial Activities	29,733	29,500	29,800	30,100	30,600	1.7	2.9	1.6
Depository Credit (banking)	6,100	6,067	6,067	6,067	6,000	-1.1	-1.6	-1.5
Professional and Business Services	75,033	73,967	75,933	74,767	75,400	0.8	0.5	0.1
Professional, Scientific, Technical	32,333	32,267	31,867	31,667	31,200	-1.5	-3.5	-3.3
Management of Companies	8,000	8,000	8,000	7,867	7,733	-1.7	-3.3	0.2
Admin, Support, Waste Mgmt.	34,700	33,700	36,067	35,233	36,467	3.5	5.1	3.5
Educational Services	30,100	29,500	30,033	29,933	31,300	4.6	4.0	2.5
Health Care and Social Assistance	67,667	67,900	68,467	69,633	70,133	0.7	3.6	5.7
Ambulatory Health Care	25,867	25,933	26,267	26,333	26,600	1.0	2.8	3.9
Hospitals (private)	22,767	22,767	23,000	24,100	24,633	2.2	8.2	10.7
Leisure and Hospitality	86,367	86,633	88,000	86,733	87,233	0.6	1.0	2.2
Arts, Entertainment, and Rec.	12,000	11,767	11,933	11,867	11,400	-3.9	-5.0	0.9
Accommodation	14,567	14,500	14,967	14,833	14,667	-1.1	0.7	2.4
Food Services and Drinking Places	59,800	60,367	61,100	60,033	61,167	1.9	2.3	2.4
Other Services	23,900	23,767	23,967	24,033	24,133	0.4	1.0	0.7
Government	72,367	72,100	73,233	70,033	70,167	0.2	-3.0	-2.1
Federal Government	12,033	12,167	12,333	12,433	12,600	1.3	4.7	4.1
State Government	13,300	12,767	12,167	11,367	12,467	9.7	-6.3	-7.0
Local Government	47,033	47,167	48,733	46,233	45,100	-2.5	-4.1	-2.4
Unemployment Rate (%) <sup>3</sup>	5.1	5.5	5.7	6.2	5.1	-1.2	0.0	-0.3
Unemp Claims weekly – Initial <sup>4</sup>	473	-	-	-	-	-	-	-
Unemp Claims weekly – Continued <sup>4</sup>	5,041	-	-	-	-	-	-	-

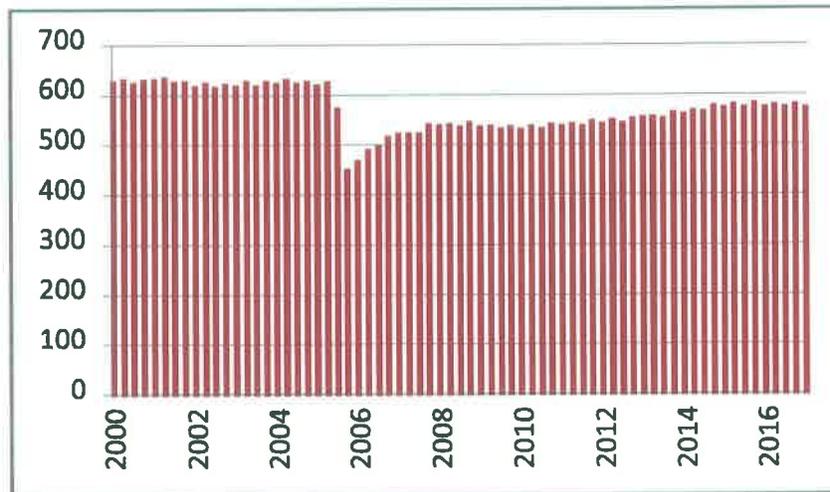
Source: Bureau of Labor Statistics (BLS) and Division of Business and Economic Research (DBER).

- 1 – Some industries are volatile or subject to seasonality, including information and educational services.
- 2 – Percent changes may not be exact due to rounding.
- 3 – Percent changes for these figures represent percentage points.
- 4 – Unemployment claims data is no longer available.

The NOMSA economy lost about 500 jobs (-0.1%) between the 2015 and 2016 calendar years (Table 1). In terms of number of jobs added, the most noticeable employment gains were in Health Care and Social Assistance (3,700 jobs or 5.7%), Leisure and Hospitality (1,900 jobs or 2.2%), and Administrative, Support, and Waste Management (1,200 jobs or 3.5%). Significant job losses were incurred in Mining and Logging (1,400 jobs or -20.6%), Information (1,500 jobs or -16.9%), Government (1,600 jobs or -2.1%), and Construction (2,000 jobs or -6.2%).

## EMPLOYMENT

Figure 1: Total Employment - New Orleans MSA Quarterly (Thousands of Jobs)

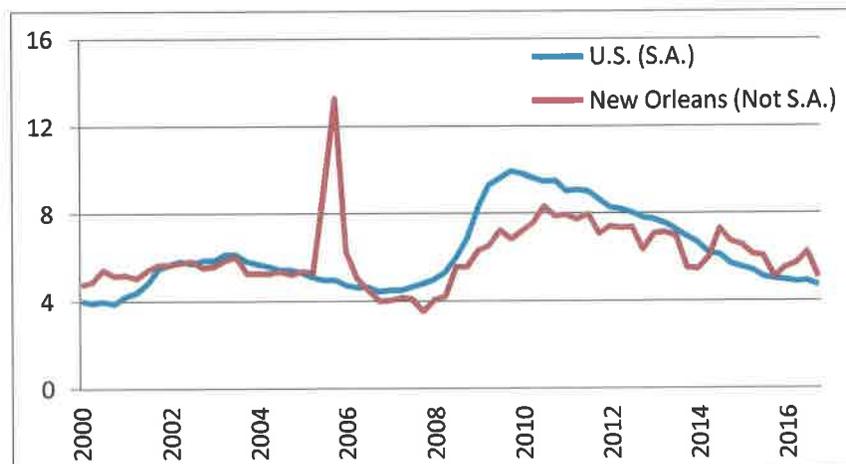


Source: BLS and DBER

Total nonfarm employment in the New Orleans Metro Area (NOMSA) has grown slowly over the years. During 2016, employment decreased slightly (-0.1%) over the previous year. Although most of the employment segments continue to recover from the recession, the number of jobs available in the area continue to lag employment figures registered before the storm in 2005 (Figure 1).

## UNEMPLOYMENT

Figure 2: Unemployment Rate - New Orleans MSA vs. U.S. Quarterly (%)

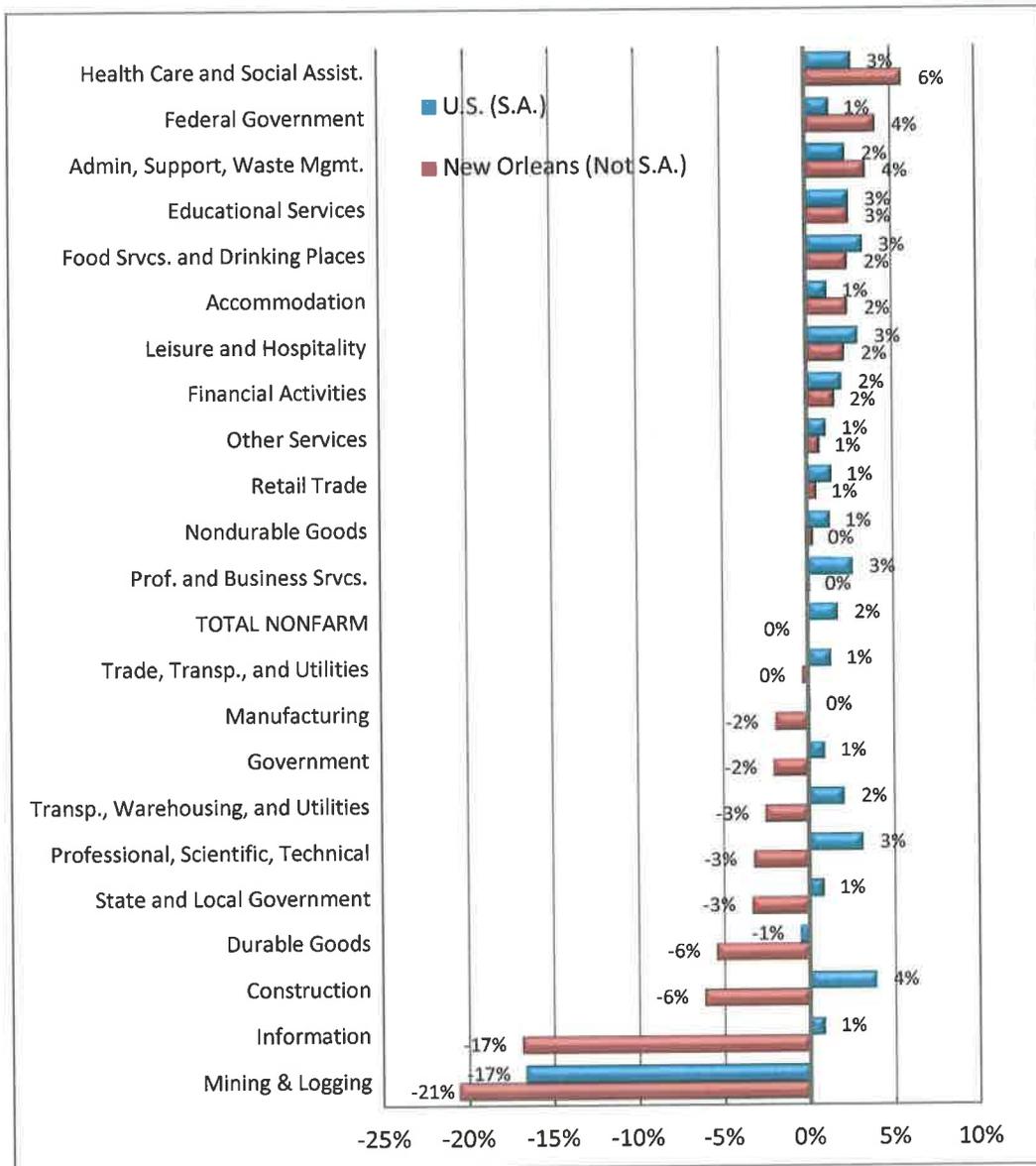


Source: BLS and DBER

After spiking in late 2014, unemployment in the New Orleans area had been declining, reaching a low of 5.1% in Q4 2015. However, the local unemployment rate has remained volatile since then and continues to exceed the national average. By last quarter of 2016, the national rate was 4.7%, down from 5.0% during the Q4 2015. The New Orleans metro area rate was 5.1%, on par with the rate recorded in the same quarter last year (Figure 2).

# EMPLOYMENT GROWTH

**Figure 3: Employment Growth - New Orleans MSA vs. U.S. 2015 FY over 2016 FY (%)**



Source: BLS and DBER.

Between 2015 and 2016, the U.S. Employment had an overall growth of 1.7%, while the New Orleans metropolitan area experienced a slight decrease of -0.1% (Figure 3). The most significant job losses in the New Orleans area in terms of growth rate were observed in Mining and Logging (-20.6%), Information (-16.9%), Construction (-6.2%), and Durable Goods (-5.5%). The U.S. as a whole had an increase on Information (0.8%) and Construction (3.9%), while it had a decrease on Mining and Logging (-16.7%) and Durable Goods (-0.6%).

Even though the Employment growth in the local area outpaced national growth in several sectors, including Health Care and Social Assistance (5.7% vs 2.7%), Federal Government (4.1% vs. 1.4%), Administrative, Support and Waste Management (3.5% vs. 2.3%), and Accommodation (2.4% vs. 1.2%), there were job losses in mining and logging.

## METROPOLITAN STATISTICAL AREA (MSA) ECONOMIC INDICATORS

Table 2: New Orleans MSA Economic Indicators – Quarterly Actuals, 2015:4 – 2016:4

Economic Indicators	2015:4	2016:1	2016:2	2016:3	2016:4	2016:3 to 2016:4	2015:4 to 2016:4	2015FY to 2016FY
	Percent Change <sup>6</sup>							
Crude Oil Price (\$ per barrel)	41.95	33.18	45.41	44.85	49.14	9.6	17.1	-11.4
Foreign Trade (Thou short tons)	8,384	8,812	8,342	8,309	8,384	0.9	0.0	0.8
Imports (Thou short tons)	3,081	3,735	3,934	3,827	3,081	-19.5	0.0	-2.9
Exports (Thou short tons)	5,304	5,077	4,408	4,482	5,304	18.3	0.0	3.8
Air Freight Cargo (Short tons)	11,594	11,618	4,106	13,799	13,995	1.4	20.7	-2.0
Hotel Room Sales (\$Mill) <sup>1</sup>	271.4	270.1	387.6	315.8	280.5	-11.2	3.4	-0.2
Convention Room Nights (Thou)	267	313	458	287	281	-2.3	5.2	0.0
Passenger Deplanements (Thou) <sup>7</sup>	1,382	1,338	1,482	1,286	1,453	13.0	5.2	4.3
Airport Capacity (Avg. Daily Seats)	18,202	18,397	19,059	17,241	18,911	9.7	3.9	3.4
Casino Admissions (Thou)	1,773	1,775	1,701	1,732	1,658	-4.3	-6.5	-6.5
Total Gambling Revenues (\$Mill)	126.1	128.1	124.0	121.8	122.4	0.5	-3.0	-6.8
Riverboat Casino Revenues (\$Mill)	54.8	56.0	56.7	56.5	54.4	-3.8	-0.8	-0.5
Harrah's Casino Revenues (\$Mill)	71.3	72.1	67.3	65.3	68.0	4.2	-4.6	-11.3
Construction Contracts (\$Mill) <sup>2</sup>	433.1	1,033.0	1,488.5	315.7	361.1	14.4	-16.6	92.6
Residential (\$Mill)	163.3	189.5	495.5	186.9	148.4	-20.6	-9.1	45.8
Non-Residential (\$Mill)	269.8	843.5	993.0	128.8	212.7	65.1	-21.2	126.7
Construction Contracts Non-Building (\$Mill) <sup>2</sup>	67.8	42.7	38.3	211.8	47.7	-77.5	-29.7	44.0
Construction Contracts in Progress (\$Mill) <sup>2</sup>	1,799	2,513	3,645	3,558	3,417	-4.0	89.9	83.7
Residential (\$Mill)	532	553	848	872	831	-4.7	56.3	41.3
Non-Residential (\$Mill)	1,268	1,960	2,797	2,686	2,586	-3.7	104.0	102.5
Construction Contracts in Progress Non-Building (\$Mill) <sup>2</sup>	1,946	1,879	1,634	1,957	1,731	-11.6	-11.1	-27.6
Housing Starts <sup>2</sup>	863	950	798	279	566	102.9	-34.4	-7.6
Foreclosures	422	453	392	338	292	-13.7	-30.8	-23.2
Bankruptcies (LA)	821	737	830	860	732	-14.9	-10.8	-5.3

1 – Hotel sales include Orleans and Jefferson parishes only.

2 – Construction figures are supplied by McGraw Hill Construction, Dodge.

3 – Population figures were revised for 2010 Census data released in April 2011 and Census Intercensal Estimates released in April 2017. Quarterly figures are a combination of data produced by U.S. Department of Census and DBER estimates using data from the Greater New Orleans Community Data Center.

4 – Per capita personal income was revised to include Census Intercensal Estimates figures released in April 2017.

5 – Motor vehicle sales are for all 7 parishes.

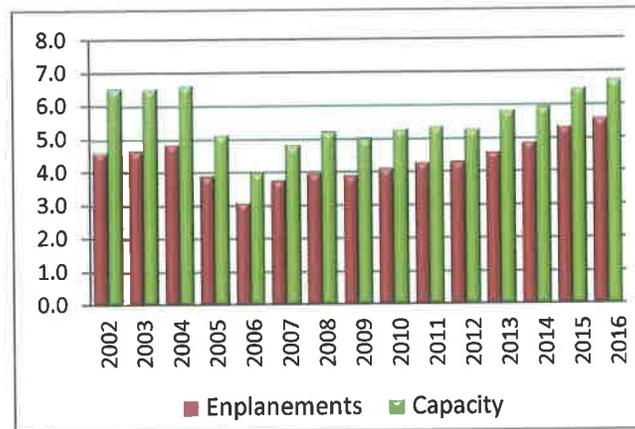
6 – Percent changes may not be exact due to rounding.

7 – Due to lag in data, figures are preliminary estimates.

Table 2 includes additional economic indicators for the New Orleans metro area. Overall, estimates indicate that the area has stabilized in terms of growth, with some indicators increasing, while others presented an overall decrease.

## AIRPORT

**Figure 4: Airport Activity - New Orleans MSA Annually (Millions)**

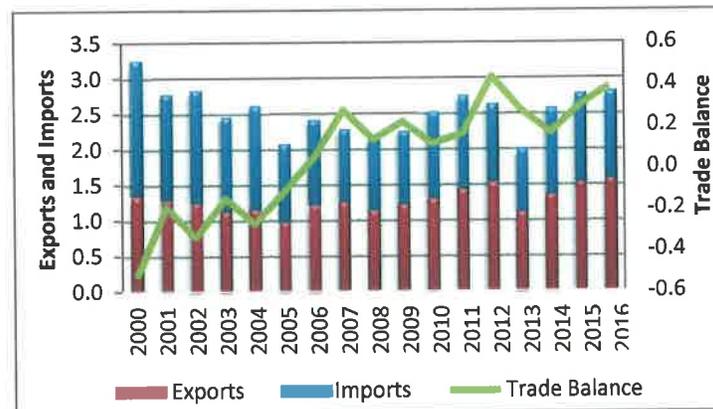


Source: Louis Armstrong International Airport (MSY), Bureau of Transportation Statistics (BTS).

Airport traffic has continued on an overall upward trend for both passengers and capacity (Figure 4). Quarterly traffic exceeded pre-Katrina figures for the first time in Q2 2015 and reached new records in 2016. The increase in passenger activity suggests that more visitors are arriving to the metro area, and that more travel is being consumed by local residents. Airport capacity also surpassed 2004 figures during 2016, adding nearly 600 average daily airplane seats over the past year.

## PORT

**Figure 5: Port Cargo - New Orleans  
Monthly Average (Millions of Short Tons)**

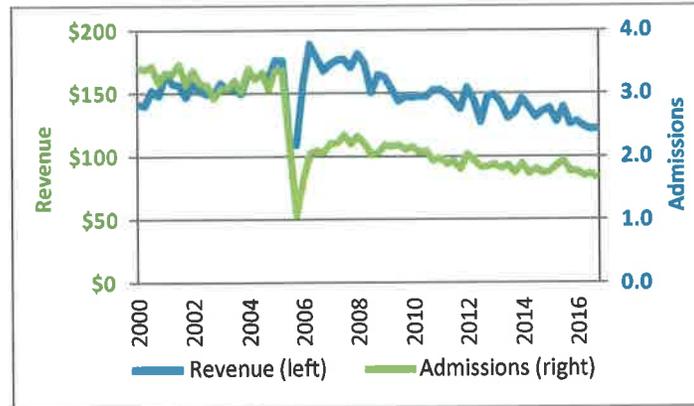


Source: Port of New Orleans

After reaching a post-Katrina low in 2013, foreign trade tonnage at the Port of New Orleans has climbed in recent years. Estimates show a modest 0.8% increase in overall port tonnage between 2015 and 2016, with a 3.8% increase in exports being balanced by a 2.9% decrease in imports. These trade indicators continue to display a lot of volatility. The trade balance reached a high of 2.2 million short tons in both Q4 of 2015 and 2016 (Figure 5).

## GAMING

**Figure 6: Casino Activity - New Orleans MSA Quarterly (Millions)**

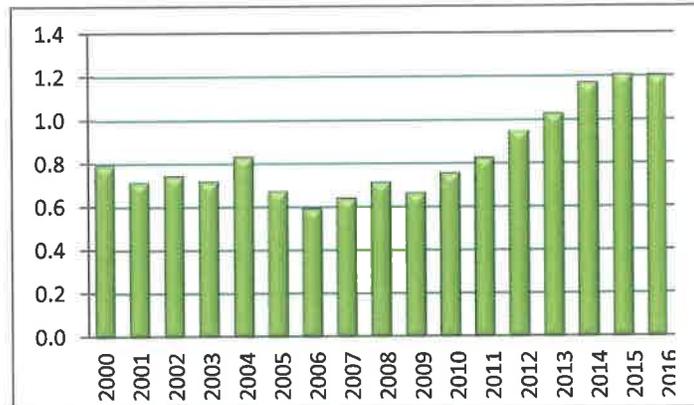


Source: Louisiana Gaming Commission

Admissions and revenues at casinos continued to weaken in 2016. These trends began immediately after Katrina and have continued since then (Figure 6). Admissions decreased by 6.5% over the previous year, and by 4.3% over the most recent quarter. While declining admissions have contributed to declining revenues, the annual decrease in casino spending was slightly higher than admissions (-6.8%).

## HOTEL SALES

**Figure 7: Hotel Taxable Sales - Orleans and Jefferson Parishes Annually (Billions)**

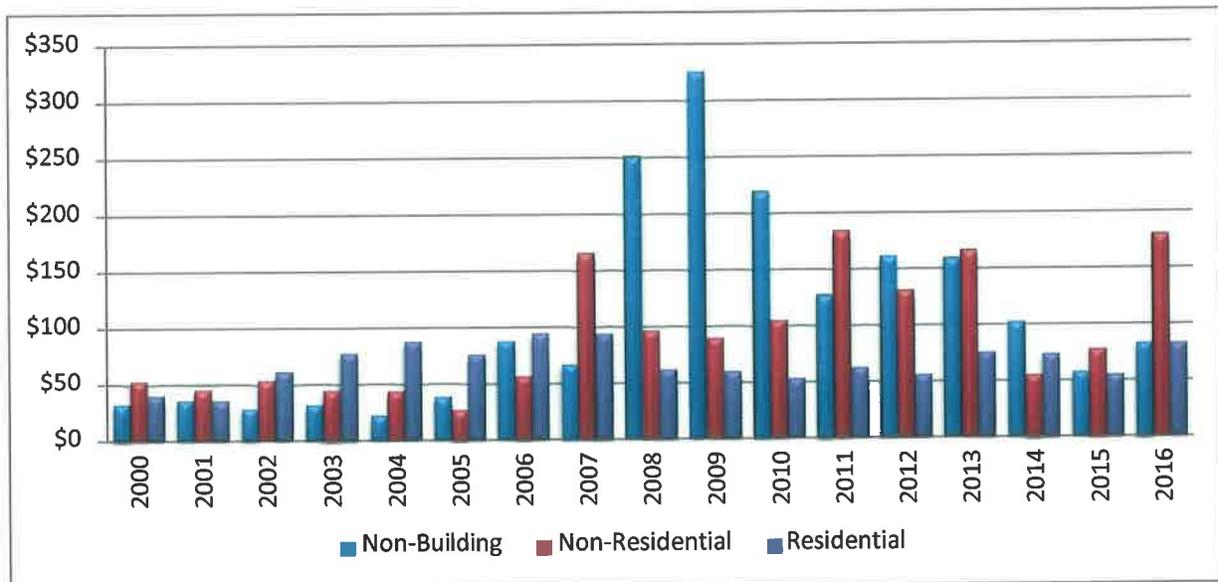


Source: Louisiana Department of Revenue

With an increasing number of out-of-town visitors who are willing to spend more money every year, hotels have experienced a solid growth in room sales over the last decade. Room sales have been increasing yearly since 2006. In 2006, room sales totaled nearly \$0.6 billion, while in 2014 this amount almost doubled, reaching \$1.2 billion. In 2016, hotel sales were at approximately \$1.3 billion, a slight decrease (-0.2%) over 2015 estimates (Figure 7).

## CONSTRUCTION

**Figure 8: Construction Contracts - New Orleans MSA Monthly Averages (Millions)**

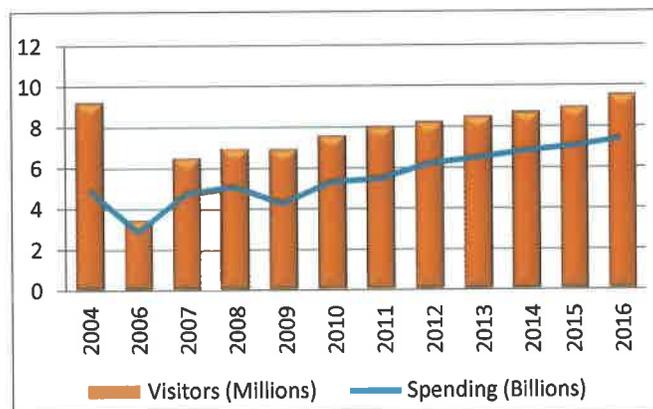


Source: McGraw Hill Construction, Dodge.

All types of construction increased substantially over the spending in the last two years. Between 2015 and 2016, residential construction increased by 46%, while non-residential grew significantly by 127%. Similarly, non-building construction gained 44% in activity. Spending activity in 2016 paralleled that of 2007 (Figure 8).

## VISITATION AND SPENDING

**Figure 9: Visitation and Spending - New Orleans MSA Annually**

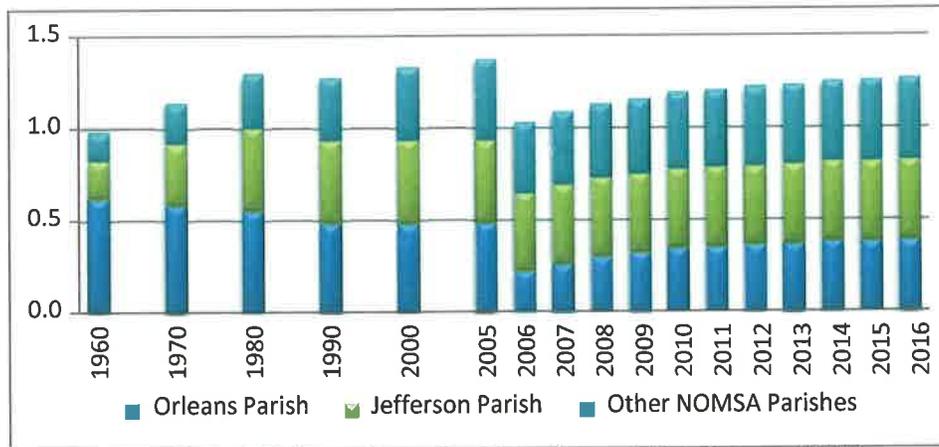


Source: Hospitality Research Center (HRC) Before 2012, spending estimates exclude gambling.

During 2016, nearly 10.45 million visitors came to the New Orleans area, representing a 7% increase over the 9.78 million visitors in 2015. Visitor spending, including gambling, reached \$7.41 billion, an increase of 5% over the \$7.05 billion in the previous year (Figure 9).

## POPULATION

**Figure 10: Population - New Orleans MSA  
Annually (Millions)**



*Source: U.S. Census, Greater New Orleans Community Data Center, and DBER.*

Over the last six years, population in the MSA area has grown modestly at a rate of about 1% annually has stabilized. Most recent 2016 estimates indicate that population increased by 0.8% compared 2015. With nearly 1.3 million residents, the current population is at 92% of the pre-Katrina population. Current population estimates are comparable to the figures recorded during 1990 (Figure 10).

## WATER SYSTEM MAJOR INITIATIVES

### **Carrollton Water Purification Plant**

- Painting of four 4 million gallon concrete ground storage tanks in progress.
- Rehabilitation of L3 flocculation basin completed.
- Rehabilitation of Filters 1A/B and 5A/B completed.
- Study of water storage tank mixing completed.
- Construction of new instrument air system for Sycamore Filter Gallery (\$1.3M) in progress.
- Design of new filter backwash pump for Sycamore Filter Gallery in progress.
- Design for replacement of the valves, actuators, and controls at Sycamore Filter Gallery in progress.
- Design of new sludge line to the river in progress.
- Design of new chemical bulk storage and feed facility in progress.
- Construction of two new elevated water storage tanks (\$36M) in progress.
- Design of Filter Backwash Recycle Pump Station improvements in progress.
- Conceptual design of Head House Renovations and Engineering Complex Hardening in progress.
- Conceptual design for the demolition of basins C7 and C8 in progress.
- Design of improvements to Claiborne Ave and Panola Pumping Stations in progress.
- Conceptual study of new electrical substation of west side of facility in progress.
- Conceptual study of Resiliency Complex including hardening of Engineering Building, rehabilitation of Head House Facility and new Infill Building in progress.

### **Algiers Water Purification Plant**

- Design of water storage tank mixing in progress.

- Design for improvements to the Algiers Water Plant in progress including replacement of Clarifier 1, improvements to Clarifiers 2, 3, and 4, a new fluorosilicic acid storage and feed system, and SCADA improvements.
- Purchase and installation of new sodium hypochlorite feed pumps and bulk storage tank completed.

### **Water Quality Laboratory**

- Cryptosporidium sampling for EPA's Long Term 2 Enhanced Surface Water Treatment Rule – Round 2 in progress.
- Completed triennial lead testing required by EPA's Lead and Copper Rule.

### **Water Distribution System**

- Contract for repairs and improvements to the Michoud Water Tank has been bid.
- Contract for construction of booster chloramination facility has been bid.
- Ongoing coordination with the Department of Public Works (DPW) to rehabilitate water mains associated with Joint Infrastructure Recovery Roads Program and other roadway rehabilitation projects.
- Managing twenty-two engineering consultants designing water main replacement projects for approximately sixty-two neighborhoods with a total program value of \$185M.

### **Water Pumping and Power**

- Turbine Generator 4 Refurbishment in progress.
- Installation of new 60Hz feeders from Carrollton Plant to DPS1 and new feeders RS-T6, RSC, and RSE completed.
- Installation of new generator load bank in progress.
- Contract for the refurbishment of Oak St. Pump Station has been bid.
- Construction for emergency fuel storage improvements in progress.
- Refurbishment of Boilers 1, and 3-6 and repairs to Boiler 2 in progress.
- Design of new boiler controls, piping, and SCADA in progress.
- Structural improvements to the power plant in progress.
- Design of refurbishment of Turbine Generators 3 and 5 in progress.
- Refurbishment of Pumps A and B is completed.
- Emergency repairs to Panola Pump Station are completed.
- Design for improvements to the three finished water pumping stations at the Carrollton Plant (Claiborne, Panola, and A&B) is in progress.
- Improvements to various 25Hz power distribution cables in progress.

## **SEWER SYSTEM MAJOR INITIATIVES**

### **Sewerage Pumping Stations**

- Construction completed for improvements to Sewer Pumping Stations 6, Dodt, Plum Orchard, and Lawrence.
- Construction completed for Sewer Pumping Stations Victoria, Bullard, Lake Forest, and Burke
- Design for structural improvements to SPSA and SPSD/DPS17 in progress.
- Improvements to Algiers Sewer Pumping Stations in progress.

### **East Bank Wastewater Treatment Plant**

- Construction of wetlands expansion cells and demonstration cells completed.
- Installation of automatic transfer switch completed.
- Installation of new waste sludge pump in South Pump House complete.
- Repair of process air blower complete.

- Demolition of Multiple Hearth Incinerator complete.
- Installation of new pure oxygen tank for the VSA complete.
- Design for the rehabilitation of the South Return Activated Sludge Pump House in progress.
- Installation of new emission control equipment for the fluidized bed incinerator in progress.
- Refurbishment of Clarifier #2 in progress.
- Installation of new bleach disinfection system in progress.
- Installation of transformer #5 and 5 new variable frequency drives for the effluent pump house in progress.
- Design for the installation of a sludge dryer in progress.
- Design for the purchase and installation of new switchgear and motor control centers in progress.
- Bio Reactor LEL replacement in progress.

### **West Bank Wastewater Treatment Plant**

- Installation of a new bleach disinfection system completed.
- Refurbishment of Primary Clarifier # 1 completed.
- Rebuild of Bar Screen # 3 completed.
- Replacement of Primary Scum Tanks completed.
- Rebuild of number three (3) main pump completed.
- Replacement of all three (3) grit pumps in headworks completed.
- West Bank auto transfer switch installation in progress.

### **Sewer Collection System**

- All sewer rehabilitation construction projects for the Ninth Ward Basin is complete.
- Design continuing for multiple point repair and replacement of sanitary sewers in the Carrollton, Mid-City and South Shore areas.
- Construction of sewer projects in the New Orleans East Basin in progress.
- Ongoing coordination with the City of New Orleans Department of Public Works in rehabilitating sewer, water and drainage systems as well as routine reconstruction and maintenance activities.

## **DRAINAGE SYSTEM MAJOR INITIATIVES**

### **Pumping Stations**

- Design to install emergency generators at five underpass pumping stations in progress.
- Engineering design and repair work to several underpass drainage pumping stations in progress funded by FEMA.
- Construction of the three new lakefront pumping stations (17<sup>th</sup> St., Orleans Ave., and London Ave.) is in progress by the Army Corps of Engineers.
- Design improvements for the Broad St. Underpass Station in progress.

### **Canals**

- Construction of Florida Ave Canal Phases II and II (\$119M) from Peoples Ave to Alvar St is 43% complete.
- Construction of Florida Ave Canal Phase IV (\$147.5M) is 29% complete.
- Napoleon Ave Canal Phase III (\$38.1M) from Carondelet St to Constance St is 98% complete.
- Construction of S. Claiborne Ave Phase I (\$27.1) from Monticello to Leonidas is 98% complete.
- Construction of S. Claiborne Ave Canal Phase II (\$27.8M) from Leonidas to Lowerline St is 100% complete.
- Jefferson Ave Canal Phase I (\$56M) from S. Claiborne Ave to Dryades is 70% complete.
- Jefferson Ave Canal Phase II (\$46.2M) from Dryades to Constance is 100% complete.

- Louisiana Ave Canal (\$82.6M) from S. Claiborne Ave. to Constance is in construction and is 79% complete.
- General de Gaulle Canal Improvements from Shirley Dr. to Holiday Dr. is in design and 85% complete.
- Green infrastructure projects from the creation of K-4<sup>th</sup> grade education program, providing professional workshops, and demonstration bioswales, green roofs and rain garden projects are in the permitting and construction phases.

### **Central Yard**

- Construction of Garage 1 and Garage 2 are is 100% and 75% complete, respectively.

## **FINANCIAL INFORMATION**

The Enterprise Fund's Water and Sewerage systems are financed by user fees. The unique characteristics of the services provided by the Drainage System of New Orleans require the use of Enterprise Fund accounting in order to obtain a meaningful measure of the cost of providing the services and capital maintenance. On November 14, 2012 the Board approved an eight-year program of sewer and water rate increases commencing January 1, 2013.

The sewer and water rates increase approximately 10% each year until the year 2020. This increase was approved by the New Orleans City Council on December 6, 2012. Revenues from the three-(3) mill, six-(6) mill and nine-(9) mill ad valorem taxes, which are restricted exclusively for drainage services, finance the Drainage System. These ad valorem taxes are the operating revenues of the drainage system. Also, there exists a potential for additional financing by additional user service charges.

### **Budgetary Control:**

The Board maintains an internal budgetary control through the preparation and monitoring of an annual operating and capital budget for the Water, Sewerage, and Drainage funds. Monthly statements of revenues, expenses, and changes in net assets, statements of net assets, and statements of cash flow are prepared for the water, sewer, and drainage system. Also, monthly budget reports are provided to department level managers to assist them in their fiscal responsibilities.

### **General Operations:**

The change in net position for the year ended December 31, 2016 was an increase of approximately \$140.7 million, as opposed to approximately \$153.4 million for the year ended December 31, 2015. The Board's total operating revenues increased by 5.5% to approximately \$192.7 million due primarily for rate increases effective January 1, 2016, and total non-operating revenue increased by 12.9% to approximately \$58.0 million.

### **Debt Administration 2016:**

Sewerage and Water Board of New Orleans sold bonds on December 2, 2015 for its water and sewer systems to fund its capital improvement program. The \$100,000,000 water system revenue bonds and \$100,000,000 sewer system revenue bonds were sold by the Board of Liquidation through a negotiated underwriting process.

The capital improvement program for the water system received \$104.2 million and the sewer system received \$103.9 million.

No additional debt was issued in 2016.

### **Sewerage and Water Board Achievements in 2016:**

S&WB completed 28,661 work orders in 2016. This includes emergency requests such as sewer overflows and customers without water. S&WB also completed the following work in 2016:

- Respond to 16,044 service requests in 2015 within an average of 59 minutes from when the call was received;
- Complete repaired 1,241 sewer mains repairs, 1,263 water mains repairs, 9,777 water service repairs, 738 hydrant repairs, and 915 valve repairs; and
- Met or exceeded all requirements of the consent decree, including inspecting 9,930 sewer mains, cleaned 1,273,826 feet of sewer main, and inspected 943,623 feet of sewer main.
- Performed preventive maintenance on 1,915 water main valves and 6,303 water hydrants.

As part of the City's Integrated Infrastructure Management System, S&WB is implementing opportunities to facilitate, link, and leverage with City assets. S&WB is also collaborating with the New Orleans Redevelopment Authority on green infrastructure pilot projects like rain gardens in neighborhoods across the city.

Delgado Community College began training the next generation of certified water infrastructure personnel to work at S&WB with the assistance of a \$1.5 million grant announced by the GE Foundation to fund the program. This work aligns with Mayor Landrieu's Economic Opportunity Strategy focused on job training based on employer needs and creating pathways to prosperity for all New Orleans residents.

S&WB successfully implemented a new Customer Service Management System and took over responsibilities for servicing calls for the sanitation system.

Citizens of New Orleans approved continuance of an ad valorem tax in the amount of 4.46 mills on property subject to taxation beginning in 2017 and ending in 2016, providing an estimated \$15,400,000 for the purposes of construction, operating, and maintaining the drainage system.

### **Looking Forward to 2017**

In 2017, S&WB is scheduled to begin construction on over \$221 million in capital improvements, including a number of important water, sewer and drainage projects. Highlights include the water hammer mitigation project, major improvements to the S&WB's power generation system, water and sewer system line replacements, water point repairs, drainage canal improvements, and drainage pumping projects.

The Board is performing a readiness assessment for implementing Automated Metering Infrastructure and is looking forward to implementation of a Human Resources, Timekeeping, and Payroll System and expanded utilization of Geographic Information System capabilities in 2017.

S&WB is contemplating issuance of additional revenue bonds for the sewerage system in fourth quarter of 2017.

### **Other Information**

State Statutes and covenants governing outstanding bond issues require an annual audit of the Board's financial records by independent certified public accountants. The accounting firm of Postlethwaite & Netterville was selected by the Board to perform this audit through a competitive bid process. The independent auditors' report on the basic financial statements is included in the Financial Section of the report. The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to Sewerage and Water Board of New Orleans for its Comprehensive Annual Financial Report for the fiscal year ended December 31, 2015. The Certificate of Achievement is a prestigious national award-recognizing conformance with the highest standards for preparation of state and local government financial reports.

In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized comprehensive annual financial report whose contents conform to program standards. Such CAFR must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one (1) year only. The Sewerage and Water Board of New Orleans has received a Certificate of Achievement for thirty-three (33) years. We believe our current report continues to conform to the Certification of Achievement Program requirements and we are submitting it to GFOA.

## ACKNOWLEDGMENTS

The Comprehensive Annual Financial Report was prepared by the dedicated staff of the Director's Office, particularly the Finance Administration and Printing Department. Additionally, we realize that the cooperation of each Department of the Sewerage & Water Board of New Orleans is essential, and we appreciate the willingness to work together toward this endeavor.

We also wish to thank the members of the Board for their interest and support in our efforts to achieve greater fiscal efficiency and accountability.

Yours very truly,



Cedric S. Grant  
Executive Director



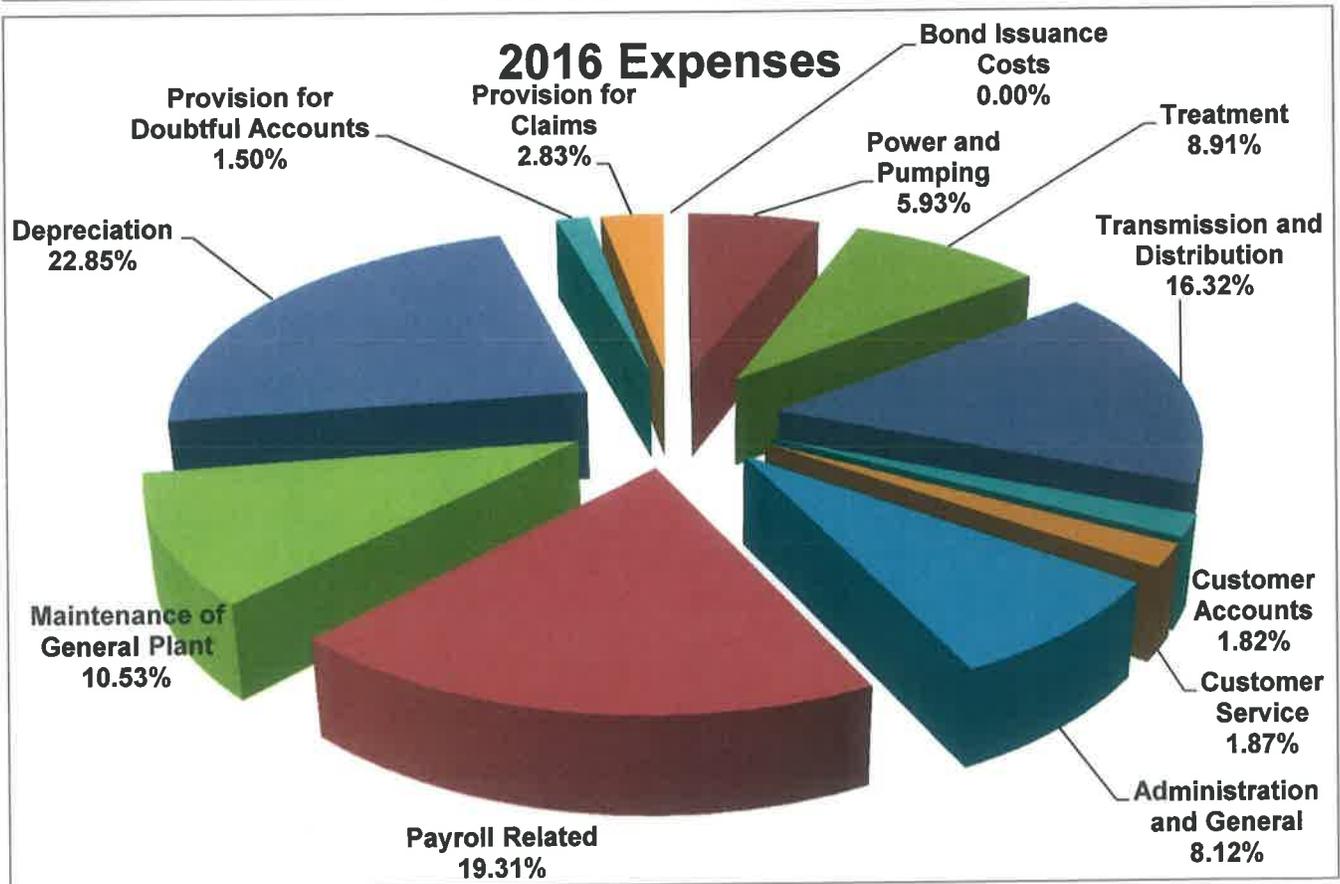
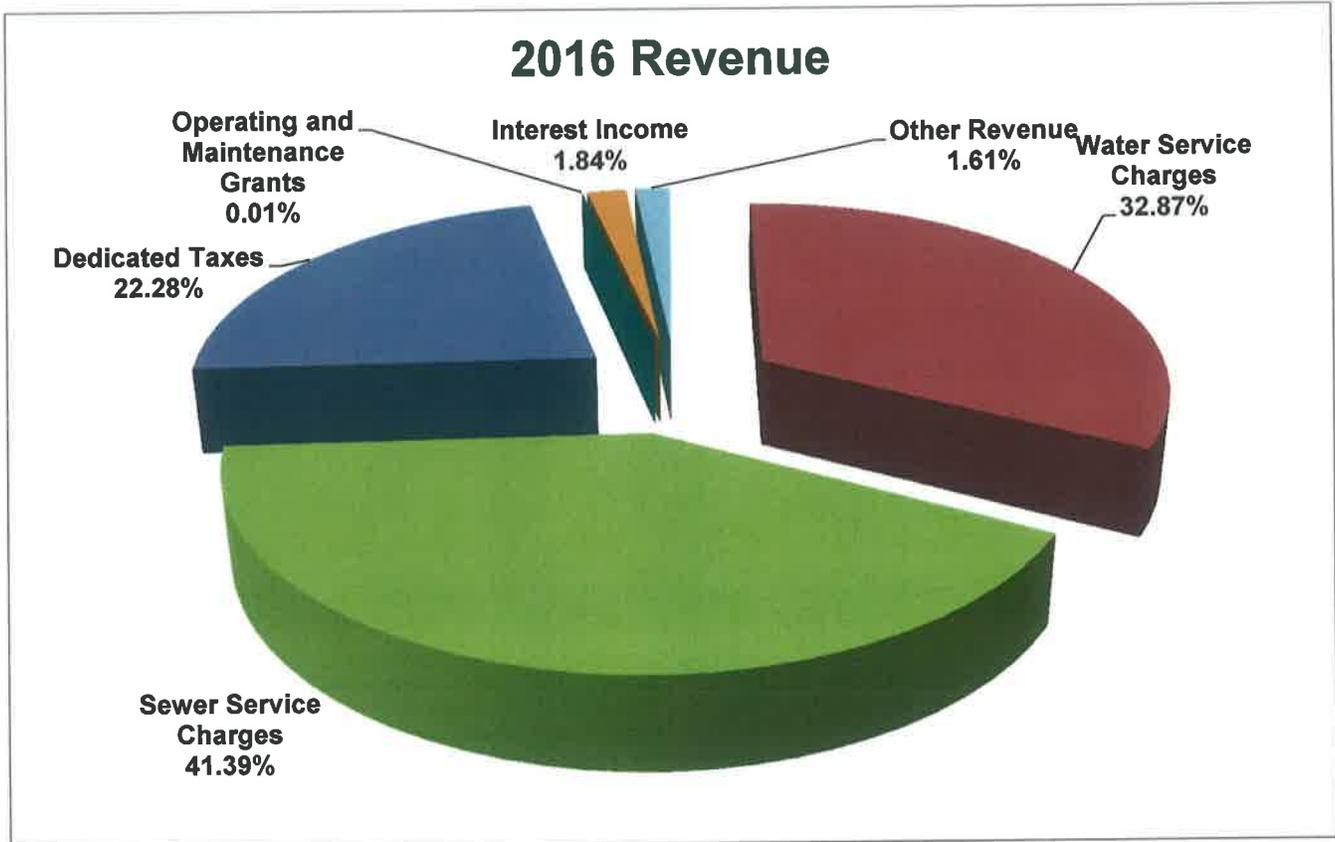
Robert K. Miller  
Deputy Director/Chief Financial Officer



Rosita P. Thomas  
Finance Administrator

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Sewerage and Water Board of New Orleans



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Presented to

**Sewerage and Water Board  
of New Orleans, Louisiana**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**December 31, 2015**

Executive Director/CEO

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**OFFICERS  
of  
SEWERAGE AND WATER BOARD  
OF NEW ORLEANS**

December 31, 2016

---

MITCHELL J. LANDRIEU.....President  
(Mayor of City of New Orleans)

SCOTT JACOBS.....President Pro-Tem

CEDRIC S. GRANT.....Executive Director

ROBERT MILLER.....Deputy Director/Chief Financial Officer

RONALD DOUCETTE.....Deputy Director/Security

KIMBERLY JOHNSON.....Deputy Director/Continuous Improvement

SHARON JUDKINS.....Deputy Director/Administration

LISA MARTIN.....Deputy Director/Communications

VALERIE RIVERS.....Deputy Director/Logistics

BRUCE ADAMS.....Deputy General Superintendent

JOSEPH BECKER.....General Superintendent

NOLAN LAMBERT.....Special Counsel

**BOARD MEMBERS OF  
SEWERAGE AND WATER BOARD OF NEW ORLEANS**

December 31, 2016

---

MITCHELL J. LANDRIEU.....Mayor  
SCOTT JACOBS.....President Pro-Tem  
ALAN ARNOLD.....Board of Liquidation Appointment  
RALPH JOHNSON.....Board of Liquidation Appointment  
ROBIN BARNES.....At-Large Appointment  
ERIC BLUE.....Council District A Appointment  
SCOTT JACOBS.....Council District B Appointment  
KERRI KANE.....Council District C Appointment  
MARION BRACY.....Council District D Appointment  
Dr. TAMIKA DUPLESSIS.....Council District E Appointment  
JOSEPH PEYCHAUD.....Consumer/Community Advocate  
KIMBERLY THOMAS, JD.....Consumer/Community Advocate

**COMMITTEES OF THE  
SEWERAGE AND WATER BOARD OF NEW ORLEANS**

December 31, 2016

---

**BOARD OF DIRECTOR'S MEETING**

MAYOR MITCHELL LANDRIEU, President

SCOTT JACOBS – President Pro-Tem

ALAN ARNOLD  
MARION BRACY  
KERRI KANE

ROBIN BARNES  
DR. TAMIKA DUPLESSIS  
JOSEPH PEYCHARD

ERIC BLUE  
SCOTT JACOBS  
KIMBERLY THOMAS

**BOARD OF TRUSTEES MEETING**

MAYOR MITCHELL LANDRIEU, President

SCOTT JACOBS – President Pro-Tem

ALAN ARNOLD  
MARION BRACY  
RALPH JOHNSON  
CHANTE' POWELL-PIERRE  
JOHN WILSON III

ROBIN BARNES  
DR. TAMIKA DUPLESSIS  
KERRI KANE  
MARVIN RUSSELL, JR.

ERIC BLUE  
HAROLD HELLER, JR.  
JOSEPH PEYCHARD  
KIMBERLY THOMAS

**AUDIT COMMITTEE MEETING**

DR. TAMIKA DUPLESSIS - Chairperson

MARION BRACY - Vice Chairperson

ROBIN BARNES

ERIC BLUE

SCOTT JACOBS

**FINANCE AND ADMINISTRATION COMMITTEE MEETING**

SCOTT JACOBS – Chairperson

JOSEPH PEYCHAUD – Vice Chairperson

DR. TAMIKA DUPLESSIS

KERRI KANE

KIMBERLY THOMAS

**GOVERNANCE COMMITTEE MEETING**

KERRI KANE – Chairperson

ALAN ARNOLD – Vice Chairperson

ROBIN BARNES

KIMBERLY THOMAS

**PENSION COMMITTEE MEETING**

JOSEPH PEYCHAUD – Chairperson

SCOTT JACOBS – Vice Chairperson

ALAN ARNOLD  
RALPH JOHNSON  
JOHN WILSON III

ERIC BLUE  
CHANTE POWELL-PIERRE

HAROLD HELLER, JR.  
MARVIN RUSSELL, JR.

**PLUMBING CONFERENCE COMMITTEE MEETING**

ALAN ARNOLD – Chairperson

JOSEPH BECKER

JAY ARNOLD  
RONNIE CROSBY

JIM FINLEY

MARION BRACY

**STRATEGY COMMITTEE MEETING**

MARION BRACY – Chairperson

ROBIN BARNES – Vice Chairperson

DR. TAMIKA DUPLESSIS

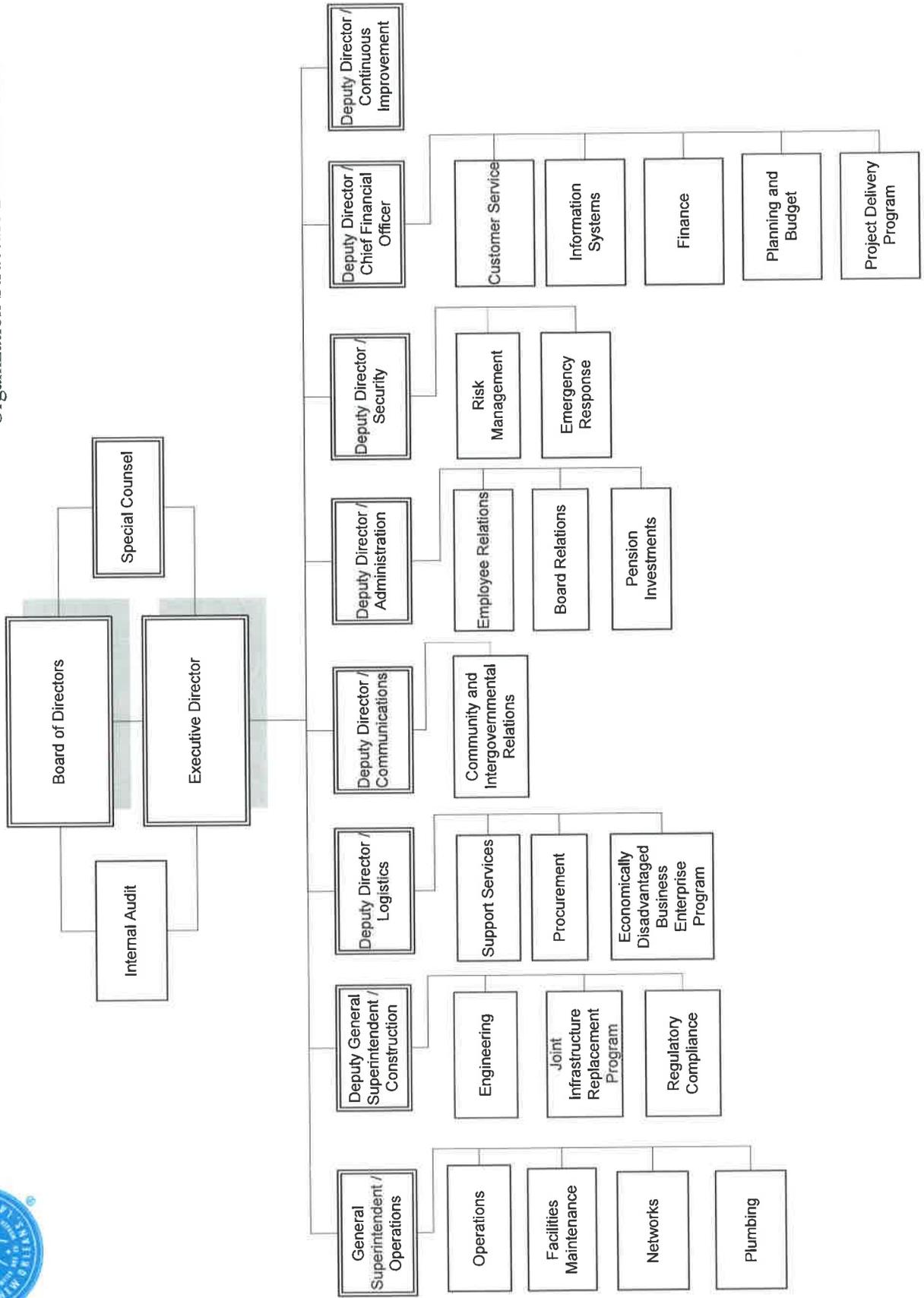
KERRI KANE

KIMBERLY THOMAS

**MICHAEL CONEFRY & COMPANY, ACTUARY**

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

Organization Structure December 2016



**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
EXECUTIVE STAFF**

December 31, 2016

**EXECUTIVE DIRECTOR**  
CEDRIC S. GRANT

**DEPUTY DIRECTOR/SECURITY**  
RONALD DOUCETTE

**DEPUTY DIRECTOR/CONTINUOUS IMPROVEMENT**  
KIMBERLY JOHNSON

**DEPUTY DIRECTOR/ADMINISTRATION**  
SHARON JUDKINS

**DEPUTY DIRECTOR/COMMUNICATIONS**  
LISA MARTIN

**DEPUTY DIRECTOR/CHIEF FINANCIAL OFFICER**  
ROBERT MILLER

**DEPUTY DIRECTOR/LOGISTICS**  
VALERIE RIVERS

**DEPUTY GENERAL SUPERINTENDENT/CONSTRUCTION**  
BRUCE ADAMS

**GENERAL SUPERINTENDENT/OPERATIONS**  
JOSEPH BECKER

**SPECIAL COUNSEL**  
NOLAN LAMBERT

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY DIRECTOR**

December 31, 2016

**RONALD DOUCETTE  
DEPUTY DIRECTOR/SECURITY**

---

**RISK MANAGEMENT, SAFETY, and WORKERS COMPENSATION**

FELICIA LOVINCE

**EMERGENCY RESPONSE**

JASON HIGGINBOTHAM

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY DIRECTOR**

December 31, 2016

**KIMBERLY JOHNSON  
DEPUTY DIRECTOR/CONTINUOUS IMPROVEMENT**

---

VACANT

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY DIRECTOR**

December 31, 2016

**SHARON JUDKINS  
DEPUTY DIRECTOR/ADMINISTRATION**

---

**BOARD INFORMATION and RECORDS CUSTODIAN**

KATHLEEN LaFRANCE

**COMPENSATION/ RECRUITMENT**

VERNON MARTIN, III

**LABOR RELATIONS/PENSION/WORK PLANNING and EVALUATIONS**

TARA BROWN

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY DIRECTOR**

December 31, 2016

**LISA MARTIN  
DEPUTY DIRECTOR / COMMUNICATIONS**

---

**COMMUNITY and INTERGOVERNMENTAL RELATIONS**

**ROBERT JACKSON**

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY DIRECTOR**

December 31, 2016

**ROBERT K. MILLER  
DEPUTY DIRECTOR/CHIEF FINANCIAL OFFICER**

---

**FINANCE ADMINISTRATION**  
ROSITA THOMAS

**INFORMATION SYSTEMS ADMINISTRATION**  
MELINDA NELSON

**OPERATING/ CAPITAL BUDGET AND FINANCIAL PLANNING**  
DEXTER JOSEPH

**PROJECT DELIVERY UNIT**  
KATIE DIGNAN

**REVENUE AND CUSTOMER SERVICES ADMINISTRATION**  
JACQUELINE SHINE

**INTERNAL AUDIT**  
RAYMOND GABLE

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY DIRECTOR/LOGISTICS**

December 31, 2016

**VALERIE RIVERS  
DEPUTY DIRECTOR /LOGISTICS**

---

**WAREHOUSE/BUILDING MAINTENANCE/CANAL MAINTENANCE/FLEET MANAGEMENT**

JOHN WILSON

**PURCHASING**

WILLIE MINGO

**ECONOMICALLY DISADVANTAGED BUSINESS PROGRAM**

VACANT

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF GENERAL SUPERINTENDENT**

December 31, 2016

**JOSEPH BECKER  
GENERAL SUPERINTENDENT/OPERATIONS**

---

**WATER DISTRIBUTION MAINTENANCE and SEWER  
COLLECTION MAINTENANCE**

STEVE BASS

**POWER PRODUCTION and DISTRIBUTION/WATER TREATMENT and PUMPING/  
WASTEWATER TREATMENT OPERATION/SEWER PUMPING and DRAINAGE  
PUMPING/STREET DRAINAGE MAINTENANCE**

VINCENT FOUCHI

**FACILITY MAINTENANCE**

GABE SIGNORELLI

**PLUMBING**

JAY ARNOLD

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DIVISION HEADS OF DEPUTY GENERAL SUPERINTENDENT**

December 31, 2016

**BRUCE ADAMS  
DEPUTY GENERAL SUPERINTENDENT/CONSTRUCTION**

---

**CAPITAL PLANNING/WATER TREATMENT, WASTEWATER TREATMENT, PUMPING,  
ELECTRICAL and NETWORKS ENGINEERING**

RON SPOONER

**ENVIRONMENTAL AFFAIRS and REGULATORY COMPLIANCE**

ANN WILSON

**JOINT INFRASTRUCTURE REPLACEMENT PROGRAM**

RICK HOFFER

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# FINANCIAL SECTION



*Filter media in Claiborne Filter No. 5 is being replaced as part of a comprehensive rehabilitation of the rapid sand filters at the Claiborne Filter Gallery. Rapid Sand Filtration to remove fine particulate matter is the final step in our treatment process. These filters consist of layers of sand and anthracite supported by gravel. The filters are cleaned by backwashing at least once per week and the filter media in them is replaced every ten years. In these pictures, workers have removed the old filter media and are installing the gravel layer of the new filter media.*



*Sewerage and Water Board is making system-wide upgrades to its water, sewer, drainage and power systems. This electrical feeder cable installation is an upgrade to the power generation system. The Board's Power Generation System went on-line in the early 1900s and has served the city well through the years. This project will upgrade, replace or retire many of the service lines, thereby enhancing the life of the power system for years to come. These underground electrical lines or cables called feeders provide power to critical sewer and drainage pumping stations through many distribution routes around the city. This photo captures a cable being pulled underground approximately 1,000 feet to a manhole that leads to a pumping station. It will provide more reliable power to the station.*



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One Galleria Boulevard, Suite 2100 - Metairie, LA 70001  
800-201-7332 Phone - 504-837-5990 Phone - 504-834-3609 Fax - [pncpa.com](http://pncpa.com)

A Professional Accounting Corporation

## **INDEPENDENT AUDITORS' REPORT**

Members of the Board of Directors  
Sewerage and Water Board of New Orleans

### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Sewerage and Water Board of New Orleans (the Board) as of and for the years ended December 31, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the Board's basic financial statements as listed in the table of contents.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditors' Responsibility**

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.



## Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and the fiduciary fund of the Board, as of December 31, 2016 and 2015, and the respective changes in financial position, and, where applicable, cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

## Other Matters

### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages II-4 through II-19 and the schedules presented on pages II-66 through II-68 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### *Other Information*

Our audits were conducted for the purpose of forming opinions on the financial statements that collectively comprise the Board's basic financial statements. The Introductory Section, Schedules 1 through 7, the Statistical Information section, and Supplementary Information section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

Schedules 1 through 7 are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedules 1 through 7 are fairly stated, in all material respects, in relation to the financial statements as a whole.

The Introductory, Statistical Information, and Supplementary Information sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.



**Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated June 27, 2017, on our consideration of the Board's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Board's internal control over financial reporting and compliance.

*Postlethwaite & Netterville*

New Orleans, Louisiana  
June 27, 2017

## **SEWERAGE & WATER BOARD OF NEW ORLEANS**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015**

This section of Sewerage & Water Board of New Orleans' (the Board) annual financial report presents a discussion and analysis of the Board's financial performance during the fiscal years that ended December 31, 2016 and 2015. We encourage readers to consider the information presented here in conjunction with the additional information that we have furnished in our letter of transmittal. The Board's financial statements follow this section.

#### **FINANCIAL HIGHLIGHTS**

The Board adopted a financial plan for 2011 through 2020 that resulted in improved debt service coverage, increased liquidity, increased funding for operations and maintenance, and full funding for the capital improvement programs. This financial plan was updated in late 2016 to cover 2017 through 2020.

Recovery from Hurricane Katrina and the resulting flooding continued to be a significant event during 2016. Repairs and replacements to the water, sewerage, and drainage systems, and rehabilitation and replacement of buildings will continue through 2025.

#### **Enterprise Fund**

The major highlights in the Board's enterprise fund were as follows:

##### **2016**

- The Board's additions to its major systems approximated \$266.1 million.
- The Southeast Louisiana (SELA) drainage system project, a major upgrade by the Corps of Engineers, resulted in additions of approximately \$122.3 million to work in progress during the year.
- Federal Emergency Management Agency (FEMA) Disaster Public Assistance grants revenues totaled approximately \$21.9 million in Disaster Assistance grants and \$18.6 million in Hazard Mitigation grants for capital contributions.
- Revenues from Water and Sewer services increased by approximately \$14.3 million to a total of approximately \$188.6 million for the year ended December 31, 2016.

##### **2015**

- The Board's additions to its major systems approximated \$258.2 million.
- The Southeast Louisiana (SELA) project, which is a major upgrade to the drainage system by the Corps of Engineers, resulted in additions of approximately \$131.8 million to work in progress during the year.
- Federal Emergency Management Agency (FEMA) Disaster Public Assistance grants revenues totaled approximately \$24.8 million in Disaster Assistance grants and \$14.3 million in Hazard Mitigation grants for capital contributions.

## SEWERAGE & WATER BOARD OF NEW ORLEANS

### MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015

#### **Pension Trust Fund**

The major highlights in the Board's fiduciary fund were as follows:

#### **2016**

The net appreciation of the fair value of investments was \$11.8 million in 2016 compared to a net depreciation of \$5.0 million in 2015. The net position restricted for pension benefits increased \$1.9 million during 2016 to \$224.4 million at December 31, 2016.

#### **2015**

The net depreciation of the fair value of investments was \$5.0 million in 2015 compared to a net appreciation of \$10.8 million in 2014. The net position restricted for pension benefits decreased \$14.1 million during 2015 to \$222.4 million at December 31, 2015.

#### **OVERVIEW OF THE FINANCIAL STATEMENTS**

This financial report consists of five parts: management's discussion and analysis (this section), the financial statements, the notes to the financial statements, required supplementary information, and other supplementary information.

#### **Government-wide Financial Statements – Enterprise Fund**

The Board's principal activities of providing water, sewerage, and drainage services are accounted for in a single proprietary fund – the enterprise fund. Enterprise funds are used to report business activities. Since the enterprise fund is the Board's single activity, its financial statements are presented as the Board's government-wide financial statements.

The financial statements provide both long-term and short-term information about the Board's overall financial status. The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of required supplementary information and other supplementary information that further explain and support the information in the financial statements.

The Board's financial statements are prepared on an accrual basis in conformity with accounting principles generally accepted in the United States of America (GAAP) as applied to government units. Under this basis of accounting, revenues are recognized in the period in which they are earned, expenses are recognized in the period in which they are incurred, and depreciation of property, plant, and equipment is recognized in the Statements of Revenues, Expenses, and Changes in Net Position. All assets and liabilities associated with the operation of the Board are included in the Statements of Net Position.

The Statement of Net Position presents financial information on all of the Board's assets, liabilities, and deferred inflows/outflows of resources, with the difference reported as net position. Over time, increases and decreases in net position may serve as a useful indicator of whether the financial position of the Board is improving or deteriorating.

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

**Fund Financial Statements – Pension Trust Fund**

The Board's fund financial statements consist of its pension trust fund. As a fiduciary fund, the pension trust fund is held for the benefit of employees and retirees of the Board. The pension trust fund is not reflected in the government-wide financials because the resources are not available to the Board for its activities. The accounting for the pension trust fund is much like that used by the enterprise fund.

**FINANCIAL ANALYSIS OF THE BOARD**

**ENTERPRISE FUND**

**2016 Net Position**

The Board's total assets and deferred outflows at December 31, 2016 were approximately \$3.2 billion, a 6.1% increase from December 31, 2015 (see Table A-1).

Table A-1 Sewerage & Water Board of New Orleans Net Position				
	2016	2015	Increase (Decrease)	Increase (Decrease)
Current unrestricted assets	\$ 219,980,110	\$ 187,055,968	\$ 32,924,142	17.6%
Restricted assets	219,761,583	283,787,405	(64,025,822)	-22.6%
Property, plant, and equipment - net	2,744,691,660	2,526,881,205	217,810,455	8.6%
Other assets	11,824,788	11,230,019	594,769	5.3%
<b>Total assets</b>	<b>3,196,258,141</b>	<b>3,008,954,597</b>	<b>187,303,544</b>	<b>6.2%</b>
Deferred outflows of resources	20,506,855	23,034,899	(2,528,044)	-11.0%
<b>Total deferred outflows of resources</b>	<b>20,506,855</b>	<b>23,034,899</b>	<b>(2,528,044)</b>	<b>-11.0%</b>
<b>Total assets and deferred outflows</b>	<b>\$ 3,216,764,996</b>	<b>\$ 3,031,989,496</b>	<b>\$ 184,775,500</b>	<b>6.1%</b>
Current liabilities	\$ 119,385,673	\$ 112,494,485	\$ 6,891,188	6.1%
Long-term liabilities	866,560,942	833,881,798	32,679,144	3.9%
<b>Total liabilities</b>	<b>985,946,615</b>	<b>946,376,283</b>	<b>39,570,332</b>	<b>4.2%</b>
Deferred inflows of resources	2,396,433	2,924,898	(528,465)	-18.1%
<b>Total deferred inflows of resources</b>	<b>2,396,433</b>	<b>2,924,898</b>	<b>(528,465)</b>	<b>-18.1%</b>
Net position:				
Net investment in capital assets	2,415,192,603	2,009,322,572	405,870,031	20.2%
Restricted	217,654,082	281,919,904	(64,265,822)	-22.8%
Unrestricted	(404,424,737)	(208,554,161)	(195,870,576)	93.9%
<b>Total net position</b>	<b>2,228,421,948</b>	<b>2,082,688,315</b>	<b>145,733,633</b>	<b>7.0%</b>
<b>Total liabilities, deferred inflows, and net position</b>	<b>\$ 3,216,764,996</b>	<b>\$ 3,031,989,496</b>	<b>\$ 184,775,500</b>	<b>6.1%</b>

## **SEWERAGE & WATER BOARD OF NEW ORLEANS**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015**

The net increase in total assets of \$187.3 million resulted primarily due to an increase in property, plant, and equipment of \$217.8 million and an increase in current unrestricted assets of \$32.9 million. The increase in current unrestricted assets is due primarily to the increase in cash and cash equivalents of \$18.9 million as a result of an increase in revenue and cash receipts from customer accounts. Restricted assets decreased \$64.0 million in 2016 mainly due to a decrease in restricted investments of approximately \$65.5 million used for capital expenditures. Long-term liabilities increased by \$32.7 million primarily due to an increase in the Southeast Louisiana Project liability of \$48.2 million. Deferred outflows of resources and deferred inflows of resources decreased by \$2.5 million and \$528,000, respectively, due to changes in actuary's assumption on investment returns and demographic factors related to the pension plan.

## SEWERAGE & WATER BOARD OF NEW ORLEANS

### MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015

#### 2015 Net Position

The Board's total assets at December 31, 2015 were approximately \$3.0 billion, a 15.7% increase from December 31, 2014 (see Table A-2).

<b>Table A-2</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Net Position</b>				
	<b>2015</b>	<b>2014</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Current unrestricted assets	\$ 187,055,968	\$ 142,627,550	\$ 44,428,418	31.1%
Restricted assets	283,787,405	126,226,933	157,560,472	124.8%
Property, plant, and equipment - net	2,526,881,205	2,319,999,281	206,881,924	8.9%
Other assets	11,230,019	10,753,170	476,849	4.4%
<b>Total assets</b>	<b>3,008,954,597</b>	<b>2,599,606,934</b>	<b>409,347,663</b>	<b>15.7%</b>
Deferred outflows of resources	23,034,899	8,101,400	14,933,499	184.3%
<b>Total deferred outflows of resources</b>	<b>23,034,899</b>	<b>8,101,400</b>	<b>14,933,499</b>	<b>184.3%</b>
<b>Total assets and deferred outflows</b>	<b>\$ 3,031,989,496</b>	<b>\$ 2,607,708,334</b>	<b>\$ 424,281,162</b>	<b>16.3%</b>
Current liabilities	\$ 112,494,485	\$ 120,746,138	\$ (8,251,653)	-6.8%
Long-term liabilities	833,881,798	556,181,825	277,699,973	49.9%
<b>Total liabilities</b>	<b>946,376,283</b>	<b>676,927,963</b>	<b>269,448,320</b>	<b>39.8%</b>
Deferred inflows of resources	2,924,898	1,475,322	1,449,576	98.3%
<b>Total deferred inflows of resources</b>	<b>2,924,898</b>	<b>1,475,322</b>	<b>1,449,576</b>	<b>98.3%</b>
Net position:				
Net investment in capital assets	2,009,322,572	2,013,060,377	(3,737,805)	-0.2%
Restricted	281,919,904	99,356,835	182,563,069	183.7%
Unrestricted	(208,554,161)	(183,112,163)	(25,441,998)	13.9%
<b>Total net position</b>	<b>2,082,688,315</b>	<b>1,929,305,049</b>	<b>153,383,266</b>	<b>8.0%</b>
<b>Total liabilities, deferred inflows, and net position</b>	<b>\$ 3,031,989,496</b>	<b>\$ 2,607,708,334</b>	<b>\$ 424,281,162</b>	<b>16.3%</b>

The net increase in total assets of \$409.3 million resulted primarily due to an increase in property, plant, and equipment of \$206.9 million, an increase of \$157.6 million in restricted assets, and an increase in current unrestricted assets of \$44.4 million. The increase in restricted assets was primarily due to unspent 2015 bond proceeds that are restricted for debt service and capital projects. The increase in current unrestricted assets is due primarily to the increase in cash and cash equivalents designated for capital projects of \$46.7 million as a result of reimbursements from the governments in addition to an increase in revenue and cash receipts from customer accounts. Long-term liabilities increased by \$277.7 million primarily due to an increase in long-term portion of bonds payable of \$209.0 million as a result of the issuance of the Series 2015 Water Revenue Bonds and Series 2015 Sewerage Revenue Bonds, in addition to an increase of \$49.0 million in the Southeast Louisiana Project liability. Furthermore, the net pension liability increased by \$17.3 million in 2015 to a total of \$77.0 million compared to a total of \$59.7 million in 2014. Deferred outflows of resources and deferred inflows of resources increased by \$14.9 million and \$1.4 million, respectively, due to changes in actuary's assumption on investment returns and demographic factors related to the pension plan.

## SEWERAGE & WATER BOARD OF NEW ORLEANS

### MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015

#### 2016 Changes in Net Position

The change in net position for the year ended December 31, 2016 was an increase of approximately \$145.7 million, as opposed to approximately \$153.4 million for the year ended December 31, 2015. The Board's total operating revenues, excluding other revenue, increased by 8.2% to approximately \$188.6 million due primarily to rate increases effective January 1, 2016, and other revenue decreased by \$4.2 million due to a decrease in legal settlement in 2016. Total non-operating revenue increased by 19.2% to approximately \$61.3 million due to a combination of increases in property taxes. Capital contributions from federal grants and construction of Board property was approximately \$119.6 million resulting primarily from capital additions reimbursable under the FEMA Disaster Public Assistance and FEMA Hazard Mitigation grants of approximately \$21.9 million and \$18.6 million, respectively, and approximately \$79.5 million of capital contributions by the Army Corps of Engineers. The changes in net position are detailed in Table A-3; operating expenses are detailed in Table A-4.

<b>Table A-3</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Revenues , Expenses and Change in Net Position</b>				
	<b>2016</b>	<b>2015</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Operating revenues:				
Sales of water and delinquent fees	\$ 83,158,940	\$ 78,007,937	\$ 5,151,003	6.6%
Sewerage service charges	104,795,184	95,636,966	9,158,218	9.6%
Plumbing inspection and license fees	638,502	610,768	27,734	4.5%
Other revenue	4,078,380	8,290,157	(4,211,777)	-50.8%
<b>Total operating revenues</b>	<b>192,671,006</b>	<b>182,545,828</b>	<b>10,125,178</b>	<b>5.5%</b>
Operating expenses (Table A-4)	227,798,026	212,448,361	15,349,665	7.2%
Operating loss	(35,127,020)	(29,902,533)	(5,224,487)	-17.5%
Non-operating revenues:				
Property taxes	56,029,548	49,855,922	6,173,626	12.4%
Other taxes	564,050	581,395	(17,345)	-3.0%
Operating and maintenance grants	24,738	2,405	22,333	928.6%
Bond issuance costs	-	(1,510,657)	1,510,657	-100.0%
Investment income	4,634,999	2,457,528	2,177,471	88.6%
<b>Total non-operating revenues</b>	<b>61,253,335</b>	<b>51,386,593</b>	<b>9,866,742</b>	<b>19.2%</b>
Income before capital contributions	26,126,315	21,484,060	4,642,255	21.6%
Capital contributions	119,607,318	131,899,206	(12,291,888)	-9.3%
<b>Change in net position</b>	<b>145,733,633</b>	<b>153,383,266</b>	<b>(7,649,633)</b>	<b>-5.0%</b>
Net position, beginning of year	2,082,688,315	1,929,305,049	153,383,266	8.0%
Net position, end of year	\$ 2,228,421,948	\$ 2,082,688,315	\$ 145,733,633	7.0%

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

<b>Table A-4</b>				
<b>Sewerage &amp; Water Board</b>				
<b>Operating Expenses</b>				
	<b>2016</b>	<b>2015</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Power and pumping	\$ 13,499,216	\$ 13,139,255	\$ 359,961	2.7%
Treatment	20,300,344	18,740,637	1,559,707	8.3%
Transmission and distribution	37,174,706	35,878,137	1,296,569	3.6%
Customer accounts	4,151,027	3,807,405	343,622	9.0%
Customer service	4,271,555	3,973,344	298,211	7.5%
Administration and general	18,506,107	16,848,253	1,657,854	9.8%
Payroll related	43,990,879	36,349,834	7,641,045	21.0%
Maintenance of general plant	23,979,309	27,148,505	(3,169,196)	-11.7%
Depreciation	52,060,674	51,661,651	399,023	0.8%
Provision for doubtful accounts	3,413,404	2,466,131	947,273	38.4%
Provision for claims	6,450,805	2,435,209	4,015,596	164.9%
Total operating expenses	<u>\$ 227,798,026</u>	<u>\$ 212,448,361</u>	<u>\$ 15,349,665</u>	<u>7.2%</u>

Total operating expenses increased by approximately \$15.3 million or 7.2% compared to 2015. Increase in provision for claims was mainly attributable to a \$4.2 million increase in general liabilities claims from 2015. In addition, payroll related costs increased by approximately \$7.6 million as a result of a \$5.4 million non-cash expense related to pension benefits and \$2.2 million increase in personnel costs. Maintenance of general plant decreased \$3.2 million as a result of a \$1.5 million decrease in expenditures on the central yard administrative building and a \$1.5 million decrease in expenditures on overall maintenance.

**2015 Changes in Net Position**

The change in net position for the year ended December 31, 2015 was an increase of approximately \$153.4 million, as opposed to approximately \$151.9 million for the year ended December 31, 2014. The Board's total operating revenues increased by 11.9% to approximately \$182.5 million due primarily for rate increases effective January 1, 2015, and total non-operating revenue increased by 11.1% to approximately \$51.4 million due to a combination of increases in property taxes and investment income. Capital contributions from federal grants and construction of Board property was approximately \$130.5 million resulting primarily from capital additions reimbursable under the FEMA Disaster Public Assistance and FEMA Hazard Mitigation grants of approximately \$24.8 million and \$14.3 million, respectively, and approximately \$85.7 million of capital contributions by the Army Corps of Engineers. The changes in net position are detailed in Table A-5; operating expenses are detailed in Table A-6.

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

<b>Table A-5</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Revenues , Expenses and Change in Net Position</b>				
	<b>2015</b>	<b>2014</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Operating revenues:				
Sales of water and delinquent fees	\$ 78,007,937	\$ 70,818,255	\$ 7,189,682	10.2%
Sewerage service charges	95,636,966	86,553,262	9,083,704	10.5%
Plumbing inspection and license fees	610,768	678,352	(67,584)	-10.0%
Other revenue	8,290,157	5,024,480	3,265,677	65.0%
<b>Total operating revenues</b>	<b>182,545,828</b>	<b>163,074,349</b>	<b>19,471,479</b>	<b>11.9%</b>
Operating expenses (Table A-4)	212,448,361	199,360,096	13,088,265	6.6%
Operating loss	(29,902,533)	(36,285,747)	6,383,214	17.6%
Non-operating revenues:				
Property taxes	49,855,922	47,534,646	2,321,276	4.9%
Other taxes	581,395	572,083	9,312	1.6%
Operating and maintenance grants	2,405	1,502	903	60.1%
Bond issuance costs	(1,510,657)	(2,649,339)	1,138,682	-43.0%
Investment income	2,457,528	811,263	1,646,265	202.9%
<b>Total non-operating revenues</b>	<b>51,386,593</b>	<b>46,270,155</b>	<b>5,116,438</b>	<b>11.1%</b>
Income before capital contributions	21,484,060	9,984,408	11,499,652	115.2%
Capital contributions	131,899,206	141,873,884	(9,974,678)	-7.0%
<b>Change in net position</b>	<b>153,383,266</b>	<b>151,858,292</b>	<b>1,524,974</b>	<b>1.0%</b>
Net position, beginning of year	1,929,305,049	1,777,446,757	151,858,292	8.5%
Net position, end of year	\$ 2,082,688,315	\$ 1,929,305,049	\$ 153,383,266	8.0%

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

<b>Table A-6</b>				
<b>Sewerage &amp; Water Board</b>				
<b>Operating Expenses</b>				
	<b>2015</b>	<b>2014</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Power and pumping	\$ 13,139,255	\$ 13,227,389	\$ (88,134)	-0.7%
Treatment	18,740,637	19,527,000	(786,363)	-4.0%
Transmission and distribution	35,878,137	27,186,606	8,691,531	32.0%
Customer accounts	3,807,405	3,514,360	293,045	8.3%
Customer service	3,973,344	3,717,925	255,419	6.9%
Administration and general	16,848,253	16,976,430	(128,177)	-0.8%
Payroll related	36,349,834	32,488,264	3,861,570	11.9%
Maintenance of general plant	27,148,505	28,178,593	(1,030,088)	-3.7%
Depreciation	51,661,651	50,157,869	1,503,782	3.0%
Provision for doubtful accounts	2,466,131	1,940,782	525,349	27.1%
Provision for claims	2,435,209	2,444,878	(9,669)	-0.4%
<b>Total operating expenses</b>	<b>\$ 212,448,361</b>	<b>\$ 199,360,096</b>	<b>\$ 13,088,265</b>	<b>6.6%</b>

Total operating expenses increased by approximately \$13.1 million or 6.6% compared to 2014. Increase in transmission and distributions costs were mainly attributable to an increase of \$4.0 million in water point repairs and \$4.2 million in sewer point repairs in 2015 compared to 2014. In addition, payroll related costs increased by approximately \$3.9 million as a result of a \$3.4 million non-cash expense related to pension benefits.

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

**PENSION TRUST FUND**

**2016 Plan Net Position**

The Board's total plan assets and net position of its pension trust fund at December 31, 2016 was approximately \$224.4 million, a 0.9% increase from December 31, 2015 (see table A-7).

Plan net position increased by approximately \$1.9 million in 2016 primarily due to appreciation in fair market value of investment by approximately \$12.6 million and contributions of \$10.1 million offset by benefit payments and other deductions totaling \$20.7 million in 2016.

<b>Table A-7</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Pension Trust Fund Net Position</b>				
	<b>2016</b>	<b>2015</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Cash	\$ 40,495	\$ 317,096	\$ (276,601)	-87.2%
Investments	224,250,456	221,077,262	3,173,194	1.4%
Receivables	111,733	105,336	6,397	6.1%
Other assets	-	927,833	(927,833)	-100.0%
<b>Total assets</b>	<b>224,402,684</b>	<b>222,427,527</b>	<b>1,975,157</b>	<b>0.9%</b>
Other liabilities	\$ 46,423	\$ -	\$ 46,423	0.0%
<b>Total liabilities</b>	<b>46,423</b>	<b>-</b>	<b>46,423</b>	<b>0.0%</b>
<b>Plan net position</b>	<b>\$ 224,356,261</b>	<b>\$ 222,427,527</b>	<b>\$ 1,928,734</b>	<b>0.9%</b>

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

**2015 Plan Net Position**

The Board's total plan assets and net position of its pension trust fund at December 31, 2015 was approximately \$222.4 million, a 6.0% decrease from December 31, 2014 (see table A-8).

Plan net position decreased by approximately \$14.1 million in 2015 primarily due to depreciation in fair market value of investments, by approximately \$4.1 million and contributions of \$10.3 million offset by benefit payments and other deductions totaling \$20.2 million in 2015.

<b>Table A-8</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Plan Net Position</b>				
	<b>2015</b>	<b>2014</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
Cash	\$ 317,096	\$ 1,950,862	\$ (1,633,766)	-83.7%
Investments	221,077,262	233,026,769	(11,949,507)	-5.1%
Receivables	105,336	146,366	(41,030)	-28.0%
Other assets	927,833	1,432,674	(504,841)	-35.2%
<b>Total assets</b>	<b>222,427,527</b>	<b>236,556,671</b>	<b>(14,129,144)</b>	<b>-6.0%</b>
<b>Plan net position</b>	<b>\$ 222,427,527</b>	<b>\$ 236,556,671</b>	<b>\$ (14,129,144)</b>	<b>-6.0%</b>

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

**2016 Changes in Plan Net Position**

Change in net position increased by \$16.1 million mainly attributable to a \$12.6 million net investment income compared to a net investment loss of \$4.1 million in 2015. The increase in net investment income is due to overall market conditions and earnings from investments.

<b>Table A-9</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Change in Plan Net Position</b>				
	<b>2016</b>	<b>2015</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
<b>Additions:</b>				
Contributions	\$ 10,101,344	\$ 10,259,600	\$ (158,256)	-1.5%
Net (loss) income on investments	12,569,604	(4,144,141)	16,713,745	-403.3%
<b>Total additions</b>	<b>22,670,948</b>	<b>6,115,459</b>	<b>16,555,489</b>	<b>270.7%</b>
<b>Deductions:</b>				
Benefits	(15,757,292)	(15,281,673)	(475,619)	3.1%
Employee refunds	(421,087)	(351,266)	(69,821)	19.9%
Employee DROP contributions	(4,563,835)	(4,611,664)	47,829	-1.0%
<b>Total deductions</b>	<b>(20,742,214)</b>	<b>(20,244,603)</b>	<b>(497,611)</b>	<b>2.5%</b>
<b>Change in net position</b>	<b>1,928,734</b>	<b>(14,129,144)</b>	<b>16,057,878</b>	<b>-113.7%</b>
Plan net position, beginning of year	222,427,527	236,556,671	(14,129,144)	-6.0%
Plan net position, end of year	<b>\$ 224,356,261</b>	<b>\$ 222,427,527</b>	<b>\$ 1,928,734</b>	<b>0.9%</b>

**SEWERAGE & WATER BOARD OF NEW ORLEANS**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
YEARS ENDED DECEMBER 31, 2016 AND 2015**

**2015 Changes in Plan Net Position**

Net income (loss) on investments decreased by \$15.5 million or 136.5% during 2015 compared to 2014 due to market conditions, changes in investment mix, and deductions exceeding the additions in 2015. The decrease in plan net position of \$14.1 million resulted primarily from the decrease noted above in unrealized loss on investments of \$16.9 million and realized gain on sales of investments of \$11.9 million in 2015.

<b>Table A-10</b>				
<b>Sewerage &amp; Water Board of New Orleans</b>				
<b>Change in Plan Net Position</b>				
	<b>2015</b>	<b>2014</b>	<b>Increase (Decrease)</b>	<b>Increase (Decrease)</b>
<b>Additions:</b>				
Contributions	\$ 10,259,600	\$ 9,592,835	\$ 666,765	7.0%
Net (loss) income on investments	(4,144,141)	11,354,226	(15,498,367)	-136.5%
<b>Total additions</b>	<b>6,115,459</b>	<b>20,947,061</b>	<b>(14,831,602)</b>	<b>-70.8%</b>
<b>Deductions:</b>				
Benefits	(15,281,673)	(13,973,343)	(1,308,330)	9.4%
Employee refunds	(351,266)	(140,938)	(210,328)	149.2%
Employee DROP contributions	(4,611,664)	(4,634,674)	23,010	-0.5%
<b>Total deductions</b>	<b>(20,244,603)</b>	<b>(18,748,955)</b>	<b>(1,495,648)</b>	<b>8.0%</b>
<b>Change in net position</b>	<b>(14,129,144)</b>	<b>2,198,106</b>	<b>(16,327,250)</b>	<b>-742.8%</b>
Plan net position, beginning of year	236,556,671	234,358,565	2,198,106	0.9%
Plan net position, end of year	<b>\$ 222,427,527</b>	<b>\$ 236,556,671</b>	<b>\$ (14,129,144)</b>	<b>-6.0%</b>

## SEWERAGE & WATER BOARD OF NEW ORLEANS

### MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015

#### CAPITAL ASSET AND DEBT ADMINISTRATION

##### 2016 Capital Assets

As of December 31, 2016, the Board had invested approximately \$3.67 billion in capital assets. Net of accumulated depreciation, the Board's net capital assets at December 31, 2016 totaled approximately \$2.74 billion. This amount represents a net increase (including additions and disposals, net of depreciation) of approximately \$214.6 million, or 8.5%, over December 31, 2015.

At December 31, 2016, the Board's budget for its 10 year capital improvements program totaled approximately \$2.68 billion including approximately \$1 billion for water, \$684.3 million for sewerage and \$935.7 million for drainage. Due to certain regulatory and legislative changes, additional capital improvements will probably be required. Future capital improvement program expenditures may require the issuance of additional debt depending on the amount and timing of expenditures. As of December 31, 2016, the Board has committed or appropriated \$49.5 million in investments for use in future capital projects and has approximately \$186.3 million remaining in restricted cash, cash equivalents, and investments for construction.

The capital improvements budget for 2017 is \$369.2 million, including \$111.3 million for projects which are expected to be funded by federal grants and programs. Significant projects included in property, plant and equipment in progress as of December 31, 2016 include the following:

Hurricane Katrina-related Repairs and Replacements  
Southeast Louisiana Flood Control Program  
Sewer System Sanitation Evaluation and Rehabilitation Program  
Eastbank Sewer Treatment Plant  
Westbank Sewer Treatment Plant  
Wetlands Assimilation Project  
Hazard Mitigation Grant Program

See Note 4 for detailed capital asset activity during 2016.

##### 2015 Capital Assets

As of December 31, 2015, the Board had invested approximately \$3.40 billion in capital assets. Net of accumulated depreciation, the Board's net capital assets at December 31, 2015 totaled approximately \$2.53 billion. This amount represents a net increase (including additions and disposals, net of depreciation) of approximately \$206.9 million, or 8.9%, over December 31, 2014.

At December 31, 2015, the Board's budget for its 10 year capital improvements program totaled approximately \$2.57 billion including approximately \$1 billion for water, \$673.8 million for sewerage and \$919.1 million for drainage. Due to certain regulatory and legislative changes, additional capital improvements will probably be required. Future capital improvement program expenditures may require the issuance of additional debt depending on the amount and timing of expenditures. As of December 31, 2015, the Board has committed or appropriated \$68.9 million in investments for use in future capital projects and has approximately \$235.7 million remaining in restricted cash, cash equivalents, and investments for construction.

## SEWERAGE & WATER BOARD OF NEW ORLEANS

### MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015

The capital improvements budget for 2016 is \$379.1 million, including \$185.7 million for projects which are expected to be funded by federal grants and programs. Significant projects included in property, plant and equipment in progress as of December 31, 2015 include the following:

Hurricane Katrina-related Repairs and Replacements  
Southeast Louisiana Flood Control Program  
Sewer System Sanitation Evaluation and Rehabilitation Program  
Eastbank Sewer Treatment Plant  
Westbank Sewer Treatment Plant  
Wetlands Assimilation Project  
Hazard Mitigation Grant Program

See Note 4 for detailed capital asset activity during 2015.

#### **2016 Debt Administration**

The Board continues to make its regularly scheduled payments on its bonds. During 2016, \$14.8 million in principal payments were made.

The Louisiana Department of Environmental Quality has committed to loan the Board up to \$9 million to fund construction of sewerage treatment works, implementing a management program under Section 1329 of the Water Quality Act of 1987, and developing and implementing a conservation and management plan under Section 1330 of the Federal Act. The outstanding balance is \$7.3 million at December 31, 2016.

See Note 6 for detailed long term debt activity during 2016.

#### **2015 Debt Administration**

During 2015, the Board issued \$100,000,000 in Series 2015 Sewerage Service Revenue Bonds with an original issue premium of \$12,826,410 and a final maturity of December 1, 2045. The Board also issued \$100,000,000 in Series 2015 Water Service Revenue Bonds with an original issue premium of \$12,686,122 and a final maturity of December 1, 2045. Bond proceeds of \$104,193,000 and \$103,936,000 were restricted for capital projects for Sewerage and Water, respectively.

The Board continues to make its regularly scheduled payments on its bonds. During 2015, \$12.9 million in principal payments were made.

The Louisiana Department of Environmental Quality has committed to loan the Board up to \$9 million to fund construction of sewerage treatment works, implementing a management program under Section 1329 of the Water Quality Act of 1987, and developing and implementing a conservation and management plan under Section 1330 of the Federal Act. The outstanding balance is \$7.6 million at December 31, 2015.

See Note 6 for detailed long term debt activity during 2015.

## **SEWERAGE & WATER BOARD OF NEW ORLEANS**

### **MANAGEMENT'S DISCUSSION AND ANALYSIS YEARS ENDED DECEMBER 31, 2016 AND 2015**

#### **ECONOMIC FACTORS AND RATES**

The Board, the City Council, and the Board of Liquidation City Debt approved a rate increase of ten percent for the Water and Sewer Departments effective January 1, 2013 and annually thereafter through 2020. The Board also authorized a study to identify the long-term revenue requirement for the drainage system and implementation methodologies for potential new revenue streams.

To meet the bond covenant for the 2014 Water and Sewer Revenue and Refunding Bonds and 2015 Water and Sewer Revenue Bonds, the cash in days is required to maintain 90 days of cash monthly. The Board has exceeded the goals by 189 days and 389 days in the Water and Sewer system, respectively.

The total number of open accounts continues to increase modestly on an annual basis. The total open accounts in 2016 were 135,027, an increase of 1,123 over 2015 open accounts of 133,904.

#### **CONTACTING THE BOARD'S FINANCIAL MANAGEMENT**

This financial report is designed to provide our bondholders, patrons, and other interested parties with a general overview of the Board's finances and to demonstrate the Board's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the Sewerage & Water Board of New Orleans at (504) 585-2356.

## **BASIC FINANCIAL STATEMENTS**

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**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**STATEMENTS OF NET POSITION**  
**December 31, 2016 and 2015**

	<b>2016</b>	<b>2015</b>
<b>ASSETS AND DEFERRED OUTFLOWS OF RESOURCES</b>		
Current assets:		
Unrestricted and undesignated		
Cash and cash equivalents	\$ 43,595,508	\$ 24,689,703
Accounts receivable:		
Customers, net of allowance	26,394,894	18,367,590
Taxes	9,863,262	8,044,268
Grants	63,578,486	52,808,428
Miscellaneous	1,703,577	3,415,995
Inventory of supplies	4,756,195	5,303,745
Prepaid expenses	617,810	1,379,165
Total unrestricted and undesignated	150,509,732	114,008,894
Designated cash, cash equivalents, and investments:		
Cash and cash equivalents designated for capital projects	65,578,148	68,926,336
Other	3,892,230	4,120,738
Total designated cash, cash equivalents, and investments	69,470,378	73,047,074
Total current assets	219,980,110	187,055,968
Noncurrent assets:		
Restricted cash, cash equivalents, and investments:		
Cash and cash equivalents restricted for capital projects	170,436,101	235,720,245
Debt service reserve	47,217,981	46,199,659
Health insurance reserve	2,107,501	1,867,501
Total restricted cash, cash equivalents, and investments	219,761,583	283,787,405
Property, plant and equipment	3,669,235,817	3,403,857,647
Less: accumulated depreciation	924,544,157	876,976,442
Property, plant and equipment, net	2,744,691,660	2,526,881,205
Other assets:		
Designated cash for customer deposits	11,773,473	11,178,704
Deposits	51,315	51,315
Total other assets	11,824,788	11,230,019
Total noncurrent assets	2,976,278,031	2,821,898,629
Total assets	3,196,258,141	3,008,954,597
Deferred outflows of resources		
Deferred amounts related to net pension liability	16,904,538	19,080,030
Deferred loss on bond refunding	3,602,317	3,954,869
Total deferred outflows of resources	20,506,855	23,034,899
Total assets and deferred outflows of resources	\$ 3,216,764,996	\$ 3,031,989,496

(Continued)

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**STATEMENTS OF NET POSITION**  
**December 31, 2016 and 2015**  
**(Continued)**

	2016	2015
LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION		
Current liabilities (payable from current unrestricted assets):		
Accounts payable	\$ 40,019,085	\$ 38,939,024
Due to City of New Orleans	394,882	154,760
Disaster Reimbursement Revolving Loan (Note 13)	11,098,232	14,094,172
Retainers and estimates payable	9,593,411	8,320,253
Due to pension trust fund	150,212	132,932
Accrued salaries	840,861	571,197
Accrued vacation and sick pay	9,822,495	9,500,827
Claims payable	15,654,076	10,682,012
Debt Service Assistance Fund loan payable	4,627,616	4,422,414
Advances from federal government	6,369,909	7,561,533
Other liabilities	106,388	153,791
	<u>98,677,167</u>	<u>94,532,915</u>
Total current liabilities (payable from current unrestricted assets):		
Current liabilities (payable from current restricted assets):		
Accrued interest	2,236,098	2,768,828
Bonds payable	17,627,000	14,827,000
Retainers and estimates payable	845,408	365,742
	<u>20,708,506</u>	<u>17,961,570</u>
Total current liabilities (payable from current restricted assets):		
Total current liabilities	<u>119,385,673</u>	<u>112,494,485</u>
Long-term liabilities:		
Claims payable	1,550,695	2,490,568
Net pension liability	80,749,658	76,967,564
Other postretirement benefits liability	73,580,341	67,579,016
Bonds payable, net of current maturities	482,308,158	502,731,633
Southeast Louisiana Project liability	163,995,508	115,703,588
Debt Service Assistance Fund loan payable, net of current maturities	52,603,109	57,230,725
Customer deposits	11,773,473	11,178,704
	<u>866,560,942</u>	<u>833,881,798</u>
Total long-term liabilities		
Total liabilities	<u>985,946,615</u>	<u>946,376,283</u>
Deferred inflows of resources:		
Deferred amounts related to net pension liability	2,396,433	2,924,898
	<u>2,396,433</u>	<u>2,924,898</u>
Total deferred inflows of resources		
Net position:		
Net investment in capital assets	2,415,192,603	2,009,322,572
Restricted for debt service	47,217,981	46,199,659
Restricted for capital improvements	170,436,101	235,720,245
Unrestricted	(404,424,737)	(208,554,161)
	<u>2,228,421,948</u>	<u>2,082,688,315</u>
Total net position		
Total liabilities, deferred inflows of resources, and net position	<u>\$ 3,216,764,996</u>	<u>\$ 3,031,989,496</u>

See accompanying notes to financial statements.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**  
**For the years ended December 31, 2016 and 2015**

	<b>2016</b>	<b>2015</b>
Operating revenues:		
Sales of water and delinquent fees	\$ 83,158,940	\$ 78,007,937
Sewerage service charges	104,795,184	95,636,966
Plumbing inspection and license fees	638,502	610,768
Other revenue	4,078,380	8,290,157
Total operating revenues	192,671,006	182,545,828
Operating expenses:		
Power and pumping	13,499,216	13,139,255
Treatment	20,300,344	18,740,637
Transmission and distribution	37,174,706	35,878,137
Customer accounts	4,151,027	3,807,405
Customer service	4,271,555	3,973,344
Administration and general	18,506,107	16,848,253
Payroll related	43,990,879	36,349,834
Maintenance of general plant	23,979,309	27,148,505
Depreciation	52,060,674	51,661,651
Provision for doubtful accounts	3,413,404	2,466,131
Provision for claims	6,450,805	2,435,209
Total operating expenses	227,798,026	212,448,361
Operating loss	(35,127,020)	(29,902,533)
Non-operating revenues (expenses):		
Three-mill tax	16,043,825	14,139,193
Six-mill tax	16,215,799	14,290,667
Nine-mill tax	23,762,398	21,421,102
Two-mill tax	7,526	4,960
Other taxes	564,050	581,395
Federal noncapital grants	24,738	2,405
Interest income	4,667,470	2,511,046
Bond issuance costs	-	(1,510,657)
Interest expense	(32,471)	(53,518)
Total non-operating revenues	61,253,335	51,386,593
Income before capital contributions	26,126,315	21,484,060
Capital contributions	119,607,318	131,899,206
Change in net position	145,733,633	153,383,266
Net position, beginning of year	2,082,688,315	1,929,305,049
Net position, end of year	\$ 2,228,421,948	\$ 2,082,688,315

See accompanying notes to financial statements.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**STATEMENTS OF CASH FLOWS**  
**ENTERPRISE FUND**  
**For the years ended December 31, 2016 and 2015**

	<b>2016</b>	<b>2015</b>
Cash flows from operating activities		
Cash received from customers	\$ 177,348,307	\$ 169,633,900
Cash payments to suppliers for goods and services	(74,377,935)	(55,136,121)
Cash payments to employees for services	(76,371,844)	(89,256,648)
Other revenue	6,429,300	7,887,156
Net cash provided by operating activities	33,027,828	33,128,287
Cash flows from noncapital financing activities		
Proceeds from property taxes	54,774,604	50,523,996
Proceeds from federal noncapital grants	24,738	2,405
Net cash provided by noncapital financing activities	54,799,342	50,526,401
Cash flows from capital and related financing activities		
Acquisition and construction of capital assets	(121,191,935)	(119,361,237)
Principal payments and refundings of bonds payable	(14,474,448)	(12,906,475)
Proceeds from bonds payable	-	225,512,532
Payments for bond issuance costs	-	(1,510,657)
Principal payments on Debt Service Assistance Fund loan	(4,422,414)	(4,225,892)
Interest paid on bonds payable	(26,982,130)	(18,853,374)
Payments to construction fund	(3,632,953)	(3,803,850)
Proceeds from construction fund	2,759	9,662
Capital contributed by developers and federal grants	28,169,723	39,068,314
Net cash (used in) provided by capital and related financing activities	(142,531,398)	103,929,023
Cash flows from investing activities		
Investment income	6,602,284	3,063,263
Net cash provided by investing activities	6,602,284	3,063,263
Net (decrease) increase in cash	(48,101,944)	190,646,974
Cash at the beginning of the year	386,811,162	196,164,188
Cash at the end of the year	\$ 338,709,218	\$ 386,811,162
Reconciliation of cash, designated cash, and restricted cash (Note 2)		
Current assets - cash	\$ 43,595,508	\$ 24,689,703
Designated assets - cash	77,993,851	80,975,778
Restricted assets - cash	217,119,859	281,145,681
Total cash	\$ 338,709,218	\$ 386,811,162

**(Continued)**

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**STATEMENTS OF CASH FLOWS**  
**ENTERPRISE FUND**  
**For the years ended December 31, 2016 and 2015**  
**(Continued)**

	<b>2016</b>	<b>2015</b>
Reconciliation of operating loss to net cash provided by operating activities is as follows:		
Operating loss	\$ (35,127,020)	\$ (29,902,533)
Adjustments to reconcile net operating loss to net cash provided by operating activities:		
Depreciation	52,060,674	51,661,651
Provision for claims	6,450,805	2,435,209
Provision for doubtful accounts	3,413,404	2,466,131
Change in operating assets and liabilities:		
Increase in customer receivables	(11,440,708)	(4,482,440)
Decrease in inventory	547,550	163,356
(Increase) decrease in prepaid expenses and other receivables	2,473,773	(1,490,217)
Increase in deferred outflows of resources related to net pension liability	2,175,492	(15,286,024)
Increase in net pension obligation	3,782,094	17,279,512
Increase in accounts payable	4,194,015	5,337,677
Increase (decrease) in accrued salaries, due to pension and accrued vacation and sick pay	608,612	(1,268,497)
Increase in customer deposits	594,769	476,849
Increase in net other postretirement benefits liability	6,001,325	6,370,271
Decrease in other liabilities	(2,178,492)	(2,082,234)
Increase (decrease) in deferred outflows of resources related to net pension liability	(528,465)	1,449,576
Net cash provided by operating activities	\$ 33,027,828	\$ 33,128,287
Schedule of non-cash capital and related financing activities		
Contributions of capital assets	\$ 91,437,595	\$ 92,830,892
Additions of property, plant and equipment in accounts payable	\$ 18,657,727	\$ 21,771,681

See accompanying notes to financial statements.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**STATEMENTS OF FIDUCIARY NET POSITION**  
**PENSION TRUST FUND**  
**December 31, 2016 and 2015**

	2016	2015
Assets:		
Cash	\$ 40,495	\$ 317,096
Receivables:		
Investment income	77,982	75,514
Employee contributions receivable	33,751	29,822
Due from other fund	-	927,833
Investments:		
Money market	1,715,931	808,697
LAMP	13,779,922	13,160,048
Debt securities	79,742,033	76,945,620
Hedge funds	20,487,315	21,009,019
Equities	108,525,255	109,153,878
Total assets	224,402,684	222,427,527
Liabilities:		
Due to other fund	46,423	-
Total Liabilities	46,423	-
Net position - restricted for pension benefits	\$ 224,356,261	\$ 222,427,527

See accompanying notes to financial statements.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
STATEMENTS OF CHANGES IN FIDUCIARY PLAN NET POSITION  
PENSION TRUST FUND**

**For the years ended December 31, 2016 and 2015**

	<b>2016</b>	<b>2015</b>
<b>Additions:</b>		
<b>Contributions:</b>		
Employee contributions	\$ 2,064,387	\$ 1,905,689
Employer contributions	6,407,201	6,506,652
City annuity and other transfers in	1,629,756	1,847,259
Total contributions	10,101,344	10,259,600
<b>Investment income:</b>		
Interest income	252,515	215,889
Dividend income	1,321,127	1,659,812
Net appreciation (depreciation)	11,840,116	(5,013,057)
	13,413,758	(3,137,356)
Less: investment expense	844,154	1,006,785
Net investment income (loss)	12,569,604	(4,144,141)
Total additions	22,670,948	6,115,459
<b>Deductions:</b>		
Benefits	(15,757,292)	(15,281,673)
Employee refunds	(421,087)	(351,266)
Employee contributions to DROP	(4,563,835)	(4,611,664)
Total deductions	(20,742,214)	(20,244,603)
Change in net position	1,928,734	(14,129,144)
Net position restricted for pension benefits at beginning of year	222,427,527	236,556,671
Net position restricted for pension benefits at end of year	\$ 224,356,261	\$ 222,427,527

See accompanying notes to financial statements.

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**NOTES TO  
BASIC FINANCIAL STATEMENTS**

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**

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(1) Summary of Significant Accounting Policies

History and Organization

The major operation of the Sewerage and Water Board of New Orleans (the Board) is providing water, sewerage, and drainage services for the City of New Orleans (the City). The Sewerage and Water Board of New Orleans was created by Act 6 of the Louisiana Legislature of 1899 as a special board independent of the City's government to construct, maintain, and operate a water treatment and distribution system and a public sanitary sewerage system for the City. In 1903, the Legislature gave the Board control of and responsibility for the City's major drainage system and relieved the City of the duty of providing in its annual operating budget or otherwise for the maintenance and operations of the water, sewerage, and drainage systems.

In accordance with the Louisiana Revised Statutes (LRS) 33:4096 and 4121, the Board has the authority to establish the water and sewerage rates to charge to its customers. The rates are based on the actual water consumed and on the costs of maintenance and operation of the water and sewerage systems, including the costs of improvements and replacements. The collections of water and sewerage revenues are to be used by the Board for the maintenance and operation of the systems, the cost of improvements, betterments, and replacements and to provide for the payments of interest and principal on the bonds payable. On November 14, 2012, the Board approved both sewer and water rate increases commencing January 1, 2013. The sewer and water rates increase approximately 10% each year until the year of 2020. This increase was approved by the New Orleans City Council on November 14, 2012.

The Board has also been given the authority to levy and collect various tax millages, which are used for the operation and maintenance of the drainage operations. All excess revenues collected are made available for capital development of the system. The proceeds of the rate collections and tax millages are invested in such investments as authorized by the LRS. These investments are reflected in the combined statements of net position, as "restricted assets," as they are restricted to the purposes as described above.

Effective January 1, 2014, the Board's makeup was changed to eleven members, including the Mayor of the City as the President of the Board, two members of the Board of Liquidation, City Debt, and eight citizens, as designated by State statutes. The terms of office are staggered from one year to four years, as designated by State statutes.

The Board's accounting policies conform to accounting principles generally accepted in the United States of America as applicable to utilities and to governmental units. The following is a summary of the more significant policies.

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS

(Continued)

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(1) Summary of Significant Accounting Policies (continued)

(A) Reporting Entity

In conformity with the Governmental Accounting Standards Board's definition of a reporting entity, the Board includes an enterprise fund and a pension trust fund for financial reporting purposes. The Board is considered a reporting entity based on the following criteria:

- (a) Responsibility for surpluses/deficits. The Board is solely responsible for its surpluses/deficits. In accordance with LRS, no other governmental unit is responsible for the Board's deficits or has a claim to its surpluses. The Board's operations are self-sustaining; revenues are generated through charges to customers and dedicated property taxes. Other than grants, no funding is received from the State of Louisiana or the City of New Orleans.
- (b) Budget Approval. The Board is solely responsible for reviewing, approving, and revising its budget.
- (c) Responsibility for Debt. The LRS authorize the Board to issue bonds; such bonds must bear on their face a statement that they do not constitute a debt of the City. The Board is solely responsible for payments to bondholders. No other governmental unit is required by statute to make any payments to bondholders nor have any payments to bondholders ever been made by any governmental unit, except the Board.
- (d) Designation of Management. The Board controls the hiring of management and employees.
- (e) Special Financial Relationship. The Board has no special financial relationships with any other governmental unit.
- (f) Statutory Authority. The Board's statutory authority was created by the State of Louisiana as an independent governmental unit. Only an amendment to the state statutes can change or abolish the Board's authority.

The Board is a stand-alone entity as defined by Governmental Accounting Standards Board Statement 61, *The Financial Reporting Entity: Omnibus—an amendment of GASB Statements No. 14 and No. 34*. The Board is a legally-separate governmental organization that does not have a separately elected governing body and does not meet the definition of a component unit. As a result of a Louisiana Supreme Court decision on March 21, 1994, the Board was declared to be an autonomous or self-governing legal entity, legally independent of the City, State and other governments, created and organized pursuant to Louisiana Revised Statutes 33:4071 as a board, separate and independent of the governing authorities of the City and vested with autonomous or self-governing authority. No other government can mandate actions of the Board nor impose specific financial burdens. The Board is fiscally independent to operate under its bond covenant and the provisions of LRS provisions.

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

## NOTES TO FINANCIAL STATEMENTS (Continued)

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(1) Summary of Significant Accounting Policies (continued)

(B) Basis of Financial Statement Presentation

The Board's basic financial statements consist of the government-wide statements which include the proprietary fund (the enterprise fund) and the fund financial statements which includes the fiduciary fund (the pension trust fund).

The operations of the Board are accounted for in the following fund types:

Proprietary Fund Type

The proprietary fund is used to account for the Board's ongoing operations and activities, which are similar to those often found in the private sector. The proprietary fund is accounted for using a flow of economic resources measurement focus. With this measurement focus, all assets and all liabilities associated with the operation of these funds are included on the statement of net position. Net position is segregated into amounts invested in capital assets (net of related debt), restricted for debt service, restricted for capital projects, and unrestricted. The Board's restricted assets are expendable for their purposes. The Board utilizes available unrestricted assets before utilizing restricted assets. The operating statements present increases (revenues) and decreases (expenses) in net position. The Board maintains one proprietary fund type – the enterprise fund. The enterprise fund is used to account for operations (a) that are financed and operated in a manner similar to private business enterprises--where the intent of the governing body is that the cost (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital maintenance.

Operating revenues include all charges for service; other revenues include reconnection fees and other miscellaneous charges. Operating expenses include the costs associated with providing water, sewerage, and drainage services. Interest income, interest expense, and tax revenues are presented as non-operating items.

The enterprise fund is presented in the government-wide financial statements.

Fiduciary Fund Type

The fiduciary fund is used to account for assets held by the Board in a trustee capacity or as an agent for individuals, private organizations, other governmental units, and/or other funds. The Board maintains one fiduciary fund type - the pension trust fund. The pension trust fund uses the flow of economic resources measurement focus. All assets and liabilities associated with the operation of this fund are included in the statement of plan net assets. The pension trust fund is used to account for the activity of the Board's employee retirement plan.

The pension trust fund is presented in the fund financial statements.

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

## NOTES TO FINANCIAL STATEMENTS (Continued)

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(1) Summary of Significant Accounting Policies (continued)

(C) Basis of Accounting

The enterprise fund and the pension trust fund prepare their financial statements on the accrual basis of accounting. Unbilled utility service charges are not recorded as management considers the effect of not recording such unbilled receivables as not material. Property taxes are recorded as revenue in the year for which they are levied. Plan member contributions are recognized in the period in which contributions are due. Employer contributions to the pension plan are recognized when due and the employer has made a commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

(D) Investments

Investments are reported at fair value, except for short-term investments (maturity of one year or less), which are reported at amortized cost, which approximates fair value. Securities traded in a national or international exchange are valued at the last reported sales price at current exchange rates. Investments that do not have an established market are reported at estimated fair value. Investment income and expenses, including changes in the fair value of the investments, are recognized in the Statements of Revenues, Expenses, and Changes in Net Position.

(E) Inventory of Supplies

Inventory is valued at the lower of cost or market. Cost is determined by the weighted average cost method.

(F) Vacation and Sick Pay

Vacation (annual leave) and sick pay (sick leave) are accrued when earned. Annual leave is accrued at the rate of .6923 of a workday for each bi-weekly accrual period for all employees on the payroll as of December 31, 1978. Employees hired after that date earn leave at a rate of .5 of a workday per bi-weekly pay period.

All employees on the payroll as of December 31, 1978 receive three bonus days each year; all employees hired after that date receive three bonus days each year for five through nine calendar years of continuous service; six bonus days each year for ten through fourteen years; nine bonus days each year for fifteen through nineteen years; and, twelve days for twenty or more years of continuous service. Civil Service's policy permits employees a limited amount of earned but unused annual leave which will be paid to employees upon separation from the Board. The amount shall not exceed ninety days for employees hired before January 1, 1979, and forty-five days for employees hired after December 31, 1978.

Sick leave is accumulated on a bi-weekly basis by all employees hired prior to December 31, 1978 at an accrual rate of .923 of a workday. For employees hired subsequent to December 31, 1978, the accrual rate is .5 of a workday for each bi-weekly period, plus a two day bonus each year for employees with six through fifteen calendar years of continuous service, and seven bonus days each year for employees with sixteen or more calendar years of continuous service.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

(1) Summary of Significant Accounting Policies (continued)

(F) Vacation and Sick Pay (continued)

Upon separation from the Board, an employee can elect to convert unused sick leave for retirement credits or cash. The conversion to cash is determined by a rate ranging from one day of pay for five days of leave for the 1st through 100th leave day to one day of pay for one day of leave for all days in excess of the 400th leave day. The total liability for unconverted sick leave as of December 31, 2016 and 2015 is approximately \$13,894,262 and \$13,549,000, respectively. The amount included in the statements of net position as of December 31, 2016 and 2015 is \$9,822,495 and \$9,500,827, respectively, which represents the annual leave and the converted sick leave since virtually all employees convert their sick leave to cash. Therefore, the Board books the compensated absences as a current liability. The amounts for compensated absences include the salary cost as well as certain salary related costs, such as the Board's share of social security expense. The following table summarizes changes in the Board's vacation and sick pay liability.

Year	Beginning of Year Liability	Current Year Earned and Changes in Estimate	Payments	End of Year Liability
2016	\$ 9,500,827	\$ 3,744,057	\$ (3,422,389)	\$ 9,822,495
2015	\$ 9,202,614	\$ 3,647,221	\$ (3,349,008)	\$ 9,500,827

(G) Property, Plant, and Equipment

Property, plant, and equipment are carried at historical cost. The Board capitalizes moveable equipment with a value of \$10,000 or greater, stationary, network, and other equipment with a value of \$5,000 or greater and all real estate. The cost of additions includes contracted work, direct labor, materials, and allocable cost. Donated capital assets are recorded at their estimated fair value at the date of donation.

Interest is capitalized on property, plant, and equipment acquired and/or constructed with tax exempt debt. Depreciation is computed using the straight-line method over the estimated useful life of the asset. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and any resulting gain or loss is recognized in revenue for the period. The cost of maintenance and repairs is charged to operations as incurred, and significant renewals and betterments are capitalized. Deductions are made for retirements resulting from renewals or betterments.

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS

(Continued)

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(1) Summary of Significant Accounting Policies (continued)

(H) Self-Insurance/Risk Management

The Board is self-insured for general liability, workers' compensation, unemployment compensation, and hospitalization benefits and claims. The accrued liability for the various types of claims represents an estimate by management of the eventual loss on the claims arising prior to year-end, including claims incurred and not yet reported including estimates of both future payments of losses and related claims adjustment and expense. Estimated expenses and recoveries are based on a case by case review.

(I) Bond Issuance Costs and Refinancing Gains (Losses)

Costs related to issuing bonds are expensed when incurred. Premiums and discounts associated with bond issues are amortized over the interest yield method.

(J) Deferred Inflows/Outflows of Resources

Deferred outflows of resources represent a consumption of net position that applies to future periods and will not be recognized as an outflow of resources (expense) until then. Deferred inflows of resources represent an acquisition of net position that applies to future periods and will not be recognized as an inflow of resources (revenue) until that time. The deferred charge on refunding reported on the statements of net position results from the difference in carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. See Note 3 for the components of deferred outflows and inflows of resources related to the pension plans.

(K) Pension

The Board may fund all or part of the accrued pension cost, depending on the resources that are available at the time of contribution, for its contributory pension plan which covers substantially all employees. Annual costs are actuarially computed using the entry age normal cost method.

(L) Drainage System

In 1903, the Legislature gave the Board control of and responsibility for the City's drainage system. The Drainage System was established as a department of the enterprise fund to account for the revenues from three-mill, six-mill, and nine-mill ad valorem taxes designated exclusively for drainage services. These revenues have been supplemented by inspection and license fees collected by the Board. There exists a potential for additional financing by additional user service charges. Expenditures from the system are for the debt service of three-mill, six-mill, and nine-mill tax bonds and drainage related operation, maintenance, and construction.

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS (Continued)

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(1) Summary of Significant Accounting Policies (continued)

(M) Capital Contributions

Contributions from developers and others, and receipts of Federal, State, and City grants for acquisition of property, plant, and equipment are recorded as capital contributions in the statements of revenues, expenses, and changes in net position.

(N) Net Position Flow Assumption

Sometimes the Board will fund outlays for a particular purpose from both restricted (e.g. restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position, a flow assumption must be made about the order in which the resources are considered to be applied. The Board's policy is to consider restricted net position to have been depleted before unrestricted-net position is applied.

(O) Net Position

Net investment in capital assets – This component of net position consists of capital assets, net of accumulated depreciation, and reduced by the outstanding debt attributable to the acquisition, construction, or improvement of those assets. If there are significant unspent related debt proceeds at year-end, the portion of the debt attributable to the unspent proceeds is not included in this component of net position. Rather, that portion of debt is included in the same component of net position as the unspent proceeds.

Restricted – This net position component reports externally imposed constraints placed on their use by creditors (such as through debt covenants), grantors, contributors, or laws or regulations of other governments or constraints imposed by law through constitutional provisions or enabling legislation.

Unrestricted – Unrestricted net position is the balance (deficit) of all other elements in a statement of net position remaining after net investment in capital assets and restricted net position.

(P) Cash Flows

For purposes of the statements of cash flows, only cash on hand and on deposit at financial institutions is considered to be cash equivalents. Certificates of deposits, treasury bills, and other securities are considered investments.

(Q) Operating and Nonoperating Revenues

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and delivering goods in connection with principal ongoing operations. The principal operating revenues of the Board are charges to customers for sales and services. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

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(1) Summary of Significant Accounting Policies (continued)

(R) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenue and expenditures during the period. Actual results could differ from those estimates.

(2) Cash and Investments

The Board's investments and cash consist primarily of investments in direct obligations of the United States or agencies thereof and deposits with financial institutions.

**Custodial Credit Risk – Deposits –** Custodial credit risk is the risk that in the event of a bank failure, the government's deposits may not be returned to it. Statutes require that the Board's cash and certificates of deposit be covered by federal depository insurance or collateral. At December 31, 2016, the Board's interest bearing deposits with banks consisted of cash and money market funds totaling \$296,814,483 and certificates of deposit of \$273,486. At December 31, 2015, the Board's interest bearing deposits with banks consisted of cash and money market funds totaling \$345,570,241 and certificates of deposit of \$273,347. The Board's cash bank balances and all certificates of deposit for 2016 and 2015 were covered by federal depository insurance or collateral held by custodial agents of the financial institutions in the name of the Board.

In accordance with GASB 40, unless there is information to the contrary, obligations of the U.S. Government are not considered to have credit risk and do not require disclosure of credit quality.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

(2) Cash and Investments (continued)

The following are the components of the Board's cash and investments as of December 31 for the Enterprise Fund:

<u>2016</u>	<u>Unrestricted</u>	<u>Restricted</u>	<u>Total</u>
Enterprise Fund:			
Cash and money market funds	\$ 121,315,874	\$ 217,119,859	\$ 338,435,733
Certificates of deposit	273,485	-	273,485
	<u>121,589,359</u>	<u>217,119,859</u>	<u>338,709,218</u>
Investments - LAMP	3,250,000	2,641,724	5,891,724
Total cash and investments at fair value	<u>\$ 124,839,359</u>	<u>\$ 219,761,583</u>	<u>\$ 344,600,942</u>

<u>2015</u>	<u>Unrestricted</u>	<u>Restricted</u>	<u>Total</u>
Enterprise Fund:			
Cash and money market funds	\$ 105,392,134	\$ 281,145,681	\$ 386,537,815
Certificates of deposit	273,347	-	273,347
	<u>105,665,481</u>	<u>281,145,681</u>	<u>386,811,162</u>
Investments - LAMP	3,250,000	2,641,724	5,891,724
Total cash and investments at fair value	<u>\$ 108,915,481</u>	<u>\$ 283,787,405</u>	<u>\$ 392,702,886</u>

(A) Fair Value Measurement

To the extent available, the Board's investments are recorded at fair value as of December 31, 2016. GASB Statement No. 72 – Fair Value Measurement and Application, defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This statement establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Inputs are used in applying the various valuation techniques and take into account the assumptions that market participants use to make valuation decisions. Inputs may include price information, credit data, interest and yield curve data, and other factors specific to the financial instrument. Observable inputs reflect market data obtained from independent sources. In contrast, unobservable inputs reflect the entity's assumptions about how market participants would value the financial instrument. Valuation techniques should maximize the use of observable inputs to the extent available.

A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The following describes the hierarchy of inputs used to measure fair value and the primary valuation methodologies used for financial instruments measured at fair value on a recurring basis.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

(2) Cash and Investments (continued)

(A) Fair Value Measurement (continued)

Investments - Statutes authorize the Board to invest in obligations of the U.S. Treasury, agencies, and instrumentalities, commercial paper rated A-1 by Standard & Poors Corporation or P-1 by Moody's Commercial Paper Record, repurchase agreements, and the Louisiana Asset Management Pool (LAMP). In addition, the pension trust fund is authorized to invest in corporate bonds rated BBB or better by Standard & Poors Corporation or Baa or better by Moody's Investors Service and equity securities.

A summary of the Fund's invests along with the Fair value hierarchy levels of each type of investment is as follows:

	12/31/2016	Fair Value Hierarchy		
		Quoted Prices in Active Markets (Level 1 Inputs)	Significant Other Observable Inputs (Level 2 Inputs)	Significant Unobservable Inputs (Level 3 Inputs)
Investment by Fair Value Level:				
Equities	\$ 108,525,255	\$ 108,525,255	\$ -	\$ -
Debt Securities	79,742,033	-	79,742,033	-
Hedge Funds	20,487,315	-	20,487,315	-
<b>Total Investments at Fair Value Level</b>	<b>\$ 208,754,603</b>	<b>\$ 108,525,255</b>	<b>\$ 100,229,348</b>	<b>\$ -</b>
Investment measured at the net asset value (NAV):				
Money market funds	\$ 285,016,120			
LAMP	19,671,645			
Certificate of Deposit	273,486			
<b>Total Investments at NAV</b>	<b>\$ 304,961,251</b>			
<b>Total Investments at Fair Value</b>	<b>\$ 513,715,854</b>			

*Money market funds, LAMP, and certificate of deposit are measured using NAV as a practical expedient. These investments have not been classified in the fair value hierarchy table. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the line items presented in the statement of net assets available for benefits.*

A reconciliation of the enterprise and pension funds to the total investments at December 31, 2016 is as follows:

	<u>Enterprise</u>	<u>Pension</u>	<u>Total</u>
Money market	\$ 283,300,189	\$ 1,715,931	\$ 285,016,120
LAMP	5,891,723	13,779,922	19,671,645
Certificate of Deposit	273,486	-	273,486
Other investments	-	208,754,603	208,754,603
	<u>\$ 289,465,398</u>	<u>\$ 224,250,456</u>	<u>\$ 513,715,854</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

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(2) Cash and Investments (continued)

(B) Louisiana Asset Management Pool (LAMP)

LAMP is administered by LAMP, Inc., a non-profit corporation organized under the laws of the State of Louisiana. Only local government entities having contracted to participate in LAMP have an investment interest in its pool of assets. The primary objective of LAMP is to provide a safe environment for the placement of public funds in short-term, high quality investments. The LAMP portfolio includes only securities and other obligations in which local governments in Louisiana are authorized to invest in accordance with Louisiana R.S. 33:2955.

LAMP is a 2a7-like investment pool. The following facts are relevant for 2a7 like investment pools:

- Credit risk: LAMP is rated AAAM by Standard & Poor's.
- Custodial credit risk: LAMP participants' investments in the pool are evidenced by shares of the pool. Investments in pools should be disclosed but not categorized because they are not evidenced by securities that exist in physical or book-entry form. The public entity's investment is with the pool, not the securities that make up the pool; therefore, no disclosure is required.
- Concentration of credit risk: Pooled investments are excluded from the 5 percent disclosure requirement.
- Interest rate risk: LAMP is designed to be highly liquid to give its participants immediate access to their account balances. LAMP prepares its own interest rate risk disclosure using the weighted average maturity (WAM) method. The WAM of LAMP assets is restricted to not more than 60 days and consists of no securities with a maturity in excess of 397 days. The WAM for LAMP's total investments is 75 as of December 31, 2016.
- Foreign currency risk: Not applicable to 2a7-like pools.

The investments in LAMP are stated at fair value based on quoted market rates. The fair value is determined on a weekly basis by LAMP, and the value of the position in the external investment pool is the same as the net asset value of the pool shares.

LAMP, Inc. is subject to the regulatory oversight of the state treasurer and the board of directors. LAMP is not registered with the SEC as an investment company.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

(2) Cash and Investments (continued)

(C) Credit and Interest Risk

Credit Risk - State law limits investments in securities issued, or backed by United States Treasury obligations, and U.S. Government instrumentalities, which are federally sponsored. The Board's investment policy does not further limit its investment choices. LAMP is rated AAAM by Standard & Poor's. The Pension Trust Fund's investment policy requires that fixed income investments be investment grade (BBB or higher as rated by Standard & Poor's or Baa or higher as rated by Moody's). Bonds rated below BBB/Baa are not to exceed 15% of the portfolio, and non-rated bonds are not to exceed 1% of the portfolio.

Following are the credit risk ratings of the Pension Trust Fund's investments in debt securities as of December 31, 2016:

Rating	Corporate Bonds	Foreign Government Bonds	Government Bonds and U.S. Treasury Notes	Other	Total	Percentage of Total
AAA	\$ -	\$ -	\$ 19,919,181	\$ 14,311,575	\$ 34,230,756	42.87%
AA+	130,821	-	-	69,908	200,729	0.25%
AA	92,738	-	-	369,843	462,581	0.58%
AA-	337,259	-	-	705,390	1,042,649	1.31%
A+	1,265,653	-	-	195,724	1,461,377	1.83%
A	3,533,573	19,760	-	714,178	4,267,511	5.34%
A-	5,764,628	38,222	-	188,514	5,991,364	7.50%
BBB+	3,395,461	-	-	2,565,903	5,961,364	7.47%
BBB	4,771,163	148,644	-	100,235	5,020,042	6.29%
BBB-	5,582,274	295,503	-	701,179	6,578,956	8.24%
BB+	1,674,724	50,710	-	96,877	1,822,311	2.28%
BB	766,273	267,656	-	1,186,890	2,220,819	2.78%
BB-	1,101,823	173,585	-	144,094	1,419,502	1.78%
B+	924,767	144,147	-	25,560	1,094,474	1.37%
B	440,465	208,459	-	210,459	859,383	1.08%
B-	518,269	170,795	-	142,123	831,187	1.04%
CCC+	194,437	-	-	9,362	203,799	0.26%
CCC	-	-	-	-	-	0.00%
CCC-	65,223	36,914	-	60,958	163,095	0.20%
CC	11,845	-	-	20,397	32,242	0.04%
C	18,603	-	-	39	18,642	0.02%
D	-	-	-	-	-	0.00%
Not Rated	141,961	51,133	1,612,948	4,154,206	5,960,248	7.46%
Total	\$ 30,731,960	\$ 1,605,528	\$ 21,532,129	\$ 25,973,414	\$ 79,843,031	100%

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

(2) Cash and Investments (continued)

(C) Credit and Interest Risk (continued)

Following are the credit risk ratings of the Pension Trust Fund's investments in debt securities as of December 31, 2015:

Rating	Corporate Bonds	Foreign Government Bonds	Government Bonds and U.S. Treasury Notes	Other	Total	Percentage of Total
AAA	\$ -	\$ -	\$ 10,260,998	\$ 3,015,226	\$ 13,276,224	17.25%
AA+	599,968	-	-	30,768	630,736	0.82%
AA	92,303	-	-	169,222	261,525	0.34%
AA-	476,898	153,838	469,206	38,460	1,138,402	1.48%
A+	1,684,527	7,692	-	292,292	1,984,511	2.58%
A	6,191,982	61,535	7,692	1,061,483	7,322,692	9.52%
A-	6,038,144	38,460	1,038,407	192,298	7,307,309	9.50%
BBB+	4,138,244	1,146,094	207,681	46,151	5,538,170	7.20%
BBB	5,922,765	123,070	7,692	107,687	6,161,214	8.01%
BBB-	6,038,144	730,731	-	699,963	7,468,838	9.71%
BB+	1,384,542	1,030,715	-	30,768	2,446,025	3.18%
BB	1,007,639	7,692	-	192,298	1,207,629	1.57%
BB-	1,223,013	246,141	-	176,914	1,646,068	2.14%
B+	1,330,699	46,151	-	30,768	1,407,618	1.83%
B	469,206	84,611	-	146,146	699,963	0.91%
B-	646,120	76,919	-	46,151	769,190	1.00%
CCC+	338,444	-	-	7,692	346,136	0.45%
CCC	76,919	153,838	-	107,687	338,444	0.44%
CCC-	-	-	-	23,076	23,076	0.03%
CC	84,611	-	-	7,692	92,303	0.12%
C	7,692	-	-	15,384	23,076	0.03%
D	-	-	-	46,151	46,151	0.06%
Not Rated	76,919	207,681	-	16,525,720	16,810,320	21.85%
Total	\$ 37,828,779	\$ 4,115,168	\$ 11,991,676	\$ 23,009,997	\$ 76,945,620	100%

Interest Rate Risk - Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. In general, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The Board has a formal investment policy that states that the investment portfolio shall remain sufficiently liquid to meet all operating and capital requirements that may be reasonably anticipated and that maturities of investments are to be structured concurrent with cash needs to meet anticipated demand.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(2) Cash and Investments (continued)

(D) Pension Trust Fund Investments

As of December 31, 2016, the Pension Trust Fund had the following investments in debt securities and maturities:

Investment Type	Duration					Total
	Less than 1 Year	1 - 5 Years	6 - 10 Years	Greater Than 10 Years	Duration Not Available	
Corporate Bonds	\$ 3,179,391	\$ 13,226,936	\$ 11,182,301	\$ 3,016,635	\$ 126,698	\$ 30,731,961
Foreign Government Bonds	127,300	564,103	609,634	304,492	-	1,605,529
Government Bonds and U.S. Treasury Notes	-	10,474,838	6,605,338	4,350,953	-	21,431,129
Other	3,495,397	11,454,351	9,620,717	1,307,733	95,216	25,973,414
<b>Total</b>	<b>\$ 6,802,088</b>	<b>\$ 35,720,228</b>	<b>\$ 28,017,990</b>	<b>\$ 8,979,813</b>	<b>\$ 221,914</b>	<b>\$ 79,742,033</b>

As of December 31, 2015, the Pension Trust Fund had the following investments in debt securities and maturities:

Investment Type	Duration					Total
	Less than 1 Year	1 - 5 Years	6 - 10 Years	Greater Than 10 Years	Duration Not Available	
Corporate Bonds	\$ 3,443,434	\$ 16,922,571	\$ 13,428,447	\$ 3,898,641	\$ 135,686	\$ 37,828,779
Foreign Government Bonds	311,907	1,584,301	1,280,933	938,027	-	4,115,168
Government Bonds and U.S. Treasury Notes	17,999	5,478,173	2,639,707	3,855,797	-	11,991,676
Other	4,283,928	14,594,309	4,011,097	11,999	108,664	23,009,997
<b>Total</b>	<b>\$ 8,057,268</b>	<b>\$ 38,579,354</b>	<b>\$ 21,360,184</b>	<b>\$ 8,704,464</b>	<b>\$ 244,350</b>	<b>\$ 76,945,620</b>

(E) Security Lending

Under the provisions of its benefit plan and state law, the Board's pension benefit trust engages in securities lending to broker dealers and other entities for cash collateral that will be returned for the same securities in the future. The cash collateral cannot be liquidated by the Board unless the borrower defaults. Cash collateral is initially pledged at 102.73% of the market value of securities lent and additional collateral is provided by the next business day if the value falls to less than 100% of the market value of the securities lent. No collateral exposure existed at December 31, 2016 and 2015. The value of securities lent at December 31, 2016 and 2015 was \$41,519,835 and \$49,795,269, respectively. The market value of the cash collateral at December 31, 2016 and 2015 was \$42,465,707 and \$51,153,684, respectively.

(3) Defined Benefit Pension Plan

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

**Plan Descriptions**

The Board has a single-employer contributory retirement plan covering all full-time employees, the Pension Trust Fund (PTF). The Board's payroll for current employees covered by the PTF for the years ended December 31, 2016 and 2015 was \$35,363,156 and \$33,672,902, respectively; such amounts exclude overtime and standby payroll. At December 31, the PTF membership consisted of:

	<u>2016</u>	<u>2015</u>
Retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving them	861	841
Current employees:		
Vested	513	513
Non-vested	<u>485</u>	<u>458</u>
	<u>998</u>	<u>971</u>
 Total	 <u>1,859</u>	 <u>1,812</u>

*Benefits Provided*

The benefit provisions were established by action of the Board in 1956 in accordance with Louisiana statutes. The Board retains exclusive control over the plan through the Pension Committee of the PTF. Effective January 1, 1996, the plan became qualified under Internal Revenue Code Section 401(a) and thus is tax exempt.

The plan provides for retirement benefits as well as death and disability benefits. All benefits vest after ten years of service. Employees who retire at or after age 65 with ten years of credited service are entitled to an annual retirement benefit, payable biweekly for life, in an amount equal to two percent of their average compensation for each year of credited service up to ten years, increasing by (1) one-half percent per year for service years over ten years, (2) an additional one-half percent per year for service years over twenty years and (3) an additional one percent per year for service years over thirty years, for a maximum of four percent for each year of credited service. Average compensation is the average annual earned compensation (prior to 2002, less \$1,200) for the period of 36 successive months of service during which the employee's compensation was the highest. Employees with thirty years or more of credited service may retire without a reduction in benefits. Employees may retire prior to age 62 without 30 years of service with a reduction in benefits of three percent for each year of age below the age of 62. If an employee leaves covered employment or dies before three years of credited service, the accumulated employee contributions plus related investment earnings are refunded to the employee or designated beneficiary.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

(3) Defined Benefit Pension Plan (continued)

**Plan Descriptions (continued)**

*Benefits Provided (continued)*

The retirement allowance for retirees over age 62 is subject to a cost of living adjustment each January 1, provided that the member retired on or after January 1, 1984. The adjustment is based on the increase in the Consumer Price Index for all urban wage earners published by the U.S. Department of Labor but is limited to an annual maximum of two percent on the first \$10,000 of initial retirement benefits.

Effective September 23, 1993, employers may transfer credit between the Board's plan and the City of New Orleans' retirement system with full credit for vested service. The Board and its employees are obligated under plan provisions to make all required contributions to the plan. The required contributions are actuarially determined. Level percentage of payroll employer contribution rates is determined using the entry age normal actuarial funding method. Employees are required to contribute four percent of their regular salaries or wages.

Deferred Retirement Option Program (DROP)

Beginning in 1996, the Board offered employees a "Deferred Retirement Option Plan" (DROP), an optional retirement program which allows an employee to elect to freeze his or her retirement benefits but continue to work and draw a salary for a minimum period of one year to a maximum period of five years. While continuing employment, the retirement benefits are segregated from overall plan assets available to other participants. As of December 31, 2016 and 2015, 121 and 123 employees, respectively, participated in the plan. The amount of plan assets segregated for these individuals was \$11,328,708 and \$11,310,510 as of December 31, 2016 and 2015, respectively.

**Funding Policy**

The actuarially determined contribution requirement for the Board was 36.175% and 37.073% for 2016 and 2015. The contribution requirement for employees for the year ended December 31, 2015 was 6.0%. The employee contribution remained at 6.0% for January 1, 2016. The actual Board's and employees' contributions (including contributions for transferred employees from other pension plans) for the years ended December 31 were as follows:

	<u>2016</u>	<u>2015</u>
Employer and other transfers	\$ 8,036,957	\$ 8,353,911
Employee	<u>2,064,387</u>	<u>1,905,689</u>
Total contributions	<u>\$ 10,101,344</u>	<u>\$ 10,259,600</u>

**Net Pension Liability**

The Board's Net Pension Liability was measured as of December 31, 2016 and 2015. The Total Pension Liability used to calculate the Net Pension Liability was determined as of that date.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

(3) Defined Benefit Pension Plan (continued)

**Actuarial Assumptions**

The total pension liability was determined by an actuarial valuation as of December 31, 2016 and 2015, using the following actuarial assumptions:

	2016	2015
Investment rate of return	7.00%	7.00%
Inflation	2.00%	2.50%
Salary increases including inflation	5.00%	5.00%

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by an asset allocation percentage which is based on the nature and mix of current and expected plan investments and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Pension Trust Fund's current and expected asset allocation as of December 31, 2016 are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Equities	8.5%
Fixed Income	6.5%
Alternative	7.0%
Cash and Equivalents	--

Discount Rate

The discount rate used to measure the total pension liability was 7% for the 2016 and 2015 plan years. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that the plan's contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the PTF's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Investment Rate of Return

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. For the years ended December 31, 2016 and 2015, the annual money-weighted rates of return on pension plan investments, net of pension plan investment expenses, were 5.79% and -1.79%, respectively.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(3) Defined Benefit Pension Plan (continued)

**Actuarial Assumptions (continued)**

Sensitivity of the Net Pension Liability to Change in the Discount Rate

The following presents the net pension liability of the Board as of December 31, 2016, calculated using the discount rate of 7%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6%) or 1-percentage-point higher (8%) than the current rate.

	1% Decrease 6%	Current Discount Rate 7%	1% Increase 8%
Total pension liability	\$ 333,051,219	\$ 305,105,919	\$ 281,298,180
Fiduciary net position	224,356,261	224,356,261	224,356,261
Net pension liability	108,694,958	80,749,658	56,941,919

**Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions**

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2016	\$ 299,395,091	\$ 222,427,527	\$ 76,967,564
Changes for the year:			
Service cost	3,030,914	-	3,030,914
Interest	20,957,657	-	20,957,657
Difference between expected and actual experience	834,712	-	834,712
Changes of assumptions	-	-	-
Contributions – employer	-	6,407,201	(6,407,201)
Contributions – employee	-	2,064,387	(2,064,387)
Contributions – fines	-	-	-
Net investment income	-	12,569,601	(12,569,601)
Benefit payments, including refunds of employee contributions	(19,112,455)	(19,112,455)	-
Administrative expense	-	-	-
Other changes	-	-	-
Net changes	5,710,828	1,928,734	3,782,094
Balances at December 31, 2016	\$ 305,105,919	\$ 224,356,261	\$ 80,749,658

For the year ended December 31, 2016, the Board will recognize a Pension Expense of \$11,836,322 in payroll related expense on the statements of revenues, expenses, and changes in net position.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(3) Defined Benefit Pension Plan (continued)

**Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions (continued)**

On December 31, 2016, the Board reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ -	\$ 2,396,433
Net difference between projected and actual earnings on pension plan investments	16,904,538	-
<b>Total</b>	<b>\$ 16,904,538</b>	<b>\$ 2,396,433</b>

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in pension expense as follows:

2017	\$ 5,108,325
2018	5,108,325
2019	4,159,823
2020	101,191
2021	(178,237)
2022	104,339
2023	104,339
	<u>\$ 14,508,105</u>

**The Board's Pension Plan Fiduciary Net Position**

A separate report on the pension trust fund is not issued.

(4) Property, Plant, and Equipment

The useful lives of property, plant, and equipment consisted of the following:

Power and pumping stations - buildings	57 years
Power and pumping stations - machinery	40 years
Distribution systems	75 years
Sewerage collection	75 years
Canals and subsurface drains	75 to 100 years
Treatment plants	50 years
Connections and meters	50 years
Power transmission	50 years
General plant	12 years
General buildings	25 years

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(4) Property, Plant and, Equipment (continued)

Property, plant, and equipment consisted of the following as of December 31:

	2016			Ending Balance
	Beginning Balance	Additions	Deletions/ Reclassifications	
<b>Cost</b>				
Real estate rights, non depreciable	\$ 13,930,960	1,701	(385,384)	\$ 13,547,277
Power and pumping stations - buildings	378,753,917	678,497	-	379,432,414
Power and pumping stations - machinery	317,318,704	5,330,730	-	322,649,434
Distribution systems	252,342,832	19,706,914	(1,961,146)	270,088,600
Sewerage collection	490,556,101	30,929,165	(1,610,987)	519,874,279
Canals and subsurface drainage	622,989,487	82,516,810	-	705,506,297
Treatment plants	200,451,465	260,521	-	200,711,986
Connections and meters	98,488,474	1,779,136	(23,932)	100,243,678
Power transmission	31,409,715	408,233	-	31,817,948
General plant and buildings	282,546,927	2,381,645	(333,106)	284,595,466
Total property, plant, and equipment in service	2,688,788,582	143,993,352	(4,314,555)	2,828,467,379
Construction in progress	715,069,065	269,692,725	(143,993,352)	840,768,438
Total property, plant, and equipment	3,403,857,647	413,686,077	(148,307,907)	3,669,235,817
<b>Accumulated Depreciation</b>				
Power and pumping stations - buildings	139,335,381	6,617,813	-	145,953,194
Power and pumping stations - machinery	169,223,128	8,078,527	-	177,301,655
Distribution systems	52,226,728	3,208,521	(1,961,146)	53,474,103
Sewerage collection	55,812,167	6,914,328	(1,610,987)	61,115,508
Canals and subsurface drainage	85,985,428	7,100,851	-	93,086,279
Treatment plants	68,620,505	4,014,240	-	72,634,745
Connections and meters	36,554,319	2,001,608	(23,932)	38,531,995
Power transmission	15,683,623	635,488	-	16,319,111
General plant and buildings	253,535,163	12,925,510	(333,106)	266,127,567
Total accumulated depreciation	876,976,442	51,496,886	(3,929,171)	924,544,157
Net property, plant, and equipment	\$ 2,526,881,205	\$ 362,189,191	\$ (144,378,736)	\$ 2,744,691,660

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(4) Property, Plant, and Equipment (continued)

	<b>2015</b>			
	Beginning Balance	Additions	Deletions/ Reclassifications	Ending Balance
<b>Cost</b>				
Real estate rights, non depreciable	\$ 13,575,258	\$ 355,702	\$ -	\$ 13,930,960
Power and pumping stations - buildings	368,676,632	10,077,285	-	378,753,917
Power and pumping stations - machinery	302,403,973	14,915,732	-	317,319,705
Distribution systems	227,823,078	25,802,516	(1,282,763)	252,342,831
Sewerage collection	452,858,359	39,508,551	(1,810,809)	490,556,101
Canals and subsurface drainage	551,928,776	71,060,711	-	622,989,487
Treatment plants	194,886,446	5,565,019	-	200,451,465
Connections and meters	94,138,623	4,450,609	(100,758)	98,488,474
Power transmission	28,187,555	3,222,160	-	31,409,715
General plant	268,271,605	7,280,540	(227,832)	275,324,313
General buildings	7,221,614	-	-	7,221,614
Total property, plant, and equipment in service	2,509,971,919	182,238,825	(3,422,162)	2,688,788,582
Construction in progress	639,095,470	258,212,420	(182,238,825)	715,069,065
Total property, plant, and equipment	3,149,067,389	440,451,245	(185,660,987)	3,403,857,647
<b>Accumulated Depreciation</b>				
Power and pumping stations - buildings	132,245,387	7,097,427	-	139,342,814
Power and pumping stations - machinery	161,191,489	8,031,639	-	169,223,128
Distribution systems	50,027,464	3,482,027	(1,282,763)	52,226,728
Sewerage collection	51,098,580	6,524,396	(1,810,809)	55,812,167
Canals and subsurface drainage	79,653,460	6,331,968	-	85,985,428
Treatment plants	64,611,476	4,009,029	-	68,620,505
Connections and meters	34,646,578	2,008,499	(100,758)	36,554,319
Power transmission	15,050,667	632,956	-	15,683,623
General plant	233,453,215	12,923,691	(227,832)	246,149,074
General buildings	7,089,792	288,864	-	7,378,656
Total accumulated depreciation	829,068,108	51,330,496	(3,422,162)	876,976,442
 Net property, plant, and equipment	 \$ 2,319,999,281	 \$ 389,120,749	 \$ (182,238,825)	 \$ 2,526,881,205

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(4) Property, Plant and Equipment (continued)

Interest capitalized was as follows for the years ended December 31:

	<b>2016</b>		<b>2015</b>	
Interest income	\$	4,097,035	\$	2,192,700
Interest expense		(26,369,526)		(19,166,588)
Net interest capitalized	\$	(22,272,491)	\$	(16,973,888)

(5) Customer Receivables

Customer receivables as of December 31 consist of the following:

		<b>Customer Accounts</b>	<b>Allowance for Doubtful Accounts</b>	<b>Net</b>
2016	Water	\$ 17,554,149	\$ 4,883,220	\$ 12,670,929
	Sewer	18,182,832	4,458,867	13,723,965
		\$ 35,736,981	\$ 9,342,087	\$ 26,394,894
2015	Water	\$ 13,999,474	\$ 4,089,042	\$ 9,910,432
	Sewer	12,067,540	3,610,382	8,457,158
		\$ 26,067,014	\$ 7,699,424	\$ 18,367,590

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(6) Changes in Long-Term Obligations

(A) Bonds Payable

Bonds payable consisted of the following as of December 31:

	<b>Principal Balances</b>	
	<b>2016</b>	<b>2015</b>
0.45% sewerage service subordinate revenue bonds, series 2011 (initial average interest cost 0.95%); due in annual principal installments ranging from \$411,000 to \$491,000; final payment due December 1, 2032.	\$ 7,333,000	\$ 7,755,000
2.00% to 4.00% drainage system bonds, series 2014 (initial average interest cost 1.88%); due in annual principal installments ranging from \$535,000 to \$2,000,000; final payment due December 1, 2022.	11,100,000	12,750,000
2.00% to 5.00% sewerage service revenue bonds (initial average interest cost 3.86%); series 2014, due in annual principal installments ranging from \$1,970,000 to \$12,970,000; final payment due June 1, 2044.	135,335,000	147,765,000
5.00% water revenue bonds, series 2014 initial average interest cost 4.43%; due in annual principal installments ranging from \$325,000 to \$6,225,000; final payment due December 1, 2044.	103,200,000	103,525,000
4.98% water revenue bonds, series 2015 initial average interest cost 4.38%; due in annual principal installments ranging from \$325,000 to \$6,225,000; final payment due December 1, 2045.	100,000,000	100,000,000
5.00% sewerage service revenue bonds, series 2015 initial average interest cost 4.39%; due in annual principal installments ranging from \$325,000 to \$6,225,000; final payment due December 1, 2045.	100,000,000	100,000,000
Plus: bond premiums	456,968,000	471,795,000
Total	42,967,158	45,763,633
Less: current maturities	499,935,158	517,558,633
Bond payable, long-term	(17,627,000)	(14,827,000)
	\$ 482,308,158	\$ 502,731,633

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

(6) Changes in Long-Term Obligations (continued)

(A) Bonds Payable (continued)

The changes in long-term debt were as follows:

	<u>2016</u>	<u>2015</u>
Balance, beginning of year	\$ 471,795,000	\$ 285,054,000
Payments	(14,827,000)	(13,259,000)
Refunded	-	-
Proceeds	-	200,000,000
Balance, end of year	<u>\$ 456,968,000</u>	<u>\$ 471,795,000</u>

The annual requirements to amortize bonds payable as of December 31, 2016, are as follows:

<u>Year</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2017	\$ 17,627,000	\$ 21,806,665	\$ 39,433,665
2018	17,461,000	21,004,668	38,465,668
2019	16,900,000	20,203,929	37,103,929
2020	17,819,000	19,389,996	37,208,996
2021	17,453,000	18,581,121	36,034,121
2022-2026	56,898,000	83,746,804	140,644,804
2027-2031	56,884,000	71,236,951	128,120,951
2032-2036	72,006,000	56,158,694	128,164,694
2037-2041	92,045,000	36,127,500	128,172,500
2042-2045	91,875,000	10,665,000	102,540,000
	<u>\$ 456,968,000</u>	<u>\$ 358,921,328</u>	<u>\$ 815,889,328</u>

The amount of revenue bonds and tax bonds payable as of December 31, 2016, are as follows:

<u>Year</u>	<u>Revenue Bonds</u>	<u>Tax Bonds</u>	<u>Total</u>
2017	\$ 15,937,000	\$ 1,690,000	\$ 17,627,000
2018	15,716,000	1,745,000	17,461,000
2019	15,085,000	1,815,000	16,900,000
2020	15,924,000	1,895,000	17,819,000
2021	15,498,000	1,955,000	19,453,000
2022-2026	54,898,000	2,000,000	54,898,000
2027-2031	56,884,000	-	56,884,000
2032-2036	72,006,000	-	72,006,000
2037-2041	92,045,000	-	92,045,000
2042-2045	91,875,000	-	91,875,000
	<u>\$ 445,868,000</u>	<u>\$ 11,100,000</u>	<u>\$ 456,968,000</u>

SEWERAGE AND WATER BOARD OF NEW ORLEANS

NOTES TO FINANCIAL STATEMENTS

(Continued)

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(6) Changes in Long-Term Obligations (continued)

(A) Bonds Payable (continued)

The indentures under which these bonds were issued provide for the establishment of restricted funds for debt service as follows:

1. Debt service funds are required for the payment of interest and principal on the revenue and tax bonds. Monthly deposits on revenue bonds, excluding bond anticipation notes, are required to be made into this fund from operations in an amount equal to 1/6 of the interest falling due on the next interest payment date, and an amount equal to 1/12 of the principal falling due on the next principal payment date. All debt service funds are administered by the Board of Liquidation. The required amount to be accumulated in this fund was \$28,810,199 and \$27,791,877 at December 31, 2016 and 2015, respectively; the accumulated balance at December 31, 2016 and 2015 was \$28,810,199 and \$27,791,877 respectively. Monthly deposits to the debt service funds were temporarily suspended due to debt service payments being paid directly by the State of Louisiana through a Cooperative Endeavor Agreement and resumed as of June 2008. See note (6) (D) for additional information.
2. A debt service reserve is required for an amount equal to but not less than 50% of the amount required to be credited in said month to the debt service fund until there shall be accumulated in the debt service reserve account the largest amount required in any future calendar year to pay the principal and interest on outstanding bonds, except for the water and sewer bonds. The water bonds require an amount equal to the largest amount required in any future calendar year to pay the principal of and interest on outstanding bonds. There is no debt service reserve required for the 1998 and 2002 drainage 9 mill tax bonds. The sewer bonds require an amount equal to 125% of average aggregate debt service. The amounts required to be accumulated in this fund were \$18,407,782 and \$18,407,782 at December 31, 2016 and 2015 respectively; the accumulated balance at December 31, 2016 and 2015 was \$18,407,782 and \$18,407,782, respectively.

The Board was in compliance with the requirements of its long-term debt agreements for the Water Department and Sewer Department for the years ended December 31, 2016 and 2015.

(B) Sewerage Service Subordinate Revenue Bonds, Series 2011

The City entered into an agreement with the Louisiana Department of Environmental Quality (LDEQ) whereby the LDEQ has committed to loan the Board \$9,000,000 to fund sewer main replacements, point repairs, replacement of associated service connections and laterals, sewer line rehabilitation by cured in-place pipe lining and manhole rehabilitation. The loan is to be advanced in incremental amounts as project costs are incurred. The indebtedness to the LDEQ will be evidenced through the Sewerage Service Subordinate Revenue Bonds, Series 2011. Annual principal payments are due beginning November 1, 2013 and continuing through December 1, 2032. Interest on the bonds is incurred at the rate of 0.45%, and the LDEQ administrative fee rate is 0.5%. Interest and administrative fee payments began on May 1, 2012 and are due semi-annually thereafter. As of December 31, 2016 and 2015, \$7,333,000 and \$7,755,000 is included as bonds payable, respectively.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

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(6) Changes in Long-term Obligations (continued)

(C) Series 2014 Bonds

During 2014, the Board refunded the Series 1997, 1998, 2000, 2000B, 2001, 2002, 2003, 2004, and 2009 Sewerage bonds. The Board issued \$158,990,000 in Series 2014 Sewerage Service Revenue and Refunding Bonds with a final maturity of June 1, 2044. The bond proceeds, less issuance costs, and investments were used to refund the outstanding principle balance of the sewerage bonds in the amount of \$121,870,000. By refunding these bonds, the Board estimated \$20,696,313 in future savings related to future interest and principal payments. The Board estimated an economic gain of approximately \$18,397,306. The cost of issuance of the Series 2014 Sewerage Bonds totaled \$1,345,380, and the deferred loss on refunding was \$4,708,925. Bond proceeds of \$47,300,000 were restricted for capital projects.

During 2014, the Board refunded the Series 1998 and 2002 Water Bonds. The Board issued \$103,525,000 in Series 2014 Water Revenue and Refunding Bonds with a final maturity of December 1, 2044. The bond proceeds, less issuance costs, and investments were used to refund the outstanding principle balance of the Water Bonds in the amount of \$27,655,000. By refunding these bonds, the Board estimated \$1,359,352 in future savings related to future interest and principal payments. The Board estimated an economic gain of approximately \$2,738,262. The cost of issuance of the Series 2014 Water Bonds totaled \$1,040,131 and the deferred loss on refunding was \$34,901. Bond proceeds of \$77,000,000 were restricted for capital projects.

During 2014, the Board refunded the Series 1998 and 2002 Drainage Bonds. The Board issued \$14,900,000 in Series 2014 Drainage Refunding Bonds with a final maturity of December 1, 2022. The bond proceeds, less issuance costs, and investments were used to refund the outstanding principle balance of the Drainage Bonds in the amount of \$16,205,000. By refunding these bonds, the Board estimated \$2,968,676 in future savings related to future interest and principal payments. The Board estimated an economic gain of approximately \$2,846,558. The cost of issuance of the Series 2014 Drainage Refunding Bonds totaled \$263,828, and the deferred loss on refunding was \$347,533.

(D) Series 2015 Bonds

During 2015, the Board issued \$100,000,000 in Series 2015 Water Revenue Bonds with an original issue premium of \$12,686,122 and a final maturity of December 1, 2045. In addition, the Board issued \$100,000,000 in Series 2015 Sewerage Revenue Bonds with an original issue premium of \$12,826,410 and a final maturity date of December 1, 2045. Proceeds from such bonds are to be used to finance capital improvements.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

(6) Changes in Long-term Obligations (continued)

(E) Debt Service Assistance

In July 2006, the Board and the State of Louisiana (the State) entered into a Cooperative Endeavor Agreement whereby the State agreed to lend up to \$77,465,247 from State funds on deposit in the Debt Service Assistance Fund, authorized by the Gulf Opportunity Zone Act of 2005 and Act 41 of the First Extraordinary Session of the Louisiana Legislature of 2006, to assist in payment of debt service requirements from 2006 through 2008 due to disruption of tax bases and revenue streams caused by Hurricanes Katrina and Rita. Draw downs on the loan will be made as debt service payments become due. No principal or interest shall be payable during the initial five year period of the loan. After the expiration of the initial five year period, the loan shall bear interest at a fixed rate of 4.64 percent. Principal payments on the bonds began in July 2012, and the loan will mature in July 2026. Interest is payable semi-annually on January 15 and July 15 beginning January 2012. The loan may be prepaid without penalty or premium.

As of December 31, 2016, debt service requirements relating to the bonds are as follows:

<u>Years Ending December 31</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2017	\$ 4,627,616	\$ 2,655,525	\$ 7,283,141
2018	4,841,852	2,440,826	7,282,678
2019	5,066,514	2,216,164	7,282,678
2020	5,301,601	1,981,077	7,282,678
2021	5,547,595	1,735,083	7,282,678
2022-2026	31,845,981	4,566,948	36,412,929
	<u>\$ 57,231,159</u>	<u>\$ 15,595,623</u>	<u>\$ 72,826,782</u>

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS (Continued)

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(6) Changes in Long-term Obligations (continued)

(G) Southeast Louisiana Project

In 2010, the Coastal Protection and Restoration Authority of Louisiana entered into agreements (SELA PPA and SELA DPA) with the Department of the Army for the Southeast Louisiana, Louisiana Project in Jefferson and Orleans Parishes (the Project). The purpose of the Project is to provide flood damage reduction and interior drainage for Orleans and Jefferson Parishes in southeast Louisiana. The agreements set forth the obligations of the federal government and non-federal sponsors, including the Board, regarding the construction and the operation, maintenance, repair, rehabilitation, and replacement of the Project. For the projects, the federal government is responsible for 65% of the project costs and the non-federal sponsors are responsible for the remaining 35%. Under the agreement, the Department of the Army, subject to the availability of funds appropriated by the Congress of the United States, shall design and construct specified work at 100% federal expense. The Board will be allowed to defer payment of its required non-federal contribution of funds of 35% and to pay said contribution of funds with interest over a period of not more than 30 years from the date of completion of the project or separable element of the project. The interest rate to be used in computing the interest shall be determined by the Secretary of the Treasury, taking into consideration average market yields on outstanding marketable obligations of the United States with remaining periods of maturity comparable to the payment period during the month preceding the Government fiscal year in which the first federal construction contract for such separable element is awarded to the SELA PPA, plus a premium of one-eighth of one percentage point for transaction costs. The amount due as of December 31, 2016 and 2015 is \$163,995,508 and \$115,703,588, respectively.

(7) Due to City of New Orleans

The Board bills and collects sanitation charges on behalf of the City of New Orleans (the City). The Board is not liable for any uncollected sanitation charges.

Additionally, amounts included in accounts payable due to the City for works performed by the Department of Public Works on behalf of the Board, were \$2,435,653 and \$8,739,076 at December 31, 2016 and 2015, respectively.

(8) Property Taxes

Property taxes are levied by the City of New Orleans. Taxes on real and personal property attach as an enforceable lien on the property as of January 1. Taxes are levied on January 1, payable on January 1, and delinquent on February 1.

The assessed value of the property is determined by an elected Assessor. The assessed value for 2016 and 2015 was \$3,653,953,630 and \$3,345,017,798, respectively. The combined tax rate dedicated for the Board for the years ended December 31, 2016 and 2015 was \$16.43 per \$1,000 of assessed valuation. These dedicated funds are available for operations, maintenance, construction, and extension of the drainage system (except for subsurface systems).

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

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(9) Commitments

(A) Capital Improvements

At December 31, 2016, the Board's budget for its ten year capital improvements program totaled \$2,675,017,000 including \$1,054,974,000 for water, \$684,340,000 for sewerage and \$935,703,000 for drainage.

Due to certain regulatory and legislative changes, additional capital improvements will probably be required. Future capital improvement program expenditures may require the issuance of additional debt depending on the amount and timing of expenditures. As of December 31, 2016, the Board has committed or appropriated \$49,491,125 in investments for use in future capital projects and has \$186,283,124 of cash and cash equivalents restricted for future capital projects

The capital improvements budget for 2017 is \$369,236,000, including \$111,252,000 for projects, which are expected to be funded by federal grants and programs. Significant projects included in property, plant and equipment in progress as of December 31, 2016 include the following:

Hurricane Katrina related Repairs and Replacements  
Southeast Louisiana Flood Control Program  
Sewer System Sanitation Evaluation and Rehabilitation Program  
Eastbank Sewer Treatment Plant  
Westbank Sewer Treatment Plant  
Wetlands Assimilation Project  
Hazard Mitigation Grant Program

(B) Self-insurance

The Board is self-insured for general liability, workers' compensation, and hospitalization benefits and claims. Settled claims have not exceeded excess coverage in any of the past three fiscal years. Hospitalization benefits are charged to payroll related expense.

General liability claims are segregated internally by "claims" and "suits" depending on the scope and type of claim and are handled by the Office of the Special Counsel and Administrative Services. Individual general liability losses have ranged from \$100 to \$7,500,000, illustrating the volatility of this exposure. The claims expense provision for 2016 and 2015 amounted to \$4,417,197 and \$1,006,238, respectively.

Worker's compensation expense provision for 2016 and 2015 amounted to \$2,959,527 and \$1,529,476, respectively.

The hospitalization self-insurance benefits are administered by HealthSmart Benefit Solutions. The Board's expense provision in excess of employee contributions for 2016 and 2015 was \$22,055,034 and \$15,863,624, respectively, and is included in payroll related expenses.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NOTES TO FINANCIAL STATEMENTS**  
**(Continued)**

(9) Commitments (continued)

(B) Self-insurance (continued)

Changes in the claims payable amount are as follows (health payments are reflected net):

	<u>2016</u>	<u>2015</u>
Beginning of Year	\$ 13,172,580	\$ 12,814,193
Current Year Claims and Estimate Change	29,126,683	17,688,582
Claim Payments	<u>(25,094,492)</u>	<u>(17,330,195)</u>
End of Year	<u>\$ 17,204,771</u>	<u>\$ 13,172,580</u>

The composition of claims payable is as follows:

	<u>2016</u>	<u>2015</u>
Short-term:		
Workers' compensation	\$ 1,465,740	\$ 958,860
Health insurance	2,107,501	1,867,600
General liability	<u>12,080,835</u>	<u>7,855,552</u>
Total short-term	<u>15,654,076</u>	<u>10,682,012</u>
Long-term:		
Workers' compensation	<u>1,550,695</u>	<u>2,490,568</u>
Total long-term	<u>1,550,695</u>	<u>2,490,568</u>
Total	<u>\$ 17,204,771</u>	<u>\$ 13,172,580</u>

(9) Commitments (continued)

(C) Regulatory Matters

The Sewer System Evaluation and Rehabilitation Program (SSERP) was initially estimated to cost the Board \$408.2 million by the original Consent Decree with an end date of 2015. However, the Board has negotiated, and continues to negotiate with U.S. Environmental Protection Agency (EPA), extensions beyond the original Consent Decree deadline. Consequently, the original Consent Decree has been modified to currently provide an end date of October 2019.

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS (Continued)

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(9) Commitments (continued)

(C) Regulatory Matters

The Board participates in a number of federal programs which are governed by various rules and regulations. Costs charged to the respective grant programs are subject to audit and adjustment by the grantor agencies; therefore, to the extent that the Board has not complied with the rules and regulations governing the grants, refunds of any money received and the collectability of any related receivable as of December 31, 2016 might be impaired. In management's opinion, there are no significant contingent liabilities relating to compliance with the rules and regulations governing state and federal grants; therefore, no provision has been recorded in the accompanying financial statements for such contingencies. Audits of prior years have not resulted in any significant disallowed costs or refunds. Any costs that would be disallowed would be recognized in the period agreed upon by the grantor agency and the Board.

(D) Post-employment Healthcare Benefits

Plan Description – The Board's post-employment benefit plan is a single-employer defined benefit plan. The Board's post-employment medical benefits for retirees are provided through a self-insured medical plan and are made available to employees upon actual retirement.

The retirement eligibility (D.R.O.P. entry) provisions are as follows: 30 years of service at any age; age 62 and 10 years of service; age 65 and 5 years of service; age 70 regardless of service; or, if age plus service equals at least 80. Complete plan provisions are contained in the official plan documents. Currently, the Board provides post-employment medical benefits to 584 retired employees.

Contribution Rates - Employees do not contribute to their post-employment benefits costs until they become retirees and begin receiving those benefits. The plan provisions and contribution rates are contained in the official plan documents.

Fund Policy - Until 2007, the Board recognized the cost of providing post-employment medical benefits (the Board's portion of the retiree medical benefit premiums) as an expense when the benefit premiums were due and thus financed the cost of the post-employment benefits on a pay-as-you-go basis. In 2016 and 2015, the Board's portion of health care funding cost for retired employees totaled \$6,301,229 and \$6,603,088 respectively.

Effective January 1, 2007, the Board implemented Governmental Accounting Standards Board Statement Number 45, Accounting and Financial Reporting by Employers for Post-employment Benefits Other than Pensions (GASB 45). This amount was applied toward the Net OPEB Benefit Obligation as shown in the following tables.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

(9) Commitments (continued)

(D) Post-employment Healthcare Benefits (continued)

Annual Required Contribution - The Board's Annual Required Contribution (ARC) is an amount actuarially determined in accordance with GASB 45. The ARC is the sum of the Normal Cost plus the contribution to amortize the Unfunded Actuarial Accrued Liability (UAAL). A level dollar, open amortization period of 30 years (the maximum amortization period allowed by GASB 43/45) has been used for the post-employment benefits. The actuarially computed ARC is as follows:

	<u>2016</u>		<u>2015</u>	
Normal cost	\$	4,057,594	\$	4,342,774
30-year UAL amortization amount		9,449,908		9,721,952
Annual required contribution (ARC)	\$	<u>13,507,502</u>	\$	<u>14,064,726</u>

Net Post-employment Benefit Obligation - The table below shows the Board's Net Other Post-employment Benefit (OPEB) Obligation for fiscal years ending December 31:

	<u>2016</u>		<u>2015</u>	
Beginning Net OPEB Obligation	\$	67,579,016	\$	61,208,742
Annual required contribution		13,507,502		14,046,726
Interest on net OPEB obligation		2,703,161		2,448,350
ARC adjustment		<u>(3,908,109)</u>		<u>(3,521,714)</u>
OPEB cost		12,302,554		12,973,362
Contribution		-		-
Current year retiree premium		<u>(6,301,229)</u>		<u>(6,603,088)</u>
Change in net OPEB obligation		<u>6,001,325</u>		<u>6,370,274</u>
Ending net OPEB obligation	\$	<u>73,580,341</u>	\$	<u>67,579,016</u>

The following table shows the Board's annual other post-employment benefits cost, percentage of the cost contributed, and the net unfunded post-employment benefits liability:

<u>Fiscal Year Ended</u>	<u>Annual OPEB Cost</u>	<u>Percentage of Annual Cost Contributed</u>	<u>Net OPEB Liability (Asset)</u>
December 31, 2016	\$ 12,302,554	51.22%	\$73,580,341
December 31, 2015	\$ 12,973,362	50.90%	\$ 67,579,016
December 31, 2014	\$ 13,398,088	52.75%	\$ 61,208,745

Funded Status and Funding Progress - In 2016 and 2015, the Board made no contributions to its post-employment benefits plan. The plan is not funded, has no assets, and hence has a funded ratio of zero. Based on the January 1, 2016 actuarial valuation, the most recent actuarial valuation, the Actuarial Accrued Liability (AAL) at the end of the year December 31, 2016 was \$163,407,162 which is defined as that portion, as determined by a particular actuarial cost method (the Board uses the Unit Credit Cost Method), of the actuarial present value of post-employment plan benefits and expenses which is not provided by normal cost.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(9) Commitments (continued)

(D) Post-employment Healthcare Benefits (continued)

The required schedule of funding progress following the notes to the financial statements presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits. Additional information for the actuarial valuation is as follows:

	<b>2016</b>		<b>2015</b>
Actuarial Accrued Liability (AAL)	\$ 163,407,162	\$	168,111,644
Actuarial Value of Plan Assets (AVP)	-		-
Unfunded Act. Accrued Liability (UAAL)	\$ 163,407,162	\$	168,111,644
Funded Ratio (AVP/AAL)	0.00%		0.00%
Covered Payroll (active plan members)	\$ 37,607,035	\$	37,973,934
UAAL as a percentage of covered payroll	434.51%		442.70%

Actuarial Methods and Assumptions - Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. The actuarial valuation for post-employment benefits includes estimates and assumptions regarding (1) turnover rate, (2) retirement rate, (3) health care cost trend rate, (4) mortality rate, (5) discount rate (investment return assumption), and (6) the period to which the costs apply (past, current, or future years of service by employees). Actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

The actuarial calculations are based on the types of benefits provided under the terms of the substantive plan (the plan as understood by the Board and its employee plan members) at the time of the valuation and on the pattern of sharing costs between the Board and its plan members to that point. The projection of benefits for financial reporting purposes does not explicitly incorporate the potential effects of legal or contractual funding limitations on the pattern of cost sharing between the Board and plan members in the future. Consistent with the long-term perspective of actuarial calculations, the actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial liabilities and the actuarial value of assets.

Actuarial Cost Method - The ARC is determined using the Projected Unit Credit Cost Method. The employer portion of the cost for retiree medical care in each future year is determined by projecting the current cost levels using the healthcare cost trend rate and discounting this projected amount to the valuation date using the other described pertinent actuarial assumptions, including the investment return assumption (discount rate), mortality, and turnover.

Actuarial Value of Plan Assets – Since the OPEB obligation has not as yet been funded, there are not any plan assets. It is anticipated that in future valuations, should funding take place, plan assets will be valued using a smoothed market value method consistent with Actuarial Standards Board ASOP 6, as provided in paragraph number 125 of GASB Statement 45.

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS

(Continued)

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(9) Commitments (continued)

(D) Post-employment Healthcare Benefits (continued)

Turnover Rate - An age-related turnover scale based on actual experience has been used. The rates, when applied to the active employee census, produce a composite average annual turnover of approximately 8%. In addition to age related turnover, it has additionally been assumed that 10% of future eligible retirees will decline coverage upon retirement.

Post-employment Benefit Plan Eligibility Requirements - It is assumed that entitlement to benefits will commence five years after earliest eligibility for retirement (D.R.O.P. entry). The five years is to accommodate the anticipated period of the D.R.O.P. Also, if the initial eligibility for D.R.O.P. entry is prior to age 55, an additional one year delay has been assumed, and it has been assumed that members eligible for the "Rule of 80" retirement formula delay three years beyond that earliest retirement date. Medical benefits are provided to employees upon actual retirement. The retirement eligibility (D.R.O.P. entry) provisions are as follows: 30 years of service at any age; age 62 and 10 years of service; age 65 and five years of service; age 70 regardless of service; or, if age plus service equals at least 80. Entitlement to benefits continues through Medicare to death.

Investment Return Assumption (Discount Rate) - GASB Statement 45 states that the investment return assumption should be the estimated long-term investment yield on the investments that are expected to be used to finance the payment of benefits (that is, for a plan which is funded). Based on the assumption that the ARC will not be funded, a 4% annual investment return has been used in this valuation.

Health Care Cost Trend Rate - The expected rate of increase in medical cost is based on a graded schedule beginning with 8% annually, down to an ultimate annual rate of 5.0% for ten years out and later.

Mortality Rate - The 1994 Group Annuity Reserving (94GAR) table, projected to 2002, based on a fixed blend of 50% of the unloaded male mortality rate and 50% of the unloaded female mortality rates, was used. This is a published mortality table which was designed to be used in determining the value of accrued benefits in defined benefit pension plans.

Method of Determining the Value of Benefits - The "value of benefits" has been assumed to be the portion of the premium after retirement date expected to be paid by the employer for each retiree and has been used as the basis for calculating the actuarial present value of OPEB benefits to be paid. The current premium schedules for active and retired are "unblended" rates, as required by GASB 45.

Inflation Rate - Included in both the Investment Return Assumption and the Healthcare Cost Trend rates above is an implicit inflation assumption of 2.50% annually.

Projected Salary Increases - This assumption is not applicable since neither the benefit structure nor the valuation methodology involves salary.

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS

(Continued)

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(9) Commitments (continued)

(D) Post-employment Healthcare Benefits (continued)

Post-retirement Benefit Increases – The plan benefit provisions in effect for retirees as of the valuation date have been used and it has been assumed for valuation purposes that there will not be any changes in the future.

(10) Deferred Compensation Plan

The Board offers its employees a deferred compensation plan created in accordance with Internal Revenue Code Section 457. This plan, available to all employees, permits them to defer a portion of their salary until future years. The deferred compensation is not available to employees until termination, retirement, death, or unforeseeable emergency. All amounts of compensation deferred under the plan, all property, and rights purchased with those amounts, and all income attributable to those amounts, property or rights are held in trust for the employees, therefore the assets of the plan are not included in these financial statements.

(11) Budgets

Operating and capital expenditure budgets are adopted by the Board on a basis consistent with accounting principles generally accepted in the United States. While not legally required, this budgetary information is employed as a management control device during the year. Comparison between actual and budgeted expenses is not a required presentation for an Enterprise Fund.

(12) Tax Abatement Agreement

The local government is subject to certain property tax abatements granted by the Louisiana State Board of Commerce and Industry (the “State Board”), a state entity governed by board members representing major economic groups and gubernatorial appointees. Abatements to which the government may be subject include those issued for property taxes under the Restoration Tax Abatement Program (“RTAP”). For the year ending December 31, 2016, the government participated in the Restoration Tax Abatement Program.

Under the RTAP, as authorized by Article 7, Section 21(H) of the Louisiana Constitution and Louisiana Revised Statutes 47:4311, companies that expand, restore, improve or develop an existing structure or structures in a downtown, historic, or economic development district can apply to the State Board and the local governing authority for a property tax exemption. The exemptions are granted for a 5 year term and are renewable for an additional 5 year term upon the approval of the State Board and the local governing authority. The property tax abatements have resulted in reductions of property taxes, which the tax assessor administers as a temporary reduction in the assessed value of the property involved. The abatement agreements stipulate a percentage reduction of property taxes, which can be as much as 100 percent. The local government may recapture abated taxes if a company fails to expand facilities or otherwise fail to fulfill its commitments under the agreement.

During 2016, the City Council of the City of New Orleans approved tax abatement projects with a total investment value of \$8,999,940 of which \$928,071 was for the Board.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS**

**(Continued)**

**(13) Segment Information**

The Board issued revenue bonds to finance its water and sewerage departments which operate the Board's water and sewerage treatment plants and distribution and collection systems. These bonds are accounted for in a single fund; however, investors in the revenue bonds rely solely on the revenue generated by the individual activities for repayment.

Summary financial information for these departments as of and for the years ended December 31 is as follows:

	<u>Condensed Statements of Net Position</u>			
	<u>Water</u>		<u>Sewer</u>	
	<u>2016</u>	<u>2015</u>	<u>2016</u>	<u>2015</u>
	(amounts in thousands)			
<b>Assets:</b>				
Current unrestricted assets	\$ 62,996	\$ 62,809	\$ 114,193	\$ 80,654
Restricted assets	119,807	140,980	92,317	137,611
Other assets	11,796	11,202	18	18
Property, plant and equipment	470,490	430,525	980,279	948,550
Total assets	<u>665,089</u>	<u>645,516</u>	<u>1,186,807</u>	<u>1,166,833</u>
Deferred outflows of resources:	5,659	6,388	8,977	9,997
Total assets and deferred outflows	<u>\$ 670,748</u>	<u>\$ 651,904</u>	<u>\$ 1,195,784</u>	<u>\$ 1,176,830</u>
<b>Liabilities:</b>				
Current	\$ 39,251	\$ 40,229	\$ 37,669	\$ 32,053
Current liabilities payable from restricted assets	3,247	1,096	15,675	15,109
Noncurrent liabilities	290,341	290,812	349,540	365,573
Total liabilities	<u>332,839</u>	<u>332,137</u>	<u>402,884</u>	<u>412,735</u>
Deferred inflows of resources:	<u>799</u>	<u>975</u>	<u>799</u>	<u>975</u>
<b>Net position:</b>				
Net investment in capital assets	350,742	207,049	775,028	667,599
Restricted	119,087	140,372	91,619	136,985
Unrestricted	<u>(132,719)</u>	<u>(28,629)</u>	<u>(74,546)</u>	<u>(41,464)</u>
Total net position	<u>337,110</u>	<u>318,792</u>	<u>792,101</u>	<u>763,120</u>
Total liabilities, deferred inflows, and net position	<u>\$ 670,748</u>	<u>\$ 651,904</u>	<u>\$ 1,195,784</u>	<u>\$ 1,176,830</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

(13) Segment Information (continued)

Condensed Statements of Revenues, Expenses and Changes in Net Position

	Water		Sewer	
	2016	2015	2016	2015
	(amounts in thousands)			
Service charges, pledged against bonds	\$ 85,986	\$ 81,729	\$ 105,620	\$ 96,503
Depreciation expense	(10,178)	(10,415)	(20,862)	(20,813)
Other operating expenses	(79,300)	(74,438)	(61,504)	(53,468)
Operating income (loss)	(3,492)	(3,124)	23,254	22,222
Nonoperating revenues (expenses):				
Investment earnings	2,105	967	2,309	1,342
Bond issuance costs	-	(403)	-	(1,107)
Other	275	261	312	322
Interest expense	-	-	-	-
Total nonoperating revenues (expenses)	2,380	825	2,621	557
Capital contributions	19,430	16,516	3,106	20,904
Change in net position	18,318	14,217	28,981	43,683
Beginning net position	318,792	304,575	763,120	719,437
Ending net position	\$ 337,110	\$ 318,792	\$ 792,101	\$ 763,120

Condensed Statements of Cash Flows

	Water		Sewer	
	2016	2015	2016	2015
	(amounts in thousands)			
Net cash provided by (used in):				
Operating activities	\$ 19,009	\$ 1,214	\$ 38,310	\$ 55,695
Noncapital financing activities	276	261	313	323
Capital and related financing activities	(44,284)	75,535	(64,358)	45,495
Investing activities	2,957	1,394	2,757	(2,043)
Net increase	(22,042)	78,404	(22,978)	99,470
Cash and cash equivalents:				
Beginning of year	174,375	95,971	177,805	78,335
End of year	\$ 152,333	\$ 174,375	\$ 154,827	\$ 177,805

## SEWERAGE AND WATER BOARD OF NEW ORLEANS

### NOTES TO FINANCIAL STATEMENTS

(Continued)

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(14) Natural Disaster

During the years ended, December 31, 2016 and 2015, the Board has cumulatively received approximately \$361.1 million and \$349.9 million, respectively, of cash reimbursements from the Federal Emergency Management Agency (FEMA). Included in accounts receivable as of December 31, 2016 and 2015 are \$11,098,232 and \$19,654,795, respectively, of reimbursements due from FEMA under the Disaster Grants program. Eligible FEMA grants totaling in excess of \$803.8 million are in various stages of the approval process and include amounts for system repairs, building repairs, vehicle and equipment repairs, and replacements, temporary power, supplies and other costs.

On June 29, 2007, the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana, City of New Orleans, Louisiana, and the Louisiana Public Facilities Authority (LPFA). The LPFA agreed to issue its bonds to provide the cash capital investment to pay for capital improvements of the City of New Orleans and the Board. The establishment of the construction fund permits the Board and City of New Orleans to publicly bid contracts that are subject to a Project Worksheet that has been obligated by FEMA or for which an award letter has been received and encumber such amounts. The State of Louisiana, City of New Orleans, and Sewerage and Water Board agree that as FEMA pays any reimbursement amounts related to projects for which disbursements have been made, or the City or the Sewerage and Water Board receives monies related to the hazard mitigation grant program for which disbursements have been made from the construction fund; the full amount of such projects shall be deposited in the construction fund and used to fund additional projects until all City of New Orleans and Sewerage and Water Board improvements are completed. The total amount made available to the Board under the agreement was \$100,000,000. The agreement also permits disbursements from the construction fund for projects with a Project Worksheet that have not been obligated by FEMA, and as a result, will not be reimbursed by FEMA. The Board is not required to reimburse the construction fund for these unobligated projects. At December 31, 2016 and 2015, the Board had an outstanding obligation under the agreement of \$11,098,232 and \$14,094,172 included as a liability in due to other governments on the statements of net position, which represent amounts not yet reimbursed by FEMA for obligated projects and deposited back into the construction fund.

(15) Change in Accounting Principles

The Board has implemented GASB Statement No. 72, Fair Value Measurement and Application, in 2016. This Statement required investments to be measured at fair value at Note 2(A).

(16) New Pronouncements

In June 2015, the Governmental Accounting Standards Board issued GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans, which establishes improved financial reporting primarily through enhanced note disclosures and schedules of required supplementary information for OPEB plans. The new information will enhance the decision-usefulness of the financial reports for OPEB plans, the value for assessing accountability, and their transparency by providing information about measure of net OPEB liabilities and explanations of how and why those liabilities changed from year to year. The Board will implement GASB 74 on the financial statements for the year ended December 31, 2017.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**NOTES TO FINANCIAL STATEMENTS  
(Continued)**

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(17) Subsequent Event

Management has evaluated subsequent events through the date that the financial statements were available to be issued, June 27, 2017, and determined that no events occurred that require additional disclosure. No events occurring after this date have been evaluated for inclusion in these financial statements.

**REQUIRED SUPPLEMENTARY INFORMATION  
(GASB STATEMENTS NO. 67, NO. 68, NO.71, AND NO.45)**

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**Required Supplementary Information Under GASB Statement No. 67, 68, and 71**  
**For the years ended December 31, 2016 and 2015**

**SCHEDULE OF NET PENSION LIABILITY**

Actuarial Valuation Date December 31	Total Pension Liability	Plan Fiduciary Net Position	Employer's Net Pension Liability	Plan Fiduciary Net Position as a % of Total Pension Liability	Covered Payroll (millions)	Net Pension Liability as a Percentage of Payroll
2016	\$ 305,105,919	\$ 224,356,261	\$ 80,749,658	73.53%	\$ 35,363,156	228.34%
2015	299,395,091	222,427,527	76,967,564	74.29%	33,672,902	228.57%
2014	296,244,723	236,556,671	59,688,052	79.85%	31,378,001	190.22%
2013	290,919,481	234,358,565	56,560,916	80.56%	29,706,715	190.40%

**SCHEDULE OF EMPLOYER CONTRIBUTIONS**

Year Ended	Actuarially Determined Contribution	Contributions in Relation to the Actuarial Determined Contribution	Contribution Deficiency (Excess)	Covered Payroll Contribution	Contributions as a % of Covered Payroll
2016	\$ 11,024,398	\$ 6,407,201	\$ 4,617,197	\$ 35,363,156	18.12%
2015	10,799,993	6,506,652	4,293,341	33,672,902	19.32%
2014	11,171,823	6,055,890	5,115,933	31,378,001	19.30%
2013	11,086,546	5,946,614	5,139,932	29,706,715	20.02%
2012	9,127,658	6,287,658	2,840,000	29,074,529	21.63%
2011	9,815,606	5,564,936	4,250,670	29,774,937	18.69%
2010	8,358,739	5,140,096	3,218,643	29,670,378	17.32%
2009	7,591,495	5,188,175	2,403,320	39,947,906	12.99%
2008	7,146,527	5,104,789	2,041,738	29,466,571	17.32%
2007	4,598,587	4,169,892	428,695	26,544,603	15.71%

**Note to schedule:** Method and assumptions used in calculations of actuarially determined contributions. The actuarially determined contribution rates in the schedule of employer contributions are calculated as of December 31, 2016 and 2015. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule.

Actuarial cost method	Entry age normal
Amortization method	Level dollar
Remaining amortization period	10 years
Asset valuation method	7-year weighted market average
Inflation	2.0% for the years ended December 31, 2016 and 2015
Salary increases	5.0%, average, including inflation
Investment rate of return	7.0%, net of pension plan investment expense, including inflation

**SCHEDULE OF INVESTMENT RETURNS**

Year Ended	Net Money-Weighted Rate of Return
2016	5.79%
2015	-1.79%
2014	4.94%

(Continued)

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**Required Supplementary Information Under GASB Statement No. 67, 68, and 71**  
**For the years ended December 31, 2016 and 2015**  
(continued)

**SCHEDULE OF CHANGES IN NET PENSION LIABILITY**

	<u>2016</u>	<u>2015</u>	<u>2014</u>
<b>Total Pension Liability</b>			
Service cost	\$ 3,030,912	\$ 2,788,621	\$ 3,417,599
Interest on total pension liability	20,957,657	20,737,131	20,364,364
Effect of plan changes	-	-	-
Effect of economic/demographic gains or (losses)	834,712	(1,978,038)	(1,721,210)
Effect of assumption changes or inputs	-	-	-
Benefit payments	(19,112,455)	(18,397,344)	(16,735,511)
<b>Net change in total pension liability</b>	<u>5,710,826</u>	<u>3,150,370</u>	<u>5,325,242</u>
<b>Total pension liability, beginning</b>	<u>299,395,093</u>	<u>296,244,723</u>	<u>290,919,481</u>
<b>Total pension liability, ending (a)</b>	<u>305,105,919</u>	<u>299,395,093</u>	<u>296,244,723</u>
<b>Plan Fiduciary Net Position</b>			
Employer contributions	6,407,201	6,506,652	6,055,890
Employee contributions	2,063,122	1,847,259	1,535,723
Investment income net of investment expenses	12,570,866	(4,085,711)	11,342,004
Benefit payments	(19,112,455)	(18,397,344)	(16,735,511)
Administrative expenses	-	-	-
<b>Net change in plan fiduciary net position</b>	<u>1,928,734</u>	<u>(14,129,144)</u>	<u>2,198,106</u>
<b>Plan fiduciary net position, beginning</b>	<u>222,427,527</u>	<u>236,556,671</u>	<u>234,358,565</u>
<b>Plan fiduciary net position, ending (b)</b>	<u>\$ 224,356,261</u>	<u>\$ 222,427,527</u>	<u>\$ 236,556,671</u>
<b>Board's net pension liability, ending = (a) - (b)</b>	<u>\$ 80,749,658</u>	<u>\$ 76,967,566</u>	<u>\$ 59,688,052</u>
<b>Plan fiduciary net position as a % of total pension liability</b>	73.53%	74.29%	79.85%
<b>Covered payroll</b>	\$ 35,363,156	\$ 33,672,902	\$ 31,378,001
<b>Board's net pension liability as a % of covered payroll</b>	228.34%	228.57%	190.22%

**Notes to Schedules:** The schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

*Factors that significantly affect trends in amounts reported.* For the periods presented, there were no changes of benefit terms, changes in the size or composition of the population covered by the benefit terms, or changes of assumptions which significantly affect trends in the amounts reported.

See accompanying notes to financial statements.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**Required Supplementary Information Under GASB Statement No. 45**  
**SCHEDULE OF FUNDING PROGRESS**  
**Last Eight Years**

Actuarial Valuation Date December 31	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	(Overfunded) Unfunded AAL	Funded Ratio	Covered Payroll (millions)	Unfunded AAL as a Percentage of payroll
2016	\$ -	\$ 163,407,162	\$ 163,407,162	0.00%	37.61	434.48%
2015	-	168,111,644	168,111,644	0.00%	33.67	499.29%
2014	-	174,861,486	174,861,486	0.00%	36.10	484.38%
2013	-	172,246,761	172,246,761	0.00%	35.44	486.02%
2012	-	176,321,034	176,321,034	0.00%	35.11	502.25%
2011	-	178,681,549	178,681,549	0.00%	35.08	509.33%
2010	-	178,904,131	178,904,131	0.00%	34.74	514.92%
2009	-	184,174,734	184,174,734	0.00%	33.88	543.56%

**SCHEDULE OF EMPLOYER CONTRIBUTIONS**

Year Ended	Annual Required Contribution	Actual Contribution	Percentage Contribution
2016	\$ 13,507,502	\$ 6,301,229	46.65%
2015	14,064,726	6,603,088	46.95%
2014	14,474,798	7,067,777	48.83%
2013	14,206,678	6,643,309	46.76%
2012	14,430,043	6,070,360	42.07%
2011	14,659,445	6,057,637	41.32%
2010	14,759,470	5,728,065	38.81%
2009	15,046,112	5,487,971	36.47%

See accompanying notes to financial statements.

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**SUPPLEMENTARY INFORMATION**

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
 SCHEDULE OF NET POSITION BY DEPARTMENT  
 ENTERPRISE FUND  
 As of December 31, 2016 and 2015

	Water System		Sewerage System		Drainage System		Total	
	2016	2015	2016	2015	2016	2015	2016	2015
<b>ASSETS AND DEFERRED OUTFLOWS OF RESOURCES</b>								
<b>Current assets:</b>								
Unrestricted and undesignated								
Cash and cash equivalents	\$ 17,576,424	\$ 6,369,024	\$ 21,897,392	\$ 7,701,581	\$ 4,121,692	\$ 10,619,098	\$ 43,595,508	\$ 24,689,703
Accounts receivable:								
Customers, net of allowance	12,670,929	9,910,432	13,723,965	8,457,158			26,394,894	18,367,590
Taxes	30,922,836	22,243,714	24,082,550	25,006,062	9,863,262	8,044,268	9,863,262	8,044,268
Grants	460,706	1,189,192	238,704	1,024,643	8,573,100	5,538,652	63,578,486	52,808,428
Miscellaneous	(11,228,350)	(2,761,777)	12,284,673	4,257,844	(1,056,323)	(1,496,067)	1,703,577	3,415,995
Due from (to) other internal departments	3,196,552	3,536,187	1,065,180	1,173,098	494,463	594,460	4,756,195	5,303,745
Inventory of supplies	386,282	640,067	231,700	485,485	(172)	253,613	617,810	1,379,165
Prepaid expenses	53,985,379	41,126,839	73,524,164	48,105,871	23,000,189	24,776,184	150,509,732	114,008,894
Total unrestricted and undesignated	7,387,079	19,951,071	39,518,505	31,329,687	18,672,564	17,645,578	65,578,148	68,926,336
Designated cash, cash equivalents, and investments	1,623,874	1,731,555	1,150,704	1,218,569	1,117,652	1,170,614	3,892,230	4,120,738
Cash and cash equivalents designated for capital projects	9,010,953	21,682,626	40,669,209	32,548,256	19,790,216	18,816,192	69,470,378	73,047,074
Other	62,996,332	62,809,465	114,193,373	80,654,127	42,790,405	43,592,376	219,980,110	187,035,968
Total current assets	102,336,574	124,024,155	61,225,105	107,234,413	6,874,422	4,461,677	170,436,101	235,720,245
Restricted cash, cash equivalents, and investments	719,890	607,786	697,842	626,442	689,769	633,273	2,107,501	1,867,501
Cash and cash equivalents restricted for capital projects	16,750,155	16,347,779	30,393,522	29,750,047	74,304	101,833	47,217,981	46,199,659
Health insurance reserve	119,806,619	140,979,720	92,316,469	137,610,902	7,638,495	5,196,783	219,761,583	283,787,405
Debt service reserve	808,301,167	760,684,249	1,244,624,751	1,193,915,014	1,616,309,899	1,449,258,384	3,669,235,817	3,403,857,647
Total restricted cash, cash equivalents, and investment	337,811,191	330,138,757	264,345,441	245,365,176	322,387,525	301,452,509	924,544,157	876,976,442
Property, plant and equipment	470,489,976	430,525,492	980,279,310	948,549,838	1,293,922,374	1,147,805,875	2,744,691,660	2,526,881,205
Less: accumulated depreciation								
Property, plant, and equipment, net	11,773,473	11,178,704	1,186,807,117	1,166,832,832	1,344,361,674	1,196,605,434	3,196,258,141	3,008,954,597
Other assets	22,950	22,950	17,965	17,965	10,400	10,400	51,315	51,315
Designated cash for customer deposits	11,796,423	11,201,654	17,965	17,965	10,400	10,400	11,824,788	11,230,019
Deposits	602,093,018	582,706,866	1,072,613,744	1,086,178,705	1,301,571,269	1,153,013,058	2,976,278,031	2,821,898,629
Total noncurrent assets	665,089,350	645,516,331	1,186,807,117	1,166,832,832	1,344,361,674	1,196,605,434	3,196,258,141	3,008,954,597
Total assets	5,634,846	6,360,010	5,634,846	6,360,010	5,634,846	6,360,010	16,904,538	19,080,030
Deferred outflows of resources:	23,973	28,356	3,342,312	3,636,958	236,032	289,555	3,602,317	3,954,869
Deferred amounts related to net pension liability	5,658,819	6,388,366	8,977,158	9,996,968	5,870,878	6,649,565	20,506,855	23,034,899
Deferred loss on bond refunding								
Total deferred outflows of resources	\$ 670,748,169	\$ 651,904,697	\$ 1,195,784,275	\$ 1,176,829,800	\$ 1,350,232,552	\$ 1,203,254,999	\$ 3,216,764,996	\$ 3,031,989,496
Total assets and deferred outflows of resources								

(Continued)

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
 SCHEDULE OF NET POSITION BY DEPARTMENT, CONTINUED  
 ENTERPRISE FUND  
 As of December 31, 2016 and 2015

	Water System		Sewerage System		Drainage System		Total	
	2016	2015	2016	2015	2016	2015	2016	2015
<b>LIABILITIES, DEFERRED OUTFLOWS OF RESOURCES, AND NET POSITION</b>								
Current liabilities (payable from current assets):								
Accounts payable	\$ 13,500,638	\$ 14,521,423	\$ 15,978,725	\$ 17,519,962	\$ 10,539,722	\$ 6,897,639	\$ 40,019,085	\$ 38,939,024
Due to City of New Orleans	394,882	154,760	-	-	-	-	394,882	154,760
Disaster Reimbursement Revolving Loan	5,732,171	6,984,993	4,644,925	127,225	721,136	6,981,954	11,098,232	14,094,172
Retainers and estimates payable	4,793,969	3,927,628	3,139,698	2,880,349	1,659,744	1,512,276	9,593,411	8,320,253
Due to other fund	73,244	64,777	34,309	30,335	42,659	37,820	150,212	132,932
Accrued salaries	453,745	332,322	175,077	90,115	212,039	148,760	840,861	571,197
Accrued vacation and sick pay	4,506,100	4,389,813	3,059,661	2,938,579	2,256,734	2,172,435	9,822,495	9,500,827
Claims payable	4,919,939	3,793,255	4,680,411	2,644,607	6,053,726	4,244,150	15,654,076	10,682,012
Debt Service Assistance Fund loan payable	406,727	388,691	3,961,768	3,786,093	259,121	247,630	4,627,616	4,422,414
Advances from federal government	4,393,604	5,585,228	1,976,305	1,976,305	-	-	6,369,909	7,561,533
Other liabilities	75,533	85,858	18,367	59,824	12,488	8,109	106,388	153,791
<b>Total Current liabilities (payable from current assets):</b>	<b>39,250,552</b>	<b>40,228,748</b>	<b>37,669,246</b>	<b>32,053,394</b>	<b>21,757,369</b>	<b>22,250,773</b>	<b>98,677,167</b>	<b>94,532,915</b>
Current liabilities (payable from restricted assets):								
Accrued interest	536,974	743,300	1,603,135	1,918,832	95,989	106,696	2,236,098	2,768,828
Bonds payable	2,540,000	325,000	13,397,000	12,852,000	1,690,000	1,650,000	17,627,000	14,827,000
Retainers and estimates payable	170,109	27,830	675,299	337,912	-	-	845,408	365,742
<b>Total current liabilities (payable from restricted assets):</b>	<b>3,247,083</b>	<b>1,096,130</b>	<b>15,675,434</b>	<b>15,108,744</b>	<b>1,785,989</b>	<b>1,756,696</b>	<b>20,708,506</b>	<b>17,961,570</b>
<b>Total current liabilities</b>	<b>42,497,635</b>	<b>41,324,878</b>	<b>53,344,680</b>	<b>47,162,138</b>	<b>23,543,358</b>	<b>24,007,469</b>	<b>119,385,673</b>	<b>112,494,485</b>
Long-term liabilities:								
Claims payable	516,898	830,189	516,898	830,189	516,899	830,190	1,550,695	2,490,568
Net pension liability	26,916,553	25,655,855	26,916,553	25,655,855	26,916,552	25,655,854	80,749,658	76,967,564
Other postretirement benefits liability	26,967,946	24,967,504	23,989,599	21,989,157	22,622,796	20,622,355	73,580,341	67,579,016
Bonds payable, net of current maturities	219,544,431	223,151,314	253,079,459	268,098,647	9,684,268	11,481,672	482,308,158	502,731,633
Southeast Louisiana Project liability	-	-	-	-	163,995,508	115,703,588	163,995,508	115,703,588
Debt Service Assistance Fund loan payable, net of current maturities	4,622,185	5,028,912	45,037,439	48,999,207	2,943,485	3,202,606	52,603,109	57,230,725
Customer deposits	11,773,473	11,178,704	-	-	-	-	11,773,473	11,178,704
Total long-term liabilities	290,341,486	290,812,478	349,539,948	365,573,055	226,679,508	177,496,265	866,560,942	833,881,798
<b>Total liabilities</b>	<b>332,839,121</b>	<b>332,137,356</b>	<b>402,884,628</b>	<b>412,735,193</b>	<b>250,222,866</b>	<b>201,503,734</b>	<b>985,946,615</b>	<b>946,376,283</b>
Deferred inflows of resources:								
Deferred amounts related to net pension liability	798,811	974,966	798,811	974,966	798,811	974,966	2,396,433	2,924,898
<b>Total deferred inflows of resources</b>	<b>798,811</b>	<b>974,966</b>	<b>798,811</b>	<b>974,966</b>	<b>798,811</b>	<b>974,966</b>	<b>2,396,433</b>	<b>2,924,898</b>
Net position:								
Net investment in capital assets	350,742,119	207,049,178	775,027,956	667,599,191	1,289,422,528	1,134,674,203	2,415,192,603	2,009,322,572
Restricted for debt service	16,750,155	16,347,779	30,393,522	29,150,047	74,304	101,833	47,217,981	46,199,659
Restricted for capital improvements	102,336,574	124,024,155	61,225,105	107,234,413	6,874,422	4,461,677	170,436,101	235,720,245
Unrestricted	(132,718,611)	(28,628,737)	(74,545,747)	(41,464,010)	(197,160,379)	(138,461,414)	(404,424,737)	(208,554,161)
<b>Total net position</b>	<b>337,110,237</b>	<b>318,792,375</b>	<b>792,100,836</b>	<b>763,119,641</b>	<b>1,099,210,875</b>	<b>1,000,776,299</b>	<b>2,228,421,948</b>	<b>2,082,688,315</b>
Total liabilities, deferred inflows of resources, and net position	\$ 670,748,169	\$ 651,904,697	\$ 1,195,784,275	\$ 1,176,829,800	\$ 1,350,232,552	\$ 1,203,254,999	\$ 3,216,764,996	\$ 3,031,989,496

See accompanying independent auditors' report.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SCHEDULE OF REVENUES, EXPENSES AND CHANGES IN NET POSITION BY DEPARTMENT  
ENTERPRISE FUND**

For the years ended December 31, 2016 and 2015

	Water System			Sewerage System			Drainage System			Total
	2016	2015	2016	2015	2016	2015	2016	2015		
<b>Operating revenues:</b>										
Sales of water and delinquent fees	\$ 83,158,940	\$ 78,007,937	\$	\$	\$	\$	\$	\$	\$ 83,158,940	\$ 78,007,937
Sewerage service charges	319,991	305,384	104,795,184	95,636,966	-	-	-	-	104,795,184	95,636,966
Plumbing inspection and license fees	2,506,704	3,416,155	318,511	305,384	-	-	-	-	638,502	610,768
Other revenues			505,847	560,157	1,065,829	4,313,845			4,078,380	8,290,157
<b>Total operating revenues</b>	<b>85,985,635</b>	<b>81,729,476</b>	<b>105,619,542</b>	<b>96,502,507</b>	<b>1,065,829</b>	<b>4,313,845</b>	<b>192,671,006</b>	<b>182,545,828</b>		
<b>Operating Expenses:</b>										
Power and pumping	2,823,007	2,987,349	3,033,447	2,773,821	7,642,762	7,378,085	13,499,216	13,139,255		
Treatment	7,450,742	7,866,310	12,739,603	10,765,096	109,999	109,231	20,300,344	18,740,637		
Transmission and distribution	21,581,831	20,459,955	14,763,699	14,339,390	829,176	1,078,792	37,174,706	35,878,137		
Customer accounts	2,071,364	1,900,893	2,071,360	1,900,889	8,303	5,623	4,151,027	3,807,405		
Customer service	2,064,751	1,915,020	2,082,863	1,933,616	123,941	124,708	4,271,555	3,973,344		
Administration and general	6,481,119	5,525,583	6,055,452	5,566,052	5,969,536	5,756,618	18,506,107	16,848,253		
Payroll related	18,842,941	15,465,794	13,998,733	11,673,366	11,149,205	9,210,674	43,990,879	36,349,834		
Maintenance of general plant	14,379,697	16,177,610	2,722,422	2,983,385	6,877,190	7,987,510	23,979,309	27,148,505		
Depreciation	10,177,757	10,414,611	20,861,655	20,813,385	21,021,262	20,433,857	52,060,674	51,661,651		
Provision for doubtful accounts	1,757,867	1,327,189	1,655,537	1,138,942	-	-	3,413,404	2,466,131		
Provision for claims	1,847,021	813,979	2,380,775	392,928	2,223,009	1,228,302	6,450,805	2,435,209		
<b>Total operating expenses</b>	<b>89,478,097</b>	<b>84,854,293</b>	<b>82,365,546</b>	<b>74,280,668</b>	<b>55,954,383</b>	<b>53,313,400</b>	<b>227,798,026</b>	<b>212,448,361</b>		
<b>Operating income (loss)</b>	<b>(3,492,462)</b>	<b>(3,124,817)</b>	<b>23,253,996</b>	<b>22,221,839</b>	<b>(54,888,554)</b>	<b>(48,999,555)</b>	<b>(35,127,020)</b>	<b>(29,902,533)</b>		
<b>Non-operating revenues (expenses):</b>										
Three-mill tax	-	-	-	-	16,043,825	14,139,193	16,043,825	14,139,193		
Six-mill tax	-	-	-	-	16,215,799	14,290,667	16,215,799	14,290,667		
Nine-mill tax	-	-	-	-	23,762,398	21,421,102	23,762,398	21,421,102		
Two-mill tax	-	-	-	-	7,526	4,960	7,526	4,960		
Other taxes	251,002	258,721	313,048	322,674	-	-	564,050	581,395		
Federal noncapital grants	24,738	2,405	-	-	-	-	24,738	2,405		
Interest income	2,104,903	966,949	2,308,629	1,341,518	253,938	202,579	4,667,470	2,511,046		
Bond issuance costs	-	(403,255)	-	(1,107,402)	-	-	-	(1,510,657)		
Interest expense	-	-	-	-	(32,471)	(53,518)	(32,471)	(53,518)		
<b>Total non-operating revenues (expenses)</b>	<b>2,380,643</b>	<b>824,820</b>	<b>2,621,677</b>	<b>556,790</b>	<b>56,251,015</b>	<b>50,004,983</b>	<b>61,253,335</b>	<b>51,386,593</b>		
<b>Income (expenses) before capital contributions</b>	<b>(1,111,819)</b>	<b>(2,299,997)</b>	<b>25,875,673</b>	<b>22,778,629</b>	<b>1,362,461</b>	<b>1,005,428</b>	<b>26,126,315</b>	<b>21,484,060</b>		
<b>Capital contributions</b>	<b>19,429,681</b>	<b>16,516,493</b>	<b>3,105,522</b>	<b>20,904,074</b>	<b>97,072,115</b>	<b>94,478,639</b>	<b>119,607,318</b>	<b>131,899,206</b>		
<b>Change in net position</b>	<b>18,317,862</b>	<b>14,216,496</b>	<b>28,981,195</b>	<b>43,682,703</b>	<b>98,434,576</b>	<b>95,484,067</b>	<b>145,733,633</b>	<b>153,383,266</b>		
<b>Net position, beginning of year</b>	<b>318,792,375</b>	<b>304,575,879</b>	<b>763,119,641</b>	<b>719,436,938</b>	<b>1,000,776,299</b>	<b>905,292,232</b>	<b>2,082,688,315</b>	<b>1,929,305,049</b>		
<b>Net position, end of year</b>	<b>\$ 337,110,237</b>	<b>\$ 318,792,375</b>	<b>\$ 792,100,836</b>	<b>\$ 763,119,641</b>	<b>\$ 1,099,210,875</b>	<b>\$ 1,000,776,299</b>	<b>\$ 2,228,421,948</b>	<b>\$ 2,082,688,315</b>		

See accompanying independent auditors' report

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SCHEDULE OF PROPERTY, PLANT AND EQUIPMENT BY DEPARTMENT**  
**As of December 31, 2016 and 2015**

	2016			
	Water	Sewer	Drainage	Total
Real estate rights, non depreciable	\$ 2,899,839	\$ 1,925,647	\$ 8,721,791	\$ 13,547,277
Power and pumping stations - buildings	65,815,156	46,788,994	266,828,264	379,432,414
Power and pumping stations - machinery	142,047,245	52,404,350	128,197,839	322,649,434
Distribution systems	270,088,600	-	-	270,088,600
Sewerage collection	-	519,874,279	-	519,874,279
Canals and subsurface drainage	-	-	705,506,297	705,506,297
Treatment plants	-	200,711,986	-	200,711,986
Connections and meters	69,626,596	30,617,082	-	100,243,678
Power transmission	10,727,059	7,535,716	13,555,173	31,817,948
General plant and buildings	<u>125,970,634</u>	<u>85,904,931</u>	<u>72,719,901</u>	<u>284,595,466</u>
 Total property, plant and equipment in service	 687,175,129	 945,762,985	 1,195,529,265	 2,828,467,379
Construction in progress	<u>121,126,038</u>	<u>298,861,766</u>	<u>420,780,634</u>	<u>840,768,438</u>
 Total property, plant and equipment	 808,301,167	 1,244,624,751	 1,616,309,899	 3,669,235,817
Accumulated depreciation	<u>337,811,191</u>	<u>264,345,441</u>	<u>322,387,525</u>	<u>924,544,157</u>
 Net property, plant and equipment	 <u>\$ 470,489,976</u>	 <u>\$ 980,279,310</u>	 <u>\$ 1,293,922,374</u>	 <u>\$ 2,744,691,660</u>

	2015			
	Water	Sewer	Drainage	Total
Real estate rights, non depreciable	\$ 2,898,138	\$ 1,929,243	\$ 9,103,579	\$ 13,930,960
Power and pumping stations - buildings	65,474,986	46,564,112	266,714,819	378,753,917
Power and pumping stations - machinery	139,873,285	50,862,868	126,582,551	317,318,704
Distribution systems	252,342,832	-	-	252,342,832
Sewerage collection	-	490,556,101	-	490,556,101
Canals and subsurface drainage	-	-	622,989,487	622,989,487
Treatment plants	-	200,451,465	-	200,451,465
Connections and meters	68,828,724	29,659,750	-	98,488,474
Power transmission	10,659,920	7,367,634	13,382,161	31,409,715
General plant and buildings	<u>125,276,954</u>	<u>85,567,502</u>	<u>71,702,471</u>	<u>282,546,927</u>
 Total property, plant and equipment in service	 665,354,839	 912,958,675	 1,110,475,068	 2,688,788,582
Construction in progress	<u>95,329,410</u>	<u>280,956,339</u>	<u>338,783,316</u>	<u>715,069,065</u>
 Total property, plant and equipment	 760,684,249	 1,193,915,014	 1,449,258,384	 3,403,857,647
Accumulated depreciation	<u>330,158,757</u>	<u>245,365,176</u>	<u>301,452,509</u>	<u>876,976,442</u>
 Net property, plant and equipment	 <u>\$ 430,525,492</u>	 <u>\$ 948,549,838</u>	 <u>\$ 1,147,805,875</u>	 <u>\$ 2,526,881,205</u>

See accompanying independent auditors' report.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SCHEDULE OF BONDS PAYABLE**  
 For the year ended December 31, 2016

	Annual Interest Rates	Interest Payment Dates	Issue Date	Final Maturity Date	Outstanding as of 12/31/2015	New Debt in 2016	Payments in 2016	Outstanding as of 12/31/2016
Drainage System Bonds, 2014 (9-Mills)	4.53%	(6/1;12/1)	12/1/2014	6/1/2022	\$ 12,750,000	\$ -	\$ 1,650,000	\$ 11,100,000
					12,750,000	-	1,650,000	11,100,000
Sewer Revenue Bonds, 2011	0.95%	(5/1; 11/1)	12/1/2011	12/1/1932	7,755,000	-	422,000	7,333,000
Sewer Revenue Bonds, 2014	4.87%	(6/1;12/1)	12/1/2014	6/1/1944	147,765,000	-	12,430,000	135,335,000
Sewer Revenue Bonds, 2015	5.00%	(6/1;12/1)	12/17/2015	12/1/1945	100,000,000	-	-	100,000,000
					255,520,000	-	12,852,000	242,668,000
Water Revenue Bonds, 2014	5.00%	(6/1;12/1)	12/1/2014	6/1/1944	103,525,000	-	325,000	103,200,000
Water Revenue Bonds, 2015	4.98%	(6/1;12/1)	12/17/2015	2/1/2030	100,000,000	-	-	100,000,000
					203,525,000	-	325,000	203,200,000
<b>TOTAL</b>					<b>\$ 471,795,000</b>	<b>\$ -</b>	<b>\$ 14,827,000</b>	<b>\$ 456,968,000</b>

See accompanying independent auditors' report.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SCHEDULE OF CASH RECEIPTS AND DISBURSEMENTS  
DEBT SERVICE AND DEBT SERVICE RESERVE  
REQUIRED BY BOND RESOLUTION  
For the year ended December 31, 2016**

	Debt Service Account				Debt Service Reserve Accounts		
	Water Revenue Bonds	Sewer Revenue Bonds	Drainage Revenue Bonds	Total	Water Revenue Bonds	Sewer Revenue Bonds	Total
Cash and investments at beginning of year	\$ 8,647,779	\$ 19,042,265	\$ 101,833	\$ 27,791,877	\$ 7,700,000	\$ 10,707,782	\$ 18,407,782
Cash receipts:							
Bond proceeds and accrued interest	-	2,275	-	2,275	-	-	-
Transfers from operating cash and debt service reserve	11,457,106	31,758,418	2,397,075	45,612,599	-	-	-
Excess debt service reserve fund applied to BANS 2006 Maturity	125,005	201,748	-	326,753	-	-	-
Total cash and investments	11,582,111	31,962,441	2,397,075	45,941,627	-	-	-
Cash disbursements:							
Principal and interest payments, cost of issuance and transfers	11,179,735	31,318,966	2,424,604	44,923,305	-	-	-
Total cash disbursements	11,179,735	31,318,966	2,424,604	44,923,305	-	-	-
Cash and investments at end of year	\$ 9,050,155	\$ 19,685,740	\$ 74,304	\$ 28,810,199	\$ 7,700,000	\$ 10,707,782	\$ 18,407,782

See accompanying independent auditors' report.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**CHANGES IN SELF-INSURANCE LIABILITIES BY DEPARTMENT**  
For the year ended December 31, 2016

	Beginning of Year	Current Year Claims and Estimate Change	Payments	End of Year
<b><u>WATER</u></b>				
Short-term:				
Workers' compensation	\$ 319,620	\$ 1,627,883	\$ 1,458,923	\$ 488,580
Health insurance	607,785	10,141,626	10,029,521	719,890
General liability	2,865,850	845,719	100	3,711,469
Total short-term	<u>3,793,255</u>	<u>12,615,228</u>	<u>11,488,544</u>	<u>4,919,939</u>
Long-term:				
Workers' compensation	830,189	(313,291)	-	516,898
Total long-term	<u>830,189</u>	<u>(313,291)</u>	<u>-</u>	<u>516,898</u>
Total	<u>\$ 4,623,444</u>	<u>\$ 12,301,937</u>	<u>\$ 11,488,544</u>	<u>\$ 5,436,837</u>
<b><u>SEWERAGE</u></b>				
Short-term:				
Workers' compensation	\$ 319,620	\$ 1,211,912	\$ 1,042,952	\$ 488,580
Health insurance	626,442	6,703,658	6,632,258	697,842
General liability	1,698,545	1,795,444	-	3,493,989
Total short-term	<u>2,644,607</u>	<u>9,711,014</u>	<u>7,675,210</u>	<u>4,680,411</u>
Long-term:				
Workers' compensation	830,189	(313,291)	-	516,898
Total long-term	<u>830,189</u>	<u>(313,291)</u>	<u>-</u>	<u>516,898</u>
Total	<u>\$ 3,474,796</u>	<u>\$ 9,397,723</u>	<u>\$ 7,675,210</u>	<u>\$ 5,197,309</u>
<b><u>DRAINAGE</u></b>				
Short-term:				
Workers' compensation	\$ 319,620	\$ 1,059,606	\$ 890,646	\$ 488,580
Health insurance	633,373	4,904,676	4,848,280	689,769
General liability	3,291,157	1,776,032	191,812	4,875,377
Total short-term	<u>4,244,150</u>	<u>7,740,314</u>	<u>5,930,738</u>	<u>6,053,726</u>
Long-term:				
Workers' compensation	830,190	(313,291)	-	516,899
Total long-term	<u>830,190</u>	<u>(313,291)</u>	<u>-</u>	<u>516,899</u>
Total	<u>\$ 5,074,340</u>	<u>\$ 7,427,023</u>	<u>\$ 5,930,738</u>	<u>\$ 6,570,625</u>
<b><u>TOTAL</u></b>				
Short-term:				
Workers' compensation	\$ 958,860	\$ 3,899,401	\$ 3,392,521	\$ 1,465,740
Health insurance	1,867,600	21,749,960	21,510,059	2,107,501
General liability	7,855,552	4,417,195	191,912	12,080,835
Total short-term	<u>10,682,012</u>	<u>30,066,556</u>	<u>25,094,492</u>	<u>15,654,076</u>
Long-term:				
Workers' compensation	2,490,568	(939,873)	-	1,550,695
Total long-term	<u>2,490,568</u>	<u>(939,873)</u>	<u>-</u>	<u>1,550,695</u>
Total	<u>\$ 13,172,580</u>	<u>\$ 29,126,683</u>	<u>\$ 25,094,492</u>	<u>\$ 17,204,771</u>

See accompanying independent auditors' report.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SCHEDULE OF COMPENSATION, BENEFITS, AND OTHER  
PAYMENTS TO THE EXECUTIVE DIRECTOR  
For the year ended December 31, 2016**

**Cedric S. Grant, Executive Director**

Purpose	Amount
Salary	\$ 220,631
Benefits-hospitalization	11,432
Benefits-life insurance	201
Benefits-retirement	44,737
Reimbursements	92
Conference travel	4,439
Total	<u>\$ 281,532</u>

See accompanying independent auditors' report.



*The Water Hammer Hazard Mitigation Program will help protect our water distribution system piping from future damage due to water hammer. Water hammer is the transient surge of water pressure caused by intermittent losses in power at the plant. The water tower projects, when completed in early 2018, will help to reduce future leaks caused by water hammer and help mitigate the loss of water pressure due to power interruptions. These upgrades will allow plant personnel time to switch the electrical power source from commercial power to the Board's own generated power in the event of an interruption. The two new elevated water tanks planned for the Carrollton Plant will be a compliment to those tanks currently in service. The new tanks will have a combined capacity of 4 million gallons and not exceed 200 feet in height.*



*Steam-driven high service potable (drinking) water pumps A and B have been totally rehabilitated. These pumps provide drinking water to the residents of New Orleans. These are the only two remaining steam driven potable water pumps. The other pumps that are a part of the potable water system are 25 cycle and 60 cycle electric motor driven.*

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SUMMARY OF STATISTICAL INFORMATION**  
**(Unaudited)**

This part of the Board's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statement, note disclosure, and required supplementary information says about the Board's overall financial health.

Financial Trends:

These schedules contain trend information to help the reader understand how the Board's financial performance and well-being have changed over time.

Revenue Capacity:

These schedules contain information to help the reader assess the Board's most significant local revenue source, the property tax.

Debt Capacity:

These schedules present information to help the reader assess the affordability of the Board's current levels of outstanding debt and the Board's ability to issue additional debt in the future.

Demographic and Economic Information:

These schedules offer demographic and economic indicators to help the reader understand the environment within which the Board's financial activities take place.

Operating Information:

These schedules contain service and infrastructure data to help the reader understand how the information in the Board's financial report relates to the services the Board provides and the activities it performs.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NET POSITION BY COMPONENT**  
**Last Ten Fiscal Years**  
**(Unaudited - accrual basis of accounting)**

	Year									
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
<b>Business-type activities</b>										
Net investment in capital assets	\$ 2,415,192,603	\$ 2,009,322,572	\$ 2,013,060,377	\$ 1,919,436,757	\$ 1,762,389,823	\$ 1,602,767,538	\$ 1,481,320,632	\$ 1,367,130,463	\$ 1,306,085,162	\$ 1,265,078,240
Restricted for debt service	47,217,981	46,199,659	30,846,959	33,405,265	35,186,883	33,137,542	32,774,880	30,040,670	32,075,521	27,986,164
Restricted for capital improvements	170,436,101	235,720,245	68,509,876	-	-	-	-	-	-	-
Unrestricted	(404,424,737)	(208,554,161)	(183,112,163)	(175,395,265)	(135,165,032)	(97,925,662)	(82,369,095)	(81,717,627)	(89,154,640)	(7,414,567)
<b>Total business-type activities net position</b>	<b>\$ 2,228,421,948</b>	<b>\$ 2,082,688,315</b>	<b>\$ 1,929,305,049</b>	<b>\$ 1,777,446,757</b>	<b>\$ 1,662,411,674</b>	<b>\$ 1,537,979,418</b>	<b>\$ 1,431,726,417</b>	<b>\$ 1,315,453,506</b>	<b>\$ 1,249,006,043</b>	<b>\$ 1,285,649,837</b>

Source: Audited Comprehensive Annual Financial Reports

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**CHANGES IN NET POSITION BY COMPONENT**  
**Last Ten Fiscal Years**  
**(Unaudited - accrual basis of accounting)**

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
<b>Operating revenues:</b>										
Sales of water and delinquent fees	\$ 83,158,940	\$ 78,007,937	\$ 70,818,255	\$ 64,398,609	\$ 60,256,304	\$ 59,890,312	\$ 55,079,772	\$ 50,677,054	\$ 43,995,732	\$ 37,795,522
Sewerage service charges	104,795,184	95,636,966	86,553,262	78,535,785	71,407,835	70,358,076	69,534,719	66,102,946	61,877,246	68,304,347
Plumbing inspection and license fees	638,502	610,768	678,352	643,036	687,806	758,072	746,426	484,448	590,604	542,340
Other revenue	4,078,380	8,290,157	5,024,480	5,119,368	4,626,276	8,581,123	4,702,753	3,814,564	2,487,983	2,927,070
<b>Total operating revenues</b>	<b>192,671,066</b>	<b>182,545,828</b>	<b>163,074,349</b>	<b>148,696,798</b>	<b>136,978,221</b>	<b>139,587,383</b>	<b>130,063,750</b>	<b>121,079,012</b>	<b>108,951,565</b>	<b>109,569,479</b>
<b>Operating Expenses:</b>										
Power and pumping	13,499,216	13,139,255	13,227,389	12,572,620	11,951,746	11,787,614	12,606,851	12,950,788	14,178,641	13,041,954
Treatment	20,300,344	18,740,637	19,527,000	18,143,049	18,906,540	18,081,523	19,029,752	19,910,557	18,243,782	16,280,975
Transmission and distribution	37,174,706	35,878,137	27,186,606	23,323,900	26,019,713	27,216,035	15,915,361	21,466,523	18,994,209	19,832,226
Customer accounts	4,151,027	3,807,405	3,514,360	3,425,934	3,334,652	3,369,643	3,314,887	3,044,936	2,719,594	2,290,092
Customer service	4,271,555	3,973,344	3,717,925	3,464,197	3,332,300	3,320,100	3,386,338	3,417,239	3,323,696	2,670,145
Administration and general	18,506,107	16,848,253	16,976,430	17,333,945	15,879,736	16,054,154	16,060,032	13,504,125	15,173,190	14,899,028
Payroll related	43,990,879	36,349,834	32,488,264	34,928,822	33,980,859	34,770,439	33,616,025	35,085,953	31,549,622	28,259,815
Maintenance of general plant	23,979,309	27,148,505	28,178,593	27,647,127	24,480,560	25,185,237	30,723,060	24,969,819	33,613,093	27,151,645
Depreciation	52,060,674	51,661,651	50,157,869	43,648,267	39,011,955	34,772,279	34,692,628	34,692,628	31,546,017	23,377,733
Provision for doubtful accounts	3,413,404	2,466,117	1,940,782	2,052,096	1,676,311	867,460	4,855,325	889,811	(12,225,825)	12,613,283
Provision for claims	6,450,805	2,435,209	2,444,878	1,801,114	130,704	(4,680,454)	3,186,714	58,860	587,465	(2,448,965)
<b>Total operating expenses</b>	<b>227,798,026</b>	<b>212,448,347</b>	<b>199,360,096</b>	<b>188,341,071</b>	<b>178,705,276</b>	<b>170,744,030</b>	<b>177,910,956</b>	<b>169,991,239</b>	<b>157,703,484</b>	<b>159,967,931</b>
<b>Operating loss</b>	<b>(35,127,020)</b>	<b>(29,902,519)</b>	<b>(36,285,747)</b>	<b>(39,644,273)</b>	<b>(41,727,055)</b>	<b>(31,156,447)</b>	<b>(47,847,226)</b>	<b>(48,912,227)</b>	<b>(48,751,919)</b>	<b>(50,398,452)</b>
<b>Non-operating revenues (expenses):</b>										
Two-mill tax	7,526	4,960	1,193	-	-	4,870	1,045	-	-	120
Three-mill tax	16,043,825	14,139,193	13,481,526	13,175,711	12,497,723	11,129,376	10,378,060	10,302,545	11,294,822	10,381,155
Six-mill tax	16,215,799	14,290,667	13,626,539	13,317,505	12,630,977	11,242,927	10,498,580	10,410,524	11,406,361	10,513,559
Nine-mill tax	23,762,398	21,421,102	20,425,388	19,962,114	18,933,290	16,855,081	15,672,791	15,485,030	17,001,253	15,773,070
Other taxes	564,050	581,395	572,083	494,106	278,394	316,079	333,795	371,006	515,735	443,122
Operating and maintenance grants	24,738	2,405	1,502	2,054,492	7,624,526	11,479,664	9,367,940	19,373,185	1,777,188	1,777,188
Interest income	4,667,470	2,511,032	811,263	353,650	401,387	426,870	274,323	885,723	3,545,564	5,826,769
Hurricane gain (loss)	-	(1,510,657)	(2,649,339)	-	-	-	-	-	-	205,995
Bond issuance costs	-	(53,518)	-	(371,349)	(737,893)	(736,878)	(1,687,693)	(1,766,553)	(1,720,030)	(2,443,612)
Interest expense	-	-	-	30,061,368	-	-	41,438,410	-	-	-
Forgiveness of Community Disaster Loan	-	-	-	-	-	-	-	-	-	-
<b>Total non-operating revenues (expenses)</b>	<b>61,253,335</b>	<b>51,386,579</b>	<b>46,270,155</b>	<b>79,047,577</b>	<b>51,628,404</b>	<b>50,717,989</b>	<b>86,277,341</b>	<b>55,061,460</b>	<b>42,039,732</b>	<b>42,477,366</b>
<b>Income (loss) before capital contributions</b>	<b>26,126,315</b>	<b>21,484,060</b>	<b>9,984,408</b>	<b>39,403,304</b>	<b>9,901,349</b>	<b>19,561,542</b>	<b>38,430,115</b>	<b>6,149,233</b>	<b>(6,712,187)</b>	<b>(7,921,086)</b>
<b>Capital contributions</b>	<b>119,680,318</b>	<b>131,899,206</b>	<b>141,873,884</b>	<b>114,317,656</b>	<b>114,530,907</b>	<b>115,575,107</b>	<b>48,959,148</b>	<b>60,298,230</b>	<b>(29,931,607)</b>	<b>71,955,106</b>
<b>Change in net position</b>	<b>145,733,633</b>	<b>153,383,266</b>	<b>151,858,292</b>	<b>153,720,940</b>	<b>124,432,256</b>	<b>135,136,649</b>	<b>87,389,263</b>	<b>66,447,463</b>	<b>(36,643,794)</b>	<b>64,034,020</b>
<b>Net position:</b>										
Beginning of year	2,082,688,315	1,929,305,049	1,777,846,757	1,662,411,674	1,537,979,418	1,402,842,769	1,315,453,506	1,249,006,043	1,285,649,837	1,221,615,817
Restatement	-	-	-	(38,685,857)	-	-	-	-	-	-
Beginning of year, as restated	2,082,688,315	1,929,305,049	1,777,846,757	1,623,725,817	1,537,979,418	1,402,842,769	1,315,453,506	1,249,006,043	1,285,649,837	1,221,615,817
<b>End of year</b>	<b>2,228,421,948</b>	<b>2,082,688,315</b>	<b>1,929,305,049</b>	<b>1,777,846,757</b>	<b>1,662,411,674</b>	<b>1,537,979,418</b>	<b>1,402,842,769</b>	<b>1,315,453,506</b>	<b>1,249,006,043</b>	<b>1,285,649,837</b>

Source: Audited Comprehensive Annual Financial Reports - Information available for nine years

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**REVENUE AND EXPENSES BY SOURCE**  
**ENTERPRISE FUND**  
**Last Ten Years**  
**(Unaudited)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Revenues</b>										
Charges for service	\$ 106,642,409	\$ 106,463,582	\$ 117,264,448	\$ 125,360,977	\$ 131,006,460	\$ 132,351,945	\$ 143,577,430	\$ 158,049,869	\$ 174,255,671	\$ 188,592,626
Dedicated taxes	36,667,784	39,702,436	36,198,099	36,549,431	39,227,384	44,061,990	46,455,330	47,533,453	49,850,962	56,022,022
Two-mill tax	120	-	-	1,045	4,870	-	-	1,193	4,960	7,526
Interest on investments	5,825,769	3,545,564	885,723	274,323	426,870	401,387	353,630	811,263	2,511,046	4,667,470
Other taxes and revenue	5,147,380	2,999,745	23,558,755	55,842,898	20,376,866	12,529,196	37,729,334	5,598,065	7,363,300	4,667,168
	<u>\$ 154,284,462</u>	<u>\$ 152,711,327</u>	<u>\$ 177,907,025</u>	<u>\$ 218,028,674</u>	<u>\$ 191,042,450</u>	<u>\$ 189,344,518</u>	<u>\$ 228,115,724</u>	<u>\$ 211,993,843</u>	<u>\$ 233,985,939</u>	<u>\$ 253,956,812</u>
<b>Expenses</b>										
Personnel services	\$ 61,421,931	\$ 68,605,280	\$ 74,540,678	\$ 72,725,464	\$ 73,834,142	\$ 74,358,288	\$ 75,998,997	\$ 76,009,536	\$ 81,094,850	\$ 88,422,754
Services and utilities	52,966,504	56,428,567	50,787,395	47,125,394	42,417,785	40,621,806	44,686,711	46,739,864	46,321,849	48,095,715
Materials and supplies	9,879,426	12,603,961	8,880,950	12,535,610	23,532,818	22,906,012	20,153,886	22,067,167	28,468,671	29,354,674
Depreciation and amortization	25,535,752	31,704,036	34,833,545	35,381,030	34,850,026	39,011,955	43,648,267	50,157,869	51,661,651	52,060,674
Provision for doubtful accounts	12,613,283	(12,225,825)	889,811	4,855,325	867,460	1,676,511	2,052,096	1,940,782	2,466,131	3,413,404
Provision for claims	(2,448,965)	587,465	58,860	3,186,714	(4,680,454)	130,704	1,801,114	2,444,878	2,435,209	6,450,805
Hurricane Loss	(205,995)	-	-	-	-	-	-	-	-	-
Bond issuance costs	-	-	-	-	-	-	-	-	1,510,657	-
Interest	2,443,612	1,720,030	1,766,553	1,687,603	736,878	737,893	371,349	2,649,339	53,518	32,471
	<u>\$ 162,205,548</u>	<u>\$ 159,423,514</u>	<u>\$ 171,757,792</u>	<u>\$ 177,497,140</u>	<u>\$ 171,558,655</u>	<u>\$ 179,443,169</u>	<u>\$ 188,712,420</u>	<u>\$ 202,009,435</u>	<u>\$ 214,012,536</u>	<u>\$ 227,830,497</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**ASSESSED AND ESTIMATED ACTUAL VALUE OF TAXABLE PROPERTY**  
**Last Ten Fiscal Years**  
**(Unaudited - amounts in thousands)**

Fiscal Year	Net Assessed Value		Total Net Assessed Value	Total Estimated Actual Value (1)	Ratio of Total Net Assessed to Total Estimated Actual Value
	Real Estate	Personal Property			
2007	1,362,097	483,200	1,845,297	14,645,214	12.6%
2008	2,004,624	539,492	2,544,116	20,698,664	12.3%
2009	2,042,426	557,039	2,599,465	21,974,841	11.8%
2010	2,489,813	387,334	2,877,147	21,974,841	13.1%
2011	2,584,334	385,700	2,970,034	21,974,841	13.5%
2012	2,760,973	390,952	3,151,925	21,974,841	14.3%
2013	2,920,015	413,120	3,333,135	21,974,841	15.2%
2014	3,065,164	405,514	3,470,678	21,974,841	15.8%
2015	3,202,063	431,355	3,633,418	21,974,841 (2)	16.5%
2016	3,376,001	456,454	3,832,455	30,873,272	12.4%

Source: City of New Orleans

(1) Amounts are net of the homestead exemption.

(2) Latest date available for total estimated actual value is 2009.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**PROPERTY TAX RATES - DIRECT AND OVERLAPPING GOVERNMENTS**  
 Last Ten Fiscal Years  
 (Unaudited)

**Number of Mills**  
**(Per \$1,000 of assessed value)**

Fiscal Year	City of New Orleans	Orleans Levee Board	Orleans Levee District		Algiers Levee District	Sewerage & Water Board of New Orleans		Orleans Parish School Board	Audubon Park & Zoo	Total
			Levee District Eastbank	Levee District		New Orleans	Parish Board			
2007	82.39	12.76	0*	0**	0***	22.59**	52.90	4.55	175.19	
2008	61.34	0*	9.65	9.28	9.28	16.43**	38.47	3.31	129.20	
2009	61.34	0*	10.95	12.76	12.76	16.03**	38.47	3.31	130.10	
2010	64.31	0*	11.67	12.76	12.76	16.43**	44.12	3.31	140.93	
2011	72.05	0*	11.67	12.76	12.76	16.43**	44.12	3.31	148.67	
2012	72.05	0*	11.67	12.76	12.76	16.43**	43.60	3.31	148.15	
2013	72.05	0*	11.67	12.36	12.36	16.43**	44.81	3.31	136.60	
2014	72.05	0*	11.67	12.76	12.76	16.43**	45.31	3.31	147.58	
2015	71.95	0*	11.67	12.56	12.56	16.43**	45.31	3.31	149.56	
2016	74.45	0*	12.28	6.21	6.21	16.43**	45.31	3.31	145.71	

Source: City of New Orleans

\*Special millage beginning in 2008 and no longer City-wide.

\*\*3 mills adopted in 1967 expires in 2017

\*\*6 mills adopted in 1978 expires in 2027

\*\*9 mills adopted in 1982 expires in 2032

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**TEN LARGEST TAXPAYERS**  
**December 31, 2016 and Nine Years Ago**  
**(Amounts in thousands)**  
**(Unaudited)**

Name of Taxpayer	Type of Business	2016 Assessed Value	Percentage of Total Assessed Value
Entergy	Electric and gas utilities	\$ 102,345	2.90%
Capital One Bank	Financial institution	58,608	1.66%
BellSouth	Telephone utilities	36,924	1.05%
Marriott Hotel	Hospitality	32,523	0.92%
Harrah's	Hospitality and gaming	28,828	0.82%
Folger Coffee	Coffee Roasting Plant	23,846	0.67%
J P Morgan Chase Bank	Financial institution	19,055	0.54%
International Rivercenter	Real Estate	18,886	0.53%
Sheraton Hotel	Hospitality	16,729	0.47%
Royal Sonesta Hotel	Hospitality	14,938	0.42%
		<u>\$ 352,682</u>	<u>9.98%</u>

Name of Taxpayer	Type of Business	2007 Assessed Value	Percentage of Total Assessed Value
Energy Services	Electric and gas utilities	\$ 60,220	3.65%
BellSouth Telecommunications	Telephone utilities	58,436	3.55%
Hibernia National Bank	Financial institution	49,568	3.01%
Harrah's Entertainment	Hospitality and gaming	21,178	1.65%
Whitney National Bank	Financial institution	23,583	1.43%
CS&M Association (Sheraton)	Real Estate	20,725	1.23%
International River Center	Real Estate	19,058	1.16%
Marriott Hotel Properties	Hospitality	15,271	0.93%
J P Morgan Chase Bank	Financial institution	13,385	0.81%
SHC New Orleans (Hyatt)	Hospitality	11,247	0.68%
		<u>\$ 292,671</u>	<u>18.10%</u>

Source: City of New Orleans

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**PROPERTY TAX**  
**LEVIES AND COLLECTIONS BY THE CITY OF NEW ORLEANS**  
**Last Ten Fiscal Years**  
**(Unaudited - Amounts in Thousands)**

Fiscal Year	Total Levied	Collected within Fiscal year of the Levy		Collections in Subsequent Years	Total Collections to Date	
		Amount	Percent	Amount	Amount	Percentage of Levy
Real Estate Taxes:						
2007	\$ 250,462	\$ 225,743	90.13%	\$ 21,675	\$ 247,418	98.78%
2008	269,746	243,204	90.16%	23,438	266,642	98.85%
2009	275,869	257,219	93.24%	15,219	272,438	98.76%
2010	309,800	291,078	93.96%	14,598	305,676	98.67%
2011	339,370	320,437	94.42%	13,717	334,154	98.46%
2012	362,262	342,248	94.48%	13,528	355,776	98.21%
2013	382,902	363,026	94.81%	11,234	374,260	97.74%
2014	393,304	375,815	95.55%	-	375,815	95.55%
2015	422,306	397,843	94.21%	11,168	409,011	96.85%
2016	457,800	442,153	96.58%	13,137	455,290	99.45%
Personal Property Taxes:						
2007	82,046	\$ 74,258	90.51%	3,709	\$ 77,967	95.03%
2008	67,548	59,645	88.30%	4,429	64,074	94.86%
2009	69,935	63,118	90.25%	3,444	66,562	95.18%
2010	74,530	68,508	91.92%	2,242	70,750	94.93%
2011	78,996	74,204	93.93%	1,653	75,857	96.03%
2012	81,685	78,275	95.83%	1,550	79,825	97.72%
2013	87,058	84,410	96.96%	365	84,775	97.38%
2014	84,620	81,926	96.82%	-	81,926	96.82%
2015	86,961	81,773	94.03%	1,002	82,775	95.19%
2016	92,428	88,797	96.07%	744	89,541	96.88%

Source: City of New Orleans

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**WATER AND SEWER RATES**  
**Last Ten Fiscal Years**  
**(Unaudited)**

Year	Water					Sewer	
	Monthly Base Rate	Rate per 1,000 Gallons				Monthly Base Rate	Rate per 1,000 Gallons
		First 3,000 Gallons	Next 17,000 Gallons	Next 980,000 Gallons	All Gallons Over 1,000,000		
2007	\$ 3.50	\$ 1.94	\$ 3.31	\$ 2.60	\$ 2.19	\$ 11.60	\$ 4.04
2008	\$ 3.50	\$ 2.35	\$ 4.01	\$ 3.15	\$ 2.65	\$ 11.60	\$ 4.04
2009	\$ 3.70	\$ 2.47	\$ 4.21	\$ 3.31	\$ 2.78	\$ 11.60	\$ 4.04
2010	\$ 3.90	\$ 2.59	\$ 4.42	\$ 3.48	\$ 2.92	\$ 11.60	\$ 4.04
2011	\$ 4.05	\$ 2.69	\$ 4.60	\$ 3.62	\$ 3.04	\$ 11.60	\$ 4.04
2012	\$ 4.05	\$ 2.69	\$ 4.60	\$ 3.62	\$ 3.04	\$ 11.60	\$ 4.04
2013	\$ 4.91	\$ 2.96	\$ 5.06	\$ 3.98	\$ 3.34	\$ 14.04	\$ 4.44
2014	\$ 4.91	\$ 3.26	\$ 5.57	\$ 4.38	\$ 3.67	\$ 14.04	\$ 4.88
2015	\$ 5.40	\$ 3.59	\$ 6.13	\$ 4.82	\$ 4.04	\$ 15.44	\$ 5.37
2016	\$ 5.94	\$ 3.95	\$ 6.74	\$ 5.30	\$ 4.44	\$ 16.98	\$ 5.91

Note: Rates are based on 5/8" meter, which is the standard household meter size.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**RATIOS OF OUTSTANDING DEBT BY TYPE**  
 Last Ten Fiscal Years  
 (Unaudited)

Fiscal Year	Personal Income (1) (in thousands)	Population (2)	Revenue Bonds		Special Tax Bonds		LDHH Bonds		Special Community Disaster Loan Payable		Debt Service Assistance Fund Loan		Capital Leases Payable		Total Debt	Percentage of Personal Income	Debt per Capita
			Bonds	Bonds	Bonds	Bonds	Payable	Payable	Loan	Payable	Payable	Payable					
2007	\$ 14,831,565	288,113	\$ 246,907,968	\$ 23,835,000	\$ -	\$ 61,956,747	\$ 64,655,122	\$ 104,445	\$ 397,459,282	3.73%	\$ 1,380						
2008	\$ 15,802,534	336,644	\$ 235,216,902	\$ 22,710,000	\$ -	\$ 61,956,747	\$ 77,460,393	\$ -	\$ 397,344,042	3.98%	\$ 1,180						
2009	\$ 15,260,613	354,850	\$ 221,958,520	\$ 21,525,000	\$ -	\$ 61,956,747	\$ 77,460,393	\$ -	\$ 382,900,660	3.99%	\$ 1,079						
2010	\$ 15,260,613	347,907	\$ 208,422,155	\$ 20,290,000	\$ 632,842	\$ 25,166,747	\$ 77,460,393	\$ -	\$ 331,972,137	4.60%	\$ 954						
2011	\$ 15,260,613	360,740	\$ 194,330,103	\$ 18,990,000	\$ 1,503,834	\$ 25,166,747	\$ 77,465,247	\$ -	\$ 317,455,931	4.81%	\$ 880						
2012	\$ 15,346,678	369,250	\$ 186,832,906	\$ 17,630,000	\$ 1,998,636	\$ 25,166,747	\$ 73,776,967	\$ -	\$ 305,405,256	5.03%	\$ 827						
2013	\$ 15,888,893	378,715	\$ 172,192,129	\$ 16,205,000	\$ 3,865	\$ -	\$ 69,917,529	\$ -	\$ 258,318,523	6.15%	\$ 682						
2014	\$ 16,437,492	378,715	\$ 292,068,863	\$ 14,870,042	\$ 3,865	\$ -	\$ 45,444,166	\$ -	\$ 352,386,936	4.66%	\$ 930						
2015	\$ 18,032,254	389,617 (3)	\$ 504,808,633	\$ 12,750,000	\$ -	\$ -	\$ 61,653,139	\$ -	\$ 579,211,772	3.11%	\$ 1,487						
2016	\$ 14,094,612	391,495	\$ 488,835,158	\$ 11,100,000	\$ -	\$ -	\$ 57,230,725	\$ -	\$ 557,165,883	2.53%	\$ 1,423						

(1) Source: Bureau of Economic Analysis.  
 (2) Source: www.census.gov/popest.  
 (3) Most recent available is as of March 2014.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
COMPUTATION OF DIRECT AND OVERLAPPING DEBT  
December 31, 2016  
(Unaudited)**

	<u>Net Outstanding Debt</u>	<u>Percentage Overlapping</u>	<u>Overlapping Debt</u>
<b>Direct debt:</b>			
Sewerage and Water Board, net of debt service funds (tax bonds only)	<u>\$ 11,100,000</u>	<u>100%</u>	<u>\$ 11,100,000</u>
<b>Overlapping debt:</b>			
City of New Orleans	595,914,616	100%	595,914,616
Audubon Park Commission	16,615,000	100%	16,615,000
Orleans Parish School Board (1)	<u>130,670</u>	<u>100%</u>	<u>130,670</u>
Total overlapping debt	<u>612,660,286</u>	<u>100%</u>	<u>612,660,286</u>
Total direct and overlapping debt	<u><u>\$ 623,760,286</u></u>	<u><u>100%</u></u>	<u><u>\$ 623,760,286</u></u>

(1) The fiscal year of the Orleans Parish School Board ends on June 30th; overlapping debt is based on June 30, 2016 financial information.



**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
REVENUE BONDS DEBT SERVICE COVERAGE**

**SEWER BONDS**

Last Ten Fiscal Years

(Unaudited)

Fiscal Year	Operating Revenue	Direct Operating Expenses	Net Revenue Available for Debt Services	Debt Service Requirements		Total	Coverage
				Principal	Interest		
2007	64,750,010	38,899,024	25,850,986	9,130,000	10,211,257	19,341,257	1.34
2008	70,836,988	42,135,587	28,701,401	15,035,000	3,326,538	18,361,538	1.56
2009	69,501,438	49,879,875	19,621,563	11,255,000	9,058,968	20,313,968	0.97
2010	87,569,727	44,361,297	43,208,430	11,815,000	8,435,057	20,250,057	2.13
2011	74,173,489	43,173,641	30,999,848	12,400,000	7,863,432	20,263,432	1.53
2012	72,399,088	44,869,796	27,529,292	13,431,000	7,282,082	20,713,082	1.33
2013	80,080,102	45,378,129	34,701,973	14,110,000	6,616,719	20,726,719	1.67
2014	88,756,831	45,943,518	42,813,313	13,695,000	5,445,799	19,140,799	2.24
2015	98,166,699	48,664,503	49,502,196	11,644,000	4,708,974	16,352,974	3.03
2016	108,241,219	56,206,881	52,034,338	12,852,000	10,463,838	23,315,838	2.23

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
 WATER SYSTEM UNRESTRICTED CASH AND CASH EQUIVALENTS  
 DAYS OF OPERATING AND MAINTENANCE EXPENSE AT YEAR END  
 Last Four Fiscal Years  
 (unaudited)**

<u>Fiscal Year</u>	<u>Cash Balance</u>	<u>One Day O&amp;M</u>	<u>Measurement</u>
2013	40,314,163	169,210	238.25
2014	32,497,474	188,711	172.21
2015	39,230,354	196,385	199.76
2016	38,585,058	203,565	189.55

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SEWER SYSTEM UNRESTRICTED CASH AND CASH EQUIVALENTS**  
**DAYS OF OPERATING AND MAINTENANCE EXPENSE AT YEAR END**  
**Last Four Fiscal Years**  
**(unaudited)**

<u>Fiscal Year</u>	<u>Cash Balance</u>	<u>One Day O&amp;M</u>	<u>Measurement</u>
2013	23,010,471	121,350	189.62
2014	26,736,696	130,990	204.11
2015	40,249,837	153,064	262.96
2016	62,709,401	161,008	389.48

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**DEMOGRAPHIC STATISTICS**  
**Last Ten Fiscal Years**  
**(Unaudited)**

Fiscal Year	Population (1)	Personal Income (2) (in thousands)	Per Capita Personal Income	Unemployment Rate (3)
2007	288,113	\$ 14,831,565	\$ 51,478	3.50%
2008	336,644	\$ 15,802,534	\$ 46,941	4.40%
2009	354,850	\$ 15,260,613	\$ 35,507	6.80%
2010	347,907	\$ 15,260,613	\$ 35,507	8.50%
2011	360,740	\$ 15,260,613	\$ 38,578	7.30%
2012	369,250	\$ 15,346,678	\$ 41,562	5.50%
2013	378,715	\$ 15,888,893	\$ 41,955	4.20%
2014	378,715	\$ 16,437,492	\$ 43,403	7.50%
2015	389,617	\$ 18,032,254	\$ 46,282	6.00%
2016	391,495	\$ 14,403,884	\$ 36,792	5.40%

(1) Source: [www.census.gov/popest/](http://www.census.gov/popest/)

(2) Source: Estimates- Bureau of Economic Analysis.

(3) Source: U.S. Bureau of Labor Statistics.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NEW ORLEANS AREA PRINCIPAL EMPLOYERS**  
 Last Ten Fiscal Years  
 (Unaudited)

	2007	2008	2009	2010	2011	2012	2013	(1) 2014	(2) 2015	(2) 2016
Acme Truck Line Inc.	8 / 250				8 / 2,500			10 / 3,100	10 / 3,100	10 / 3,100
Al Copeland Investments		10 / 2,000	7 / 2,000	7 / 2,000	9 / 2,200	9 / 2,000				
Boh Bros. Construction			9 / 1,500	9 / 1,500						
Boomtown Casino Westbank	6 / 781					8 / 2,150				
Capital One Bank N.A.		9 / 2,150	6 / 2,150	6 / 2,150						
City of New Orleans		5 / 3,500								
Dow Chemical Company			8 / 2,000	8 / 2,000		10 / 2,000				
East Jefferson General Hospital		6 / 3,150				5 / 3,150				
Harrah's New Orleans Casino		8 / 2,200	5 / 2,200	5 / 2,200	7 / 2,700	7 / 2,200	7 / 2,700	4 / 5,000	4 / 5,000	4 / 5,000
Hilton New Orleans			10 / 1,400	10 / 1,400						
Hope Haven Center	10 / 150									
Houma Industries	9 / 160							3 / 6,000	3 / 6,000	3 / 6,000
Ingalls Shipbuilding										
JCC Holding Co. LLC			4 / 2,832	4 / 2,832		7 / 2,800				
Lockheed Martin Manned Space Systems	2 / 2,832	7 / 2,832								
Louisiana Children's Medical Center					2 / 7,000	3 / 5,000	2 / 7,000	7 / 4,500	7 / 4,500	7 / 4,500
LSU Health Sciences Center New Orleans		3 / 5,000						2 / 7,000	2 / 7,000	2 / 7,000
LSU Public Hospital								5 / 5,000	5 / 5,000	5 / 5,000
NASA Michoud					10 / 2,000					
North Oaks Health System	1 / 5,400	2 / 5,400	2 / 5,400	2 / 5,400	3 / 6,000	2 / 5,400				
Northrup Grumman Avondale		1 / 9,107	1 / 9,107	1 / 9,107	1 / 9,800	1 / 9,100		1 / 9,800	1 / 9,800	1 / 9,800
Ochsner Medical Institutions / Health System										
Superior Energy Services, Inc.	7 / 750									
Textron Marine & Land Systems	5 / 1,165	4 / 4,410	3 / 4,410	3 / 4,410	4 / 5,000	4 / 4,400	4 / 5,000	6 / 4,700	6 / 4,700	6 / 4,700
Tulane University					6 / 3,114		6 / 3,114	9 / 3,100	9 / 3,100	9 / 3,100
University of New Orleans					5 / 4,000	6 / 2,900	5 / 4,000	8 / 4,000	8 / 4,000	8 / 4,000
US Post Office										
USDA, National Finance Center	4 / 1,300									
West Jefferson Medical Center	3 / 1,654						10 / 1,904			

(1) Source: Greater New Orleans Inc. and New Orleans City Business

(2) Most recent available is as of March 2014.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**CAPITAL EXPENDITURES BY DEPARTMENT**  
**ENTERPRISE FUND**  
**Last Ten Fiscal Years**  
**(Unaudited)**

<u>Year</u>	<u>Water (1)</u>	<u>Sewer (1)</u>	<u>Drainage (1)</u>	<u>Total</u>
2007	\$ 19,053,142	\$ 56,093,058	\$ 16,250,996	\$ 91,397,196
2008	\$ 19,938,659	\$ 25,608,236	\$ 28,592,805	\$ 74,139,700
2009	\$ 22,465,931	\$ 56,010,946	\$ 47,185,424	\$ 125,662,301
2010	\$ 32,248,119	\$ 58,682,400	\$ 51,465,065	\$ 142,395,584
2011	\$ 20,374,785	\$ 53,662,611	\$ 66,821,905	\$ 140,859,301
2012	\$ 33,888,620	\$ 60,658,231	\$ 90,435,159	\$ 184,982,010
2013	\$ 37,552,122	\$ 63,172,589	\$ 79,241,317	\$ 179,966,028
2014	\$ 46,604,884	\$ 58,870,182	\$ 152,172,018	\$ 257,647,084
2015	\$ 42,638,486	\$ 56,387,080	\$ 155,764,692	\$ 254,790,258
2016	46,106,462	48,975,578	167,051,515	\$ 262,133,555

(1) Includes contributed assets

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SCHEDULE OF FUTURE DEBT PAYMENTS**  
**December 31, 2016**  
**(Unaudited)**

		Water Revenue Bonds		
		Series	Water	All Bond
		2014	2015	Issues
2017	Principal	2,540,000	-	2,540,000
	Interest	5,160,000	4,940,550	10,100,550
2018	Principal	2,660,000	700,000	3,360,000
	Interest	5,033,000	4,940,550	9,973,550
2019	Principal	2,800,000	775,000	3,575,000
	Interest	4,900,000	4,919,550	9,819,550
2020	Principal	2,930,000	895,000	3,825,000
	Interest	4,760,000	4,888,550	9,648,550
2021	Principal	3,070,000	935,000	4,005,000
	Interest	4,613,500	4,852,750	9,466,250
2022	Principal	3,225,000	970,000	4,195,000
	Interest	4,460,000	4,815,350	9,275,350
2023	Principal	2,230,000	2,155,000	4,385,000
	Interest	4,298,750	4,786,250	9,085,000
2024	Principal	2,345,000	2,260,000	4,605,000
	Interest	4,187,250	4,678,500	8,865,750
2025	Principal	2,460,000	2,375,000	4,835,000
	Interest	4,070,000	4,565,500	8,635,500
2026	Principal	2,585,000	2,490,000	5,075,000
	Interest	3,947,000	4,446,750	8,393,750
2027	Principal	2,715,000	2,615,000	5,330,000
	Interest	3,817,750	4,322,250	8,140,000
2028	Principal	2,850,000	2,750,000	5,600,000
	Interest	3,682,000	4,191,500	7,873,500
2029	Principal	2,990,000	2,885,000	5,875,000
	Interest	3,539,500	4,054,000	7,593,500
2030	Principal	3,140,000	3,030,000	6,170,000
	Interest	3,390,000	3,909,750	7,299,750
2031	Principal	3,300,000	3,180,000	6,480,000
	Interest	3,233,000	3,758,250	6,991,250
2032	Principal	3,460,000	3,345,000	6,805,000
	Interest	3,068,000	3,599,250	6,667,250
2033	Principal	3,635,000	3,510,000	7,145,000
	Interest	2,895,000	3,432,000	6,327,000
2034	Principal	3,820,000	3,680,000	7,500,000
	Interest	2,713,250	3,256,500	5,969,750
2035	Principal	4,010,000	3,865,000	7,875,000
	Interest	2,522,250	3,072,500	5,594,750
2036	Principal	4,210,000	4,060,000	8,270,000
	Interest	2,321,750	2,879,250	5,201,000
2037	Principal	4,420,000	4,265,000	8,685,000
	Interest	2,111,250	2,676,250	4,787,500
2038	Principal	4,645,000	4,475,000	9,120,000
	Interest	1,890,250	2,463,000	4,353,250
2039	Principal	4,875,000	4,700,000	9,575,000
	Interest	1,658,000	2,239,250	3,897,250
2040	Principal	5,120,000	4,930,000	10,050,000
	Interest	1,414,250	2,004,250	3,418,500
2041	Principal	5,370,000	5,185,000	10,555,000
	Interest	1,158,250	1,757,750	2,916,000
2042	Principal	5,645,000	5,435,000	11,080,000
	Interest	889,750	1,498,500	2,388,250
2043	Principal	5,925,000	5,710,000	11,635,000
	Interest	607,500	1,226,750	1,834,250
2044	Principal	6,225,000	5,995,000	12,220,000
	Interest	311,250	941,250	1,252,500
2045	Principal	-	12,830,000	12,830,000
	Interest	-	641,500	641,500
Total Principal		103,200,000	100,000,000	203,200,000
Total Interest		86,652,500	99,758,050	186,410,550
Total Future Debt Payments		<u>\$ 189,852,500</u>	<u>\$ 199,758,050</u>	<u>\$ 389,610,550</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SCHEDULE OF FUTURE DEBT PAYMENTS**  
**December 31, 2016**  
**(Unaudited)**

		<b>Sewer Revenue Bonds</b>			
		<b>Series 2011</b>	<b>Series 2014</b>	<b>Series 2015</b>	<b>All Bond Issues</b>
2017	Principal	427,000	12,970,000	-	13,397,000
	Interest	32,240	6,339,825	5,000,000	11,372,065
2018	Principal	431,000	11,925,000	-	12,356,000
	Interest	30,318	5,717,450	5,000,000	10,747,768
2019	Principal	435,000	11,075,000	-	11,510,000
	Interest	28,379	5,142,450	5,000,000	10,170,829
2020	Principal	439,000	11,660,000	-	12,099,000
	Interest	26,421	4,574,075	5,000,000	9,600,496
2021	Principal	443,000	9,050,000	2,000,000	11,493,000
	Interest	24,446	4,056,325	4,950,000	9,030,771
2022	Principal	447,000	7,445,000	2,000,000	9,892,000
	Interest	22,452	3,643,950	4,850,000	8,516,402
2023	Principal	451,000	3,920,000	2,000,000	6,371,000
	Interest	20,440	3,359,825	4,750,000	8,130,265
2024	Principal	456,000	3,760,000	2,000,000	6,216,000
	Interest	18,412	3,167,825	4,650,000	7,836,237
2025	Principal	460,000	1,970,000	2,125,000	4,555,000
	Interest	16,360	3,024,575	4,546,875	7,587,810
2026	Principal	464,000	2,070,000	2,235,000	4,769,000
	Interest	14,290	2,923,575	4,437,875	7,375,740
2027	Principal	469,000	2,175,000	2,350,000	4,994,000
	Interest	12,202	2,817,450	4,323,250	7,152,902
2028	Principal	473,000	2,280,000	2,480,000	5,233,000
	Interest	10,090	2,706,075	4,202,500	6,918,665
2029	Principal	478,000	2,395,000	2,610,000	5,483,000
	Interest	7,962	2,589,200	4,075,250	6,672,412
2030	Principal	482,000	2,515,000	2,735,000	5,732,000
	Interest	5,812	2,475,881	3,941,625	6,423,318
2031	Principal	487,000	2,620,000	2,880,000	5,987,000
	Interest	3,642	2,366,762	3,801,250	6,171,654
2032	Principal	491,000	2,735,000	3,025,000	6,251,000
	Interest	1,450	2,252,969	3,653,625	5,908,044
2033	Principal	-	2,850,000	3,695,000	6,545,000
	Interest	-	2,134,287	3,485,625	5,619,912
2034	Principal	-	2,970,000	3,885,000	6,855,000
	Interest	-	2,010,613	3,296,125	5,306,738
2035	Principal	-	3,095,000	4,100,000	7,195,000
	Interest	-	1,870,125	3,096,500	4,966,625
2036	Principal	-	3,250,000	4,315,000	7,565,000
	Interest	-	1,711,500	2,886,125	4,597,625
2037	Principal	-	3,415,000	4,540,000	7,955,000
	Interest	-	1,544,875	2,664,750	4,209,625
2038	Principal	-	3,585,000	4,775,000	8,360,000
	Interest	-	1,369,875	2,431,875	3,801,750
2039	Principal	-	3,765,000	5,025,000	8,790,000
	Interest	-	1,186,125	2,186,875	3,373,000
2040	Principal	-	3,950,000	5,290,000	9,240,000
	Interest	-	993,250	1,929,000	2,922,250
2041	Principal	-	4,150,000	5,565,000	9,715,000
	Interest	-	790,750	1,657,625	2,448,375
2042	Principal	-	4,360,000	5,855,000	10,215,000
	Interest	-	578,000	1,372,125	1,950,125
2043	Principal	-	4,575,000	6,165,000	10,740,000
	Interest	-	354,625	1,071,625	1,426,250
2044	Principal	-	4,805,000	6,485,000	11,290,000
	Interest	-	120,125	755,375	875,500
2045	Principal	-	-	11,865,000	11,865,000
	Interest	-	-	296,625	296,625
Total Principal		7,333,000	135,335,000	100,000,000	242,668,000
Total Interest		274,916	71,822,362	99,312,500	171,409,778
Total Future Debt Payments		<u>\$ 7,607,916</u>	<u>\$ 207,157,362</u>	<u>\$ 199,312,500</u>	<u>\$ 414,077,778</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SCHEDULE OF FUTURE DEBT PAYMENTS**  
**December 31, 2016**  
**(Unaudited)**

		<b>Drainage Special Tax Bonds</b>	
		<b>Series</b>	<b>All Bond</b>
		<b>2014</b>	<b>Issues</b>
2017	Principal	1,690,000	1,690,000
	Interest	334,050	334,050
2018	Principal	1,745,000	1,745,000
	Interest	283,350	283,350
2019	Principal	1,815,000	1,815,000
	Interest	213,550	213,550
2020	Principal	1,895,000	1,895,000
	Interest	140,950	140,950
2021	Principal	1,955,000	1,955,000
	Interest	84,100	84,100
2022	Principal	2,000,000	2,000,000
	Interest	45,000	45,000
2023	Principal	-	-
	Interest	-	-
Total Principal		11,100,000	11,100,000
Total Interest		1,101,000	1,101,000
Total Future Debt Payments		<u>\$ 12,201,000</u>	<u>\$ 12,201,000</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SCHEDULE OF FUTURE DEBT PAYMENTS**  
**December 31, 2016**  
**(Unaudited)**

		All Departments			
		Water	Sewer	Drainage	Total
2017	Principal	2,540,000	13,397,000	1,690,000	17,627,000
	Interest	10,100,550	11,372,065	334,050	21,806,665
2018	Principal	3,360,000	12,356,000	1,745,000	17,461,000
	Interest	9,973,550	10,747,768	283,350	21,004,668
2019	Principal	3,575,000	11,510,000	1,815,000	16,900,000
	Interest	9,819,550	10,170,829	213,550	20,203,929
2020	Principal	3,825,000	12,099,000	1,895,000	17,819,000
	Interest	9,648,550	9,600,496	140,950	19,389,996
2021	Principal	4,005,000	11,493,000	1,955,000	17,453,000
	Interest	9,466,250	9,030,771	84,100	18,581,121
2022	Principal	4,195,000	9,892,000	2,000,000	16,087,000
	Interest	9,275,350	8,516,402	45,000	17,836,752
2023	Principal	4,385,000	6,371,000	-	10,756,000
	Interest	9,085,000	8,130,265	-	17,215,265
2024	Principal	4,605,000	6,216,000	-	10,821,000
	Interest	8,865,750	7,836,237	-	16,701,987
2025	Principal	4,835,000	4,555,000	-	9,390,000
	Interest	8,635,500	7,587,810	-	16,223,310
2026	Principal	5,075,000	4,769,000	-	9,844,000
	Interest	8,393,750	7,375,740	-	15,769,490
2027	Principal	5,330,000	4,994,000	-	10,324,000
	Interest	8,140,000	7,152,902	-	15,292,902
2028	Principal	5,600,000	5,233,000	-	10,833,000
	Interest	7,873,500	6,918,665	-	14,792,165
2029	Principal	5,875,000	5,483,000	-	11,358,000
	Interest	7,593,500	6,672,412	-	14,265,912
2030	Principal	6,170,000	5,732,000	-	11,902,000
	Interest	7,299,750	6,423,318	-	13,723,068
2031	Principal	6,480,000	5,987,000	-	12,467,000
	Interest	6,991,250	6,171,654	-	13,162,904
2032	Principal	6,805,000	6,251,000	-	13,056,000
	Interest	6,667,250	5,908,044	-	12,575,294
2033	Principal	7,145,000	6,545,000	-	13,690,000
	Interest	6,327,000	5,619,912	-	11,946,912
2034	Principal	7,500,000	6,855,000	-	14,355,000
	Interest	5,969,750	5,306,738	-	11,276,488
2035	Principal	7,875,000	7,195,000	-	15,070,000
	Interest	5,594,750	4,966,625	-	10,561,375
2036	Principal	8,270,000	7,565,000	-	15,835,000
	Interest	5,201,000	4,597,625	-	9,798,625
2037	Principal	8,685,000	7,955,000	-	16,640,000
	Interest	4,787,500	4,209,625	-	8,997,125
2038	Principal	9,120,000	8,360,000	-	17,480,000
	Interest	4,353,250	3,801,750	-	8,155,000
2039	Principal	9,575,000	8,790,000	-	18,365,000
	Interest	3,897,250	3,373,000	-	7,270,250
2040	Principal	10,050,000	9,240,000	-	19,290,000
	Interest	3,418,500	2,922,250	-	6,340,750
2041	Principal	10,555,000	9,715,000	-	20,270,000
	Interest	2,916,000	2,448,375	-	5,364,375
2042	Principal	11,080,000	10,215,000	-	21,295,000
	Interest	2,388,250	1,950,125	-	4,338,375
2043	Principal	11,635,000	10,740,000	-	22,375,000
	Interest	1,834,250	1,426,250	-	3,260,500
2044	Principal	12,220,000	11,290,000	-	23,510,000
	Interest	1,252,500	875,500	-	2,128,000
2045	Principal	12,830,000	11,865,000	-	24,695,000
	Interest	641,500	296,625	-	938,125
Total Principal		203,200,000	242,668,000	11,100,000	456,968,000
Total Interest		186,410,550	171,409,778	1,101,000	358,921,328
Total Future Debt Payments		<u>\$ 389,610,550</u>	<u>\$ 414,077,778</u>	<u>\$ 12,201,000</u>	<u>\$ 815,889,328</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**PROPERTY VALUE, NEW CONSTRUCTION AND BANK DEPOSITS**  
**Last Ten Fiscal Years**  
**(Unaudited)**

Fiscal Year	New Commercial Construction (1)		New Residential Construction (1)		Bank deposits (2) (in thousands)	Estimated actual property value (3) (in thousands)
	Number of units	Value (in thousands)	Number of units	Value (in thousands)		
2007	2,044	506,281	1,427	182,729	10,062,454	14,645,214
2008	1,929	550,895	1,215	160,387	10,553,556	20,698,664
2009	364	220,748	1,862	227,714	10,480,561	21,974,841
2010	349	549,906	1,102	160,331	12,175,831	
2011	365	266,981	1,047	161,875	10,024,118	
2012					10,862,390	
2013					15,738,913	
2014					16,043,233	
2015					11,211,760	
2016					16,706,112	

(1) City of New Orleans (2011 latest year for which information is available).

(2) Summary of Deposits (as of June 30, 2016) - bank branches located in New Orleans, Federal Depository Insurance Corporation.

(3) Source: City of New Orleans - Latest date available 2009

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**CAPITAL ASSET STATISTICS BY FUNCTION**  
 Last Ten Fiscal Years  
 (Unaudited)

	Year									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Water:</b>										
Water lines (miles)	1,583	1,586	1,587	1,590	1,597	1,599	1,805	1,812	1,819	1,822
Water manholes	29,632	29,673	29,741	29,957	30,150	30,194	30,297	30,402	30,463	30,508
Water valves	29,246	29,255	29,277	29,366	29,611	29,521	29,629	29,730	29,791	30,508
Fire hydrants	22,780	22,785	22,894	22,989	23,045	23,078	23,099	23,117	23,130	29,831
<b>Sewer:</b>										
Sewers lines (miles)	1,503	1,507	1,512	1,518	1,519	1,520	1,536	1,547	1,561	1,568
Sewer manholes	22,922	22,974	22,998	23,047	22,977	22,983	22,987	23,042	23,051	23,115

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**NUMBER OF ACTIVE EMPLOYEES**  
**Last Nine Fiscal Years**  
**(Unaudited)**

<u>Year</u>	<u>Number of Active Employees</u>
2016	1108
2015	1183
2014	1060
2013	1025
2012	991
2011	994
2010	974
2009	964
2008	940

Source: Sewerage and Water Board of New Orleans.



*The Southeast Louisiana Urban Flood Control Project (SELA) consists of canal and pumping station projects that are being designed and constructed to reduce flooding caused by 10 year frequency rainfall events. The SELA program brings much needed federal funds to Sewerage and Water Board for massive expansion of the drainage system throughout the city. This investment in drainage infrastructure projects continues the fight in improving drainage. Many of these projects are underway, nearing completion, or completed.*

*Sewerage and Water Board joined with the Army Corps of Engineers to upgrade and build canals, pumping stations and electrical generator power. The Napoleon Avenue Canal Project, one of many SELA projects, has a new concrete box canal that is 7,100 linear feet long and parallels the existing box canal from Constance Street to Claiborne Avenue. Napoleon Avenue Canal Project completion is shown, landscaping goal is 2018.*



*Central Yard Garage I has been rehabilitated as an automotive repair garage set up to service the small automobiles and trucks that make up the fleet of Sewerage & Water Board. This two story building is equipped with mechanic work stations, parts storage room on two levels, offices on two levels, employee shower and locker rooms. There is also a fully equipped lunch room. All of these areas are climate controlled.*

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**December 31, 2016**  
**ACTUAL CAPITAL EXPENDITURES**

**WATER DEPARTMENT**

<b><u>C.P.#</u></b>	<b><u>WATERWORKS</u></b>		
110	Normal Extension & Replacement	\$	3,483,174.89
156	Advanced Water Treatment (Carrollton)		735,404.92
175	Water Hurricane Recovery Bonds		4,886,835.15
180	FEMA Review of Change Orders - Water		11,683,197.41
	<b>TOTAL WATERWORKS</b>	<b>\$</b>	<b>20,788,612.37</b>
	<b><u>WATER DISTRIBUTION</u></b>		
214	Normal Extension & Replacement	\$	2,142,181.44
216	Water System Replacement Program		2,096,192.46
239	Mains DPW Contracts		(158,499.87)
	<b>TOTAL WATER DISTRIBUTION</b>	<b>\$</b>	<b>4,079,874.03</b>
	<b><u>POWER PROJECTS AND GENERAL BUDGET</u></b>		
600	Water Share of Power Projects	\$	5,864,913.81
700	Water Reserve for Emergencies		233,730.58
800	Water Share of General Budget Items		9,168,341.31
	<b>GENERAL BUDGET</b>	<b>\$</b>	<b>15,266,985.70</b>
	<b>TOTAL WATER DEPARTMENT</b>	<b>\$</b>	<b>40,135,472.10</b>

NOTE: These figures do not include proration of interest expense.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**December 31, 2016**  
**ACTUAL CAPITAL EXPENDITURES**

**SEWERAGE DEPARTMENT**

<u>C.P.#</u>	<u>SEWERAGE SYSTEM</u>		
313	<u>Ext. &amp; Replace - Sewer ForceMains EPA Consent &amp; Decree</u>		321,042.10
317	Normal Extensions & Replacement of Gravity Mains		10,126,432.14
318	Rehabilitation Gravity Sewer System		3,015,865.33
326	Ext. Rep to plumbing Stations EPA Consent Deree		839,571.18
339	Main in Streets Dept. Contracts		(1,610,844.76)
340	Sewerage Hurricane Recovery Bonds (FEMA)		4,466,847.36
348	Normal Extensions & Replacements		8,511,324.72
368	Wetlands Assimilation Project		1,052,443.65
375	Sewerage Hurricane Recovery Bonds		1,324,029.91
380	FEMA Review of Change Orders-Sewer		1,356,523.24
	<b>TOTAL SEWERAGE SYSTEM</b>	<b>\$</b>	<b>29,403,234.87</b>
<b><u>POWER PROJECTS AND GENERAL BUDGET</u></b>			
600	Sewerage Share of Power Projects	\$	2,110,436.00
700	Sewer Reserve for Emergencies		63,520.51
800	Sewerage Share of General Budget Items		8,967,252.95
	<b>TOTAL GENERAL BUDGET</b>	<b>\$</b>	<b>11,141,209.46</b>
	<b>TOTAL SEWERAGE DEPARTMENT</b>	<b>\$</b>	<b>40,544,444.33</b>

NOTE: These figures do not include proration of interest expense.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**December 31, 2016**

**ACTUAL CAPITAL EXPENDITURES**

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**DRAINAGE DEPARTMENT**

<u>C.P.#</u>	<u>CANALS</u>	
418	Normal Extension & Replacements	\$ 44,887.37
439	Major Drainage Participation in DPW Projects	131,944.96
466	Louisiana Avenue Canal (SELA)	13,067,979.16
471	SELA Program Management	2,460,361.37
476	Hollygrove Canal (SELA)	10,971.59
478	S. Claiborne-Lowerline to Monticello Street	297,717.21
480	FEMA Review of Change Orders-Drainage	2,606,075.84
486	Napoleon Avenue Canal Improvements (SELA-B)	123,631.75
497	Florida Ave. Canal - DPS#19 to Peoples Ave. (SELA-B)	921,077.00
498	Dwyer Intake Canal (St. Charles to Dwyer (DPS)(SELA-A)	50,951.58
499	Jefferson Avenue Canal	557,141.36
	TOTAL DRAINAGE CANALS	<u>\$ 20,272,739.19</u>
	<b><u>PUMPING STATIONS</u></b>	
511	Normal Extension & Rep./Stations	\$ 225,488.95
575	Drainage Hurricane Recovery Bonds	1,044,940.73
	TOTAL DRAINAGE PUMPING STATIONS	<u>\$ 1,270,429.68</u>
	<b><u>POWER PROJECTS AND GENERAL BUDGET</u></b>	
600	Drainage Share of Power Projects	\$ 9,673,518.93
700	Drainage Reserve for Emergencies	1,097,286.12
800	Drainage Share of General Budget Items	6,953,788.31
	TOTAL GENERAL BUDGET	<u>\$ 17,724,593.36</u>
	TOTAL DRAINAGE DEPARTMENT	<u><u>\$ 39,267,762.23</u></u>

NOTE: These figures do not include proration of interest expense.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**December 31, 2016**  
**ACTUAL CAPITAL EXPENDITURES**

		<u>POWER PROJECTS</u>				
<u>C.P.#</u>	<u>POWER PROJECTS</u>	<u>Water</u>	<u>Sewerage</u>	<u>Drainage</u>	<u>Total</u>	
624	Extension and Replacements to Electrical System	\$ 613,183.68	\$ 102,421.55	\$ 1,030,171.39	\$ 1,745,776.62	
676	Modification to Power Generating System (HMGP)	5,251,730.13	2,008,014.45	8,643,347.54	15,903,092.12	
701	Water Reserve for Emergencies	67,600.00			67,600.00	
702	Sewer Reserve for Emergencies					
703	Water Reserve for Emergencies	\$ 166,130.58	63,520.51		166,130.58	
703	Sewer Reserve for Emergencies				63,520.51	
703	Drainage Reserve for Emergencies			1,097,286.12	1,097,286.12	
<b>TOTAL POWER PROJECTS</b>		<u>\$ 6,098,644.39</u>	<u>\$ 2,173,956.51</u>	<u>\$ 10,770,805.05</u>	<u>\$ 19,043,405.95</u>	

NOTE: These figures do not include proration of interest expense.

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**December 31, 2016**  
**ACTUAL CAPITAL EXPENDITURES**

		<u>GENERAL BUDGET ITEMS</u>					
<u>C.P.#</u>	<u>General Budget Items</u>	<u>Water</u>	<u>Sewerage</u>	<u>Drainage</u>	<u>Total</u>		
803	Property Acquisition	\$40,535.00			\$40,535.00		
807	Improvements to Central Yard and St. Joseph St.	62,873.71	62,873.69	34,279.69	\$160,027.09		
808	Improvements to Customer Service Satellite	4,098.91	4,098.90		\$8,197.81		
810	Major Equipment Purchases	1,276,555.59	1,276,555.62	1,276,555.59	\$3,829,666.80		
812	Computer Systems Development	1,870,022.00	1,870,021.64	924,613.06	\$4,664,656.70		
820	Overhead Charged to Capital	4,627,300.06	4,515,752.14	3,657,456.38	\$12,800,508.58		
823	Purchase of Water Meters	442,773.31	442,773.29		\$885,546.60		
824	Meter Boxes and Meter Parts	430,284.38	430,284.28		\$860,568.66		
843	Minor Equipment Purchases	364,893.35	364,893.39	364,893.35	\$1,094,680.09		
862	Fire Hydrants and Related Parts	49,005.00			\$49,005.00		
879	Green Infrastructure			695,990.24	\$695,990.24		
<b>TOTAL GENERAL BUDGET ITEMS</b>		<u>\$9,168,341.31</u>	<u>\$8,967,252.95</u>	<u>\$6,953,788.31</u>	<u>\$25,089,382.57</u>		

NOTE: These figures do not include proration of interest expense.

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
 DECEMBER 31, 2016  
 ANALYSIS OF PUMPING AND POWER DEPARTMENT  
 POWER PURCHASED AND PRODUCED  
 NATURAL GAS AND FUEL OIL CONSUMED  
 TEN YEARS 2007 THROUGH 2016

YEAR	ELECTRIC POWER PURCHASED		ELECTRIC & STEAM POWER GENERATED BY THE S&WB		NATURAL GAS			NATURAL GAS & FUEL OIL USED TO GENERATE ELECTRIC & STEAM POWER		
	KW-HRS	\$ AMOUNT	KW-HRS	\$ AMOUNT	MCF	\$ AMOUNT	GALLONS	\$ AMOUNT	GALLONS	\$ AMOUNT
2007	68,574,205	\$7,278,339	39,421,440	\$15,138,653	1,464,900	\$15,131,635	1,464	\$7,018		
2008	62,579,355	\$7,051,655	40,407,984	\$19,125,397	1,535,660	\$18,895,716	85,222	\$229,681		
2009	67,889,778	\$6,422,589	37,716,720	\$10,651,094	1,449,540	\$10,651,094	0	\$0		
2010	70,609,461	\$6,653,752	39,090,720	\$9,719,013	1,332,770	\$9,669,414	12,883	\$49,600		
2011	70,049,094	\$6,180,373	27,351,600	\$10,721,624	1,552,330	\$10,721,356	315	\$268		
2012	63,873,900	\$5,941,992	44,819,460	\$9,180,160	1,605,720	\$9,174,678	1,459	\$5,482		
2013	67,980,940	\$6,725,811	35,005,422	\$11,648,150	1,830,890	\$11,648,148	9	\$34		
2014	68,632,618	\$7,052,078	32,407,296	\$12,442,213	1,643,347	\$12,442,282	9	\$69		
2015	73,123,062	\$6,660,862	29,217,520	\$9,483,132	1,780,110	\$9,483,132	0	\$0		
2016	69,736,118	\$7,081,051	33,182,519	\$9,082,988	1,854,370	\$9,082,988	0	\$0		
TOTALS	683,048,531	\$67,048,502	358,620,681	\$117,192,424	16,049,637	\$116,900,443	101,361	\$292,151		

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**DECEMEBR 31, 2016**  
**POWER PURCHASED AND PRODUCED**  
**NATURAL GAS AND FUEL OIL CONSUMED**

	KW-HOURS	COST
ELECTRIC POWER PURCHASED	69,736,118	\$7,081,050.64
ELECTRIC AND STEAM POWER GENERATED BY THE S.& W.B.*	33,182,519	\$9,082,987.70
TOTAL	102,918,637	\$16,164,038.34

NOTE: \*NATURAL GAS CONSUMED IN OPERATION WAS 1,854,370 MCF  
AT A COST OF \$9,082,978. FUEL OIL CONSUMED WAS 0 GALLONS  
AT A COST OF \$0

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**GALLONS METERED - PAY WATER CONSUMPTION**  
**December 31, 2016**

<u>Month</u>	<u>Consumption</u>
January	1,081,229,200
February	1,015,665,300
March	1,034,008,500
April	1,009,677,500
May	1,037,995,600
June	1,117,607,400
July	1,128,169,600
August	1,063,011,500
September	1,070,999,129
October	1,025,123,218
Novemeber	1,136,284,390
December	<u>1,386,964,503</u>
Gross Total	<u><u>13,106,735,840</u></u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DECEMBER 31, 2016  
MONTHLY WATER CHARGES COLLECTED**

<u>Months</u>	<u>Water Service Charges &amp; Fees</u>	<u>Delinquent Fees</u>	<u>Total</u>
January	\$ 6,803,245.21	\$ 114,215.86	\$ 6,917,461.07
February	6,942,620.28	107,632.64	7,050,252.92
March	7,573,066.50	113,042.52	7,686,109.02
April	7,107,352.65	102,075.24	7,209,427.89
May	6,913,914.36	105,689.63	7,019,603.99
June	7,437,727.94	104,070.56	7,541,798.50
July	6,786,604.70	101,303.21	6,887,907.91
August	8,440,662.56	79,623.08	8,520,285.64
September	6,400,916.84	121,362.28	6,522,279.12
October	7,112,386.09	81,052.91	7,193,439.00
November	10,907,380.25	83,611.77	10,990,992.02
December	9,005,601.85	52,022.68	9,057,624.53
	<u>\$ 91,431,479.23</u>	<u>\$ 1,165,702.38</u>	<u>\$ 92,597,181.61</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS  
MONTHLY SEWERAGE CHARGES COLLECTED - 2016**

<u>Months</u>	<u>Sewerage Service Charges</u>	<u>Delinquent Fees</u>	<u>Total</u>
January	\$ 8,097,046.26	\$ 76,274.84	\$ 8,173,321.10
February	8,080,495.62	71,878.62	8,152,374.24
March	8,958,297.65	75,492.82	9,033,790.47
April	8,223,392.01	68,176.73	8,291,568.74
May	8,279,896.42	70,600.92	8,350,497.34
June	9,116,776.57	69,522.38	9,186,298.95
July	8,132,187.21	67,660.09	8,199,847.30
August	9,932,820.53	52,361.60	9,985,182.13
September	8,038,170.50	72,356.71	8,110,527.21
October	8,326,157.20	71,174.09	8,397,331.29
November	7,951,338.75	64,561.24	8,015,899.99
December	10,045,046.22	62,369.02	10,107,415.24
	<u>\$ 103,181,624.94</u>	<u>\$ 822,429.06</u>	<u>\$ 104,004,054.00</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**TABLE I**  
December 31, 2016  
**CARROLLTON TURBIDITIES**

	River (NTU)					Effluent Settling Reservoirs (NTU)					Filters (NTU)				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Maximum	159	281	277	273	271	7.3	9.3	12	6.9	14	0.35	0.25	0.24	0.21	0.31
Minimum	5	5	8	7	13	0.5	0.8	0.9	1.0	0.9	0.08	0.07	0.05	0.07	0.07
Average	34	70	75	71	63	2.0	2.8	2.7	2.3	2.9	0.12	0.11	0.11	0.10	0.13

**TABLE II**  
**CARROLLTON ALKALINITIES**  
PARTS PER MILLION

	River					Effluent Settling Reservoirs					Filters				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Maximum	154	139	146	160	201	146	127	140	160	205	168	144	157	190	230
Minimum	81	72	75	75	81	53	53	54	56	60	99	74	78	82	87
Average	122	101	109	116	130	110	89	93	105	118	135	115	120	128	146

**TABLE II A**  
**CARROLLTON HARDNESS**  
PARTS PER MILLION

	NON-CARBONATE HARDNESS										TOTAL HARDNESS									
	RIVER					FILTERS					RIVER					FILTERS				
	###	###	###	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	###	###
Maximum	104	86	74	90	86	109	93	101	81	102	214	188	211	233	272	242	206	225	245	304
Minimum	19	18	14	12	1	23	25	12	11	11	115	101	91	106	108	143	115	132	115	127
Average	43	40	46	43	40	55	49	57	51	48	164	141	155	159	169	190	164	177	178	197

**TABLE III**  
**CARROLLTON BACTERIAL CHARACTERISTICS**  
TOTAL COLIFORM ANALYSIS

2016	River	Plant Tap	Distribution System
Maximum (Colonies / 100 ml)	5,700	0	89
Minimum (Colonies / 100 ml)	140	0	0
Average (colonies / 100 ml)	690	0	0
Number of Samples	259	366	1,964
Number of Samples Negative	0	366	1,958
Number of Samples Positive	259	0	6*

\* None of these six total coliform positive samples was *E. coli* positive, and none resulted in a violation of the Total Coliform Rule.

SEWERAGE AND WATER BOARD OF NEW ORLEANS

TABLE IV-A

PRINCIPLE RESULTS OF OPERATION OF THE G3 CONVENTIONAL UNIT AT THE CARROLLTON WATER PURIFICATION PLANT FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10	11	12	13
Month		Total Million Gallons of Water Treated During Month	Amount of Water Treated Million Gallons Per 24 Hours	Total Pounds of Polymer used at Intake	Polymer at Intake Parts Per Million	Total Pounds of Polymer used in Plant	Polymer in Plant Parts Per Million	Total Pounds of Pure Iron (Fe) used During Month	Pure Iron (Fe) Parts Per Million	NTU Turbidity of River Water	PPM Alkalinity of River Water	NTU Turbidity of Unit Effluent
January	Max.		87.00			97,225	5.24	115,924	5.95	182	119	8.1
	Min.	2,532.52	75.38	0			4.39		5.25	48	83	2.2
	Avg.		81.69				4.60		5.49	90	94	4.4
February	Max.		83.67			86,219	4.89	103,221	5.86	115	115	9.8
	Min.	2,238.33	75.96	0			4.40		5.25	44	96	1.6
	Avg.		79.94				4.62		5.53	65	107	3.6
March	Max.		83.46			28,198	4.70	33,806	5.74	90	113	6.3
	Min.	1,028.34	0.00	0			0.00		0.00	44	81	2.1
	Avg.		33.17				1.37		1.64	68	96	3.5
April	Max.		79.79			35,326	4.92	42,321	5.68	86	135	9.0
	Min.	926.50	0.00	0			0.00		0.00	38	96	1.2
	Avg.		30.88				1.83		1.99	58	111	2.4
May	Max.		82.75			92,342	4.87	110,593	5.84	143	145	6.4
	Min.	2,435.96	73.75	0			4.37		5.23	38	109	1.0
	Avg.		78.58				4.55		5.45	78	121	2.1
June	Max.		94.00			91,705	5.17	109,856	6.24	152	154	3.1
	Min.	2,423.42	73.75	0			4.21		4.84	37	120	1.0
	Avg.		80.78				4.54		5.43	81	132	1.7
July	Max.		93.42			82,891	4.68		5.67	145	166	2.7
	Min.	2,664.92	81.21	0			3.37	99,139	4.00	25	104	0.9
	Avg.		85.97				3.72		4.45	59	138	1.6
August	Max.		87.13			78,465	4.35		5.52	271	154	3.4
	Min.	2,378.25	65.83	0			3.54	91,280	4.21	26	105	1.0
	Avg.		76.72				3.87		4.61	74	127	2.0
September	Max.		82.38			77,796	4.85		5.10	80	142	3.5
	Min.	2,253.96	72.50	0			4.02	92,230	4.67	24	120	1.1
	Avg.		75.13				4.14		4.91	50	127	2.3
October	Max.		85.58			85,149	4.52		5.39	130	175	4.6
	Min.	2,483.79	72.79	0			3.86	101,641	4.59	40	138	1.2
	Avg.		80.12				4.12		4.91	69	156	2.5
November	Max.		82.71			27,148	4.49		5.38	87	201	2.8
	Min.	798.13	0.00	0			0.00	32,424	0.00	13	155	1.8
	Avg.		26.60				1.36		1.62	27	175	2.2
December	Max.											
	Min.											
	Avg.											
Total		22,164.11				782,465		932,436				
General	Max.		94.00			97,225	5.24	115,924	6.24	271	201	9.8
	Min.		26.60			27,148	1.36	32,424	1.62	13	81	0.9
	Avg.		194.42			71,133	4.12	84,767	4.88	63	130	2.3

Note: G3 Basin in service from 1-1-16 to 3-10-16 and 4-18-16 to 11-10-16

SEWERAGE AND WATER BOARD OF NEW ORLEANS

TABLE IV-B

PRINCIPLE RESULTS OF OPERATION OF THE G4 CONVENTIONAL UNIT AT THE CARROLLTON WATER PURIFICATION PLANT FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10	11	12	13
Month		Total Million Gallons of Water Treated During Month	Amount of Water Treated Million Gallons Per 24 Hours	Total Pounds of Polymer used at Intake	Polymer at Intake Parts Per Million	Total Pounds of Polymer used in Plant	Polymer in Plant Parts Per Million	Total Pounds of Pure Iron (Fe) used During Month	Pure Iron (Fe) Parts Per Million	NTU Turbidity of River Water	PPM Alkalinity of River Water	NTU Turbidity of Unit Effluent
January	Max. Min. Avg.											
February	Max. Min. Avg.											
March	Max. Min. Avg.	1,251.03	81.20 0.00 10.54	0		64,282	4.74 0.00 0.46	75,170	5.54 0.00 0.54	90 44 68	113 81 96	14.0 1.6 5.2
April	Max. Min. Avg.	1,337.04	77.46 0.00 44.57	0		51,612	4.96 0.00 2.78	60,246	5.85 0.00 3.24	86 38 58	135 96 111	7.4 4.6 6.2
May	Max. Min. Avg.											
June	Max. Min. Avg.											
July	Max. Min. Avg.											
August	Max. Min. Avg.											
September	Max. Min. Avg.											
October	Max. Min. Avg.											
November	Max. Min. Avg.	1,476.33	82.83 0.00 49.28	0		49,319	4.22 0.00 2.67	57,221	4.90 0.00 3.10	87 13 27	201 155 175	8.2 1.9 4.1
December	Max. Min. Avg.	2,223.27	78.38 64.83 71.72	0		75,329	4.25 3.77 4.06	87,385	4.93 4.41 4.71	95 13 35	199 152 174	5.9 1.1 3.9
Total		6,289.68				240,543		280,022				
General	Max. Min. Avg.	2,223.27 1,251.03 1,572.42	82.83 10.54 108.44			75,329 49,319 60,136	4.96 0.46 3.55	87,385 57,221 70,005	5.85 0.54 4.14	271 13 63	201 81 130	14.0 1.1 4.7

Note: G4 Basin was in service from 3-10-16 to 4-17-16 and 11-10-2016 to 12-31-2016.

TABLE IV-C

PRINCIPLE RESULTS OF OPERATION OF THE L3 CONVENTIONAL UNIT AT THE CARROLLTON WATER PURIFICATION PLANT FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10	11	12	13
Month		Total Million Gallons of Water Treated During Month	Amount of Water Treated Million Gallons Per 24 Hours	Total Pounds of Polymer used at Intake	Polymer at Intake Parts Per Million	Total Pounds of Polymer used in Plant	Polymer in Plant Parts Per Million	Total Pounds of Pure Iron (Fe) used During Month	Pure Iron (Fe) Parts Per Million	NTU Turbidity of River Water	PPM Alkalinity of River Water	NTU Turbidity of Unit Effluent
January	Max. Min. Avg.											
February	Max. Min. Avg.											
March	Max. Min. Avg.											
April	Max. Min. Avg.											
May	Max. Min. Avg.											
June	Max. Min. Avg.											
July	Max. Min. Avg.											
August	Max. Min. Avg.											
September	Max. Min. Avg.											
October	Max. Min. Avg.											
November	Max. Min. Avg.											
December	Max. Min. Avg.											
Total												
General	Max. Min. Avg.											

Note: L3 Basin not in service in 2016

SEWERAGE AND WATER BOARD OF NEW ORLEANS

TABLE IV-D

PRINCIPLE RESULTS OF OPERATION OF THE L4 CONVENTIONAL UNIT AT THE CARROLLTON WATER PURIFICATION PLANT FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10	13	14	15
Month	Max. Min. Avg.	Total Million Gallons of Water Treated During Month	Amount of Water Treated Million Gallons Per 24 Hours	Total Pounds of Polymer used at Intake	Polymer at Intake Parts Per Million	Total Pounds of Polymer used in Plant	Polymer in Plant Parts Per Million	Total Pounds of Pure Iron (Fe) During Month	Pure Iron (Fe) Parts Per Million	NTU Turbidity of River Water	PPM Alkalinity of River Water	NTU Turbidity of Unit Effluent
January	58.17 40.71 40.21	1,556.54	58.17 40.71 50.21	0	52,906	4.95 3.57 4.08	59,759	5.56 4.02 4.61	182 48 90	119 83 94	10.0 2.3 4.8	
February	59.33 49.13 53.05	1,505.50	59.33 49.13 53.05	0	51,525	4.65 3.86 4.05	57,843	6.00 4.33 4.68	115 44 65	115 96 107	7.2 2.0 3.4	
March	62.96 47.79 52.11	1,615.42	62.96 47.79 52.11	0	57,275	6.97 3.77 4.16	62,778	6.00 4.24 4.63	90 44 68	113 81 96	6.5 2.3 3.3	
April	55.42 48.92 53.44	1,595.04	55.42 48.92 53.44	0	53,745	4.27 3.88 4.04	60,927	5.73 4.35 4.54	86 38 58	135 96 111	4.7 1.6 2.5	
May	56.33 40.17 48.30	1,497.29	56.33 40.17 48.30	0	52,034	5.12 3.81 4.17	58,475	5.75 4.27 4.69	143 38 78	145 109 121	3.9 1.1 2.1	
June	59.88 43.29 50.34	1,510.17	59.88 43.29 50.34	0	51,546	4.62 3.84 4.10	58,238	5.23 4.31 4.63	152 37 81	154 120 132	3.5 1.0 2.0	
July	60.38 47.71 53.25	1,650.71	60.38 47.71 53.25	0	44,232	4.24 2.81 3.21	49,798	4.77 3.17 3.61	145 25 59	166 104 138	3.2 1.2 1.8	
August	66.54 48.00 49.78	1,593.38	66.54 48.00 49.78	0	44,035	3.80 2.98 3.07	49,752	4.76 3.37 3.46	271 26 74	154 105 127	3.6 1.2 2.3	
September	62.54 43.21 55.39	1,619.83	62.54 43.21 55.39	0	48,499	4.80 3.41 3.58	54,382	5.39 3.81 4.02	80 24 50	142 120 127	3.1 2.1 2.1	
October	58.54 41.88 49.45	1,515.58	58.54 41.88 49.45	0	45,178	4.15 3.10 3.59	50,998	4.68 3.82 4.07	130 40 69	175 138 156	3.7 1.0 2.5	
November	69.25 45.33 57.61	1,728.21	69.25 45.33 57.61	0	49,848	3.72 3.21 3.46	56,102	4.32 3.61 3.90	87 13 27	201 155 175	7.7 1.4 2.7	
December	69.04 54.63 62.27	1,930.51	69.04 54.63 62.27	0	57,708	4.26 3.21 3.59	63,019	6.97 3.51 3.93	95 13 35	199 152 174	5.6 2.0 3.0	
Total		19,318.18			608,531		682,071					
General	Max. Min. Avg.	1,930.51 1,497.29 1,609.85	69.25 40.17 52.93		57,708 44,035 50,711	6.97 2.81 3.95	63,019 49,752 56,839	6.97 3.17 4.52	271 13 63	201 81 130	10.0 1.0 2.7	

Note: L4 Basin in service from 1/1/2016 through 12/31/2016

TABLE IV-E

MONTHLY SUMMARY OF COMBINED OPERATION OF CONVENTIONAL UNITS AT THE CARROLLTON WATER PURIFICATION PLANT FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Month	Max. Min. Avg.	Total Million Gallons of Water Treated During Month	Amount of Water Treated Million Gallons Per 24 Hours	Total Pounds of Polymer used at Intake	Total Pounds of Polymer used in Plant	Total Pounds of Fluoride (100%) used During Month	Fluoride Parts Per Million	Total Pounds of Pure Iron (Fe) used During Month	Total Pounds of Lime Used During Month	Lime Parts per Million	Total Pounds of Chlorine Used During Month	Chlorine Parts Per Million	Total Pounds of Anhydrous Ammonia Used During Month	Ammonia Parts Per Million	Total Pounds of Polyphosphate Used During Month	Polyphosphate Parts Per Million	Alkalinity of Filtered Water Parts Per Million (OFE)	Estimated High Lift	
																		M.G.D	
January	Max. 138.21 Min. 120.46 Avg. 131.91	4,089.09	120.46	0	150,132	14,906	0.52 0.40 0.44	175,683	627,279	21.58 6.00 17.99	200,935	6.37 5.00 5.88	37,698	1.17 1.04 1.11	26,383	0.82 0.74 0.77	116	4,079.42	142.17 120.63 131.59
February	Max. 138.83 Min. 129.38 Avg. 133.71	3,743.84	129.38	0	137,744	13,446	0.43 0.39 0.41	161,065	562,967	20.66 18.74 18.03	172,205	5.83 5.34 5.52	33,634	1.14 1.02 1.08	24,167	0.81 0.74 0.77	130	3,940.71	146.67 135.04 140.74
March	Max. 213.83 Min. 126.54 Avg. 134.35	4,165.18	126.54	0	149,754	14,992	0.44 0.40 0.41	171,754	551,173	18.66 10.31 15.97	177,462	6.00 3.28 5.18	36,910	0.62 0.62 0.75	25,968	0.81 0.47 0.75	127	4,237.04	143.67 131.63 136.68
April	Max. 134.50 Min. 122.88 Avg. 128.62	3,858.60	122.88	0	140,683	14,212	0.44 0.39 0.42	163,494	597,074	20.48 15.98 18.54	165,497	5.43 4.94 5.14	37,962	1.25 0.99 1.18	24,811	0.83 0.74 0.77	127	4,051.33	140.63 130.04 135.04
May	Max. 131.08 Min. 121.54 Avg. 126.88	3,933.25	121.54	0	144,376	14,798	0.41 0.43 0.43	169,068	616,070	22.45 12.75 18.79	166,724	5.59 4.88 5.08	38,255	0.93 0.93 1.17	25,291	0.85 0.74 0.77	135	4,136.42	139.54 123.75 133.43
June	Max. 145.88 Min. 121.17 Avg. 131.12	3,933.61	121.17	0	143,251	14,438	0.47 0.40 0.43	168,094	698,327	25.11 17.39 21.28	174,528	6.05 4.98 5.32	40,390	1.41 1.13 1.23	25,101	0.86 0.74 0.77	102	4,009.21	122.25 114.42 133.64
July	Max. 148.63 Min. 130.71 Avg. 139.21	4,315.66	130.71	0	127,123	15,079	0.46 0.40 0.43	148,937	736,202	24.76 17.90 20.44	202,490	5.98 5.43 5.63	46,763	1.38 1.26 1.30	26,902	0.81 0.70 0.75	142	4,239.00	144.42 127.29 136.74
August	Max. 137.00 Min. 120.88 Avg. 126.12	3,971.62	120.88	0	122,500	15,075	0.49 0.40 0.44	141,032	645,618	20.62 17.16 19.48	199,633	6.60 5.20 6.03	46,773	1.56 1.30 1.41	24,376	1.23 0.70 0.79	128	4,139.96	143.13 121.63 133.55
September	Max. 135.25 Min. 121.46 Avg. 129.13	3,873.82	121.46	0	126,296	13,273	0.49 0.24 0.42	146,611	577,248	19.13 11.89 17.87	196,780	5.77 6.09	45,323	1.25 1.40	24,709	0.65 0.77	108	3,813.96	117.50 127.13 129.46
October	Max. 135.63 Min. 123.67 Avg. 129.01	3,999.43	123.67	0	130,327	14,454	0.48 0.42 0.46	152,639	660,335	23.74 15.30 19.78	202,685	6.60 5.77 6.06	47,560	1.58 1.32 1.43	25,263	0.84 0.70 0.77	148	3,806.04	138.54 117.17 122.78
November	Max. 148.17 Min. 126.08 Avg. 133.49	4,004.67	126.08	0	126,316	14,538	0.51 0.41 0.46	145,747	717,414	24.18 13.81 21.48	175,993	6.34 4.54 5.28	42,512	1.52 1.14 1.27	24,818	0.86 0.62 0.74	157	3,823.29	138.54 118.29 137.44
December	Max. 143.00 Min. 125.86 Avg. 133.99	4,153.79	125.86	0	133,037	14,808	0.48 0.31 0.45	150,404	752,779	24.54 16.31 21.78	172,505	5.20 4.66 4.97	41,613	1.28 1.06 1.20	25,598	0.82 0.47 0.74	146	3,976.50	136.67 115.63 128.27
Total	Max. 48,042.56 Min. 4,315.66 Avg. 3,743.84	48,042.56	126.08	0	1,631,538	174,020	0.52 0.40 0.44	1,894,528	7,742,486	21.78 11.89 17.87	2,207,437	6.37 5.00 5.88	495,393	1.17 1.04 1.11	303,388	0.82 0.74 0.77	132	48,252.9	146.67 120.63 131.59
General	Max. 4,315.66 Min. 120.46 Avg. 4,003.55	4,003.55	120.46	0	135,962	14,502	0.43 0.24 0.43	157,877	645,207	19.32 6.00 19.32	183,953	5.51 3.28 5.51	41,283	1.24 0.62 1.24	25,282	0.76 0.47 0.76	120	4,021.07	152.20 115.63 132.20

SEWERAGE AND WATER BOARD OF NEW ORLEANS

TABLE V

PRINCIPLE RESULTS OF OPERATION OF THE ALGIERS WATER PURIFICATION PLANT FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Month	Max. Min. Avg.	Low Lift Total Million Gallons of Water Treated During Month	Amount of Water Treated Million Gallons Per 24 Hours	Total Pounds of Polyelec- trolyte Used During Month	Polyelec- trolyte Parts Per Million	Total Pounds of Fluoride (100%) Used During Month	Fluoride Parts Per Million	Total Pounds of Pure Iron (Fe) used During Month	Pure Iron (Fe) Parts Per Million	Total Pounds of Lime Used During Month	Lime Parts Per Million	Total Pounds of Anhydrous Ammonia Used During Month	Anhydrous Ammonia Parts Per Million	Total Pounds Chlorine Used During Month	Chlorine Parts Per Million	Total Pounds Polyphos- phate Used During Month	Polyphos- phate Parts Per Million	NTU Turbidity of Clarifier Effluent	PPM Clear Well Alkalinity of Filter Effluent	Total M.G.D.	High Lift Pumpage M.G.D.
January	Max. 11.00 Min. 9.00 Avg. 10.06	311.99	11.00	10,794	4.53	1,478	0.60	15,140	7.33	65,067	38.28	2,720	1.20	16,818	7.76	2,066	0.89	0.7	59	10.41	10.41
February	Max. 11.00 Min. 9.00 Avg. 10.04	291.08	11.00	10,351	4.94	1,384	0.63	13,860	6.30	77,743	38.27	2,106	0.92	12,287	5.19	1,799	0.89	0.3	60	10.26	8.71
March	Max. 11.00 Min. 9.00 Avg. 9.55	296.09	11.00	10,384	4.64	1,419	0.56	15,180	7.33	78,772	46.51	2,260	1.03	12,652	6.20	1,867	0.89	0.7	53	9.74	9.74
April	Max. 11.00 Min. 9.00 Avg. 9.04	270.00	9.00	9,090	4.04	1,320	0.59	13,750	7.33	83,072	30.06	2,383	0.88	11,003	5.53	1,767	0.89	0.4	57	9.10	9.10
May	Max. 11.00 Min. 9.00 Avg. 9.19	284.83	9.00	9,736	4.53	1,388	0.57	15,032	7.44	105,332	39.97	2,783	1.05	12,734	4.77	1,900	0.55	3.6	73	250.76	250.76
June	Max. 12.00 Min. 8.00 Avg. 9.29	278.61	12.00	10,295	4.84	1,467	0.74	14,685	7.33	125,301	44.95	3,209	1.19	17,266	5.70	1,933	1.26	4.1	76	255.55	255.55
July	Max. 11.00 Min. 8.00 Avg. 9.34	289.55	11.00	10,969	4.59	1,237	0.63	14,190	7.22	136,832	70.14	3,080	1.15	18,411	6.75	1,867	1.00	1.1	45	10.27	10.27
August	Max. 11.00 Min. 8.00 Avg. 9.29	288.05	11.00	10,896	4.58	1,505	0.64	14,960	7.87	111,449	60.07	3,252	1.72	19,611	10.51	1,716	0.99	0.5	55	10.14	10.14
September	Max. 17.25 Min. 8.00 Avg. 9.40	282.02	17.25	10,649	4.43	1,481	0.60	14,966	8.24	97,997	50.07	2,955	1.57	17,814	9.63	1,900	1.00	0.9	59	14.29	14.29
October	Max. 13.00 Min. 8.00 Avg. 9.76	302.66	13.00	11,413	4.50	1,614	0.52	13,420	6.15	137,486	62.18	3,059	1.68	15,807	9.76	1,800	0.95	1.0	63	12.07	12.07
November	Max. 12.00 Min. 8.67 Avg. 10.19	305.82	12.00	11,530	4.56	1,600	0.65	13,750	6.60	171,736	84.69	2,744	1.21	12,604	6.21	2,000	1.13	1.0	77	10.74	10.74
December	Max. 12.33 Min. 10.00 Avg. 10.49	325.17	12.33	12,345	4.51	1,630	0.66	14,630	6.60	142,810	65.05	2,310	1.14	13,703	5.82	2,000	0.80	0.4	93	10.34	10.34
Total	Max. 3,525.87 Min. 325.17 Avg. 293.82	3,525.87	10.49	128,452	4.55	17,523	0.60	179,563	5.38	1,333,597	52.64	32,861	0.85	180,710	5.05	22,615	0.70	3.0	117	3,308.38	3,308.38
General	Max. 17.25 Min. 8.00 Avg. 9.66	325.17	17.25	12,345	5.23	1,630	0.74	15,180	8.24	171,736	84.69	3,252	1.72	19,611	11.59	2,066	1.26	0.3	45	297.86	297.86
	Max. 270.00 Min. 293.82 Avg. 9.66	270.00	8.00	9,090	3.54	1,237	0.50	13,420	4.40	65,067	17.37	2,106	0.79	11,003	4.00	1,716	0.47	13.0	135	244.48	244.48
	Max. 293.82 Min. 9.66 Avg. 10.704	293.82	9.66	10,704	4.37	1,460	0.60	14,464	5.90	111,133	45.35	2,738	1.12	15,059	6.15	1,885	0.77	2.4	75	275.70	275.70

SEWERAGE AND WATER BOARD OF NEW ORLEANS

TABLE VI-A

MONTHLY SUMMARY OF CARROLLTON WATER PURIFICATION PLANT FILTER OPERATIONS  
FOR THE YEAR ENDING: December 31, 2016

1 Month	2		3		4		5		6		7		8		9		10		11	
	Max.	Min.	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
January	1,347.250	2,613.982	64	80	263	167	32,875	51,875	3,007	5,822	19,200	48,100	0.300	0.601	3.38	3.84	91,524	96,607		
February	1,546.875	2,475.975	75	72	167	165	20,875	51,562	3,000	6,549	22,200	43,200	0.296	0.600	4.23	2.59	91,320	107,182		
March	1,627.250	2,602.721	78	62	191	221	23,875	67,501	2,993	6,269	21,600	37,200	0.277	0.600	1.55	2.48	91,110	104,029		
April	1,483.125	2,576.615	71	76	169	169	21,125	52,500	3,002	5,991	21,300	47,500	0.300	0.625	1.43	5.00	91,380	99,414		
May	1,556.500	2,636.761	78	76	167	190	21,125	57,415	2,922	6,106	23,400	45,600	0.300	0.600	1.68	2.83	88,948	101,322		
June	1,529.625	2,022.891	73	68	144	99	17,875	21,192	2,978	5,198	21,977	40,800	0.301	0.600	1.42	1.14	90,646	86,256		
July	1,556.834	2,740.876	76	70	221	187	27,000	54,375	3,120	6,089	31,200	42,000	0.411	0.600	2.78	2.46	94,978	101,034		
August	1,667.080	2,397.145	81	74	191	358	23,875	62,417	2,958	5,108	24,300	47,000	0.300	0.635	2.25	3.50	90,055	84,755		
September	1,543.252	2,234.863	78	66	169	238	20,875	49,042	2,872	4,900	23,100	39,600	0.296	0.600	2.12	2.45	87,412	81,313		
October	1,414.750	2,322.828	77	76	193	194	26,500	43,541	2,836	4,808	21,100	45,600	0.274	0.600	2.02	2.58	86,331	79,776		
November	1,450.811	2,324.973	73	72	175	212	26,841	43,313	2,859	4,850	21,600	43,200	0.296	0.600	1.49	1.86	87,034	80,480		
December	1,489.961	2,490.130	75	66	231	259	29,125	67,605	3,104	4,951	23,700	38,400	0.316	0.582	1.08	0.86	94,497	82,150		
Total	18,213.313	29,439.760	899	858	5,883	5,569	704,862	1,327,152	35,851	66,641	274,677	518,200	3,667	7,243	68.19	69.95	1,085,235	1,104,318		
General	1,667.080	2,740.876	81	80	263	358	32,875	67,605	3,120	6,549	31,200	48,100	0.411	0.635	10.99	5.00	94,978	107,182		
	1,347.250	2,022.891	64	62	23	25	2,875	12,505	2,836	4,908	19,200	37,200	0.274	0.582	0.90	0.86	86,331	79,776		
	1,517.776	2,453.313	75	72	164	150	20,260	34,312	2,971	5,553	22,890	43,183	0.306	0.604	1.51	1.76	90,436	92,027		

SEWERAGE AND WATER BOARD OF NEW ORLEANS

TABLE VI-B

MONTHLY SUMMARY OF ALGIERS FILTER OPERATIONS FOR THE YEAR ENDING: December 31, 2016

1	2	3	4	5	6	7	8	9	10
Month	Total Million Gallons Water Filtered During Month of Runs	Total Number of Runs	Length of Runs in Hours	Million Gallons of Water Filtered Per Run	Million Gallons Per Day Per Filter	Total Amount in Million Gallons of Wash Water Used	Million Gallons of Wash Water Used Per Run	Percentage of Wash Water Used Per Run	
January	Max.	289.74	48	193	7.866	0.87	5.47	2.48	
	Min.			141	4.588			1.45	
	Avg.			167	6.036			1.89	
February	Max.	301.78	51	167	8.669	0.85	6.14	2.65	
	Min.			167	4.538			1.39	
	Avg.			167	5.917			2.04	
March	Max.	329.35	57	167	7.399	0.83	6.35	2.92	
	Min.			167	3.812			1.51	
	Avg.			167	5.778			1.93	
April	Max.	260.67	49	167	6.105	0.78	6.11	7.91	
	Min.			47	1.577			2.04	
	Avg.			164	5.319			2.35	
May	Max.	293.40	54	167	5.963	0.78	5.44	2.47	
	Min.			167	4.088			1.69	
	Avg.			167	5.433			1.86	
June	Max.	307.40	51	167	7.740	0.87	6.54	3.76	
	Min.			167	3.412			1.66	
	Avg.			167	6.028			2.13	
July	Max.	271.66	49	167	7.900	0.81	6.13	34.84	
	Min.			23	0.359			1.58	
	Avg.			164	5.544			2.26	
August	Max.	328.11	57	167	7.849	0.83	7.42	2.89	
	Min.			167	4.507			1.66	
	Avg.			167	5.756			2.26	
September	Max.	294.82	48	191	7.815	0.83	5.38	2.62	
	Min.			143	4.278			1.44	
	Avg.			177	6.142			1.83	
October	Max.	300.25	51	167	8.208	0.85	5.57	2.90	
	Min.			167	3.774			1.33	
	Avg.			167	5.887			1.86	
November	Max.	352.01	54	167	7.486	0.94	6.02	2.37	
	Min.			167	4.700			1.49	
	Avg.			167	6.519			1.71	
December	Max.	321.47	51	191	8.668	0.85	5.56	2.24	
	Min.			143	4.873			1.26	
	Avg.			177	6.303			1.73	
Total	3650.64	620.00	5762.00	206.84	10.08	72.14	1.39	112.40	
General	Max.	352.01	57	193.00	8.67	0.94	7.42	34.84	
	Min.			23.00	0.36			1.26	
	Avg.			168.17	5.89			1.98	

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

**TABLE VII**  
December 31, 2015  
**FIVE YEAR ANALYSIS COMPOSITE DATA (2012 - 2016) FOR NEW ORLEANS**  
**DRINKING WATER PURIFICATION SYSTEM**

PARAMETER	MISSISSIPPI RIVER (Before Purification)			FINISHED WATER (After Purification)		
	MAX	MIN	AVG	MAX	MIN	AVG
Total Alkalinity (ppm as CaCO <sub>3</sub> )	201	72	116	210	78	127
Total Hardness (ppm as CaCO <sub>3</sub> )	272	91	158	300	116	179
Noncarbonate Hardness (ppm as CaCO <sub>3</sub> )	104	12	42	104	8	53
Calcium Hardness (ppm as CaCO <sub>3</sub> )	167	40	103	200	88	125
Magnesium Hardness (ppm as CaCO <sub>3</sub> )	118	10	55	151	5	54
Nephelometric Turbidity (NTU)	281	4.9	63	0.28	0.06	0.11
pH	8.47	7.00	7.70	9.42	7.76	8.85
Chloride (ppm)	63	14	30	65	19	34
Fluoride (ppm)	0.65	0.08	0.26	1.06	0.26	0.72
Total Dissolved Solids (ppm)	445	146	255	526	137	295
Total Suspended Solids (ppm)	396	7	88	-----	-----	-----
Free Chlorine Residual (ppm as Cl <sub>2</sub> )	-----	-----	-----	0.6	0.0	0.2
Total Chlorine Residual (ppm as Cl <sub>2</sub> )	-----	-----	-----	5.0	0.2	3.2
Ammonia (ppm as N)	-----	-----	-----	0.61	0.01	0.15
Nitrate + Nitrite (ppm as N) *	-----	-----	-----	3	1	2
Sulfate (ppm) *	-----	-----	-----	69	35	50
Conductivity (µS/cm)	682	230	415	700	244	468
Temperature (°F)	89	37	66	91	44	74
Aluminum (ppm) *	-----	-----	-----	0.01	0.00	0.08
Antimony (ppm) *	-----	-----	-----	0.002	0.000	0.000
Arsenic (ppm) *	-----	-----	-----	0.001	0.000	0.000
Barium (ppm) *	-----	-----	-----	0.47	0.000	0.018
Beryllium (ppm) *	-----	-----	-----	0.000	0.000	0.000
Cadmium (ppm) *	-----	-----	-----	0.000	0.000	0.000
Chromium (ppm) *	-----	-----	-----	0.00	0.00	0.00
Copper (ppm) *	-----	-----	-----	0.2	0.0	0.1
Iron (ppm) *	-----	-----	-----	0.05	0.00	0.01
Lead (ppm) *	-----	-----	-----	0.021	0.000	0.003
Manganese (ppm) *	-----	-----	-----	0.00	0.00	0.00
Mercury (ppm) *	-----	-----	-----	0.000	0.000	0.000
Nickel (ppm) *	-----	-----	-----	0.0	0.0	0.0
Selenium (ppm) *	-----	-----	-----	0.00	0.00	0.00
Silver (ppm) *	-----	-----	-----	0.00	0.00	0.00
Thallium (ppm) *	-----	-----	-----	0.000	0.000	0.000
Zinc (ppm) *	-----	-----	-----	0	0	0
Potassium (ppm) *	-----	-----	-----	3.6	2.8	3.2
Sodium (ppm) *	-----	-----	-----	34	18	25
Cyanide (ppb) *	-----	-----	-----	0.0	0.0	0.0
Haloacetic Acids (HAA5) (ppb)	-----	-----	-----	43.4	6.1	18.0
Total Organic Carbon (ppm)	4.7	2.9	3.7	3.7	1.9	2.7
Total Trihalomethanes (ppb)	25.7	0.0	0.0	85.1	6.8	22.0
1,2-Dichloroethane (ppb)	0.0	0.0	0.0	0.6	0.0	0.0
Chloroform (ppb)	25.7	0.0	0.0	62.1	5.2	13.7
Carbon Tetrachloride (ppb)	3.1	0.0	0.0	0.0	0.0	0.0
Bromodichloromethane (ppb)	0.0	0.0	0.0	19.1	0.0	5.6
Tetrachloroethene (ppb)	0.0	0.0	0.0	0.0	0.0	0.0
BTX (Benzene, Toluene & Xylenes) (ppb)	1.3	0.0	0.0	0.0	0.0	0.0
Total Coliforms (CFUs/100 ml)	6800	28	630	89	0	0
Fecal Coliforms (CFUs/100 ml)	350	0	50	0	0	0

The results for constituents indicated with asterisks are from the Louisiana Department of Health and Hospitals.

Total Organic Carbon and Haloacetic Acid results are from a DHH certified contract laboratory.

All other results are from testing by the S&WB Water Quality Laboratory.

Lead and Copper results are from 2016 Lead and Copper Rule compliance testing.

Concerning the chemical results, the S&WB Laboratory does not meet the higher criteria required by DHH to be classified as a "DHH-OPH *Certified* Chemical Laboratory/Drinking Water;" therefore, any results reported by this laboratory for chemical drinking water parameters which are required to be analyzed in a certified laboratory are officially deemed invalid.

The S&WB Laboratory is certified by DHH for Total Coliform and Fecal Coliform testing.

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

**TABLE VIII**  
December 31, 2015

## CARROLLTON OPERATION

CHEMICAL	CHEMICAL COST	CHEMICAL COST PER MILLION GALLONS
Lime	\$657,097.83	\$13.68
Ferric Coagulant	\$1,282,595.75	\$26.70
Chlorine & Sodium Hypochlorite	\$977,476.17	\$20.35
Sodium Polyphosphate	\$109,067.95	\$2.27
Polyelectrolyte	\$337,728.42	\$7.03
Fluoride	\$183,103.53	\$3.81
Ammonia	\$287,327.72	\$5.98
Carbon	\$0.00	\$0.00
<b>TOTAL CHEMICALS</b>	<b>\$3,834,397.36</b>	<b>\$79.81</b>

Purification Plant Operating Cost:

Total Water Treated in 2016:

48,042,560,000 Gallons

## TOTAL COST PER MILLION GALLONS

YEAR	TOTAL WATER TREATED IN MILLION GALLONS	OPERATING COST	TOTAL COST PER MILLION GALLONS
2016	48,042.56	\$7,974,759	\$165.99
2015	47,616.37	\$8,238,282	\$173.01
2014	48,386.88	\$8,585,082	\$177.43
2013	50,240.70	\$8,119,447	\$169.71
2012	50,870.78	\$8,294,045	\$165.09

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

**TABLE IX**  
December 31, 2016  
**ALGIERS OPERATION**

CHEMICAL	CHEMICAL COST	CHEMICAL COST PER MILLION GALLONS
Lime	\$113,396.50	\$32.16
Ferric Coagulant	\$121,431.35	\$34.44
Sodium Hypochlorite	\$80,506.05	\$22.83
Sodium Polyphosphate	\$33,922.50	\$9.62
Polyelectrolyte	\$27,420.70	\$7.78
Fluoride (100%)	\$18,437.66	\$5.23
Ammonia	\$23,331.31	\$6.62
Carbon	\$0.00	\$0.00
<b>TOTAL CHEMICALS</b>	<b>\$418,446.07</b>	<b>\$118.68</b>

Purification Plant Operating Cost:  
Total Water Treated in 2016:

3,525,870,000 Gallons

## TOTAL COST PER MILLION GALLONS

YEAR	TOTAL WATER TREATED IN MILLION GALLONS	OPERATING COST	TOTAL COST PER MILLION GALLONS
2016	3,525.87	\$1,678,026.00	\$475.92
2015	3,684.57	\$1,952,339.00	\$529.87
2014	3,807.99	\$1,835,436.00	\$482.00
2013	4,115.36	\$1,967,690.00	\$478.13
2012	4,227.86	\$2,061,032.00	\$487.49
2011	4,280.60	\$1,834,511.00	\$428.56

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

## TABLE X

December 31, 2016

### SLUDGE REMOVED FROM THE "G" BASINS PRIMARY TREATMENT UNITS DOOR MONORAKE CONVENTIONAL SYSTEM 2016

Total Million Gallons Water Treated	28,453.79
Total Tons Dry Sludge Deposited in Basins Including suspended and Dissolved Solids Removed and Reacting Chemicals	13,950
Total Million Gallons Wet Sludge Withdrawn from Basins	1,037.11
Average Percent solids in Wet Sludge	0.32
Total Million Gallons Water Used in withdrawing Sludge	1,035.72
Percent of Total Water Treated Used in Withdrawing Wet Sludge	3.64

## TABLE X-A

### SLUDGE REMOVED FROM THE "L" BASINS PRIMARY TREATMENT UNITS DOOR MONORAKE CONVENTIONAL SYSTEM 2016

Total Million Gallons Water Treated	19,318.18
Total Tons Dry Sludge Deposited in Basins Including suspended and Dissolved Solids Removed and Reacting Chemicals	8,765
Total Million Gallons Wet Sludge Withdrawn from Basins	267.86
Average Percent solids in Wet Sludge	0.78
Total Million Gallons Water Used in withdrawing Sludge	266.98
Percent of Total Water Treated Used in Withdrawing Wet Sludge	1.39

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

**TABLE XI**  
December 31, 2016  
**2016 ANALYSIS DATA FOR NEW ORLEANS CARROLLTON**  
**DRINKING WATER PURIFICATION SYSTEM**

PARAMETER	MISSISSIPPI RIVER (Before Purification)			FINISHED WATER (After Purification)		
	MAX	MIN	AVG	MAX	MIN	AVG
Total Alkalinity (ppm as CaCO <sub>3</sub> )	201	81	130	210	84	142
Total Hardness (ppm as CaCO <sub>3</sub> )	272	108	169	300	116	190
Noncarbonate Hardness (ppm as CaCO <sub>3</sub> )	86	12	40	104	14	48
Calcium Hardness (ppm as CaCO <sub>3</sub> )	167	40	107	200	90	129
Magnesium Hardness (ppm as CaCO <sub>3</sub> )	118	22	62	151	14	61
Nephelometric Turbidity (NTU)	271	13	63	0.28	0.07	0.11
pH	8.18	7.31	7.76	9.31	7.76	8.86
Chloride (ppm)	50	14	28	48	19	32
Fluoride (ppm)	0.31	0.13	0.21	0.92	0.26	0.71
Free Chlorine Residual (ppm as Cl <sub>2</sub> )	-----	-----	-----	0.4	0.1	0.2
Total Chlorine Residual (ppm as Cl <sub>2</sub> )	-----	-----	-----	5.0	0.5	3.4
Ammonia (ppm as N)	-----	-----	-----	0.36	0.02	0.14
Nitrate + Nitrite (ppm as N) *	-----	-----	-----	1.7	1.7	1.7
Sulfate (ppm) *	-----	-----	-----	34.6	34.6	34.6
Conductivity (µS/cm)	682	238	427	700	244	476
Temperature (°F)	87	42	67	91	52	75
Antimony (ppm) *	-----	-----	-----	0.0	0.0	0.0
Arsenic (ppm) *	-----	-----	-----	0.0	0.0	0.0
Barium (ppm) *	-----	-----	-----	0.047	0.046	0.047
Beryllium (ppm) *	-----	-----	-----	0.0	0.0	0.0
Cadmium (ppm) *	-----	-----	-----	0.0	0.0	0.0
Chromium (ppm) *	-----	-----	-----	0.0	0.0	0.0
Copper (ppm) *	-----	-----	-----	0.2	0.0	0.1
Iron (ppm) *	-----	-----	-----	0.0	0.0	0.0
Lead (ppm) *	-----	-----	-----	0.021	0.000	0.004
Manganese (ppm) *	-----	-----	-----	0.0	0.0	0.0
Mercury (ppm) *	-----	-----	-----	0.0	0.0	0.0
Nickel (ppm) *	-----	-----	-----	0.0	0.0	0.0
Selenium (ppm) *	-----	-----	-----	0.0	0.0	0.0
Silver (ppm) *	-----	-----	-----	0.0	0.0	0.0
Thallium (ppm) *	-----	-----	-----	0.0	0.0	0.0
Zinc (ppm) *	-----	-----	-----	0.0	0.0	0.0
Sodium (ppm) *	-----	-----	-----	17.8	17.5	17.7
Cyanide (ppb) *	-----	-----	-----	0.0	0.0	0.0
Haloacetic Acids (HAA5) (ppb)	-----	-----	-----	29.1	6.1	18.1
Total Organic Carbon (ppm)	4.2	2.9	3.6	3.5	2.0	2.8
Total Trihalomethanes (ppb)	0.0	0.0	0.0	49.6	11.9	24.1
1,2-Dichloroethane (ppb)	0.0	0.0	0.0	0.0	0.0	0.0
Chloroform (ppb)	0.0	0.0	0.0	37.6	7.5	16.5
Carbon Tetrachloride (ppb)	0.0	0.0	0.0	0.0	0.0	0.0
Bromodichloromethane (ppb)	0.0	0.0	0.0	19.1	1.6	6.4
Tetrachloroethene (ppb)	0.0	0.0	0.0	0.0	0.0	0.0
BTX (Benzene, Toluene & Xylenes) (ppb)	0.0	0.0	0.0	0.0	0.0	0.0
Total Coliforms (CFUs/100 ml)	5700	140	690	89	0	0
E. coli (CFUs/100 ml)	350	5	90	0	0	0

The results for constituents indicated with asterisks are from the Louisiana Department of Health and Hospitals. Total Organic Carbon and Haloacetic Acid results are from a DHH certified contract laboratory. All other results are from testing by the S&WB Water Quality Laboratory. Lead and Copper results are from 2016 Lead and Copper Rule compliance testing. Concerning the chemical results, the S&WB Laboratory does not meet the higher criteria required by DHH to be classified as a "DHH-OPH Certified Chemical Laboratory/Drinking Water;" therefore, any results reported by this laboratory for chemical drinking water parameters which are required to be analyzed in a certified laboratory are officially deemed invalid. The S&WB Laboratory is certified by DHH for Total Coliform and Fecal Coliform testing.

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

**TABLE XII**  
December 31, 2016  
**EXTRACTS FROM TABLES IV-E AND V**

**20 Year Period, 1997 to 2016 Inclusive**  
**Maximum, Minimum, and Average Amount of**  
**Water Treated Per Day**  
**(M.G. per 24 Hours)**

YEAR	CARROLLTON			ALGIERS		
	MAX.	MIN.	AVG.	MAX.	MIN.	AVG.
1997	156.53	112.70	128.73	18.83	9.58	12.06
1998	152.96	98.48	126.86	22.96	12.00	12.36
1999	168.25	122.55	140.26	22.00	8.90	15.19
2000	152.50	126.71	128.10	18.83	7.58	12.13
2001	153.93	107.75	126.70	15.76	6.00	10.90
2002	128.67	87.00	106.63	14.00	6.66	9.80
2003	144.26	90.75	115.35	13.16	8.00	10.06
2004	145.83	102.92	122.57	13.16	8.00	10.15
2005	144.00	0.00	115.47	22.67	7.00	10.20
2006	165.63	115.33	139.73	18.34	8.00	11.67
2007	144.75	124.00	134.06	16.00	10.00	12.13
2008	143.50	114.08	133.88	13.58	6.92	10.38
2009	147.92	129.83	138.17	14.00	8.00	10.78
2010	156.50	125.33	137.10	15.67	8.00	11.25
2011	150.83	127.17	139.37	16.83	10.00	11.73
2012	163.29	117.96	137.65	15.50	10.00	11.58
2013	141.83	120.00	131.08	15.25	10.00	11.27
2014	157.30	122.08	132.57	15.58	9.00	10.43
2015	144.71	118.33	130.47	13.92	8.83	10.09
2016	213.83	120.46	131.62	17.25	8.00	9.66

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

## TABLE XIII

December 31, 2016

### Monthly Temperature (Degrees Farenheit) of the Mississippi River Water at the Carrollton Plant

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	52	50	50	41	43	48	47	42	43	47
February	47	53	46	41	43	48	47	40	45	46
March	56	55	51	48	51	57	49	46	45	54
April	63	63	58	62	61	69	57	59	61	62
May	71	68	69	71	68	74	66	69	70	70
June	79	77	79	81	80	81	76	79	79	79
July	82	80	85	85	84	85	81	83	84	86
August	85	82	84	86	87	87	83	84	85	85
September	82	78	81	83	80	82	83	83	83	84
October	75	71	70	72	72	72	76	72	74	75
November	63	63	59	61	62	60	62	59	65	66
December	58	55	49	50	50	55	48	49	54	53
Maximum	89	85	86	89	90	89	86	86	87	87
Minimum	40	42	42	37	40	46	45	37	39	42
Average	68	66	65	65	65	68	65	64	66	67

<u>Ten Year Period</u>	
Maximum:	90
Minimum:	37
Average:	66

# SEWERAGE AND WATER BOARD OF NEW ORLEANS

## TABLE XIV

December 31, 2016

### Monthly Temperature (Degrees Farenheit) of the Tap Water at the Carrollton Plant

	2012	2013	2014	2015	2016
January	64	65	62	62	57
February	65	66	61	62	59
March	69	66	66	66	66
April	74	69	72	73	72
May	77	73	77	76	77
June	82	81	80	80	83
July	84	81	83	83	88
August	79	81	84	82	87
September	78	84	84	80	86
October	73	78	79	76	81
November	69	72	69	70	74
December	68	64	65	64	66
Maxiumum	89	91	89	86	91
Minimum	51	49	44	55	52
Average	73	73	74	73	75

Five Year Period

Maximum:           91  
Minimum:           44  
Average:            74

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**New Orleans East Bank Sewerage Treatment Plant**  
**2016 Yearly Summary**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2016
<b>Plant EF Flow (MGD)</b>													
Average	108,035	88,7	103,1	119,003	94,971	98,883	90,832	110,529	97,321	74,987	79,9	91,361	96
Maximum	79.3	152.23	178.6	191	187.6	152.8	130.2	169.1	148.9	83.1	142.4	156.5	191
<b>INFLUENT BOD (mg/L)</b>													
Average	130.6	110	85	70	91.2	62.7	91.7	83.4	89.1	113.9	105.5	99.4	94
Maximum	281	150	126	112	224	92	125	140	126	161	146	138	281
<b>INFLUENT TSS (mg/L)</b>													
Average	226.2	126.6	99.1	90.5	108	106.9	159.4	151.2	152.2	155	164.8	158.9	142
Maximum	621	227	169	179	171	170	271	301	224	237	414	331	621
<b>INFLUENT BOD (lbs/day)</b>													
Average	116,994	78,864	61,868	68,363	69,027	49,416	70,410	71,695	70,351	68,472	70,657	72,514	72,386
Maximum	255,446	109,996	83,694	146,291	149,266	70,510	117,931	124,933	141,653	97,598	117,244	134,427	255,446
<b>INFLUENT TSS (lbs/day)</b>													
Average	206,132	92,730	74,993	92,069	84,722	85,782	124,063	131,727	123,947	93,380	116,501	119,015	112,088
Maximum	564,526	223,020	144,949	241,451	142,577	129,103	223,662	268,028	59,543	140,337	429,894	322,431	564,526
<b>EFFLUENT BOD (mg/L)</b>													
Average	15	18.2	18.5	13.1	13.3	13.6	17.5	12.9	11.9	16.2	20.3	21.6	16.0
Weekly Maximum	33	29	33	36	30	50	34	25	19	43	34	51	51.0
<b>EFFLUENT TSS (mg/L)</b>													
Average	8.4	11.9	12.9	12.4	11.4	11	10.3	12.2	8.2	8.1	13.1	12.3	11.0
Weekly Maximum	24	21	38	57	41	70	24	37	42	18	22	34	70.0
<b>EFFLUENT BOD (lbs/day)</b>													
Average	13,440	13,463	15,967	13,574	10,582	11,596	13,540	12,347	9,610	10,070	13,833	16,915	12,911
Weekly Maximum	40,539	29,844	36,357	57,346	26,798	36,066	28,816	31,254	17,386	26,753	39,755	57,634	57,634
<b>EFFLUENT TSS (lbs/day)</b>													
Average	7,753	8,766	12,019	14,112	9,246	9,419	8,033	12,464	7,305	5,045	9,030	10,246	9,453
Weekly Maximum	30,404	22,383	54,732	90,798	37,887	50,382	18,460	46,256	52,157	11,199	23,752	38,422	90,798
<b>EFFLUENT CL2 (mg/L)</b>													
Average	0.49	0.47	0.49	0.48	0.49	0.49	0.49	0.5	0.5	0.5	0.5	0.5	0.49
Maximum	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50
<b>EFFLUENT COLIFORM (col/100-ml)</b>													
Average (Geo)	2.25	2.09	2.49	2.30	2.93	2.78	2.35	2.51	2.24	4.03	5.24	5	3
Weekly Maximum (Geo)	2.69	2.25	3.35	2.89	3.8	6.65	3.04	4.04	2.67	7.89	10.88	7.82	11
<b>EFFLUENT pH (su)</b>													
Minimum	6.74	6.76	6.76	6.79	6.82	6.78	6.81	6.82	6.83	6.82	6.88	6.81	6.74
Maximum	6.93	6.84	6.84	6.94	7.03	6.90	6.86	7.2	6.92	6.95	7.11	7.2	7.20
<b>DISPOSED SLUDGE (dry tons)</b>													
Average per day	27.64	30.89	30.57	25.7	28.14	27.97	31.15	26.46	34.65	32.57	22.4	35.43	29.46
Total	746.16	772.19	825.46	591.1	703.59	783.16	616.34	529.25	727.74	651.44	335.35	566.84	7,849
<b>ELECTRICITY (kwhr)</b>													
Average per day	79,865	70,723	72,053	77,406	75,507	79,665	72,427	74,787	74,697	68,320	67,972	68,465	73,474
Total (kwhr)	2,469,601	2,192,401	2,161,601	2,389,601	2,265,201	2,469,601	2,172,802	2,318,401	2,315,601	2,049,602	1,971,201	2,122,402	26,908,015
<b>RAINFALL (inches) East Bank</b>													
TOTAL	4.74	3.80	7.47	12.94	4.95	9.78	7.39	11.87	5.19	0.16	2.73	6.13	77.15

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**

**New Orleans West Bank Sewerage Treatment Plant  
2016 Yearly Summary**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2016
<b>Plant Eff Flow (MGD)</b>													
Average	13.2	9.147	11.272	12.863	10.109	12.482	10.221	13.009	9.072	5.09	7.112	10.35	10.32
Maximum	21.72	19.470	28.470	28.46	31.01	23.6	27.96	33.940	21.46	6.25	16.43	21.90	33.94
<b>Plant INF Flow (MGD)</b>													
Average	12.084	8.439	10.308	11.243	9.488	12.639	10.144	12.841	9.334	6.985	7.627	10.92	10.19
Maximum	19.45	17.350	25.180	25.29	22.63	23.6	27.96	31.530	19.85	7.48	18.38	24.08	31.53
<b>INFLUENT BOD (mg/L)</b>													
Average	192	179.9	180.2	242	239.7	289.6	381.6	478.5	292.1	336	351.2	457.3	301.68
Maximum	407	334	414	567	389	443	693	733	639	684	564	705	733
<b>INFLUENT TSS (mg/L)</b>													
Average	286.8	217.8	228.9	301.9	332.3	408.9	449.2	494.1	340.6	408.7	420.1	489.4	365.73
Maximum	992	367	656	843	592	1010	930	2074	773	738	885	1064	2,074
<b>INFLUENT BOD (lbs/day)</b>													
Average	18,421	13,116	14,639	21,415	19,063	29,970	33,702	46,973	20,251	19,568	24,889	47,633	25,802
Maximum	42,362	34,004	38,640	78,324	45,674	57,224	90,010	108,089	54,369	38,563	67,828	122,705	122,705
<b>INFLUENT TSS (lbs/day)</b>													
Average	27,640	15,886	19,813	26,464	27,215	43,578	38,811	48,749	21,905	23,834	30,039	53,250	31,432
Maximum	103,251	41,818	70,560	79,872	68,699	142,356	98,969	155,317	46,804	43,700	93,813	156,051	158,051
<b>EFFLUENT BOD (mg/L)</b>													
Average	7.5	8.6	9.3	8.9	8.6	6.9	9	5.7	6	6.8	9.4	10.3	8.08
Weekly Maximum	10	12	18	17	13	11	17	13	8	10	21	23	23
<b>EFFLUENT TSS (mg/L)</b>													
Average	11.8	11.5	12.5	14.7	14.9	17.8	17.5	12.5	10.2	10.5	10.8	12	13.06
Weekly Maximum	19	24	31	35	32	32	27	22	16	13	22	26	35
<b>EFFLUENT BOD (lbs/day)</b>													
Average	782	680	865	989	754	720	752	574	479	284	606	1,027	707.63
Weekly Maximum	1,477	1,786	4,274	3,873	3,104	1,575	2,332	1,460	1,218	459	2,604	3,653	4,274
<b>EFFLUENT TSS (lbs/day)</b>													
Average	1,258	959	1,233	1,751	1,459	1,966	1,483	1,322	862	441	701	1,266	1,225.19
Weekly Maximum	2,898	3,897	7,361	7,975	8,276	5,087	5,130	3,962	2,864	596	3,015	4,749	8,276
<b>EFFLUENT CL2 (mg/L)</b>													
Average	1.16	1.29	1.14	1.15	1.06	1.05	1.01	1	1.1	1.13	1.13	1.05	1.11
Maximum	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.40
<b>EFFLUENT COLIFORM (col/100-ml)</b>													
Average (Geo)	2.13	2	2.35	2.48	2.77	5.63	4.37	4.48	2.33	2.71	2.45	2.92	3.05
Weekly Maximum (Geo)	5	2	2.88	3.17	3.63	31.4	8.11	33.31	2.21	5.53	4.16	8	33.31
<b>EFFLUENT pH (su)</b>													
Minimum	7.59	7.41	7.38	7.36	7.25	7.27	7.14	7.33	7.21	6.95	7.22	7.6	6.95
Maximum	7.92	7.74	7.72	7.72	7.53	7.57	7.54	7.94	7.8	7.14	7.54	7.87	7.94
<b>DISPOSED SLUDGE (dry tons)</b>													
Average per day	10.7	8.78	5.41	6.49	3.31	6.99	3.63	0	0	0	0	0	4
Total	256.92	184.4	129.81	136.19	79.38	139.7	24.69	0.00	0.00	0.00	0.00	0.00	951
<b>ELECTRICITY (kwhr)</b>													
Average per day	10,234	8,857	9,579	9,854	8,219	8,019	9,455	9,962	7,443	6,418	6,511	9,191	8,645
Total (kwhr)	347,951	274,582	296,946	285,771	246,581	232,552	302,569	288,963	238,177	198,963	201,829	266,551	3,161,445
<b>RAINFALL (inches) West Bank</b>													
TOTAL	4.27	1.36	4.07	5.05	3.33	2.96	1.94	4.23	5.44	0.06	2.89	3.45	39.15

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SEWER TABULATION NUMBER 1**  
**SEWER LINES AND MANHOLES IN THE SYSTEM AS OF DECEMBER 31, 2016**

**SEWER LINES DISCARDED AND INSTALLED IN 2016**

<b>ORIGINAL CONSTRUCTION (FEET)</b>	<b>DESTROYED OR ABANDONED IN 2016 (FEET)</b>	<b>BUILT IN 2016 (FEET)</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016 (FEET)</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016 (MILES)</b>
8,243,402.5	79,745.8	118,001.8	8,281,658.5	1,568.496

**SEWER MANHOLES REMOVED AND INSTALLED IN 2016**

<b>ORIGINAL CONSTRUCTION</b>	<b>REMOVED IN 2016</b>	<b>BUILT IN 2016</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016</b>
23,051	21	85	23,115

**DETAILS OF SEWER LINES AND SEWER MANHOLES INSTALLED (CONSTRUCTED) IN 2016**

<b>ITEMS</b>	<b>BOARD FUNDED</b>	<b>BY OTHERS</b>	<b>TOTAL FEET</b>	<b>TOTAL MILES</b>
6" P.V.C.	28,352.1	1,864.2	30,216.3	5.723
8" P.V.C.	75,873.1	44,440.6	80,313.7	15.211
10" P.V.C.	2,784.4	0.0	2,784.4	0.527
12" P.V.C.	1,496.2	1,374.4	2,870.6	0.544
15" P.V.C.	1,012.6	0.0	1,012.6	0.192
18" P.V.C.	471.0	0.0	471.0	0.089
21" P.V.C.	321.2	0.0	321.2	0.061
27" P.V.C.	12.0	0.0	12.0	0.002
<b>TOTAL SEWER LINES CONSTRUCTED IN 2016</b>	<b>110,322.6</b>	<b>47,679.2</b>	<b>118,001.8</b>	<b>22.3</b>
<b>SEWER MANHOLES CONSTRUCTED IN 2016</b>	<b>BOARD FUNDED</b>	<b>BY OTHERS</b>	<b>TOTAL MANHOLES BUILT IN 2016</b>	
	24	61	85	

SEWERAGE AND WATER BOARD OF NEW ORLEANS

December 31, 2016

SEWER TABULATION NUMBER 2

LENGTH OF SEWER LINES OF EACH SIZE AND MATERIAL DISCARDED, BUILT, AND NOW REMAINING IN THE SYSTEM

SIZE & MATERIAL OF SEWER	TOTAL LENGTH IN SYSTEM AS OF 12/31/2015	DESTROYED OR ABANDONED IN 2016	BUILT IN 2016	NOW REMAINING IN THE SYSTEM AS OF 12/31/2016
72" Steel	29,182.4			29,182.4
68" Steel	9,061.9			9,061.9
66" Steel	28,979.7			28,979.7
66" Concrete	13,740.7			13,740.7
60" Steel	2,577.7			2,577.7
60" Concrete	722.8			722.8
57" Concrete	1,766.8			1,766.8
54" Steel	44,014.5			44,014.5
54" Concrete	7,030.4			7,030.4
51" Concrete	755.9			755.9
50" Steel	135.0			135.0
48" Steel	21,147.2			21,147.2
48" Concrete	10,127.6			10,127.6
48" Fiberglass Reinforced	10,900.2			10,900.2
48" P V C	3,663.4			3,663.4
45" Concrete	3,048.4			3,048.4
42" Steel	3,580.2			3,580.2
42" Concrete	19,121.2			19,121.2
39" Brick	832.8			832.8
39" Concrete	3,871.8			3,871.8
36" Vitrified Clay	1,894.9			1,894.9
36" Cast Iron	431.0			431.0
36" Steel	332.6			332.6
36" Prestressed Concrete	11,273.0			11,273.0
36" Reinforced Concrete	9,312.7			9,312.7
36" P V C	10,604.0			10,604.0
33" Brick	3,080.9			3,080.9
33" Vitrified Clay	562.3			562.3
33" Reinforced Concrete	1,381.4			1,381.4
30" Brick	2,763.0			2,763.0
30" Vitrified Clay	7,538.5			7,538.5
30" Cast Iron	4,305.9			4,305.9
30" Steel	3,535.2			3,535.2
30" Prestressed Concrete	484.0			484.0
30" Reinforced Concrete	33,920.5			33,920.5
30" Fiberglass Reinforced	16,400.0			16,400.0
30" P V C	996.0			996.0
27" Vitrified Clay	24,440.4	12.0		24,428.4
27" Reinforced Concrete	13,336.4			13,336.4
27" P V C	4,622.0		12.0	4,634.0
24" Vitrified Clay	31,572.2			31,572.2
24" Cast Iron	16,269.2			16,269.2
24" Ductile Iron	619.0			619.0

SIZE & MATERIAL OF SEWER	TOTAL LENGTH IN SYSTEM AS OF 12/31/2015	DESTROYED OR ABANDONED IN 2016	BUILT IN 2016	NOW REMAINING IN THE SYSTEM AS OF 12/31/2016
24" Steel	87.0			87.0
24" Reinforced Concrete	26,337.0			26,337.0
24" Asbestos Cement	4,924.2			4,924.2
24" P V C	5,949.6			5,949.6
21" Reinforced Concrete	10,903.1			10,903.1
21" P V C	5,199.2		321.2	5,520.4
20" Ductile Iron Pipe	1,991.4			1,991.4
18" P V C	19,085.0		471.0	19,556.0
16" Steel	120.0			120.0
16" Asbestos Cement	28,460.9			28,460.9
16" Plastic	1,913.1			1,913.1
15" Vitrified Clay	99,423.2	730.1		98,693.1
15" P V C	13,395.3		1,012.6	14,407.9
15" Plastic Truss	1,766.8	432.2		1,334.6
12" Vitrified Clay	108,874.6			108,874.6
12" P V C	65,984.4		2,870.6	68,855.0
10" Vitrified Clay	153,648.7	1,528.6		152,120.1
10" Steel	130.0			130.0
10" Concrete	48,084.7	829.8		47,254.9
10" Asbestos Cement	4,356.2			4,356.2
10" P V C	133,930.1	160.0	2,784.4	136,554.5
10" Plastic Truss	4,983.5	306.0		4,677.5
8" Terra Cotta	318,613.7	6,715.0		311,898.7
8" Vitrified Clay	4,031,020.3	62,475.9		3,968,544.4
8" Cast Iron	32,210.2	174.0		32,036.2
8" Ductile Iron	2,233.0			2,233.0
8" Concrete	270,543.8	4,544.9		265,998.9
8" Asbestos Cement	3,562.9			3,562.9
8" P V C	837,621.2		80,313.7	917,934.9
8" Plastic Truss	63,412.1	1,500.3		61,911.8
8" Plastic	691,151.6	337.0		690,814.6
6" Terra Cotta	9,194.7			9,194.7
6" Vitrified Clay	76,522.4			76,522.4
6" Cast Iron	4,204.4			4,204.4
6" Asbestos Cement	4,493.9			4,493.9
6" P V C	371,588.7		30,216.3	401,805.0
6" Plastic Truss	1,763.3			1,763.3
6" Plastic	364,876.3			364,876.3
4" Cast Iron	874.2			874.2
4" Ductile Iron	180.4			180.4
4" P V C	5,525.7			5,525.7
4" Plastic	126.0			126.0
<b>Total Linear Feet</b>	<b>8,243,402.5</b>	<b>79,745.8</b>	<b>118,001.8</b>	<b>8,281,658.5</b>
<b>Total Miles</b>	<b>1,561,250</b>	<b>15.103</b>	<b>22.349</b>	<b>1,568,496</b>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**WATER TABULATION NUMBER 1**  
**WATER LINES, MANHOLES, VALVES, AND FIRE HYDRANTS IN THE SYSTEM AS OF DECEMBER 31, 2016**

**WATER LINES DISCARDED AND INSTALLED IN 2016**

<b>ORIGINAL CONSTRUCTION (FEET)</b>	<b>DESTROYED OR ABANDONED IN 2016 (FEET)</b>	<b>BUILT IN 2016 (FEET)</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016 (FEET)</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016 (MILES)</b>
9,605,673.7	6,128.0	24,085.3	9,623,631.0	1,822.657

**WATER MANHOLES REMOVED AND INSTALLED IN 2016**

<b>ORIGINAL CONSTRUCTION</b>	<b>REMOVED IN 2016</b>	<b>BUILT IN 2016</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016</b>
30,463	20	65	30,508

**WATER VALVES REMOVED AND INSTALLED IN 2016**

<b>ORIGINAL CONSTRUCTION</b>	<b>REMOVED IN 2016</b>	<b>INSTALLED IN 2016</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016</b>
29,791	41	81	29,831

**FIRE HYDRANTS REMOVED AND INSTALLED IN 2016**

<b>ORIGINAL CONSTRUCTION</b>	<b>REMOVED IN 2016</b>	<b>INSTALLED IN 2016</b>	<b>REMAINING IN THE SYSTEM AS OF 12/31/2016</b>
23,130	10	26	23,146

**DETAILS OF WATER LINES, MANHOLES, VALVES, AND FIRE HYDRANTS INSTALLED (CONSTRUCTED) IN 2016**

<b>ITEMS</b>	<b>BOARD FUNDED</b>	<b>BY OTHERS</b>	<b>TOTAL FEET</b>	<b>TOTAL MILES</b>
2" P.V.C.	811.0	247.3	1,058.3	0.200
4" P.V.C.	29.0	429.8	458.8	0.087
4" DUCTILE IRON	279.0	149.0	428.0	0.081
6" P.V.C.	806.0	244.7	1,050.7	0.199
6" DUCTILE IRON	40.5	78.5	119.0	0.023
8" P.V.C.	5,939.0	7,710.0	13,649.0	2.585
8" DUCTILE IRON	1,566.0	480.0	2,046.0	0.388
12" P.V.C.	1,845.0	1,291.9	3,136.9	0.594
16" P.V.C.	2,038.6	0.0	2,038.6	0.386
20" P.V.C.	100.0	0.0	100.0	0.019
<b>TOTAL WATER LINES CONSTRUCTED IN 2016</b>	<b>13,454.1</b>	<b>10,631.2</b>	<b>24,085.3</b>	<b>4.6</b>
<b>WATER MANHOLES CONSTRUCTED IN 2016</b>	<b>BOARD FUNDED</b>	<b>BY OTHERS</b>	<b>TOTAL MANHOLES BUILT IN 2016</b>	
	36	29	65	
<b>WATER VALVES INSTALLED IN 2016</b>	<b>BOARD FUNDED</b>	<b>BY OTHERS</b>	<b>TOTAL WATER VALVES INSTALLED IN 2016</b>	
	35	46	81	
<b>FIRE HYDRANTS INSTALLED IN 2016</b>	<b>BOARD FUNDED</b>	<b>BY OTHERS</b>	<b>TOTAL FIRE HYDRANTS INSTALLED IN 2016</b>	
	20	6	26	

SEWERAGE AND WATER BOARD OF NEW ORLEANS

December 31, 2016

WATER TABULATION NUMBER 2

LENGTH OF WATER LINES OF EACH SIZE AND MATERIAL, NUMBER OF VALVES OF EACH SIZE, BOTH GATE AND CHECK, ORIGINALLY INSTALLED, THE QUANTITIES DISCARDED OR BUILT, AND THE QUANTITIES NOW REMAINING IN THE DISTRIBUTION SYSTEM DECEMBER 31, 2016

WATER LINES					
SIZE	MATERIAL	TOTAL LENGTH IN SYSTEM AS OF 12/31/2015	DESTROYED OR ABANDONED IN 2016	BUILT IN 2016	NOW REMAINING IN THE SYSTEM AS OF 12/31/2016
54"	Concrete Pipe	7,535.1			7,535.1
50"	Steel Pipe	88,374.0			88,374.0
48"	Cast Iron Pipe	12,759.3			12,759.3
48"	Steel Pipe	36,637.1			36,637.1
48"	Concrete Pipe	4,982.9			4,982.9
43"	Cast Iron Pipe	11,170.1			11,170.1
42"	Cast Iron Pipe	4,349.6			4,349.6
42"	Concrete Pipe	9,361.9			9,361.9
36"	Cast Iron Pipe	4,523.3			4,523.3
36"	Steel Pipe	16,922.0			16,922.0
36"	Concrete Pipe	37,374.7			37,374.7
36"	Prestressed Concrete	675.0			675.0
30"	Cast Iron Pipe	59,740.1			59,740.1
30"	Ductile Iron Pipe	296.0			296.0
30"	Steel Pipe	19,863.1			19,863.1
30"	Concrete Pipe	71,216.4			71,216.4
30"	Prestressed Concrete	36,654.4			36,654.4
30"	Reinforced Concrete	3,919.6			3,919.6
30"	P.V.C. Pipe	3,716.1			3,716.1
24"	Cast Iron Pipe	30,090.0			30,090.0
24"	P.V.C. Pipe	1,372.0			1,372.0
24"	Ductile Iron Pipe	140.0			140.0
24"	Concrete Pipe	4,062.5			4,062.5
20"	P.V.C. Pipe	10,270.5		100.0	10,370.5
20"	Cast Iron Pipe	87,785.9	100.0		87,685.9
20"	Ductile Iron Pipe	10,405.4			10,405.4
20"	Concrete Pipe	18,755.8			18,755.8
20"	Prestressed Concrete	212.5			212.5
20"	Asbestos Cement	12,688.0			12,688.0
18"	Reinforced Concrete	970.5			970.5
16"	Cast Iron Pipe	112,496.7			112,496.7
16"	Ductile Iron Pipe	6,692.7			6,692.7
16"	Concrete Pipe	5,681.6			5,681.6
16"	Asbestos Cement	65,284.2	2,038.6		63,245.6
16"	P.V.C. Pipe	12,565.4		2,038.6	14,604.0
15"	Reinforced Concrete	1,069.3			1,069.3
12"	Cast Iron Pipe	840,197.1	97.9		840,099.2
12"	Ductile Iron Pipe	17,663.5			17,663.5
12"	Steel Pipe	1,272.9			1,272.9
12"	Asbestos Cement	358,289.2			358,289.2
12"	P.V.C. Pipe	234,371.5		3,136.9	237,508.4
10"	Cast Iron Pipe	10,271.7			10,271.7
10"	Ductile Iron Pipe	670.0			670.0
10"	Asbestos Cement	12,763.6			12,763.6
10"	P.V.C. Pipe	7,896.0			7,896.0
8"	Cast Iron Pipe	114,517.6			114,517.6
8"	Ductile Iron Pipe	39,129.0		2,046.0	41,175.0
8"	Asbestos Cement	697,824.4			697,824.4
8"	P.V.C. Pipe	863,051.1		13,649.0	876,700.1
8"	Plastic Pipe	318,036.5			318,036.5
6"	Cast Iron Pipe	2,470,084.0	3,752.0		2,466,332.0
6"	Ductile Iron Pipe	21,693.9		119.0	21,812.9
6"	Asbestos Cement	1,038,898.5	48.5		1,038,850.0
6"	P.V.C. Pipe	302,279.7		1,050.7	303,330.4
6"	Plastic Pipe	121,385.5			121,385.5
4"	Cast Iron Pipe	1,166,532.5	91.0		1,166,441.5
4"	Ductile Iron Pipe	3,111.8		428.0	3,539.8
4"	Asbestos Cement	22,250.8			22,250.8
4"	P.V.C. Pipe	23,810.9		458.8	24,269.7
4"	Plastic Pipe	3,833.1			3,833.1
3"	Galvanized Steel	3,361.7			3,361.7
2"	Cast Iron Pipe	7,909.9			7,909.9
2"	Galvanized Steel	9,620.0			9,620.0
2"	P.V.C. Pipe	78,987.0		1,058.3	80,045.3
1"	Galvanized Steel	5,346.6			5,346.6
<b>Total Linear Feet</b>		<b>9,605,673.7</b>	<b>6,128.0</b>	<b>24,085.3</b>	<b>9,623,631.0</b>
<b>Total Miles</b>		<b>1,819,256</b>	<b>1.2</b>	<b>4.6</b>	<b>1,822.7</b>

VALVES				
SIZE	EXISTING IN SYSTEM AS OF 12/31/2015	REMOVED IN 2016	INSTALLED IN 2016	REMAINING IN SYSTEM AS OF 12/31/2016
48"	16			16
42"	4			4
36"	18			18
30"	66			66
24"	39			39
20"	133			133
16"	193			193
14"	3			3
12"	2,309	2	2	2,309
10"	72	0	0	72
8"	6,723	9	41	6,755
6"	13,019	26	14	13,007
4"	7,196	4	24	7,216
<b>Total</b>	<b>29,791</b>	<b>41</b>	<b>81</b>	<b>29,831</b>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**Table of Rainfall in New Orleans**  
**December 31, 2016**

YEAR	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		ANNUAL MONTHLY AVERAGE	EXCESS OR DEFICIT	
	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE	AMOUNT	TOTAL DATE			
2007	412	1.81	539	7.31	1.81	9.12	8.51	17.63	4.43	22.06	7.66	29.72	1.64	31.36	4.42	35.78	11.62	47.40	1.21	48.61	4.52	53.13	4.43	53.13	4.43	-1.11	
total	522.13	524.30	1,048.70	1,676.81	546.76	2,183.53	546.90	2,730.47	3,377.50	4,122.02	670.35	4,792.37	638.16	5,450.51	586.96	5,799.47	419.94	6,222.47	419.94	6,222.47	532.98	6,752.80	532.98	6,752.80	532.98		
avg	4.58	4.60	9.20	14.27	4.82	19.15	4.80	23.95	5.61	29.63	6.55	36.16	5.88	42.04	3.24	50.87	3.68	54.98	3.68	54.98	4.68	59.24	4.68	59.24	4.68		
2008	632	5.64	11.96	14.53	7.88	22.41	7.76	30.17	6.52	36.69	9.91	40.60	7.77	48.37	7.87	56.24	1.96	57.60	2.06	59.66	1.86	61.52	5.13	61.52	5.13	2.27	
total	538.45	539.94	1,060.66	1,641.34	557.64	2,205.94	554.66	2,760.64	3,414.19	4,162.62	678.12	4,840.74	646.08	5,486.75	970.32	5,857.07	422.00	6,282.13	422.00	6,282.13	534.84	6,814.32	534.84	6,814.32	534.84		
avg	4.60	4.61	9.22	14.27	4.85	19.18	4.82	24.01	5.61	29.69	6.51	36.20	5.90	42.09	3.22	50.99	3.67	54.63	3.67	54.63	4.65	59.25	4.65	59.25	4.65		
2009	516	2.97	8.13	6.17	14.30	1.21	15.51	2.46	17.96	2.40	20.36	9.82	24.18	4.62	28.80	7.45	36.25	7.57	43.82	0.78	44.60	19.81	64.01	5.37	64.01	5.37	5.11
total	539.61	532.91	1,068.79	1,655.64	558.85	2,221.45	557.12	2,776.60	3,454.55	4,186.80	682.74	4,869.54	659.48	5,523.00	977.88	5,900.89	422.78	6,326.73	422.78	6,326.73	554.65	6,878.79	554.65	6,878.79	554.65		
avg	4.60	4.59	9.21	14.27	4.82	19.15	4.80	23.95	5.59	29.61	6.48	36.09	5.88	41.98	3.26	50.87	3.64	54.54	3.64	54.54	4.78	59.30	4.78	59.30	4.78		
2010	1.75	5.91	7.66	10.40	2.97	13.37	6.12	19.49	7.24	26.73	5.62	32.35	9.98	41.93	2.26	44.19	0.39	44.58	2.32	46.90	1.58	48.49	4.04	48.49	4.04	-10.72	
total	535.36	538.82	1,076.45	1,666.04	561.82	2,234.81	563.24	2,798.09	3,461.28	4,219.15	692.32	4,911.47	655.74	5,567.19	978.29	5,945.47	425.10	6,375.64	425.10	6,375.64	556.23	6,927.21	556.23	6,927.21	556.23		
avg	4.58	4.61	9.20	14.24	4.80	19.10	4.81	23.92	5.60	29.58	6.48	36.06	5.92	41.98	3.23	50.82	3.63	54.48	3.63	54.48	4.75	59.21	4.75	59.21	4.75		
2011	2.99	1.59	4.59	11.08	0.27	11.35	0.90	12.25	4.18	16.42	11.48	27.91	1.57	28.48	9.99	39.47	0.14	39.61	1.66	41.27	0.78	42.04	9.50	42.04	9.50	-17.02	
total	538.35	540.42	1,081.04	1,677.12	562.09	2,246.17	561.13	2,810.34	3,477.71	4,207.06	693.89	4,940.95	665.73	5,606.66	976.43	5,985.08	426.76	6,414.91	426.76	6,414.91	557.00	6,969.26	557.00	6,969.26	557.00		
avg	4.56	4.58	9.16	14.21	4.76	19.04	4.78	23.82	5.59	29.47	6.52	35.89	5.88	41.87	3.83	50.72	3.21	50.72	3.62	54.36	4.72	59.06	4.72	59.06	4.72		
2012	1.74	3.38	5.12	6.16	11.28	8.14	19.42	2.45	21.87	4.84	26.71	12.89	39.60	17.79	57.39	3.83	61.22	0.15	61.36	2.13	63.50	2.30	65.80	5.48	65.80	5.48	6.68
total	540.09	543.79	1,086.16	1,688.39	570.23	2,265.38	566.58	2,832.21	3,504.42	4,266.66	711.68	4,998.34	669.55	5,657.88	978.57	6,046.95	428.90	6,478.40	428.90	6,478.40	559.30	7,035.06	559.30	7,035.06	559.30		
avg	4.54	4.57	9.13	14.19	4.79	19.04	4.76	23.80	5.58	29.45	6.57	36.02	5.98	42.00	3.83	50.81	3.60	54.44	3.60	54.44	4.70	59.12	4.70	59.12	4.70		
2013	5.14	6.82	11.96	12.51	12.51	25.01	4.51	29.52	4.55	34.08	4.43	38.51	4.58	43.09	5.44	48.59	2.19	50.72	2.81	53.53	4.48	58.01	4.83	58.01	4.83	-1.10	
total	545.24	550.61	1,098.12	1,700.90	582.74	2,290.60	571.09	2,861.73	3,538.49	4,325.17	716.26	5,041.43	674.99	5,716.41	980.76	6,097.17	431.71	6,531.94	431.71	6,531.94	563.78	7,093.07	563.78	7,093.07	563.78		
avg	4.54	4.59	9.15	14.17	4.86	19.09	4.76	23.85	5.57	29.49	6.56	36.04	5.97	42.01	3.17	50.81	3.60	54.48	3.60	54.48	4.70	59.11	4.70	59.11	4.70		
2014	2.72	6.54	9.26	6.44	15.70	2.19	17.89	7.69	23.57	6.41	31.98	6.49	38.47	4.74	49.21	4.20	47.41	1.94	49.35	1.47	50.82	3.70	54.52	4.54	54.52	4.54	-4.55
total	547.96	557.15	1,107.37	1,716.60	584.93	2,306.48	578.78	2,887.30	3,570.47	4,363.64	721.00	5,084.64	679.19	5,763.82	982.71	6,146.52	433.17	6,582.76	433.17	6,582.76	567.49	7,147.60	567.49	7,147.60	567.49		
avg	4.53	4.60	9.15	14.19	4.83	19.08	4.78	23.86	5.58	29.51	6.56	36.06	5.96	42.02	3.16	50.80	3.58	54.40	3.58	54.40	4.69	59.07	4.69	59.07	4.69		
2015	4.76	1.65	6.41	4.21	10.62	11.29	21.91	6.86	28.78	2.75	31.53	4.32	35.85	2.59	38.45	4.15	42.60	5.21	47.81	1.47	49.27	6.76	56.03	4.67	56.03	4.67	-3.01
total	552.72	558.80	1,113.79	1,727.22	586.22	2,330.40	585.64	2,916.08	3,602.00	4,399.50	723.59	5,123.09	683.34	5,806.41	987.92	6,194.33	434.64	6,652.03	434.64	6,652.03	574.25	7,203.63	574.25	7,203.63	574.25		
avg	4.53	4.58	9.13	14.16	4.89	19.10	4.80	23.90	5.56	29.52	6.54	36.06	5.93	41.99	3.58	50.79	3.52	54.46	3.52	54.46	4.69	59.07	4.69	59.07	4.69		
2016	4.67	2.48	7.15	6.99	14.14	11.73	25.87	5.62	31.49	8.16	39.65	4.94	43.89	7.63	55.20	0.02	55.22	3.92	59.14	4.70	63.84	5.32	63.84	5.32	4.72		
total	557.99	561.28	1,118.67	1,739.09	607.95	2,356.27	591.26	2,947.53	3,633.57	4,443.49	731.22	5,174.71	686.92	5,861.63	987.94	6,249.57	442.61	6,692.18	442.61	6,692.18	574.95	7,271.13	574.95	7,271.13	574.95		
avg	4.53	4.56	9.09	14.14	4.94	19.16	4.81	23.96	5.58	29.54	6.52	36.13	5.94	42.07	3.58	50.81	3.60	54.41	3.60	54.41	4.71	59.11	4.71	59.11	4.71		

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**December 31, 2016**  
**COST OF OPERATIONS IDENTIFICATION PROGRAM**  
**BENCHMARKING**

**ADMINISTRATIVE SERVICES DEPARTMENT**

**Insurance Cost per Employee:**

Workers' Compensation	\$ 1,942,236.00
Auto Liability	\$ 241,859.00
General Liability	\$ 138,389.00

**ENGINEERING DEPARTMENT**

Total Capital Program Design and Construction Contracts Cost Growth	9.5%
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**ENVIRONMENTAL DEPARTMENT**

Cost of Typical Industry Sampling Event	\$ 1,072.68
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**FACILITY MAINTENANCE DEPARTMENT**

Cost to set 5/8" water meter	\$ 94.59
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**MANAGEMENT SERVICES DEPARTMENT**

**FINANCE:**

Cost to Process a Miscellaneous Invoice	\$ 31.61
Cost to Process a Vendor Invoice	\$ 9.71
Cost to Process a Paycheck	\$ 6.27

**INFORMATION SYSTEM:**

Cost to Image a Document	\$ 0.70
Cost to Retrieve a Document	\$ 1.79

**PERSONNEL:**

Cost to Hire an Employee	\$ 193.00
Cost to complete a Voluntary - Employee Termination	\$ 17.80
Employee Turnover Rate	15.07%

**PURCHASING:**

Cost to Process a Sundry Purchase Order	\$ 59.75
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**REVENUE:**

Cost to Read a Meter	\$ 1.55
Cost to Render a Bill (Less Meter Reading)	\$ 0.91
Cost to Manage a Customer by Phone	\$ 2.63
Cost to Manage a Customer by Mail	\$ 8.31
Cost to Manage a Walk-in Customer	\$ 6.17
Cost to Process a Mail-in Payment	\$ 1.16
Cost to Process a Walk-in Payment	\$ 2.30

**SUPPORT SERVICES DEPARTMENT**

Average Annual Maintenance Cost Per Piece of Equipment	\$ 1,500.00 18%
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## **Section A.**

# **Financial Reports of Acts, Doings, Receipts, and Expenditures**

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### ***Financial Report***





## SEWERAGE AND WATER BOARD OF NEW ORLEANS

November 8, 2017

Finance and Administration Committee  
Sewerage and Water Board of New Orleans  
New Orleans, Louisiana

### Re: Financial Results through September 2017

Attached are the *Statement of Net Position and the Statement of Revenues, Expenses, and Changes in Net Position* with budget and prior year comparisons for the water, sewer, drainage and total systems through September 2017. The Variance Indicators for Financial Results through September 2017 and the *Statement of Cash Flows* are also attached.

#### Operating Revenues:

**Water System Fund** (pages 7 and 8, line 5) for September of \$9,191,829 is \$469,436 or 5.4% more than budgeted and \$1,924,766 or 26.5% more than September 2016. September YTD operating revenues of \$69,350,217 is \$4,743,661 or 6.4% less than budgeted and \$4,772,982 or 7.4% more than September YTD 2016.

**Sewer System Fund** (pages 13 and 14, line 5) for September of \$11,158,562 is \$1,063,492 or 10.5% more than budgeted and \$2,468,547 or 28.4% more than September 2016. September YTD operating revenues of \$83,093,172 is \$2,661,147 or 3.1% less than budgeted and \$4,489,363 or 5.7% more than September YTD 2016.

**Drainage System Fund** (pages 19 and 20, line 5) for September of \$113,418 is \$113,418 or 0.0% budgeted and \$395,811 or 77.7% less than for September 2016. September YTD operating revenues of \$139,185 is \$139,185 or 0.0% budgeted and \$409,940 or 74.7% less than September YTD 2016.

**Total System Funds** (pages 1 and 2, line 5) for September of \$20,463,808 are \$1,646,346 or 8.7% more than budgeted and \$3,997,502 or 24.3% more than September 2016. September YTD operating revenues of \$152,582,574 are \$7,265,624 or 4.5% less than budgeted and \$8,852,404 or 6.2% more than September YTD 2016.

#### Operating Expenses:

**Water System Fund** (pages 7 and 8, line 18) for September of \$7,710,040 is \$534,346 or 6.5% less than budgeted and \$730,435 or 8.7% less than September 2016. September YTD operating expenses of \$63,027,835 is \$2,519,601 or 3.8% less than budgeted and \$7,159,845 or 10.2% less than September YTD 2016.

**Sewer System Fund** (pages 13 and 14, line 18) for September of \$7,504,622 is \$1,986,425 or 20.9% less than budgeted and \$1,024,402 or 15.8% more than September 2016. September YTD operating expenses of \$59,889,946 is \$16,063,773 or 21.1% less than budgeted and \$6,246,053 or 11.6% more than September YTD 2016.

**Drainage System Fund** (pages 19 and 20, line 18) for September of \$11,669,741 is \$5,983,810 or 105.2% more than budgeted and \$7,616,241 or 187.9% more than September 2016. September YTD operating expenses of \$48,019,016 is \$1,866,783 or 4.0% more than budgeted and \$11,318,541 or 30.8% more than September YTD 2016.

**Total System Funds** (pages 1 and 2, line 18) for September of \$26,884,403 are \$3,463,038 or 14.8% more than budgeted and \$7,910,208 or 41.7% more than September 2016. September YTD operating expenses of \$170,936,797 is \$16,716,591 or 8.9% less than budgeted and \$10,404,748 or 6.5% more



## SEWERAGE AND WATER BOARD OF NEW ORLEANS

than September YTD 2016.

### Net Non-Operating Revenues:

**Water System Fund** (pages 7 and 8, line 28) for September of \$59,939 is \$46,445 or 344.2% more than budgeted and \$11,823 or 16.5% less than September 2016. September YTD net non-operating revenues of \$776,316 are \$1,847,054 or 70.4% less than budgeted and \$132,055 or 14.5% less than September YTD 2016.

**Sewer System Fund** (pages 13 and 14, line 28) for September of \$31,738 is \$25,622 or 418.9% more than budgeted and \$4,829 or 13.2% less than September 2016. September YTD net non-operating revenues of \$561,035 are \$628,035 or 52.8% less than budgeted and \$75,951 or 11.9% less than September YTD 2016.

**Drainage System Fund** (pages 19 and 20, line 28) for September of \$2,752,440 is \$2,479,800 or 909.6% more than budgeted and \$2,395,574 or 671.3% more September 2016. September YTD net non-operating revenues of \$55,411,563 are \$2,408,276 or 4.5% more than budgeted and \$1,679,559 or 3.1% more than September YTD 2016.

**Total System Funds** (pages 1 and 2, line 28) for September of \$2,844,117 is \$2,551,867 or 873.2% more than budgeted and \$2,378,921 or 511.4% more than September 2016. September YTD net non-operating revenues of \$56,748,914 are \$66,814 or 0.1% less than budgeted and \$1,471,553 or 2.7% more than September YTD 2016.

### Income Before Contributions in Aid of Construction:

**Water System Fund** (pages 7 and 8, line 29) for September of \$1,541,727 is \$1,050,227 or 213.7% more than budgeted and \$2,643,378 or 239.9% more than September 2016. September YTD income before capital contributions of \$7,098,698 is \$4,071,114 or 36.4% less than budgeted and \$11,800,772 or 251.0% more than September YTD 2016.

**Sewer System Fund** (pages 13 and 14, line 29) for September of \$3,685,678 is \$3,075,539 or 504.1% more than budgeted and \$1,439,315 or 64.1% more than September 2016. September YTD income before capital contributions of \$23,764,261 is \$12,774,590 or 116.2% more than budgeted and \$1,832,641 or 7.2% less than September YTD 2016.

**Drainage System Fund** (pages 19 and 20, line 29) for September of -\$8,803,883 is \$3,390,592 or 62.6% less than budgeted and \$5,616,478 or 176.2% less than September 2016. September YTD income before capital contributions of \$7,531,731 is \$680,677 or 9.9% more than budgeted and \$10,048,922 or 57.2% less than September YTD 2016.

**Total System Funds** (pages 1 and 2, line 29) for September of -\$3,576,477 is \$735,174 or 17.1% more than budgeted and \$1,533,784 or 75.1% less than September 2016. September YTD income before capital contributions of \$38,394,691 is \$9,384,153 or 32.3% more than budgeted and \$80,791 or 0.2% less than September YTD 2016.



## SEWERAGE AND WATER BOARD OF NEW ORLEANS

The balances of funds from the Series 2014 bond proceeds available for capital construction as of September 30, 2017 are:

	Water	Sewer	Total
<b>Original Balance</b>	\$2,056,223.29	20,925.60	\$2,077,148.89
<b>Less Disbursements</b>	-	-	0.00
<b>Plus Reimbursements</b>	-	-	0.00
<b>Plus Income</b>	1,622.44	-	1,622.44
<b>Ending Balance</b>	\$2,057,845.73	20,925.60	\$2,078,771.33

The balances of funds from the Series 2015 bond proceeds available for capital construction as of September 30, 2017 are:

	Water	Sewer	Total
<b>Original Balance</b>	\$72,761,157.83	\$22,063,587.75	\$94,824,745.58
<b>Less Disbursements</b>	(5,000,000.00)	(6,500,000.00)	(11,500,000.00)
<b>Plus Reimbursements</b>	-	-	0.00
<b>Plus Income</b>	42,715.78	8,036.84	50,752.62
<b>Ending Balance</b>	\$67,803,873.61	\$15,571,624.59	\$83,375,498.20

The days-of-cash at September 30, 2017 were 187.15 for the water system, 317.93 for the sewer system, and 302.36 for the drainage system. These results are well ahead of their minimum policy target of 180 days for the water, sewerage and drainage systems.

The projected coverage for the year ending December 31, 2017, based upon financial results through September 30, 2017, remains at the budgeted levels of 1.71 times for the water system and 2.18 times for the sewer system. The water results are ahead of the policy target of 1.50 times and the bond covenant minimum of 1.25. The sewerage results are ahead of the policy targets of 1.50 times and the bond covenant minimum of 1.25 times coverage for sewerage systems.

**Certification.** In connection with the accompanying monthly financial report of the Sewerage and Water Board of New Orleans for the period ended September 30, 2017, I hereby certify that, to my knowledge, the information contained in the report fairly presents, in all material respects, the financial condition and results of the Board.

Rosita Thomas  
Finance Administrator

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**ALL SYSTEM FUNDS**  
**STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION**  
**WITH PRIOR YEAR COMPARISONS**  
 September 2017

	A		B		C		D		E		F		G		H			
	MTD	Prior Year	MTD	Prior Year	MTD	Prior Year	MTD	Prior Year	YTD	Prior Year	YTD	Prior Year	YTD	Prior Year	YTD	Prior Year		
	Actual		Variance		Variance		%		Actual		Variance		Variance		Variance	%		
<b>Operating revenues:</b>																		
1 Sales of water and delinquent fees	8,900,658	6,972,140	1,928,518	27.7%	67,843,585	61,948,297	5,895,288	9.5%	1									
2 Sewerage service charges and delinquent fees	11,024,082	8,667,978	2,356,104	27.2%	82,429,053	77,957,764	4,471,289	5.7%	2									
3 Plumbing inspection and license fees	41,030	39,680	1,350	3.4%	447,530	492,160	(44,630)	-9.1%	3									
4 Other revenues	498,038	786,508	(288,470)	-36.7%	1,862,406	3,331,948	(1,469,542)	-44.1%	4									
5 Total operating revenues	20,463,808	16,466,306	3,997,502	24.3%	152,582,574	143,730,170	8,852,404	6.2%	5									
<b>Operating Expenses:</b>																		
6 Executive Director	96,294	21,104	75,190	356.3%	1,412,770	1,358,577	54,193	4.0%	6									
7 Special Counsel	144,405	108,659	35,747	32.9%	1,399,400	1,051,554	347,846	33.1%	7									
8 Security	1,323,740	1,130,648	193,091	17.1%	8,670,116	6,364,839	2,305,278	36.2%	8									
9 Operations	15,943,249	9,051,136	6,892,113	76.1%	82,321,671	73,961,956	8,359,714	11.3%	9									
10 Engineering	512,921	427,310	85,611	20.0%	5,505,534	4,268,638	1,236,896	29.0%	10									
11 Logistics	1,014,213	846,925	167,288	19.8%	8,159,989	8,242,420	(82,431)	-1.0%	11									
12 Communications	175,965	257	175,708	68371.6%	507,021	161,300	345,722	214.3%	12									
13 Administration	1,533,044	1,286,899	246,145	19.1%	9,836,948	11,126,261	(1,289,313)	-11.6%	13									
14 Chief Financial Officer	1,789,648	1,833,875	(44,227)	-2.4%	15,675,627	13,697,417	1,978,210	14.4%	14									
15 Continuous Improvement	12,827	46,374	(33,547)	-72.3%	118,397	46,386	72,011	155.2%	15									
16 Overhead and Budget Adjustments	(1,082,409)	(1,299,098)	216,689	-16.7%	(10,271,042)	(9,284,753)	(986,289)	10.6%	16									
17 Subtotal	21,463,896	13,454,089	8,009,808	59.5%	123,336,432	110,994,594	12,341,838	11.1%	17									
18 Non-Cash Operating Expenses	5,420,506	5,520,106	(99,600)	-1.8%	47,600,365	49,537,455	(1,937,090)	-3.9%	18									
19 Total operating expenses	26,884,403	18,974,195	7,910,208	41.7%	170,936,797	160,532,049	10,404,748	6.5%	19									
20 Operating income (loss)	(6,420,595)	(2,507,889)	(3,912,706)	156.0%	(18,354,223)	(16,801,879)	(1,552,344)	9.2%	20									
<b>Non-operating revenues (expense):</b>																		
21 Two-mill tax	395	181	214	118.3%	2,057	7,477	(5,420)	-72.5%	21									
22 Three-mill tax	2,101,784	97,001	2,004,783	2066.8%	15,379,398	15,206,743	172,655	1.1%	22									
23 Six-mill tax	254,474	98,031	156,443	159.6%	15,966,427	15,369,785	596,642	3.9%	23									
24 Nine-mill tax	381,443	146,945	234,498	159.6%	23,932,908	23,038,622	894,286	3.9%	24									
25 Interest income	106,209	123,038	(16,829)	-13.7%	1,170,468	1,362,109	(191,641)	-14.1%	25									
26 Other income	-	-	-	0.0%	296,165	267,886	28,279	10.6%	26									
27 Interest expense	-	-	-	0.0%	-	-	-	0.0%	27									
28 Operating and maintenance grants	(188)	-	(188)	0.0%	1,491	24,738	(23,247)	-94.0%	28									
29 Total non-operating revenues	2,844,117	465,196	2,378,921	511.4%	56,748,914	55,277,361	1,471,553	2.7%	29									
30 Income before capital contributions	(3,576,478)	(2,042,693)	(1,533,784)	75.1%	38,394,691	38,475,482	(80,791)	-0.2%	30									
31 Capital contributions	4,722,887	4,056,659	666,228	16.4%	25,871,139	23,180,185	2,690,955	11.6%	31									
32 Change in net position	1,146,409	2,013,966	(867,557)	-43.1%	64,265,830	61,655,666	2,610,164	4.2%	32									
33 Net position, beginning of year					2,228,421,948	2,083,688,315	145,733,633	7.0%	33									
34 Net position, end of year					2,292,687,778	2,144,343,981	148,343,797	6.9%	34									

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**ALL SYSTEM FUNDS**  
**STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION**  
**WITH BUDGET COMPARISONS**  
 September 2017

	A	B	C	D	E	F	G	H
	MTD	MTD	MTD	%	YTD	YTD	YTD	%
	Actual	Budget	Variance		Actual	Budget	Variance	
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	8,900,658	8,313,034	587,624	7.1%	67,843,585	70,616,513	(2,772,928)	-3.9%
2 Sewerage service charges and delinquent fees	11,024,082	10,013,810	1,010,272	10.1%	82,429,053	85,064,049	(2,634,996)	-3.1%
3 Plumbing inspection and license fees	41,030	55,070	(14,040)	-25.5%	447,530	467,805	(20,275)	-4.3%
4 Other revenues	498,038	435,547	62,491	14.3%	1,862,406	3,699,831	(1,837,425)	-49.7%
5 Total operating revenues	20,463,808	18,817,462	1,646,346	8.7%	152,582,574	159,848,198	(7,265,624)	-4.5%
<b>Operating Expenses:</b>								
6 Executive Director	96,294	143,313	(47,019)	-32.8%	1,412,770	1,117,424	295,347	26.4%
7 Special Counsel	144,405	239,609	(95,204)	-39.7%	1,399,400	1,868,252	(468,852)	-25.1%
8 Security	1,323,740	1,006,410	317,330	31.5%	8,670,116	7,847,061	823,055	10.5%
9 Operations	15,943,249	10,002,612	5,940,637	59.4%	82,321,671	77,991,201	4,330,470	5.6%
10 Engineering	512,921	1,151,343	(638,422)	-55.5%	5,505,534	8,977,118	(3,471,584)	-38.7%
11 Logistics	1,014,213	1,487,416	(473,203)	-31.8%	8,159,989	11,597,507	(3,437,517)	-29.6%
12 Communications	175,965	101,884	74,082	72.7%	507,021	794,395	(287,374)	-36.2%
13 Administration	1,533,044	1,394,802	138,242	9.9%	9,836,948	10,875,389	(1,038,441)	-9.5%
14 Chief Financial Officer	1,789,648	2,512,563	(722,915)	-28.8%	15,675,627	19,590,818	(3,915,191)	-20.0%
15 Continuous Improvement	12,827	41,261	(28,434)	-68.9%	118,597	321,713	(203,117)	-63.2%
16 Overhead and Budget Adjustments	(1,082,409)	(1,520,132)	437,723	-28.8%	(10,271,042)	(11,852,593)	1,581,552	-13.3%
17 Subtotal	21,463,896	16,561,101	4,902,795	29.6%	123,336,432	129,128,285	(5,791,853)	-4.5%
18 Non-Cash Operating Expenses	5,420,506	6,860,263	(1,439,757)	-21.0%	47,600,365	58,525,104	(10,924,739)	-18.7%
19 Total operating expenses	26,884,403	23,421,365	3,463,038	14.8%	170,936,797	187,653,389	(16,716,591)	-8.9%
20 Operating income (loss)	(6,420,595)	(4,603,902)	(1,816,692)	39.5%	(18,354,223)	(27,805,190)	9,450,967	-34.0%
<b>Non-operating revenues (expense):</b>								
21 Two-mill tax	395	-	395	0.0%	2,057	-	2,057	0.0%
22 Three-mill tax	2,101,784	73,272	2,028,512	2768.5%	15,379,398	14,244,664	1,134,733	8.0%
23 Six-mill tax	254,474	77,379	177,094	228.9%	15,966,427	15,043,133	923,294	6.1%
24 Nine-mill tax	381,443	115,987	265,456	228.9%	23,932,908	22,548,729	1,384,180	6.1%
25 Interest income	106,209	6,671	99,538	1492.1%	1,170,468	1,296,914	(126,446)	-9.7%
26 Other Income	-	9,099	(9,099)	-100.0%	296,165	1,768,920	(1,472,756)	-83.3%
27 Interest expense	-	(11,849)	11,849	-100.0%	-	(2,303,507)	2,303,507	-100.0%
28 Operating and maintenance grants	(188)	21,691	(21,879)	-100.9%	1,491	4,216,875	(4,215,384)	-100.0%
29 Total non-operating revenues	2,844,117	292,250	2,551,867	873.2%	56,748,914	56,815,728	(66,814)	-0.1%
30 Income before capital contributions	(3,576,478)	(4,311,652)	735,174	-17.1%	38,394,691	29,010,537	9,384,153	32.3%
31 Capital contributions	4,722,887	-	4,722,887	0.0%	25,871,139	-	25,871,139	0.0%
32 Change in net position	1,146,409	(4,311,652)	5,458,061	-126.6%	64,265,830	29,010,537	35,255,293	121.5%
33 Net position, beginning of year					2,228,421,948	2,082,688,315	145,733,633	7.0%
34 Net position, end of year					2,292,687,778	2,089,539,369	203,148,409	9.7%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
ALL SYSTEM FUNDS

STATEMENTS OF NET POSITION  
WITH PRIOR YEAR AND BEGINNING OF YEAR COMPARISONS  
September 2017

	A	B	C	D	E	F	G
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>Assets</b>							
<b>Noncurrent assets:</b>							
1 Property, plant and equipment	3,470,762,752	291,753,711	8.4%	3,762,516,463	613,449,074	19.5%	3,149,067,389
2 Less: accumulated depreciation	916,839,047	46,637,484	5.1%	963,476,531	134,408,423	16.2%	829,068,108
3 Property, plant, and equipment, net	2,553,923,705	245,116,227	9.6%	2,799,039,932	479,040,651	20.6%	2,319,999,281
<b>Restricted cash, cash equivalents, and investments</b>							
4 Cash and cash equivalents restricted for capital projects	184,438,138	(79,838,796)	-43.3%	104,599,342	11,196,867	12.0%	93,402,475
5 Debt service reserve	78,064,949	4,498,938	5.8%	82,563,887	51,716,928	167.7%	30,846,959
6 Health insurance reserve	1,867,498	240,000	12.9%	2,107,498	129,999	6.0%	1,977,499
7 Total restricted cash, cash equivalents, and investments	264,370,585	(75,099,857)	-28.4%	189,270,728	63,043,795	49.9%	126,226,933
<b>Designated cash, cash equivalents, and investments</b>							
8 Cash and cash equivalents designated for capital projects	93,456,760	(28,069,482)	-30.0%	65,387,278	43,137,621	193.9%	22,249,657
9 Customer deposits	11,464,823	866,307	7.6%	12,331,130	1,629,275	15.2%	10,701,855
10 Other	4,129,051	(217,120)	-5.3%	3,911,931	(87,340)	-2.2%	3,999,271
11 Total designated cash and cash equivalents, and investments	109,050,634	(27,420,295)	-25.1%	81,630,339	44,679,556	120.9%	36,950,783
<b>Current assets:</b>							
<b>Unrestricted and undesignated</b>							
12 Cash and cash equivalents	35,452,906	19,363,348	54.6%	54,816,254	15,938,058	41.0%	38,878,196
<b>Accounts receivable:</b>							
13 Customers (net of allowance for doubtful accounts)	20,384,510	16,747,271	82.2%	37,131,781	20,780,500	127.1%	16,351,281
14 Taxes	8,044,268	1,818,994	22.6%	9,863,262	1,732,315	21.3%	8,130,947
15 Interest	58	-	0.0%	58	58	0.0%	-
16 Grants	50,466,836	15,964,745	31.6%	66,431,581	22,185,427	50.1%	44,246,154
17 Miscellaneous	4,830,779	1,002,994	20.8%	5,833,773	3,431,547	142.8%	2,402,226
18 Due from enterprise fund	(482,785)	663,496	-137.4%	180,711	180,711	0.0%	-
19 Inventory of supplies	5,303,745	(547,551)	-10.3%	4,756,194	(710,907)	-13.0%	5,467,101
20 Prepaid expenses	1,379,165	(761,355)	-55.2%	617,810	(284,907)	-31.6%	902,717
21 Total unrestricted current assets	125,379,482	54,251,942	43.3%	179,631,424	63,252,802	54.4%	116,378,622
<b>Other assets:</b>							
22 Bond issue costs	-	-	0.0%	-	-	0.0%	-
23 Deposits	51,315	-	0.0%	51,315	-	0.0%	51,315
24 Total other assets	51,315	-	0.0%	51,315	-	0.0%	51,315
25 TOTAL ASSETS	3,052,775,721	196,848,017	6.4%	3,249,623,738	650,016,804	25.0%	2,599,606,934
<b>Deferred outflows or resources:</b>							
26 Deferred amounts related to net pension liability	19,080,030	(2,175,492)	-11.4%	16,904,538	16,904,538	0.0%	-
27 Deferred loss on bond refunding	3,954,869	(352,552)	-8.9%	3,602,317	(705,077)	-16.4%	4,307,394
28 TOTAL DEFERRED OUTFLOWS OF RESOURCES	23,034,899	(2,528,044)	-11.0%	20,506,855	16,199,461	376.1%	4,307,394
29 TOTAL ASSETS AND TOTAL DEFERRED OUTFLOWS	3,075,810,620	194,319,973	6.3%	3,270,130,593	666,216,265	401.1%	2,603,914,328

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
ALL SYSTEM FUNDS

STATEMENTS OF NET POSITION  
WITH PRIOR YEAR COMPARISONS  
September 2017

	A	B	C	D	E	F	G
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>NET ASSETS AND LIABILITIES</b>							
<b>Net position</b>							
1 Net investments in capital assets	2,037,025,463	263,450,094	12.9%	2,300,475,557	267,415,180	14.3%	2,013,060,377
2 Restricted for Debt Service	78,064,949	4,498,938	5.8%	82,563,887	51,716,928	167.7%	30,846,959
3 Unrestricted	29,253,569	(119,605,234)	-408.0%	(90,351,665)	(15,243,685)	20.3%	(75,107,980)
4 Total net position	2,144,343,981	148,343,798	6.9%	2,292,687,779	323,888,423	16.5%	1,968,799,356
<b>Long-term liabilities</b>							
5 Claims payable	2,490,568	(939,873)	-37.7%	1,550,695	(1,043,459)	-40.2%	2,594,154
6 Net pension obligation	81,045,567	3,932,124	4.9%	84,977,691	67,102,631	375.4%	17,875,060
7 Other postretirement benefits liability	71,647,971	4,946,410	6.9%	76,594,381	15,385,636	25.1%	61,208,745
8 Bonds payable (net of current maturities)	502,731,633	(20,423,475)	-4.1%	482,308,158	188,628,254	64.2%	293,679,904
9 Special Community Disaster Loan Payable			0.0%			0.0%	
10 Southeast Louisiana Project liability	115,703,588	48,291,920	41.7%	163,995,508	97,339,532	146.0%	66,655,976
11 Debt Service Assistance Fund Loan payable	57,230,725	(4,627,616)	-8.1%	52,603,109	(9,050,030)	-14.7%	61,653,139
12 Total long-term liabilities	830,850,052	31,179,490	3.8%	862,029,542	358,362,563.79	71.2%	503,666,978
<b>Current liabilities (payable from current assets)</b>							
13 Accounts payable and other liabilities	11,613,920	9,687,375	83.4%	21,301,295	(25,427,853)	-54.4%	46,729,148
14 Due to City of New Orleans	126,492	1,137,514	899.3%	1,264,006	1,103,834	689.2%	160,172
15 Disaster Reimbursement Revolving Loan	11,320,331	(992,487)	-8.8%	10,328,044	(7,566,997)	-42.3%	17,895,041
16 Retainers and estimates payable	9,633,523	176,989	1.8%	9,810,512	1,864,237	23.3%	7,946,275
17 Due to other fund	130,534	17,280	13.2%	147,814	(145,856)	-49.7%	293,670
18 Accrued salaries, vacations and sick pay	11,029,199	(1,305,730)	-11.8%	9,723,469	(1,456,314)	-13.0%	11,179,783
19 Claims payable	10,682,013	4,972,066	46.5%	15,654,079	5,434,040	53.2%	10,220,039
20 Debt Service Assistance Fund Loan payable	4,422,414	205,202	4.6%	4,627,616	401,724	9.3%	4,225,892
21 Advances from federal government	7,598,043	(1,673,287)	-22.0%	5,924,756	(232,793)	-3.8%	6,157,549
22 Other Liabilities	1,404,383	(944,533)	-67.3%	459,850	385,641	519.7%	74,209
23 Total current liabilities (payable from current assets)	67,961,052	11,280,389	16.6%	79,241,441	(25,640,337)	-24.4%	104,881,778
<b>Current liabilities (payable from restricted assets)</b>							
24 Accrued interest	2,768,829	(532,731)	-19.2%	2,236,098	(245,580)	-9.9%	2,481,678
25 Bonds payable	14,827,000	2,800,000	18.9%	17,627,000	4,368,000	32.9%	13,259,000
26 Retainers and estimates payable	669,985	911,185	136.0%	1,581,170	1,457,487	1178.4%	123,683
27 Customer deposits	11,464,823	866,307	7.6%	12,331,130	1,629,275	15.2%	10,701,855
28 Total current liabilities (payable from restricted assets)	29,730,637	4,044,761	13.6%	33,775,998	7,209,182	27.1%	26,566,216
29 Total current liabilities	97,691,689	15,325,150	15.7%	113,016,839	(18,431,155)	-14.0%	131,447,994
30 Total liabilities	928,541,741	10,697,534	1.2%	975,046,381	339,931,409	53.5%	635,134,972
<b>Deferred inflows or resources:</b>							
31 Unavailable revenue - refunding of bonds	2,924,898.00	(528,465)	-18.1%	2,396,433.00	2,396,433	0.0%	-
32 TOTAL DEFERRED INFLOWS OF RESOURCES	2,924,898	(528,465)	-18.1%	2,396,433	2,396,433	0.0%	-
33 Total Net Position, Liabilities and Deferred Inflows of Resources	3,075,810,620	159,041,332	5.2%	3,270,130,592	666,216,264	25.6%	2,603,914,328

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**ALL SYSTEM FUNDS**  
**STATEMENTS OF CASH FLOWS**  
September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
<b>Cash flows from operating activities</b>				
1 Cash received from customers	139,301,400	113,145,270	26,156,130	23.1%
2 Cash payments to suppliers for goods and services	(91,300,010)	(72,722,837)	(18,577,173)	25.5%
3 Cash payments to employees for services	(53,425,514)	(45,000,965)	(8,424,549)	18.7%
4 Other revenue	2,535,916	799,641	1,736,275	217.1%
5 Net cash used in operating activities	<u>(2,888,206)</u>	<u>(3,778,891)</u>	<u>890,685</u>	<u>-23.6%</u>
<b>Cash flows from noncapital financing activities</b>				
6 Proceeds from property taxes	55,576,953	51,470,225	4,106,728	8.0%
7 Proceeds from federal operating and maintenance grants	-	-	-	0.0%
8 Cash received paid to an other government	-	-	-	0.0%
9 Net cash provided by noncapital financing activities	<u>55,576,953</u>	<u>51,470,225</u>	<u>4,106,728</u>	<u>8.0%</u>
<b>Cash flows from capital and related financing activities</b>				
10 Acquisition and construction of capital assets	(89,644,867)	(47,232,998)	(42,411,869)	89.8%
11 Principal payments on bonds payable	-	-	-	0.0%
12 Proceeds from bonds payable	-	-	-	0.0%
13 Payments for bond issuance costs	-	-	-	0.0%
14 Principal payments on Debt Service Assistance Fund loan	(239,553)	-	(239,553)	0.0%
15 Interest paid on bonds payable	346,381	1,914,542	(1,568,161)	-81.9%
16 Proceeds from construction fund, net	(1,422,952)	(2,727,318)	1,304,366	-47.8%
17 Capital contributed by developers and federal grants	18,218,148	21,688,988	(3,470,840)	-16.0%
18 Net cash used in capital and related financing activities	<u>(72,742,842)</u>	<u>(26,356,786)</u>	<u>(46,386,056)</u>	<u>176.0%</u>
<b>Cash flows from investing activities</b>				
19 Payments for purchase of investments	-	-	-	0.0%
20 Proceeds from maturities of investments	(23,111,873)	-	(23,111,873)	0.0%
21 Investment income	1,170,467	1,185,086	(14,619)	-1.2%
22 Net cash provided by investing activities	<u>(21,941,406)</u>	<u>1,185,086</u>	<u>(23,126,492)</u>	<u>-1951.5%</u>
23 Net increase in cash	(41,995,501)	22,519,634	(64,515,135)	-286.5%
24 Cash at the beginning of the year	338,593,950	386,695,888	(48,101,938)	-12.4%
25 Cash at the end of the period	<u>296,598,451</u>	<u>409,215,521</u>	<u>(112,617,070)</u>	<u>-27.5%</u>
<b>Reconciliation of cash and restricted cash</b>				
26 Current assets - cash	54,816,263	24,526,662	30,289,601	123.5%
27 Current assets - designated	79,998,883	119,357,968	(39,359,085)	-33.0%
28 Restricted assets - cash	161,783,305	265,330,891	(103,547,586)	-39.0%
29 Total cash	<u>296,598,451</u>	<u>409,215,521</u>	<u>(112,617,070)</u>	<u>-27.5%</u>

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
ALL SYSTEM FUNDS  
STATEMENTS OF CASH FLOWS  
September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
1	(18,354,220)	(12,719,091)	(5,635,129)	44.3%
2	38,932,374	32,649,812	6,282,562	19.2%
3	2,191,649	1,189,840	1,001,809	84.2%
4	1,661,130	1,387,825	273,305	19.7%
5	-	-	-	0.0%
6	(11,840,356)	(2,836,171)	(9,004,185)	317.5%
7	(1)	-	(1)	0.0%
8	0	-	0	0.0%
9	45,270	(1,732,224)	1,777,494	-102.6%
10	-	-	-	0.0%
11	(22,418,219)	(27,516,845)	5,098,626	-18.5%
12	727,983	(83,764)	811,747	-969.1%
13	3,014,040	3,315,443	(301,403)	-9.1%
14	4,228,035	3,322,748	905,287	27.2%
15	(1,075,892)	(756,445)	(319,447)	42.2%
16	-	-	-	0.0%
17	(2,888,206)	(3,778,873)	890,667	-23.6%

Reconciliation of operating loss to net cash used in operating activities is as follows:  
 Operating loss  
 Adjustments to reconcile net operating loss to net cash used in operating activities:  
 Depreciation  
 Provision for claims  
 Provision for (revision) doubtful accounts  
 Amortization  
 Change in operating assets and liabilities:  
 (Increase) decrease in customer and other receivables  
 Increase in inventory  
 Increase (decrease) in deferred outflows of resources related to net pension liability  
 Increase (decrease) in prepaid expenses and other receivables  
 Decrease in net pension asset  
 Increase (decrease) in accounts payable  
 Increase (decrease) in accrued salaries, due to pension and accrued vacation and sick pay  
 Increase in net other postretirement benefits liability  
 Increase (decrease) in net pension obligation  
 Decrease in other liabilities  
 Increase (decrease) in deferred inflows of resources related to net pension liability

Net cash used in operating activities

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**WATER SYSTEM FUND**  
**STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION**  
**WITH PRIOR YEAR COMPARISONS**  
**September 2017**

	A	B	C	D	E	F	G	H
	MTD	MTD	MTD	%	YTD	YTD	YTD	%
	Actual	Prior Year	Variance		Actual	Prior Year	Variance	
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	8,900,658	6,972,140	1,928,518	27.7%	67,843,585	61,948,297	5,895,288	9.5%
2 Sewerage service charges and delinquent fees	-	-	-	0.0%	-	-	-	0.0%
3 Plumbing inspection and license fees	20,515	21,250	(735)	-3.5%	228,000	246,080	(18,080)	-7.3%
4 Other revenues	270,656	273,672	(3,017)	-1.1%	1,278,632	2,382,858	(1,104,226)	-46.3%
5 Total operating revenues	9,191,829	7,267,062	1,924,766	26.5%	69,350,217	64,577,236	4,772,982	7.4%
<b>Operating Expenses:</b>								
6 Executive Director	34,492	10,056	24,436	243.0%	496,580	475,761	20,819	4.4%
7 Special Counsel	46,215	34,825	11,390	32.7%	459,170	348,484	110,685	31.8%
8 Security	501,413	394,589	106,824	27.1%	3,247,057	2,359,262	887,794	37.6%
9 Operations	4,221,884	4,628,458	(406,574)	-8.8%	35,668,997	36,644,628	(975,631)	-2.7%
10 Engineering	167,153	136,061	31,092	22.9%	1,979,377	1,470,166	509,210	34.6%
11 Logistics	337,783	280,862	56,921	20.3%	2,633,220	2,738,368	(105,148)	-3.8%
12 Communications	58,655	86	58,569	68374.3%	169,007	53,767	115,241	214.3%
13 Administration	707,978	582,137	125,840	21.6%	4,522,552	5,152,455	(629,903)	-12.2%
14 Chief Financial Officer	777,789	767,223	10,566	1.4%	6,878,403	5,951,272	927,131	15.6%
15 Continuous Improvement	4,276	15,458	(11,182)	-72.3%	39,466	15,462	24,004	155.2%
16 Overhead and Budget Adjustments	(390,682)	(452,786)	62,104	-13.7%	(3,754,001)	(3,364,400)	(389,602)	11.6%
17 Non-Cash Operating Expenses	1,243,086	2,043,507	(800,421)	-39.2%	10,688,009	18,342,454	(7,654,445)	-41.7%
18 Total operating expenses	7,710,040	8,440,476	(730,435)	-8.7%	63,027,835	70,187,680	(7,159,845)	-10.2%
19 Operating income (loss)	1,481,788	(1,173,413)	2,655,202	-226.3%	6,322,382	(5,610,445)	11,932,827	-212.7%
<b>Non-operating revenues (expense):</b>								
20 Two-mill tax	-	-	-	0.0%	-	-	-	0.0%
21 Three-mill tax	-	-	-	0.0%	-	-	-	0.0%
22 Six-mill tax	-	-	-	0.0%	-	-	-	0.0%
23 Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%
24 Interest income	59,961	71,762	(11,801)	-16.4%	643,055	764,424	(121,368)	-15.9%
25 Other Income	-	-	-	0.0%	131,793	119,209	12,584	10.6%
26 Interest expense	-	-	-	0.0%	-	-	-	0.0%
27 Operating and maintenance grants	(22)	-	(22)	0.0%	1,468	24,738	(23,271)	-94.1%
28 Total non-operating revenues	59,939	71,762	(11,823)	-16.5%	776,316	908,371	(132,055)	-14.5%
29 Income before capital contributions	1,541,727	(1,101,651)	2,643,378	-239.9%	7,098,698	(4,702,074)	11,800,772	-251.0%
30 Capital contributions	3,124,709	1,632,382	1,492,327	91.4%	16,913,521	9,376,722	7,536,799	80.4%
31 Change in net position	4,666,436	530,731	4,135,705	779.2%	24,012,219	4,674,648	19,337,570	413.7%
32 Net position, beginning of year					337,110,237	318,792,375	18,317,862	5.7%
33 Net position, end of year					361,172,456	323,467,023	37,655,432	11.6%

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**WATER SYSTEM FUND**  
**STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION**  
**WITH BUDGET COMPARISONS**  
 September 2017

	A	B	C	D	E	F	G	H
	MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	8,900,658	8,313,034	587,624	7.1%	67,843,585	70,616,513	(2,772,928)	-3.9%
2 Sewerage service charges and delinquent fees	-	-	-	0.0%	-	-	-	0.0%
3 Plumbing inspection and license fees	20,515	26,374	(5,859)	-22.2%	228,000	224,035	3,965	1.8%
4 Other revenues	270,656	382,985	(112,329)	-29.3%	1,278,632	3,253,331	(1,974,699)	-60.7%
5 Total operating revenues	9,191,829	8,722,393	469,436	5.4%	69,350,217	74,093,879	(4,743,661)	-6.4%
<b>Operating Expenses:</b>								
6 Executive Director	34,492	53,289	(18,797)	-35.3%	496,580	415,498	81,081	19.5%
7 Special Counsel	46,215	76,278	(30,063)	-39.4%	459,170	594,748	(135,578)	-22.8%
8 Security	501,413	371,666	129,747	34.9%	3,247,057	2,897,914	349,143	12.0%
9 Operations	4,221,884	4,818,805	(596,922)	-12.4%	35,668,997	37,572,626	(1,903,629)	-5.1%
10 Engineering	167,153	366,923	(199,770)	-54.4%	1,979,377	2,860,929	(881,552)	-30.8%
11 Logistics	337,783	496,098	(158,315)	-31.9%	2,633,220	3,868,117	(1,234,897)	-31.9%
12 Communications	58,655	33,961	24,694	72.7%	169,007	264,798	(95,791)	-36.2%
13 Administration	707,978	632,674	75,303	11.9%	4,522,552	4,933,015	(410,463)	-8.3%
14 Chief Financial Officer	777,789	1,106,898	(329,109)	-29.7%	6,878,403	8,630,577	(1,752,173)	-20.3%
15 Continuous Improvement	4,276	13,754	(9,478)	-68.9%	39,466	107,238	(67,772)	-63.2%
16 Overhead and Budget Adjustments	(390,682)	(1,449,888)	1,059,206	-73.1%	(3,754,001)	(11,304,900)	7,550,899	-66.8%
17 Non-Cash Operating Expenses	1,243,086	1,723,928	(480,842)	-27.9%	10,688,009	14,706,877	(4,018,869)	-27.3%
18 Total operating expenses	7,710,040	8,244,386	(534,346)	-6.5%	63,027,835	65,547,437	(2,519,601)	-3.8%
19 Operating income (loss)	1,481,788	478,006	1,003,782	210.0%	6,322,382	8,546,442	(2,224,060)	-26.0%
<b>Non-operating revenues (expense):</b>								
20 Two-mill tax	-	-	-	0.0%	-	-	-	0.0%
21 Three-mill tax	-	-	-	0.0%	-	-	-	0.0%
22 Six-mill tax	-	-	-	0.0%	-	-	-	0.0%
23 Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%
24 Interest income	59,961	1,681	58,280	3467.3%	643,055	326,774	316,281	96.8%
25 Other Income	-	1,979	(1,979)	-100.0%	131,793	384,694	(252,901)	-65.7%
26 Interest expense	(22)	(1,011)	1,011	-100.0%	-	(196,535)	196,535	-100.0%
27 Operating and maintenance grants		10,845	(10,868)	-100.2%	1,468	2,108,437	(2,106,970)	-99.9%
28 Total non-operating revenues	59,939	13,494	46,445	344.2%	776,316	2,623,370	(1,847,054)	-70.4%
29 Income before capital contributions	1,541,727	491,501	1,050,227	213.7%	7,098,698	11,169,812	(4,071,114)	-36.4%
30 Capital contributions	3,124,709		3,124,709	0.0%	16,913,521		16,913,521	0.0%
31 Change in net position	4,666,436	491,501	4,174,935	849.4%	24,012,219			
32 Net position, beginning of year					337,110,237	318,792,375	18,317,862	5.7%
33 Net position, end of year					361,122,456	318,792,375	42,330,081	13.3%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
WATER SYSTEM FUND  
STATEMENTS OF NET POSITION  
WITH PRIOR YEAR AND BEGINNING OF YEAR COMPARISONS  
September 2017

	A	B	C	D	E	F	G
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>Assets</b>							
<b>Noncurrent assets:</b>							
1 Property, plant and equipment	782,728,560	58,265,181	7.4%	840,993,741	122,947,978	17.1%	718,045,763
2 Less: accumulated depreciation	344,968,838	363,455	0.1%	345,332,293	24,100,579	7.5%	321,231,714
3 Property, plant, and equipment, net	437,759,722	57,901,726	13.2%	495,661,448	98,847,399	24.9%	396,814,049
<b>Restricted cash, cash equivalents, and investments</b>							
4 Cash and cash equivalents restricted for capital projects	111,919,560	(35,367,299)	-31.6%	76,552,261	18,125,493	31.0%	58,426,768
5 Debt service reserve	24,339,454	2,371,072	9.7%	26,710,526	16,488,427	161.3%	10,222,099
6 Health insurance reserve	607,785	112,104	18.4%	719,889	60,722	9.2%	659,167
7 Total restricted cash, cash equivalents, and investments	136,866,799	(32,884,123)	-24.0%	103,982,676	34,674,642	50.0%	69,308,034
<b>Designated cash, cash equivalents, and investments</b>							
8 Cash and cash equivalents designated for capital projects	6,425,904	(700,407)	-10.9%	5,725,497	(2,190,755)	-27.7%	7,916,252
9 Customer deposits	11,464,823	866,307	7.6%	12,331,130	1,629,275	15.2%	10,701,855
10 Other	1,734,866	(103,409)	-6.0%	1,631,457	(44,303)	-2.6%	1,675,760
11 Total designated cash and cash equivalents, and investments	19,625,593	62,491	0.3%	19,688,084	(605,783)	-3.0%	20,293,867
<b>Current assets:</b>							
<b>Unrestricted and undesignated</b>							
12 Cash and cash equivalents	12,721,255	5,757,520	45.3%	18,478,775	6,275,168	34.0%	12,203,607
<b>Accounts receivable:</b>							
13 Customers (net of allowance for doubtful accounts)	11,030,155	7,391,711	67.0%	18,421,866	9,788,297	53.1%	8,633,569
14 Taxes	-	-	0.0%	-	-	0.0%	-
15 Interest	-	-	0.0%	-	-	0.0%	-
16 Grants	25,544,353	13,784,439	54.0%	39,328,792	21,574,048	121.5%	17,754,744
17 Miscellaneous	556,841	(254,275)	-45.7%	302,566	(370,744)	-55.1%	673,310
18 Due from enterprise fund	(3,204,921)	(12,952,469)	404.1%	(16,157,390)	(7,845,720)	94.4%	(8,311,670)
19 Inventory of supplies	3,536,187	(339,635)	-9.6%	3,196,552	(493,320)	-13.4%	3,689,872
20 Prepaid expenses	640,067	(253,785)	-39.6%	386,282	(94,969)	-19.7%	481,251
21 Total unrestricted current assets	50,823,957	13,133,506	25.8%	63,957,443	28,832,760	82.1%	35,124,683
<b>Other assets:</b>							
22 Bond issue costs	-	-	0.0%	-	-	0.0%	-
23 Deposits	22,950	-	0.0%	22,950	-	0.0%	22,950
24 Total other assets	22,950	-	0.0%	22,950	-	0.0%	22,950
25 TOTAL ASSETS	645,099,001	38,213,600	5.9%	683,312,601	161,749,018	31.0%	521,563,583
<b>Deferred outflows or resources:</b>							
26 Deferred amounts related to net pension liability	6,360,010	(725,164)	-11.4%	5,634,846	5,634,846	0.0%	-
27 Deferred loss on bond refunding	28,356	(4,383)	-15.5%	23,973	(8,746)	-26.7%	32,719
28 TOTAL DEFERRED OUTFLOWS OF RESOURCES	6,388,366	(729,547)	-11.4%	5,658,819	5,626,100	17195.2%	32,719
29 TOTAL ASSETS AND TOTAL DEFERRED OUTFLOWS	651,487,367	37,484,053	-5.5%	688,971,420	167,375,118	17226.2%	521,596,302

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**WATER SYSTEM FUND**  
**STATEMENTS OF NET POSITION**  
**WITH PRIOR YEAR COMPARISONS**  
September 2017

	A	B	C	D	E	F	G
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>NET ASSETS AND LIABILITIES</b>							
<b>Net position</b>							
1 Net investments in capital assets	214,279,118	59,624,867	27.8%	274,003,985	(11,585,881)	-4.1%	285,589,866
2 Restricted for Debt Service	24,339,454	2,371,072	9.7%	26,710,526	16,488,427	161.3%	10,222,099
3 Unrestricted	84,748,451	(24,340,505)	-28.7%	60,407,946	38,384,106	174.3%	22,023,840
4 <b>Total net position</b>	<b>323,467,023</b>	<b>37,655,433</b>	<b>11.6%</b>	<b>361,122,456</b>	<b>43,286,651</b>	<b>13.6%</b>	<b>317,835,805</b>
<b>Long-term liabilities</b>							
5 Claims payable	830,189	(313,291)	-37.7%	516,898	(347,820)	-40.2%	864,718
6 Net pension obligation	27,015,189	1,411,176	5.2%	28,426,365	22,563,169	384.8%	5,863,196
7 Other postretirement benefits liability	26,323,822	1,548,336	5.9%	27,872,158	5,028,077	22.0%	22,844,081
8 Bonds payable (net of current maturities)	223,151,314	(3,606,883)	-1.6%	219,544,431	108,320,248	97.4%	111,224,183
9 Special Community Disaster Loan Payable	-	-	0.0%	-	-	0.0%	-
10 Southeast Louisiana Project liability	-	-	0.0%	-	-	0.0%	-
11 Debt Service Assistance Fund Loan payable	5,028,912	(466,727)	-8.1%	4,562,185	(795,418)	-14.7%	5,417,603
12 <b>Total long-term liabilities</b>	<b>282,349,426</b>	<b>(1,367,589)</b>	<b>-0.5%</b>	<b>280,982,037</b>	<b>134,768,256</b>	<b>92.2%</b>	<b>146,213,781</b>
<b>Current liabilities (payable from current assets)</b>							
13 Accounts payable and other liabilities	4,923,077	(195,774)	-4.0%	4,727,303	(14,086,895)	-74.9%	18,814,198
14 Due to City of New Orleans	126,492	1,137,514	899.3%	1,264,006	1,103,834	689.2%	160,172
15 Disaster Reimbursement Revolving Loan	6,273,137	(918,050)	-14.6%	5,355,087	(2,987,063)	-35.8%	8,342,170
16 Retainers and estimates payable	4,600,171	197,899	4.3%	4,798,070	1,806,376	60.4%	2,991,694
17 Due to other fund	63,962	8,467	13.2%	72,429	(71,109)	-49.5%	143,538
18 Accrued salaries, vacation and sick pay	5,133,562	(597,981)	-11.6%	4,535,581	(771,131)	-14.5%	5,306,712
19 Claims payable	3,793,255	1,126,685	29.7%	4,919,940	1,068,937	27.8%	3,851,003
20 Debt Service Assistance Fund Loan payable	388,691	18,036	4.6%	406,727	35,389	9.5%	371,338
21 Advances from federal government	5,621,738	(1,673,287)	-29.8%	3,948,451	(2,209,098)	-35.9%	6,157,549
22 Other Liabilities	1,107,948	(765,402)	-69.1%	342,546	269,916	371.6%	72,630
23 <b>Total current liabilities (payable from current assets)</b>	<b>32,032,033</b>	<b>(1,661,893)</b>	<b>-5.2%</b>	<b>30,370,140</b>	<b>(15,840,864)</b>	<b>-34.3%</b>	<b>46,211,004</b>
<b>Current liabilities (payable from restricted assets)</b>							
24 Accrued interest	743,300	(206,326)	-27.8%	536,974	(17,475)	-3.2%	554,449
25 Bonds payable	325,000	2,215,000	681.5%	2,540,000	2,540,000	0.0%	-
26 Retainers and estimates payable	130,796	159,076	121.6%	289,872	210,464	265.0%	79,408
27 Customer deposits	11,464,823	866,307	7.6%	12,331,130	1,629,275	15.2%	10,701,855
28 <b>Total current liabilities (payable from restricted assets)</b>	<b>12,663,919</b>	<b>3,034,057</b>	<b>24.0%</b>	<b>15,697,976</b>	<b>4,362,264</b>	<b>38.5%</b>	<b>11,335,712</b>
29 <b>TOTAL CURRENT LIABILITIES</b>	<b>44,695,952</b>	<b>1,372,164</b>	<b>3.1%</b>	<b>46,068,116</b>	<b>(11,478,600)</b>	<b>-19.9%</b>	<b>57,546,716</b>
30 <b>TOTAL LIABILITIES</b>	<b>327,045,378</b>	<b>4,775</b>	<b>0.0%</b>	<b>327,050,153</b>	<b>123,289,656</b>	<b>60.5%</b>	<b>203,760,497</b>
<b>Deferred inflows or resources:</b>							
31 Deferred amounts related to net pension liability	974,966	(176,155)	-18.1%	798,811	798,811	0.0%	-
32 <b>TOTAL DEFERRED INFLOWS OF RESOURCES</b>	<b>974,966</b>	<b>(176,155)</b>	<b>-18.1%</b>	<b>798,811</b>	<b>798,811</b>	<b>0.0%</b>	<b>-</b>
33 <b>Total Net Position, Liabilities and Deferred Inflows of Resources</b>	<b>651,487,367</b>	<b>37,660,208</b>	<b>5.8%</b>	<b>688,971,420</b>	<b>167,375,118</b>	<b>32.1%</b>	<b>521,596,302</b>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**WATER SYSTEM FUND**  
**STATEMENTS OF CASH FLOWS**  
 September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
<b>Cash flows from operating activities</b>				
1 Cash received from customers	62,656,921	54,521,583	8,135,338	14.9%
2 Cash payments to suppliers for goods and services	(36,182,394)	(31,643,862)	(4,538,532)	14.3%
3 Cash payments to employees for services	(21,042,959)	(22,400,112)	1,357,153	-6.1%
4 Other revenue	1,664,773	2,947,746	(1,282,973)	-43.5%
5 Net cash used in operating activities	7,096,341	3,425,372	3,670,969	107.2%
<b>Cash flows from noncapital financing activities</b>				
6 Proceeds from property taxes	131,793	119,209	12,584	10.6%
7 Proceeds from federal operating and maintenance grants	-	-	-	0.0%
8 Cash received paid to an other government	-	-	-	0.0%
9 Net cash provided by noncapital financing activities	131,793	119,209	12,584	10.6%
<b>Cash flows from capital and related financing activities</b>				
10 Acquisition and construction of capital assets	(31,842,118)	(18,427,972)	(13,414,146)	72.8%
11 Principal payments on bonds payable	-	-	-	0.0%
12 Proceeds from bonds payable	-	-	-	0.0%
13 Payments for bond issuance costs	-	-	-	0.0%
14 Payment to refunded bond escrow agent	(0)	-	(0)	0.0%
15 Interest paid on bonds payable	267,013	1,541,521	(1,274,508)	-82.7%
16 Proceeds from construction fund, net	(377,899)	(711,875)	333,976	-46.9%
17 Capital contributed by developers and federal grants	8,063,878	5,237,307	2,826,571	54.0%
18 Net cash used in capital and related financing activities	(23,889,126)	(12,361,019)	(11,528,107)	93.3%
<b>Cash flows from investing activities</b>				
19 Payments for purchase of investments	-	-	-	0.0%
20 Proceeds from maturities of investments	(23,111,873)	-	(23,111,873)	0.0%
21 Investment income	643,055	692,662	(49,607)	-7.2%
22 Net cash provided by investing activities	(22,468,818)	692,662	(23,161,480)	-3343.8%
23 Net increase in cash	(39,129,809)	(8,123,776)	(31,006,033)	381.7%
24 Cash at the beginning of the year	152,217,472	174,260,074	(22,042,602)	-12.6%
25 Cash at the end of the period	113,087,664	166,136,298	(53,048,634)	-31.9%
<b>Reconciliation of cash and restricted cash</b>				
26 Current assets - cash	18,478,784	14,158,147	4,320,637	30.5%
27 Current assets - designated	18,056,627	16,372,986	1,683,641	10.3%
28 Restricted assets - cash	76,552,253	135,605,165	(59,052,912)	-43.5%
29 Total cash	113,087,664	166,136,298	(53,048,634)	-31.9%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
WATER SYSTEM FUND  
STATEMENTS OF CASH FLOWS  
September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
Reconciliation of operating loss to net cash used in operating activities is as follows:				
1 Operating loss	6,322,383	(4,437,031)	10,759,414	-242.5%
Adjustments to reconcile net operating loss to net cash used in operating activities:				
2 Depreciation	7,521,102	13,164,516	(5,643,414)	-42.9%
3 Provision for claims	1,004,937	568,360	436,577	76.8%
4 Provision for (revision) doubtful accounts	862,506	766,672	95,834	12.5%
5 Amortization	-	-	-	0.0%
Change in operating assets and liabilities:				
6 (Increase) decrease in customer and other receivables	(6,055,788)	(818,679)	(5,237,109)	639.7%
7 Increase in inventory	(0)	-	(0)	0.0%
8 Increase (decrease) in deferred outflows of resources related to net pension liability	0	-	0	0.0%
9 Increase (decrease) in prepaid expenses and other receivables	5,087,180	1,240,637	3,846,523	310.0%
10 Decrease in net pension asset	-	-	-	0.0%
11 Increase (decrease) in accounts payable	(9,499,927)	(9,313,559)	(186,368)	2.0%
12 Increase (decrease) in accrued salaries, due to pension and accrued vacation and sick pay	(424,264)	44,774	(469,038)	-1047.6%
13 Increase in net other postretirement benefits liability	904,212	1,205,616	(301,404)	-25.0%
14 Increase (decrease) in net pension obligation	1,509,813	1,208,283	301,530	25.0%
15 Decrease in other liabilities	(135,813)	(204,237)	68,424	-33.5%
16 Increase (decrease) in deferred inflows of resources related to net pension liability	-	-	-	0.0%
17 Net cash used in operating activities	7,096,341	3,425,372	3,670,969	107.2%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SEWER SYSTEM FUND  
STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION  
WITH PRIOR YEAR COMPARISONS  
September 2017

	A	B	C	D	E	F	G	H
	MTD	MTD	MTD	%	YTD	Prior Year	YTD	%
	Actual	Prior Year	Variance		Actual		Variance	
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	11,024,082	8,667,978	2,356,104	27.2%	82,429,053	77,957,764	4,471,289	5.7%
2 Sewerage service charges and delinquent fees	20,515	18,430	2,085	11.3%	219,530	246,080	(26,550)	-10.8%
3 Plumbing inspection and license fees	113,965	3,607	110,358	3059.4%	444,589	399,965	44,624	11.2%
4 Other revenues	11,158,562	8,690,015	2,468,547	28.4%	83,093,172	78,603,809	4,489,363	5.7%
5 Total operating revenues								
<b>Operating Expenses:</b>								
6 Executive Director	31,896	6,780	25,116	370.4%	468,762	450,929	17,833	4.0%
7 Special Counsel	46,215	34,825	11,390	32.7%	456,181	347,384	108,797	31.3%
8 Security	430,410	374,206	56,205	15.0%	2,827,764	2,083,535	744,229	35.7%
9 Operations	3,479,885	3,201,390	278,495	8.7%	26,905,156	25,088,882	1,816,274	7.2%
10 Engineering	188,844	161,564	27,280	16.9%	1,954,791	1,552,810	401,981	25.9%
11 Logistics	320,770	277,502	43,268	15.6%	2,550,254	2,702,433	(152,179)	-5.6%
12 Communications	58,655	86	58,569	68366.2%	169,007	53,767	115,240	214.3%
13 Administration	458,271	387,949	70,322	18.1%	2,946,089	3,322,061	(375,971)	-11.3%
14 Chief Financial Officer	745,038	740,307	4,731	0.6%	6,590,071	5,694,608	895,463	15.7%
15 Continuous Improvement	4,276	15,458	(11,182)	-72.3%	39,466	15,462	24,004	155.2%
16 Overhead and Budget Adjustments	(380,176)	(459,762)	79,585	-17.3%	(3,593,132)	(3,279,505)	(313,626)	9.6%
17 Non-Cash Operating Expenses	2,120,538	1,739,914	380,624	21.9%	18,575,538	15,611,529	2,964,009	19.0%
18 Total operating expenses	7,504,622	6,480,220	1,024,402	15.8%	59,889,946	53,643,893	6,246,053	11.6%
19 Operating income (loss)	3,653,940	2,209,796	1,444,144	65.4%	23,203,226	24,959,916	(1,756,690)	-7.0%
<b>Non-operating revenues (expense):</b>								
20 Two-mill tax	-	-	-	0.0%	-	-	-	0.0%
21 Three-mill tax	-	-	-	0.0%	-	-	-	0.0%
22 Six-mill tax	-	-	-	0.0%	-	-	-	0.0%
23 Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%
24 Interest income	31,904	36,567	(4,663)	-12.8%	396,640	488,310	(91,669)	-18.8%
25 Other Income	-	-	-	0.0%	164,371	148,677	15,695	10.6%
26 Interest expense	(166)	-	(166)	0.0%	23	-	23	0.0%
27 Operating and maintenance grants	31,738	36,567	(4,829)	-13.2%	561,035	636,986	(75,951)	-11.9%
28 Total non-operating revenues								
29 Income before capital contributions	3,685,678	2,246,363	1,439,315	64.1%	23,764,261	25,596,902	(1,832,641)	-7.2%
30 Capital contributions	637,830	1,283,859	(646,029)	-50.3%	4,084,675	6,784,770	(2,700,094)	-39.8%
31 Change in net position	4,323,508	3,530,221	793,286	22.5%	27,848,937	32,381,672	(4,532,735)	-14.0%
32 Net position, beginning of year					792,100,836	763,119,641	28,981,195	3.8%
33 Net position, end of year					819,949,773	795,501,313	24,448,460	3.1%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SEWER SYSTEM FUND  
STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION  
WITH BUDGET COMPARISONS  
September 2017

	A	B	C	D	E	F	G	H
	MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	11,024,082	10,013,810	1,010,272	10.1%	82,429,053	85,064,049	(2,634,996)	-3.1%
2 Sewerage service charges and delinquent fees	20,515	28,697	(8,182)	-28.5%	219,530	243,770	(24,240)	-9.9%
3 Plumbing inspection and license fees	113,965	52,562	61,402	116.8%	444,589	446,500	(1,911)	-0.4%
4 Other revenues	11,158,562	10,095,070	1,063,492	10.5%	83,093,172	85,754,320	(2,661,147)	-3.1%
5 Total operating revenues								
<b>Operating Expenses:</b>								
6 Executive Director	31,896	47,306	(15,410)	-32.6%	468,762	368,852	99,910	27.1%
7 Special Counsel	46,215	63,752	(17,537)	-27.5%	456,181	497,079	(40,898)	-8.2%
8 Security	430,410	329,167	101,244	30.8%	2,827,764	2,566,539	261,225	10.2%
9 Operations	3,479,885	3,269,886	209,998	6.4%	26,905,156	25,495,577	1,409,579	5.5%
10 Engineering	188,844	442,368	(253,524)	-57.3%	1,954,791	3,449,180	(1,494,389)	-43.3%
11 Logistics	320,770	483,248	(162,478)	-33.6%	2,550,254	3,767,928	(1,217,674)	-32.3%
12 Communications	58,655	33,961	24,694	72.7%	169,007	264,798	(95,792)	-36.2%
13 Administration	458,271	420,074	38,197	9.1%	2,946,089	3,275,351	(329,262)	-10.1%
14 Chief Financial Officer	745,038	1,060,561	(315,523)	-29.8%	6,590,071	8,269,281	(1,679,210)	-20.3%
15 Continuous Improvement	4,276	13,754	(9,478)	-68.9%	39,466	107,238	(67,772)	-63.2%
16 Overhead and Budget Adjustments	(380,176)	668,414	(1,048,590)	-156.9%	(3,593,132)	5,211,676	(8,804,808)	-168.9%
17 Non-Cash Operating Expenses	2,120,538	2,658,556	(538,018)	-20.2%	18,575,538	22,680,220	(4,104,682)	-18.1%
18 Total operating expenses	7,504,622	9,491,047	(1,986,425)	-20.9%	59,889,946	75,953,719	(16,063,773)	-21.1%
19 Operating income (loss)	3,653,940	604,023	3,049,918	504.9%	23,203,226	9,800,600	13,402,626	136.8%
<b>Non-operating revenues (expense):</b>								
20 Two-mill tax	-	-	-	0.0%	-	-	-	0.0%
21 Three-mill tax	-	-	-	0.0%	-	-	-	0.0%
22 Six-mill tax	-	-	-	0.0%	-	-	-	0.0%
23 Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%
24 Interest income	31,904	3,182	28,722	902.7%	396,640	618,584	(221,944)	-35.9%
25 Other Income	-	2,283	(2,283)	-100.0%	164,371	443,863	(279,492)	-63.0%
26 Interest expense	-	(10,194)	10,194	-100.0%	-	(1,981,814)	1,981,814	-100.0%
27 Operating and maintenance grants	(166)	10,845	(11,011)	-101.5%	23	2,108,437	(2,108,414)	-100.0%
28 Total non-operating revenues	31,738	6,116	25,622	418.9%	561,035	1,189,071	(628,035)	-52.8%
29 Income before capital contributions	3,685,678	610,139	3,075,539	504.1%	23,764,261	10,989,671	12,774,590	116.2%
30 Capital contributions	637,830	-	637,830	0.0%	4,084,675	-	4,084,675	0.0%
31 Change in net position	4,323,508	610,139	3,713,369	608.6%	27,848,937	-	-	-
32 Net position, beginning of year	-	-	-	-	792,100,836	763,119,641	28,981,195	3.8%
33 Net position, end of year	-	-	-	-	819,949,773	763,119,641	56,830,132	7.4%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SEWER SYSTEM FUND

STATEMENTS OF NET POSITION  
WITH PRIOR YEAR AND BEGINNING OF YEAR COMPARISONS  
September 2017

	A	B	C	D	E	F	G
Assets	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>Noncurrent assets:</b>							
1 Property, plant and equipment	1,216,726,533	62,552,161	5.1%	1,279,278,694	141,750,760	12.5%	1,137,527,934
2 Less: accumulated depreciation	257,506,807	22,271,871	8.6%	279,778,678	53,258,479	23.5%	226,520,199
3 Property, plant, and equipment, net	959,219,726	40,280,290	4.2%	999,500,016	88,492,281	9.7%	911,007,735
<b>Restricted cash, cash equivalents, and investments</b>							
4 Cash and cash equivalents restricted for capital projects	67,962,850	(44,500,082)	-65.5%	23,462,768	(7,065,185)	-23.1%	30,527,953
5 Debt service reserve	51,226,587	2,126,874	4.2%	53,353,461	32,885,655	160.7%	20,467,806
6 Health insurance reserve	626,441	71,400	11.4%	697,841	38,675	5.9%	659,166
7 Total restricted cash, cash equivalents, and investments	119,815,878	(42,301,808)	-35.3%	71,514,070	25,859,145	50.1%	51,654,925
<b>Designated cash, cash equivalents, and investments</b>							
8 Cash and cash equivalents designated for capital projects	56,223,540	(17,394,957)	-30.9%	38,828,583	35,129,274	949.6%	3,699,309
9 Customer deposits	-	-	0.0%	-	-	0.0%	-
10 Other	1,221,215	(64,450)	-5.3%	1,156,765	(25,551)	-2.2%	1,182,316
11 Total designated cash and cash equivalents, and investments	57,444,755	(17,459,407)	-30.4%	39,985,348	35,103,723	719.1%	4,881,625
<b>Current assets:</b>							
12 Unrestricted and undesignated cash and cash equivalents	13,184,109	14,771,719	112.0%	27,955,828	6,100,757	27.9%	21,855,071
13 Accounts receivable:							
Customers (net of allowance for doubtful accounts)	9,354,355	9,355,560	100.0%	18,709,915	10,992,203	142.4%	7,717,712
14 Taxes	-	-	0.0%	-	-	0.0%	-
15 Interest	58	(0)	-0.2%	58	58	0.0%	-
16 Grants	19,519,735	612,543	3.1%	20,132,278	588,584	3.0%	19,543,694
17 Miscellaneous	3,633,152	955,370	26.3%	4,588,522	4,237,032	1205.4%	351,490
18 Due from enterprise fund	4,357,643	12,156,948	279.0%	16,514,591	5,450,667	49.3%	11,063,924
19 Inventory of supplies	1,175,098	(107,919)	-9.2%	1,065,179	(105,622)	-9.0%	1,170,801
20 Prepaid expenses	485,485	(253,785)	-52.3%	231,700	(94,969)	-29.1%	326,669
21 Total unrestricted current assets	51,707,635	37,490,436	72.5%	89,198,071	27,168,710	43.8%	62,029,361
<b>Other assets:</b>							
22 Bond issue costs	-	-	0.0%	-	-	0.0%	-
23 Deposits	17,965	-	0.0%	17,965	-	0.0%	17,965
24 Total other assets	17,965	-	0.0%	17,965	-	0.0%	17,965
25 TOTAL ASSETS	1,188,205,959	18,009,511	1.5%	1,206,215,470	176,623,859	17.2%	1,029,591,611
<b>Deferred outflows or resources:</b>							
26 Deferred amounts related to net pension liability	6,560,010	-	0.0%	5,634,846	-	0.0%	-
27 Deferred loss on bond refunding	3,636,958	(294,646)	-8.1%	3,342,312	(589,290)	-15.0%	3,931,602
28 TOTAL DEFERRED OUTFLOWS OF RESOURCES	9,996,968	(1,019,810)	-10.2%	8,977,158	(5,045,556)	-128.3%	3,931,602
29 TOTAL ASSETS AND TOTAL DEFERRED OUTFLOWS	1,198,202,927	16,989,701	-8.7%	1,215,192,628	181,669,415	145.5%	1,033,523,213

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SEWER SYSTEM FUND**  
**STATEMENTS OF NET POSITION**  
**WITH PRIOR YEAR COMPARISONS**  
**September 2017**

	A	B	C	D	E	F	G
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>NET ASSETS AND LIABILITIES</b>							
<b>Net position</b>							
1 Net investments in capital assets	678,819,683	55,131,505	8.1%	733,951,188	3,788,132	0.5%	750,163,056
2 Restricted for Debt Service	51,226,587	2,126,874	4.2%	53,353,461	32,885,655	160.7%	20,467,806
3 Unrestricted	65,455,043	(32,809,919)	-50.1%	32,645,124	50,709,069	-280.7%	(18,063,945)
4 Total net position	795,501,313	24,448,460	3.1%	819,049,773	87,382,856	11.9%	732,566,917
<b>Long-term liabilities</b>							
5 Claims payable	810,189	(313,291)	-37.7%	516,898	(347,820)	-40.2%	864,718
6 Net pension obligation	27,015,189	1,411,176	5.2%	28,426,365	22,433,223	374.3%	5,993,142
7 Other postretirement benefits liability	23,345,476	1,548,335	6.6%	24,893,811	5,028,078	25.3%	19,865,733
8 Bonds payable (net of current maturities)	268,098,647	(15,019,188)	-5.6%	253,079,459	83,878,780	49.6%	169,200,679
9 Special Community Disaster Loan Payable	-	-	0.0%	-	-	0.0%	-
10 Southeast Louisiana Project liability	-	-	0.0%	-	-	0.0%	-
11 Debt Service Assistance Fund Loan payable	48,999,207	(3,961,768)	-8.1%	45,037,439	(7,747,861)	-14.7%	52,785,300
12 Total long-term liabilities	368,288,708	(16,334,736)	-4.4%	351,953,972	103,244,400	41.5%	248,709,572
<b>Current liabilities (payable from current assets)</b>							
13 Accounts payable and other liabilities	4,306,789	531,892	12.4%	4,838,681	(17,021,634)	-77.9%	21,860,315
14 Due to City of New Orleans	(1,441,753)	5,764,352	-399.8%	4,322,599	1,753,176	68.2%	2,569,423
15 Disaster Reimbursement Revolving Loan	3,268,872	75,701	2.3%	3,344,573	(1,158,317)	-25.7%	4,502,890
16 Retainers and estimates payable	30,023	3,974	13.2%	33,997	(33,308)	-49.5%	67,305
17 Due to other fund	3,326,481	(383,912)	-11.5%	2,942,569	(410,193)	-12.2%	3,352,762
18 Accrued salaries, vacation and sick pay	2,644,607	2,035,805	77.0%	4,680,412	1,909,640	68.9%	2,770,772
19 Claims payable	3,786,093	175,675	4.6%	3,961,768	343,704	9.5%	3,618,064
20 Debt Service Assistance Fund Loan payable	1,976,305	-	0.0%	1,976,305	1,976,305	0.0%	-
21 Advances from federal government	230,502	(132,767)	-57.6%	97,735	96,182	6193.3%	1,553
22 Other Liabilities	18,127,919	8,070,720	44.5%	26,198,639	(12,544,445)	-32.4%	38,743,084
23 Total current liabilities (payable from current assets)	18,127,919	8,070,720	44.5%	26,198,639	(12,544,445)	-32.4%	38,743,084
<b>Current liabilities (payable from restricted assets)</b>							
24 Accrued interest	1,918,832	(315,697)	-16.5%	1,603,135	(212,230)	-11.7%	1,815,365
25 Bonds payable	12,852,000	545,000	4.2%	13,397,000	(1,753,000)	-15.1%	11,644,000
26 Retainers and estimates payable	539,189	752,109	139.5%	1,291,298	(1,247,023)	-2816.5%	44,275
27 Customer deposits	-	-	0.0%	-	-	0.0%	-
28 Total current liabilities (payable from restricted assets)	15,310,021	981,412	6.4%	16,291,433	2,787,793	20.6%	13,503,640
<b>TOTAL CURRENT LIABILITIES</b>	33,437,940	9,052,131	27.1%	42,490,072	(9,756,652)	-18.7%	52,246,724
<b>TOTAL LIABILITIES</b>	401,726,648	(7,282,605)	-1.8%	394,444,044	93,487,748	31.1%	300,556,296
<b>Deferred inflows or resources:</b>							
31 Deferred amounts related to net pension liability	974,966	(176,155)	-18.1%	798,811	798,811	0.0%	-
32 TOTAL DEFERRED INFLOWS OF RESOURCES	974,966	(176,155)	-18.1%	798,811	798,811	0.0%	-
33 Total Net Position, Liabilities and Deferred Inflows of Resources	1,198,202,077	17,165,855	1.4%	1,215,197,628	181,669,415	17.6%	1,103,523,213

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
SEWER SYSTEM FUND  
STATEMENTS OF CASH FLOWS  
September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
Reconciliation of operating loss to net cash used in operating activities is as follows:				
1 Operating loss	23,203,224	19,896,830	3,306,394	16.6%
Adjustments to reconcile net operating loss to net cash used in operating activities:				
2 Depreciation	15,433,237	9,443,491	5,989,746	63.4%
3 Provision for claims	638,148	331,075	307,073	92.8%
4 Provision for (revision) doubtful accounts	798,624	621,153	177,471	28.6%
5 Amortization	-	-	-	0.0%
Change in operating assets and liabilities:				
6 (Increase) decrease in customer and other receivables	(5,784,568)	(2,017,492)	(3,767,076)	186.7%
7 Increase in inventory	(0)	-	(0)	0.0%
8 Increase (decrease) in deferred outflows of resources related to net pension liability	-	-	-	0.0%
9 Increase (decrease) in prepaid expenses and other receivables	(4,223,560)	3,790,970	(8,014,530)	-211.4%
10 Decrease in net pension asset	-	-	-	0.0%
11 Increase (decrease) in accounts payable	(13,682,150)	(13,982,485)	300,335	-2.1%
12 Increase (decrease) in accrued salaries, due to pension and accrued vacation and sick pay	(292,169)	(37,151)	(255,018)	686.4%
13 Increase in net other postretirement benefits liability	904,212	1,054,914	(150,702)	-14.3%
14 Increase (decrease) in net pension obligation	1,509,812	1,057,232	452,580	42.8%
15 Decrease in other liabilities	(638,149)	(331,075)	(307,074)	92.8%
16 Increase (decrease) in deferred inflows of resources related to net pension liability	-	-	-	0.0%
17 Net cash used in operating activities	17,866,661	19,827,462	(1,960,801)	-9.9%

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**SEWER SYSTEM FUND**  
**STATEMENTS OF CASH FLOWS**  
 September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
<b>Cash flows from operating activities</b>				
1 Cash received from customers	76,644,479	58,623,687	18,020,792	30.7%
2 Cash payments to suppliers for goods and services	(38,747,407)	(30,201,312)	(8,546,095)	28.3%
3 Cash payments to employees for services	(20,700,888)	(5,561,343)	(15,139,545)	272.2%
4 Other revenue	670,477	(3,033,570)	3,704,047	-122.1%
5 <b>Net cash used in operating activities</b>	<u>17,866,661</u>	<u>19,827,462</u>	<u>(1,960,801)</u>	<u>-9.9%</u>
<b>Cash flows from noncapital financing activities</b>				
6 Proceeds from property taxes	164,371	148,676	15,695	10.6%
7 Proceeds from federal operating and maintenance grants	-	-	-	0.0%
8 Cash received paid to an other government	-	-	-	0.0%
9 <b>Net cash provided by noncapital financing activities</b>	<u>164,371</u>	<u>148,676</u>	<u>15,695</u>	<u>10.6%</u>
<b>Cash flows from capital and related financing activities</b>				
10 Acquisition and construction of capital assets	(31,290,965)	(12,778,723)	(18,512,242)	144.9%
11 Principal payments on bonds payable	-	-	-	0.0%
12 Proceeds from bonds payable	-	-	-	0.0%
13 Payments for bond issuance costs	-	-	-	0.0%
14 Principal payments on Debt Service Assistance Fund loan	(1)	-	(1)	0.0%
15 Interest paid on bonds payable	79,368	373,021	(293,653)	-78.7%
16 Proceeds from construction fund, net	(322,640)	(1,521,383)	1,198,743	-78.8%
17 Capital contributed by developers and federal grants	3,678,736	10,780,053	(7,101,317)	-65.9%
18 <b>Net cash used in capital and related financing activities</b>	<u>(27,855,502)</u>	<u>(3,147,032)</u>	<u>(24,708,470)</u>	<u>785.1%</u>
<b>Cash flows from investing activities</b>				
19 Payments for purchase of investments	-	-	-	0.0%
20 Proceeds from maturities of investments	-	-	-	0.0%
21 Investment income	396,640	414,119	(17,479)	-4.2%
22 <b>Net cash provided by investing activities</b>	<u>396,640</u>	<u>414,119</u>	<u>(17,479)</u>	<u>-4.2%</u>
23 <b>Net increase in cash</b>	<u>(9,427,829)</u>	<u>17,243,225</u>	<u>(26,671,054)</u>	<u>-154.7%</u>
24 <b>Cash at the beginning of the year</b>	<u>154,826,076</u>	<u>177,803,739</u>	<u>(22,977,663)</u>	<u>-12.9%</u>
25 <b>Cash at the end of the period</b>	<u>145,398,247</u>	<u>195,046,964</u>	<u>(49,648,717)</u>	<u>-25.5%</u>
<b>Reconciliation of cash and restricted cash</b>				
26 <b>Current assets - cash</b>	<u>27,955,828</u>	<u>7,040,186</u>	<u>20,915,642</u>	<u>297.1%</u>
27 <b>Current assets - designated</b>	<u>39,985,349</u>	<u>66,446,112</u>	<u>(26,460,763)</u>	<u>-39.8%</u>
28 <b>Restricted assets - cash</b>	<u>77,457,070</u>	<u>121,560,666</u>	<u>(44,103,596)</u>	<u>-36.3%</u>
29 <b>Total cash</b>	<u>145,398,247</u>	<u>195,046,964</u>	<u>(49,648,717)</u>	<u>-25.5%</u>

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**DRAINAGE SYSTEM FUND**  
**STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION**  
**WITH PRIOR YEAR COMPARISONS**  
 September 2017

	A	B	C	D	E	F	G	H
	MTD	MTD	MTD	%	YTD	YTD	YTD	%
	Actual	Prior Year	Variance		Actual	Prior Year	Variance	
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	-	-	-	0.0%	-	-	-	0.0%
2 Sewerage service charges and delinquent fees	-	-	-	0.0%	-	-	-	0.0%
3 Plumbing inspection and license fees	-	-	-	0.0%	-	-	-	0.0%
4 Other revenues	113,418	509,229	(395,811)	-77.7%	139,185	549,125	(409,940)	-74.7%
5 Total operating revenues	113,418	509,229	(395,811)	-77.7%	139,185	549,125	(409,940)	-74.7%
<b>Operating Expenses:</b>								
6 Executive Director	29,906	4,268	25,638	600.7%	447,429	431,887	15,541	3.6%
7 Special Counsel	51,976	39,009	12,967	33.2%	484,049	355,685	128,364	36.1%
8 Security	391,916	361,854	30,062	8.3%	2,595,296	1,922,041	673,254	35.0%
9 Operations	8,241,481	1,221,288	7,020,192	574.8%	19,747,518	12,228,446	7,519,072	61.5%
10 Engineering	156,923	129,685	27,239	21.0%	1,571,367	1,245,662	325,705	26.1%
11 Logistics	355,661	288,561	67,099	23.3%	2,976,515	2,801,619	174,896	6.2%
12 Communications	58,655	86	58,569	68374.3%	169,007	53,767	115,241	214.3%
13 Administration	366,795	316,812	49,983	15.8%	2,368,307	2,651,745	(283,438)	-10.7%
14 Chief Financial Officer	266,821	326,345	(59,524)	-18.2%	2,207,153	2,051,537	155,617	7.6%
15 Continuous Improvement	4,276	15,458	(11,182)	-72.3%	39,466	15,462	24,004	155.2%
16 Overhead and Budget Adjustments	(311,550)	(386,551)	75,000	-19.4%	(2,923,909)	(2,640,848)	(283,061)	10.7%
17 Non-Cash Operating Expenses	2,056,882	1,736,685	320,197	18.4%	18,536,819	15,583,472	2,953,347	17.7%
18 Total operating expenses	11,669,741	4,053,500	7,616,241	187.9%	48,019,016	36,700,475	11,318,541	30.8%
19 Operating income (loss)	(11,556,323)	(3,544,271)	(8,012,052)	226.1%	(47,879,831)	(36,151,350)	(11,728,481)	32.4%
<b>Non-operating revenues (expense):</b>								
20 Two-mill tax	395	181	214	118.3%	2,057	7,477	(5,420)	-72.5%
21 Three-mill tax	2,101,784	97,001	2,004,783	2066.8%	15,379,398	15,206,743	172,655	1.1%
22 Six-mill tax	254,474	98,031	156,443	159.6%	15,966,427	15,369,785	596,642	3.9%
23 Nine-mill tax	381,443	146,945	234,498	159.6%	23,932,908	23,038,622	894,286	3.9%
24 Interest income	14,344	14,708	(364)	-2.5%	130,772	109,376	21,396	19.6%
25 Other Income	-	-	(364)	0.0%	-	-	-	0.0%
26 Interest expense	-	-	-	0.0%	-	-	-	0.0%
27 Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%
28 Total non-operating revenues	2,752,440	356,866	2,395,574	671.3%	55,411,563	53,732,003	1,679,559	3.1%
29 Income before capital contributions	(8,803,883)	(3,187,405)	(5,616,478)	176.2%	7,531,731	17,580,653	(10,048,922)	-57.2%
30 Capital contributions	960,348	1,140,418	(180,070)	-15.8%	4,872,943	7,018,693	(2,145,749)	-30.6%
31 Change in net position	(7,843,535)	(2,046,987)	(5,796,548)	283.2%	12,404,675	24,599,346	(12,194,671)	-49.6%
32 Net position, beginning of year					1,099,210,875	1,000,776,299	98,434,576	9.8%
33 Net position, end of year					1,111,615,550	1,025,375,645	86,239,905	8.4%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DRAINAGE SYSTEM FUND  
STATEMENT OF REVENUES AND EXPENSES AND CHANGES IN NET POSITION  
WITH BUDGET COMPARISONS  
September 2017

	A	B	C	D	E	F	G	H
	MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%
<b>Operating revenues:</b>								
1 Sales of water and delinquent fees	-	-	-	0.0%	-	-	-	0.0%
2 Sewerage service charges and delinquent fees	-	-	-	0.0%	-	-	-	0.0%
3 Plumbing inspection and license fees	-	-	-	0.0%	-	-	-	0.0%
4 Other revenues	113,418	-	113,418	0.0%	139,185	-	139,185	0.0%
5 Total operating revenues	113,418	-	113,418	0.0%	139,185	-	139,185	0.0%
<b>Operating Expenses:</b>								
6 Executive Director	29,906	42,718	(12,811)	-30.0%	447,429	333,073	114,355	34.3%
7 Special Counsel	51,976	99,579	(47,603)	-47.8%	484,049	776,426	(292,376)	-37.7%
8 Security	391,916	305,577	86,339	28.3%	2,595,296	2,382,608	212,688	8.9%
9 Operations	8,241,481	1,913,920	6,327,560	330.6%	19,747,518	14,922,997	4,824,520	32.3%
10 Engineering	156,923	342,052	(185,129)	-54.1%	1,571,367	2,667,010	(1,095,643)	-41.1%
11 Logistics	355,661	508,070	(152,409)	-30.0%	2,976,515	3,961,461	(984,946)	-24.9%
12 Communications	58,655	33,961	24,694	72.7%	169,007	264,798	(95,791)	-36.2%
13 Administration	366,795	342,054	24,741	7.2%	2,368,307	2,667,023	(298,717)	-11.2%
14 Chief Financial Officer	266,821	345,124	(78,303)	-22.7%	2,207,153	2,690,961	(483,807)	-18.0%
15 Continuous Improvement	4,276	13,754	(9,478)	-68.9%	39,466	107,238	(67,772)	-63.2%
16 Overhead and Budget Adjustments	(311,550)	(738,657)	427,107	-57.8%	(2,923,909)	(5,759,369)	2,835,461	-49.2%
17 Non-Cash Operating Expenses	2,056,882	2,477,779	(420,897)	-17.0%	18,336,819	21,138,007	(2,801,188)	-13.3%
18 Total operating expenses	11,669,741	5,685,931	5,983,810	105.2%	48,019,016	46,152,233	1,866,783	4.0%
19 Operating income (loss)	(11,556,323)	(5,685,931)	(5,870,392)	103.2%	(47,879,831)	(46,152,233)	(1,727,598)	3.7%
<b>Non-operating revenues (expense):</b>								
20 Two-mill tax	395	-	395	0.0%	2,057	-	2,057	0.0%
21 Three-mill tax	2,101,784	73,272	2,028,512	2768.5%	15,379,398	14,244,664	1,134,733	8.0%
22 Six-mill tax	254,474	77,379	177,094	228.9%	15,966,427	15,043,133	923,294	6.1%
23 Nine-mill tax	381,443	115,987	265,456	228.9%	23,932,908	22,548,729	1,384,180	6.1%
24 Interest income	14,344	1,808	12,536	693.2%	130,772	351,556	(220,783)	-62.8%
25 Other Income	-	4,837	(4,837)	-100.0%	-	940,363	(940,363)	-100.0%
26 Interest expense	-	(644)	644	-100.0%	-	(125,158)	125,158	-100.0%
27 Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%
28 Total non-operating revenues	2,752,440	272,640	2,479,800	909.6%	55,411,563	53,003,287	2,408,276	4.5%
29 Income before capital contributions	(8,803,883)	(5,413,291)	(3,390,592)	62.6%	7,531,731	6,851,054	680,677	9.9%
30 Capital contributions	960,348	-	960,348	0.0%	4,872,943	-	4,872,943	0.0%
31 Change in net position	(7,843,535)	(5,413,291)	(2,430,243)	44.9%	12,404,675	6,851,054	5,553,621	81.1%
32 Net position, beginning of year					1,099,210,875	1,000,776,299	98,434,576	9.8%
33 Net position, end of year					1,111,615,550	1,007,627,353	103,988,197	10.3%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DRAINAGE SYSTEM FUND

STATEMENTS OF NET POSITION  
WITH PRIOR YEAR AND BEGINNING OF YEAR COMPARISONS  
September 2017

	A		B		C		D		E		F		G	
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year	%						
<b>Assets</b>														
<b>Noncurrent assets:</b>														
1 Property, plant and equipment	1,471,307,659	170,936,369	11.6%	1,642,244,028	348,750,336	27.0%	1,293,493,692	27.0%						
2 Less: accumulated depreciation	314,363,402	24,002,158	7.6%	338,365,560	57,049,365	20.3%	281,316,195	20.3%						
3 Property, plant, and equipment, net	1,156,944,257	146,934,211	12.7%	1,303,878,468	291,700,971	28.8%	1,012,177,497	28.8%						
<b>Restricted cash, cash equivalents, and investments</b>														
4 Cash and cash equivalents restricted for capital projects	4,555,728	28,585	0.0%	4,584,313	136,559	3.1%	4,447,754	3.1%						
5 Debt services reserve	2,498,908	992	0.0%	2,499,900	2,342,846	1491.7%	157,054	1491.7%						
6 Health insurance reserve	633,272	56,496	8.9%	689,768	30,602	4.6%	659,166	4.6%						
7 Total restricted cash, cash equivalents, and investments	7,687,908	86,074	1.1%	7,773,982	2,510,008	47.7%	5,263,974	47.7%						
<b>Designated cash, cash equivalents, and investments</b>														
8 Cash and cash equivalents designated for capital projects	30,807,316	(9,974,118)	-32.4%	20,833,198	10,199,102	95.9%	10,634,096	95.9%						
9 Customer deposits	-	-	0.0%	-	-	0.0%	-	0.0%						
10 Other	1,172,970	(49,261)	-4.2%	1,123,709	(17,486)	-1.5%	1,141,195	-1.5%						
11 Total designated cash and cash equivalents, and investments	31,980,286	(10,023,379)	-31.3%	21,956,907	10,181,616	892.2%	11,775,291	892.2%						
<b>Current assets:</b>														
<b>Unrestricted and undesignated</b>														
12 Cash and cash equivalents	9,547,542	(1,165,891)	-12.2%	8,381,651	3,562,133	73.9%	4,819,518	73.9%						
<b>Accounts receivable:</b>														
13 Customers (net of allowance for doubtful accounts)	-	-	0.0%	-	-	0.0%	-	0.0%						
14 Taxes	8,044,268	1,818,994	22.6%	9,863,262	1,732,315	21.3%	8,130,947	21.3%						
15 Interest	-	-	0.0%	-	-	0.0%	-	0.0%						
16 Grants	5,402,748	1,567,763	29.0%	6,970,511	22,795	0.3%	6,947,716	0.3%						
17 Miscellaneous	640,786	301,899	47.1%	942,685	(434,741)	-31.6%	1,377,426	-31.6%						
18 Due from enterprise fund	(1,635,507)	1,459,017	-89.2%	(176,490)	2,575,764	-93.6%	(2,752,254)	-93.6%						
19 Inventory of supplies	594,460	(99,997)	-16.8%	494,463	(111,965)	-18.5%	606,428	-18.5%						
20 Prepaid expenses	253,613	(253,785)	-100.1%	(172)	(94,969)	-100.2%	94,797	-100.2%						
21 Total unrestricted current assets	22,847,910	3,628,000	15.9%	26,475,910	7,251,332	37.7%	19,224,578	37.7%						
<b>Other assets:</b>														
22 Bond issue costs	-	-	0.0%	-	-	0.0%	-	0.0%						
23 Deposits	10,400	-	0.0%	10,400	-	0.0%	10,400	0.0%						
24 Total other assets	10,400	-	0.0%	10,400	-	0.0%	10,400	0.0%						
25 TOTAL ASSETS	1,219,470,761	140,624,906	11.5%	1,360,095,667	311,643,927	29.7%	1,048,451,740	29.7%						
<b>Deferred outflows or resources:</b>														
26 Deferred amounts related to net pension liability	6,360,010	-	0.0%	5,634,846	5,634,846	0.0%	5,634,846	0.0%						
27 Deferred loss on bond refunding	289,555	(53,523)	-18.5%	236,032	(107,041)	-31.2%	343,073	-31.2%						
28 TOTAL DEFERRED OUTFLOWS OF RESOURCES	6,649,565	(778,687)	-11.7%	5,870,878	5,527,805	1611.3%	343,073	1611.3%						
29 TOTAL ASSETS AND TOTAL DEFERRED OUTFLOWS	1,226,120,326	139,846,219	-0.2%	1,365,966,545	317,171,732	1641.0%	1,048,794,813	1641.0%						

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DRAINAGE SYSTEM FUND  
STATEMENTS OF NET POSITION  
WITH PRIOR YEAR COMPARISONS  
September 2017

	A	B	C	D	E	F	G
	Prior Year	Variance	%	Current Year	Variance	%	Beginning of Year
<b>NET ASSETS AND LIABILITIES</b>							
Net position							
1 Net investments in capital assets	1,143,826,662	148,693,722	13.0%	1,292,520,384	295,212,929	29.6%	997,307,455
2 Restricted for Debt Service	2,498,908	992	0.0%	2,499,900	2,342,846	1491.7%	157,054
3 Unrestricted	(120,949,925)	(62,454,809)	51.6%	(183,404,734)	(104,336,859)	132.0%	(79,067,875)
4 Total net position	1,025,375,645	86,239,905	8.4%	1,111,615,550	193,218,916	21.0%	918,396,634
Long-term liabilities							
5 Claims payable	830,190	(313,291)	-37.7%	516,899	(347,819)	-40.2%	864,718
6 Net pension obligations	27,015,189	1,109,772	4.1%	28,124,961	22,106,239	367.3%	6,018,722
7 Other postretirement benefits liability	21,978,673	1,849,739	8.4%	23,828,412	5,329,481	28.8%	18,498,931
8 Bonds payable (net of current maturities)	11,481,672	(1,797,404)	-15.7%	9,684,268	(3,570,774)	-26.9%	13,253,042
9 Special Community Disaster Loan Payable			0.0%			0.0%	
10 Southeast Louisiana Project liability	115,703,588	48,291,920	41.7%	163,995,508	97,339,532	146.0%	66,655,976
11 Debt Service Assistance Fund Loan payable	3,202,606	(259,121)	-8.1%	2,943,485	(506,751)	-14.7%	3,450,236
12 Total long-term liabilities	180,211,918	48,881,615	27.1%	229,093,533	120,349,908	110.7%	108,743,625
Current liabilities (payable from current assets)							
13 Accounts payable and other liabilities	2,384,054	9,351,257	392.2%	11,735,311	5,680,676	93.8%	6,054,635
14 Due to City of New Orleans			0.0%			0.0%	
15 Disaster Reimbursement Revolving Loan	6,489,147	(5,838,789)	-90.0%	650,358	(6,333,090)	-90.7%	6,983,448
16 Retainers and estimates payable	1,764,480	(96,611)	-5.5%	1,667,869	1,216,178	269.2%	451,691
17 Due to other fund	36,549	4,839	13.2%	41,388	(41,439)	-50.0%	82,827
18 Accrued salaries, vacation and sick pay	2,569,156	(323,837)	-12.6%	2,245,319	(274,990)	-10.9%	2,520,309
19 Claims payable	4,244,151	1,809,576	42.6%	6,053,727	2,455,463	68.2%	3,598,264
20 Debt Service Assistance Fund Loan payable	247,630	11,491	4.6%	259,121	22,631	9.6%	236,490
21 Advances from federal government			0.0%			0.0%	
22 Other Liabilities	65,933	(46,364)	-70.3%	19,569	19,543	75165.4%	26
23 Total current liabilities (payable from current assets)	17,801,100	4,871,562	27.4%	22,672,662	2,744,972	13.8%	19,927,690
Current liabilities (payable from restricted assets)							
24 Accrued interest	106,697	(10,708)	-10.0%	95,989	(15,875)	-14.2%	111,864
25 Bonds payable	1,650,000	40,000	2.4%	1,690,000	75,000	4.6%	1,615,000
26 Retainers and estimates payable			0.0%			0.0%	
27 Customer deposits			0.0%			0.0%	
28 Total current liabilities (payable from restricted assets)	1,756,697	29,293	1.7%	1,785,989	59,125	3.4%	1,726,864
29 Total current liabilities	19,557,797	4,900,855	25.1%	24,458,651	2,804,097	12.9%	21,654,554
30 Total liabilities	199,769,715	53,782,469	26.9%	253,552,184	123,154,005	94.4%	130,398,179
Deferred inflows or resources:							
31 Deferred amounts related to net pension liability	974,966	(176,155)	-18.1%	798,811	798,811	0.0%	
32 TOTAL DEFERRED INFLOWS OF RESOURCES	974,966	(176,155)	-18.1%	798,811	798,811	0.0%	
33 Total Net Position, Liabilities and Deferred Inflows of Resources	1,226,120,326	140,022,374	11.4%	1,365,966,545	317,171,732	30.2%	1,048,794,813

**SEWERAGE AND WATER BOARD OF NEW ORLEANS**  
**DRAINAGE SYSTEM FUND**  
**STATEMENTS OF CASH FLOWS**  
September 2017

	A	B	C	D
	YTD	YTD	YTD	%
	Current Year	Prior Year	Variance	
<b>Cash flows from operating activities</b>				
1 Cash received from customers	-	-	-	0.0%
2 Cash payments to suppliers for goods and services	(16,370,209)	(10,877,663)	(5,492,546)	50.5%
3 Cash payments to employees for services	(11,681,666)	(17,039,510)	5,357,844	-31.4%
4 Other revenue	200,666	835,465	(684,799)	-77.3%
5 Net cash used in operating activities	(27,851,209)	(27,031,708)	(819,501)	3.0%
<b>Cash flows from noncapital financing activities</b>				
6 Proceeds from property taxes	55,280,789	51,202,340	4,078,449	8.0%
7 Proceeds from federal operating and maintenance grants	-	-	-	0.0%
8 Cash received paid to an other government	-	-	-	0.0%
9 Net cash provided by noncapital financing activities	55,280,789	51,202,340	4,078,449	8.0%
<b>Cash flows from capital and related financing activities</b>				
10 Acquisition and construction of capital assets	(26,511,784)	(16,026,303)	(10,485,481)	65.4%
11 Principal payments on bonds payable	0	-	-	0.0%
12 Proceeds from bonds payable	-	-	-	0.0%
13 Payments for bond issuance costs	-	-	-	0.0%
14 Principal payments on Debt Service Assistance Fund loan	(239,552)	-	(239,552)	0.0%
15 Interest paid on bonds payable	0	-	0	0.0%
16 Proceeds from construction fund, net	(722,413)	(494,078)	(228,335)	46.2%
17 Capital contributed by developers and federal grants	6,475,534	5,671,628	803,906	14.2%
18 Net cash used in capital and related financing activities	(20,998,215)	(10,848,753)	(10,149,462)	93.6%
<b>Cash flows from investing activities</b>				
19 Payments for purchase of investments	-	-	-	0.0%
20 Proceeds from maturities of investments	-	-	-	0.0%
21 Investment income	130,772	78,305	52,467	67.0%
22 Net cash provided by investing activities	130,772	78,305	52,467	67.0%
23 Net increase (decrease) in cash	6,562,138	13,400,184	(6,838,046)	-51.0%
24 Cash at the beginning of the year	31,550,402	34,632,075	(3,081,673)	-8.9%
25 Cash at the end of the period	38,112,540	48,032,259	(9,919,719)	-20.7%
<b>Reconciliation of cash and restricted cash</b>				
26 Current assets - cash	8,381,651	3,328,329	5,053,322	151.8%
27 Current assets - designated	21,956,907	36,538,870	(14,581,963)	-39.9%
28 Restricted assets -cash	7,773,982	8,165,060	(391,078)	-4.8%
29 Total cash	38,112,540	48,032,259	(9,919,719)	-20.7%

SEWERAGE AND WATER BOARD OF NEW ORLEANS  
DRAINAGE SYSTEM FUND  
STATEMENTS OF CASH FLOWS  
September 2017

	A YTD Current Year	B YTD Prior Year	C YTD Variance	D %
1	(47,879,827)	(28,178,890)	(19,700,937)	69.9%
2	15,978,035	10,041,805	5,936,230	59.1%
3	548,564	290,405	258,159	88.9%
4	-	-	-	0.0%
5	-	-	-	0.0%
6	-	-	-	0.0%
7	(0)	-	(0)	0.0%
8	-	-	-	0.0%
9	(818,350)	(5,763,850)	5,945,501	-87.9%
10	-	-	-	0.0%
11	763,859	(4,220,801)	4,984,660	-118.1%
12	1,444,415	(91,387)	1,535,802	-1680.5%
13	1,205,616	1,054,913	150,703	14.3%
14	1,208,410	1,057,233	151,177	14.3%
15	(301,931)	(221,135)	(80,796)	36.5%
16	-	-	-	0.0%
17	(27,851,209)	(27,031,708)	(819,501)	3.0%

**Sewerage and Water Board of New Orleans  
Comparative Variance Indicators for Financial Results  
Through September 2017**

<b>Statement of Revenues, Expenses, and Changes in Net Position with Prior Year Comparisons</b>	<b>Total</b>	<b>Water</b>	<b>Sewer</b>	<b>Drainage</b>
Revenues	Green	Green	Green	Yellow
Operating Expenses	Yellow	Green	Yellow	Yellow
Non-Operating Revenues and Expenses	Green	Yellow	Yellow	Green
Income before Capital Contributions	Yellow	Green	Yellow	Yellow
<b>Statement of Revenues, Expenses, and Changes in Net Position with Budget Comparisons</b>	<b>Total</b>	<b>Water</b>	<b>Sewer</b>	<b>Drainage</b>
Revenues	Yellow	Yellow	Yellow	Green
Operating Expenses	Green	Yellow	Green	Green
Non-Operating Revenues and Expenses	Green	Green	Green	Green
Income before Capital Contributions	Green	Yellow	Green	Green
<b>Statement of Net Position with Prior Year Comparisons</b>	<b>Total</b>	<b>Water</b>	<b>Sewer</b>	<b>Drainage</b>
Plant, Property, and Equipment	Green	Green	Green	Green
Restricted Current Assets	Green	Yellow	Yellow	Green
Unrestricted Designated Current Assets	Green	Green	Yellow	Yellow
Unrestricted Undesignated Current Assets	Green	Green	Green	Green
Net Position	Green	Green	Green	Green
Long-Term Liabilities	Yellow	Green	Green	Yellow
Current Liabilities from Unrestricted Assets	Green	Green	Yellow	Yellow
Current Liabilities from Restricted Assets	Yellow	Yellow	Yellow	Yellow
<b>Statement of Cash Flows with Prior Year Comparisons</b>	<b>Total</b>	<b>Water</b>	<b>Sewer</b>	<b>Drainage</b>
Operating Activities	Yellow	Green	Yellow	Yellow
Non-Capital Financing Activities	Green	Green	Green	Green
Capital and Related Financing Activities	Yellow	Yellow	Yellow	Yellow
Investing Activities	Yellow	Yellow	Yellow	Green
Net Increase in Cash	Yellow	Yellow	Yellow	Yellow

Green = Favorable Variance  
Yellow = Unfavorable Variance / No Action Recommended  
Red = Unfavorable Variance / Action Recommended

# Sewerage and Water Board of New Orleans

## Total System Unrestricted Cash and Cash Equivalents in Days of O&M Expenses at Month End

**EUM Attribute:**  
**Financial Viability**

**Description:** Establish and maintain an effective balance between long-term debt, assets values, operations and maintenance expenditures, and operating revenues.

**Constituency:**  
**Suppliers and Bondholders**

**Objective:** Provide adequate cash to pay invoices on a timely basis

**Goal:** Cash balance of at least 180 days of O&M expenses.

**Currently Meeting Goal:** Yes

**Process Operating Within Control Limits:**  
Yes

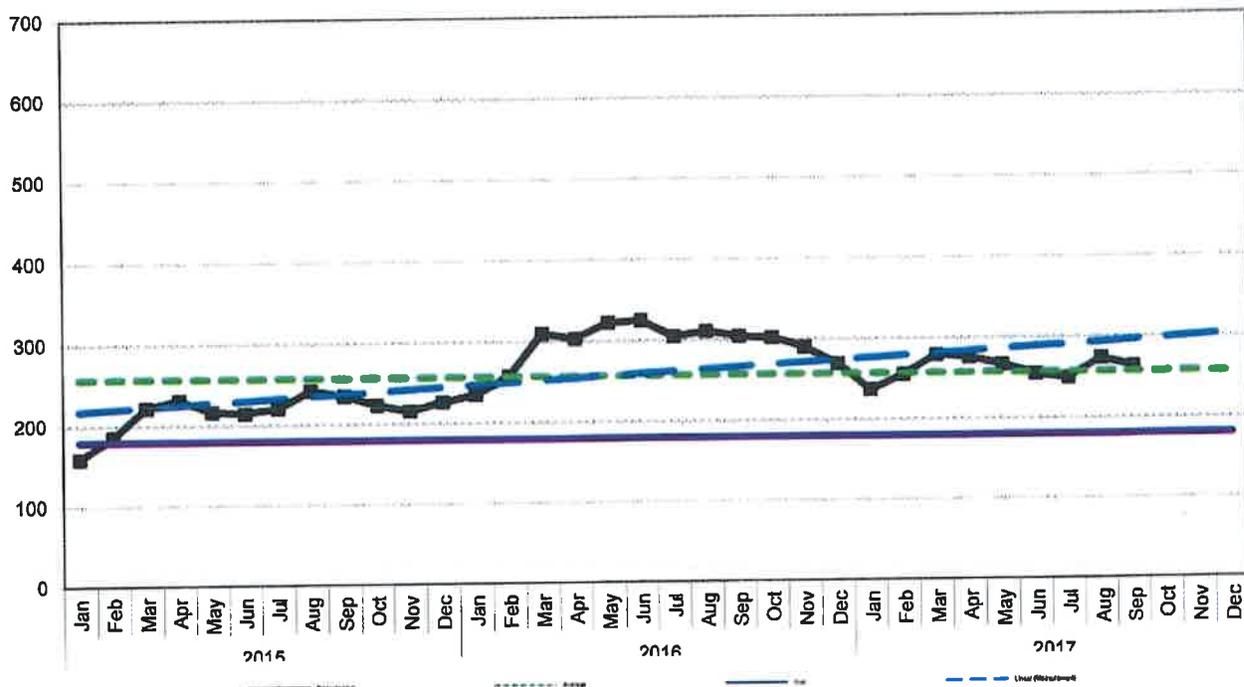
**Trend:** Unfavorable

### Analysis

Monthly cash balances have remained stable except for repayment of previous inter-system loans. Note: Reclassification of certain current assets from restricted to unrestricted in October 2013 resulted in higher unrestricted balances.

### Plans for Improvement

Utilize revenues generated from operations to increase cash balances according to 2011-2020 Financial Plan.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	158.8	185.6	221.5	230.9	216.1	214.6	220.1	241.7	234.7	223.1	215.7	226.1
<b>2016</b>	234.7	257.4	309.3	302.7	321.7	324.2	304.3	310.6	304.1	302.0	289.7	269.0
<b>2017</b>	236.4	255.0	279.2	275.9	266.7	254.8	249.5	273.7	263.4			

# Sewerage and Water Board of New Orleans Drainage System Unrestricted Cash and Cash Equivalents in Days of O&M Expenses at Month End

**EUM Attribute:**  
**Financial Viability**

**Description:** Establish and maintain an effective balance between long-term debt, assets values, operations and maintenance expenditures, and operating revenues.

**Constituency:**  
**Suppliers and Bondholders**

**Objective:** Provide adequate cash to pay invoices on a timely basis

**Goal:** Cash balance of at least 180 days of O&M expenses.

**Currently Meeting Goal:** Yes

**Process Operating Within Control Limits:** Yes

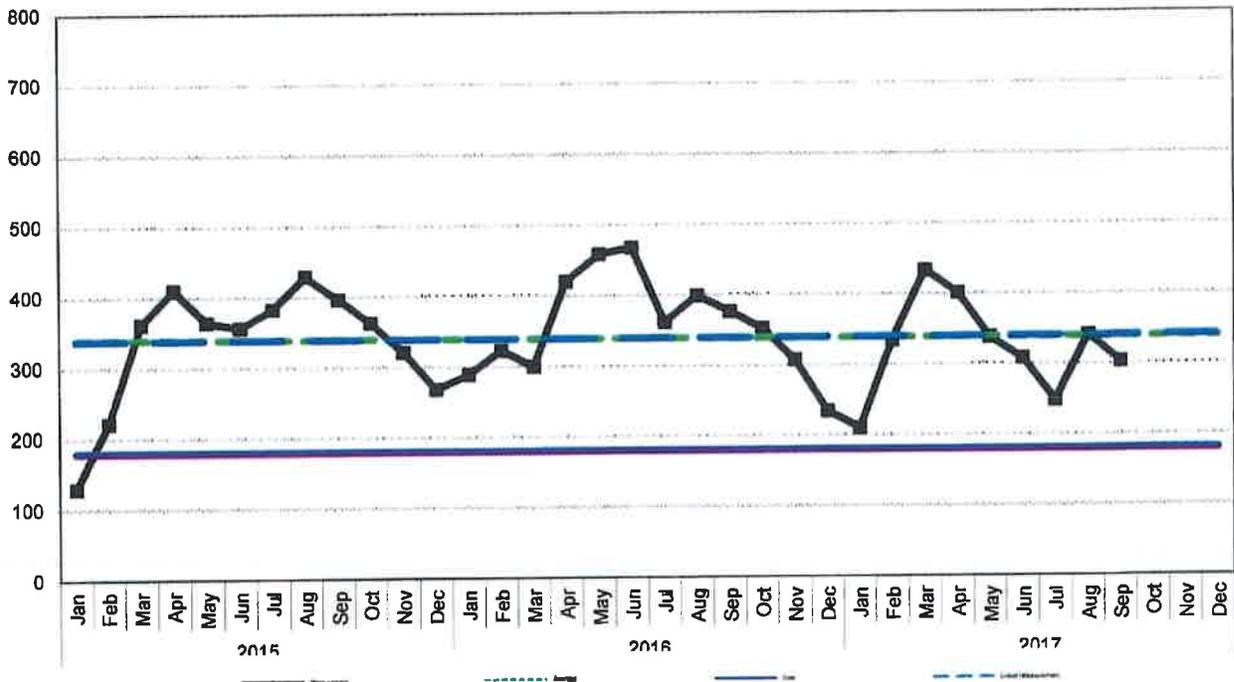
**Trend:** Unfavorable

### Analysis

Monthly cash balances typically increase during the first quarter from property tax collections and then decrease for the remainder of the year. The long-term goal will not be met until a new revenue stream for the drainage system is created and implemented.

### Plans for Improvement

Utilize revenues generated from operations to increase cash balances according to 2011-2020 Financial Plan.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	129.2	220.6	360.8	409.2	363.2	355.3	381.5	428.2	395.7	361.6	320.2	267.0
<b>2016</b>	287.9	321.6	299.4	419.2	457.5	466.6	360.3	398.3	375.3	351.2	306.8	233.7
<b>2017</b>	209.5	333.3	432.7	400.8	337.1	307.5	247.6	340.3	302.4			

# Sewerage and Water Board of New Orleans

## Water System Unrestricted Cash and Cash Equivalents in Days of O&M Expenses at Month End

**EUM Attribute:**  
Financial Viability

**Description:** Establish and maintain an effective balance between long-term debt, assets values, operations and maintenance expenditures, and operating revenues.

**Constituency:**  
Suppliers and Bondholders

**Objective:** Provide adequate cash to pay invoices on a timely basis

**Goal:** Cash balance of at least 180 days of O&M expenses.

**Currently Meeting Goal:** No

**Process Operating Within Control Limits:**  
Yes

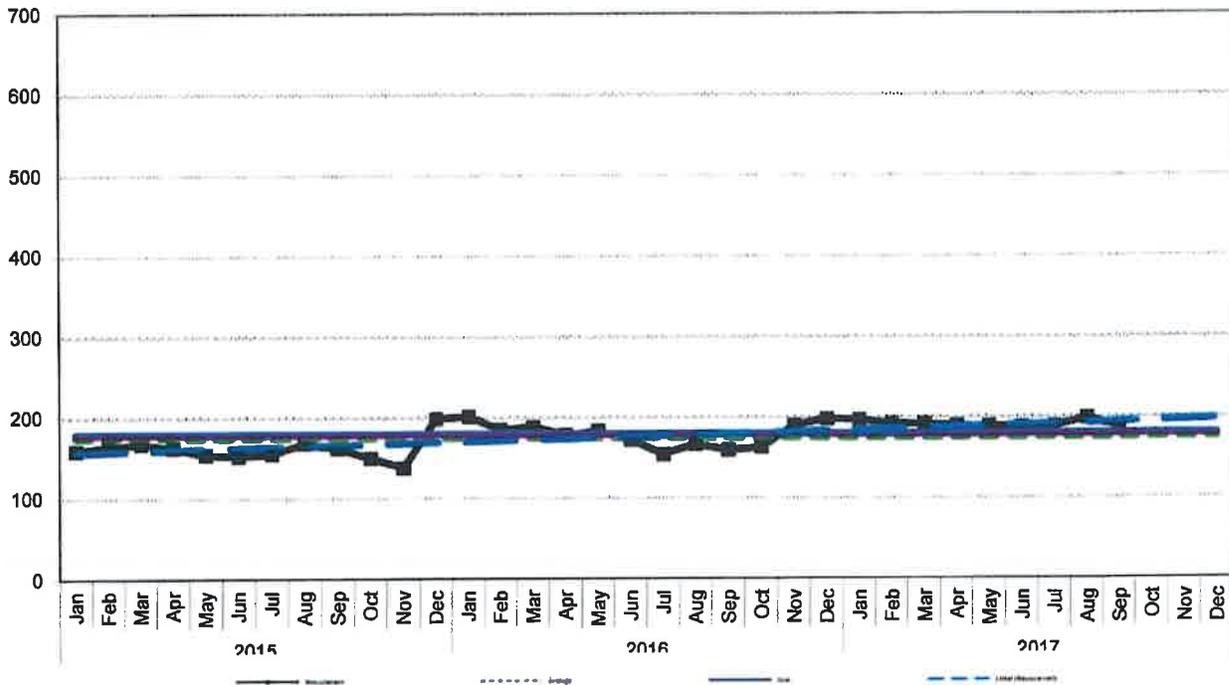
**Trend:** Unfavorable

### Analysis

Monthly cash balances have remained stable except for repayment of previous inter-system loans. Note: Reclassification of certain current assets from restricted to unrestricted in October 2013 resulted in higher unrestricted balances.

### Plans for Improvement

Utilize revenues generated from operations to increase cash balances according to 2011-2020 Financial Plan.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	158.9	163.6	167.0	162.1	153.4	151.6	154.2	167.7	161.2	149.5	137.4	197.9
<b>2016</b>	200.6	184.5	187.7	178.0	183.0	171.5	153.5	165.9	158.9	162.2	189.3	197.3
<b>2017</b>	196.2	191.3	190.9	188.7	188.1	187.2	187.8	198.2	187.2			

# Sewerage and Water Board of New Orleans

## Sewer System Unrestricted Cash and Cash Equivalents in Days of O&M Expenses at Month End

**EUM Attribute:**  
Financial Viability

**Description:** Establish and maintain an effective balance between long-term debt, assets values, operations and maintenance expenditures, and operating revenues.

**Constituency:**  
Suppliers and Bondholders

**Objective:** Provide adequate cash to pay invoices on a timely basis

**Goal:** Cash balance of at least 180 days of O&M expenses.

**Currently Meeting Goal:** Yes

**Process Operating Within Control Limits:** Yes

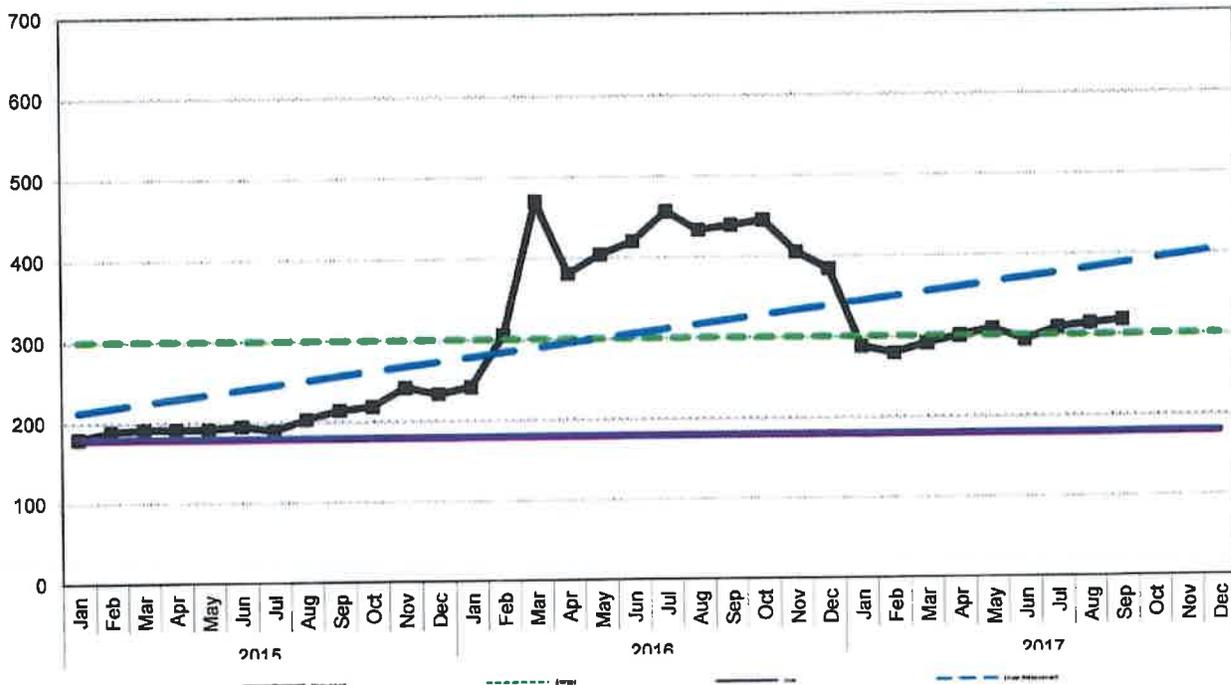
**Trend:** Favorable

### Analysis

Monthly cash balances have remained stable except for repayment of previous inter-system loans. Note: Reclassification of certain current assets from restricted to unrestricted in October 2013 resulted in higher unrestricted balances.

### Plans for Improvement

Utilize revenues generated from operations to increase cash balances according to 2011-2020 Financial Plan.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	180.0	188.6	191.4	191.4	191.1	194.5	188.9	202.9	213.7	218.3	241.3	233.0
<b>2016</b>	241.4	305.3	469.9	380.4	403.7	419.5	456.4	433.1	438.7	444.9	405.1	383.9
<b>2017</b>	287.5	279.1	291.3	300.4	308.7	294.4	309.3	314.6	317.9			

# **Section B.**

## **Contracts**

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***Quarterly Report of All Contracts***



# Sewerage & Water Board Capital Projects 2010 to 2022

City of New Orleans  
November - 2017



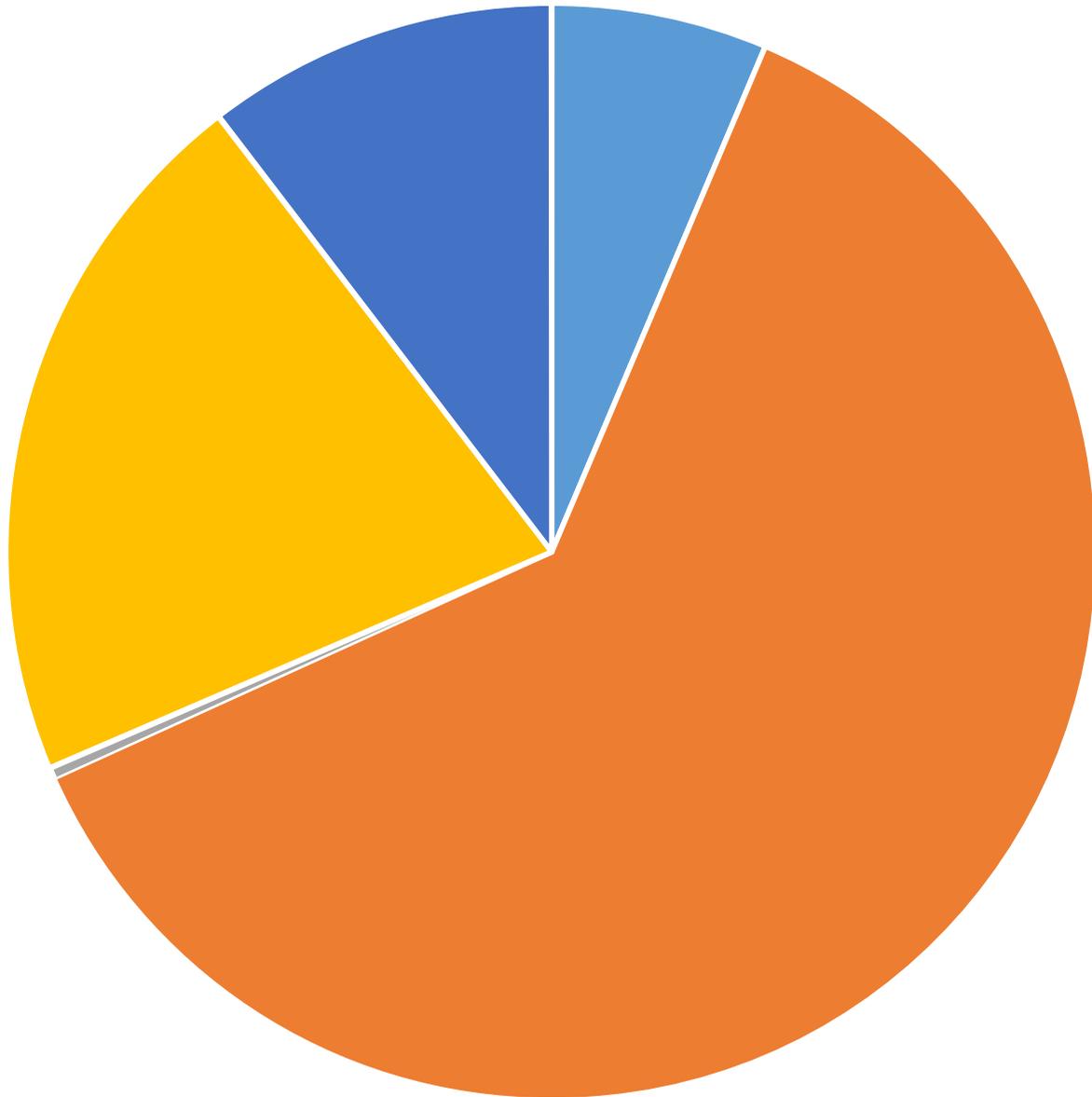
# SWBNO Capital Projects Program





**Total Program**  
Phase Breakdown

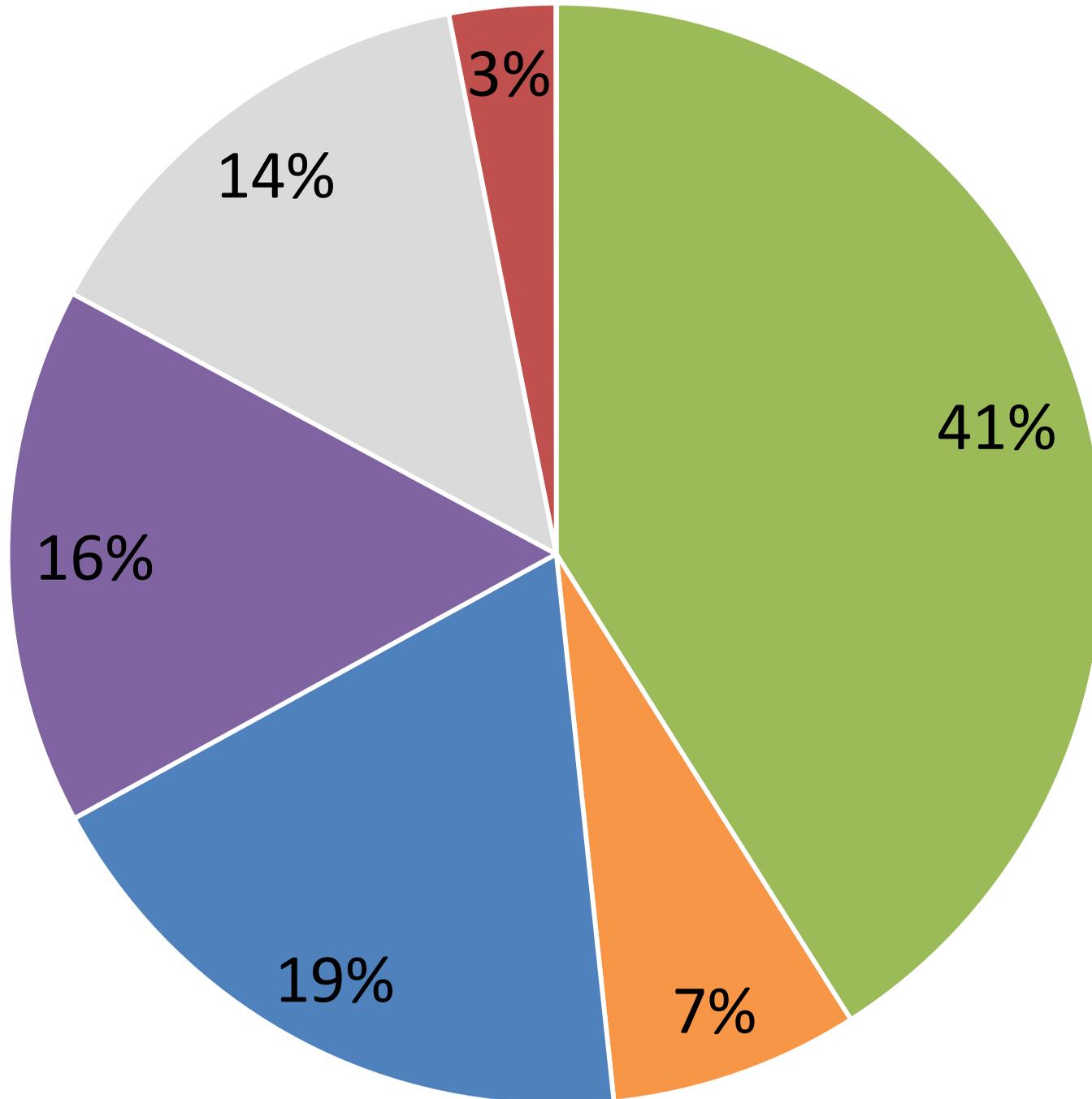
**Total 253 Projects - \$ 1.2 billion**



■ Completed	■ \$78 million 6%
■ Construction	■ \$764 million 62%
■ Bid & Award	■ \$3.8 million 0%
■ Design	■ \$259 million 21%
■ Planning	■ \$128 million 11%



**Total 253 Projects - \$ 1.2 billion**



- Drainage  
\$506,300,690.62
- Sewerage  
\$90,724,009.90
- Water  
\$231,212,419.38
- Combined/Power  
\$195,047,946.98
- Joint Projects  
\$173,242,724.41
- Emergency Drainage  
\$38,823,262.53

# Current Capital Projects





# Active Capital Projects

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
C008	A, B	HMGP-Feeders from Power Plant to DPS1	Installing two feeders from CWP to drainage pumping station #1.	\$4,628,919.90	Completed	2016 - Q4	2017 - Q4
DPW067	C, D	N. Galvez (Elysian Fields - Almonaster)	Reconstruction of existing roadway, including replacement of affected utilities	\$1,455,827.70	Completed	2015 - Q3	2017 - Q2
DPW076	B	Gravier St. (S. Galvez to S. Broad)	Reconstruction of existing roadway, including the replacement of affected utilities	\$2,211,872.70	Completed	2016 - Q1	2017 - Q4
DPW092	A	S. Johnson - Melodia Ct.	Reconstruction of existing roadway, including the replacement of affected utilities.	\$588,259.95	Completed	2016 - Q4	2017 - Q4
DPW442	B	Jackson Ave (S. Claiborne - Tchoupitoulas)	Reconstruction of existing roadway, including the replacement of affected utilities	\$81,980.00	Completed	2016 - Q3	2017 - Q3
DPW449	D	Aubry St (Broad - Gentilly)	This project will perform roadway improvements on Aubry Street from North Broad to Gentilly Boulevard, including installation of new subsurface utilities including drain lines, sewer, and water lines.	\$712,277.50	Completed	2016 - Q4	2017 - Q3
ER.DPS.25HZ	C, D, E, A, B	Purchase of five 25 Hz generators	Emergency generator purchase and installation	\$13,878,409.09	Completed	2017 - Q3	2017 - Q3
ER.DPS.TG	C, D, E, A, B	Rental of temporary generators	Emergency temporary generator rental at CFC, DPS 4, DPS 10 Citrus, Dwyer, Grant, Maxent, Oleander, Elaine, SPS A, plus A/C units at Power House 1 and PFC	\$5,537,025.44	Completed	2017 - Q3	2017 - Q3
ER.DPS01.CD1	B	DPS 1 - Constant Duty Pump 1	Repair bearing failure and seat	\$231,186.00	Completed	2017 - Q3	2017 - Q3
ER.DPS01.V2	B	DPS 1 - Vertical Pump 2	Repair impellar & damaged shaft	\$254,199.00	Completed	2017 - Q3	2017 - Q3
ER.DPS05.EP	E	DPS 5 - Emergency pump rental	Rental, installation and crane costs for emergency pump	\$115,480.00	Completed	2017 - Q3	2017 - Q3
ER.DPS06.C	A	DPS 6 - Pump C	Repair of impellar and damaged shaft	\$164,144.50	Completed	2017 - Q3	2017 - Q3
ER.DPS06.CD1	A	DPS 6 - Constant Duty Pump 1	Predecessor to 6260 - balance rotor (reassemble pump, shaft and realignment)	\$80,000.00	Completed	2017 - Q3	2017 - Q3
ER.DPS06.CD1.1	A	DPS 6 - Constant Duty Pump 1	Balance rotor, need to VPI, test and install	\$191,155.50	Completed	2017 - Q3	2017 - Q3
ER.DPS06.D	A	DPS 6 - Motor D	Shaft, bearings and impellar repairs	\$52,337.50	Completed	2017 - Q3	2017 - Q3
ER.DPS06.F	A	DPS 6 - Motor F	Reassemble pump, shaft and realignment	\$196,197.50	Completed	2017 - Q3	2017 - Q3
ER.DPS07.C	A	DPS 7 - Pump C	Repair bearing failure and seat	\$186,602.50	Completed	2017 - Q3	2017 - Q3
ER.DPS07.EP	A	DPS 7 - Emergency pump rental	Rental, installation and crane costs for emergency pump	\$82,300.00	Completed	2018 - Q3	2018 Q3
ER.DPS11.D	C	DPS 11 - Pump D	Reassemble pump, bearing shaft, and realignment	\$98,472.00	Completed	2017 - Q3	2017 - Q3
ER.DPS11.E	C	DPS 11 - Pump E	Reassemble pump, bearing shaft, and realignment	\$173,692.00	Completed	2017 - Q3	2017 - Q3
ER.DPS17.TG	E	DPS 17 "Station D" - Temporary generator purchase and wiring	Purchase of temporary generator and wiring	\$3,369,148.00	Completed	2017 - Q3	2017 - Q3
ER.UPS02.TG	A	UPS 2 - Canal Blvd - temporary generator rental	Emergency temporary generator rental	\$78,547.00	Completed	2017 - Q3	2017 - Q3
ER.UPS03.TG	D	UPS 3 - Franklin Ave - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3

Water Sewerage Drainage Combo/Power Joint Project Emergency Repair

Note: Joint Projects are part of the Joint Infrastructure Program with the City of New Orleans, with DPW as facilitator.

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
ER.UPS04.TG	E	UPS 4 - Hospital - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3
ER.UPS05.TG	A	UPS 5 - New Carrollton - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3
ER.UPS06.M	A	Underpass Pump Station 06 - Old Carrollton - Electric Rewind of Motor	Electric rewind of motor	\$43,578.00	Completed	2017 - Q3	2017 - Q4
ER.UPS06.SP	A	UPS 6 - Old Carrollton - spare parts for pump	Spare parts/pump for Old Carrollton underpass station	\$28,563.00	Completed	2017 - Q3	2017 - Q3
ER.UPS06.TG	A	UPS 6 - Old Carrollton - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3
ER.UPS07.TG	D	UPS 7 - Paris Ave - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3
ER.UPS09.TG	D	UPS 9 - Press Dr - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3
ER.UPS10.TG	D	UPS 10 - St. Bernard Ave - temporary generator rental	Emergency temporary generator rental	\$78,540.00	Completed	2017 - Q3	2017 - Q3
S001	C, D, E, A, B	Restoration of Existing Gravity Sewer Mains in Various Locations	Restore basin in Uptown, 9th Ward, and Carrollton.	\$5,032,700.00	Completed	2013 - Q4	2017 - Q3
S002	C, D, E, A, B	Restoration of Existing Gravity Sewer Mains in Various Locations	Restore basin in Lake View, Gentilly, S. Shore, and Mid-City.	\$4,759,309.00	Completed	2014 - Q2	2017 - Q4
S014	E	DODT SPS	Restoration of sewer pump station from Hurricane Katrina damage.	\$1,518,397.45	Completed	2014 - Q1	2017 - Q3
S015	E	Plum Orchard SPS	Restoration of sewer pump station from Hurricane Katrina damage.	\$1,246,542.01	Completed	2014 - Q1	2017 - Q3
S016	A	Mistletoe 18" sewer line	Replacement of 18" sewer main.	\$1,439,277.94	Completed	2015 - Q3	2017 - Q3
W005	B	A&B Pumps and Auxiliaries at Carrollton Water Plant	Repairs to Pumps A & B from Hurricane Katrina Damage.	\$18,295,141.33	Completed	2011 - Q3	2018 - Q1
W006	B	Replacement of Pump Package @ CWP	Repairs & service two lift pumps, steam turbine drivers, & auxiliary equipment.	\$6,207,477.43	Completed	2012 - Q3	2017 - Q3
W044	D	Garage No. 1 at Central Yard	Repairs to Garage no. 1 Building & Roof.	\$3,024,637.28	Completed	2014 - Q3	2017 - Q3
W045	D	Garage No. 2 at Central Yard	Repairs to Garage No. 2 Electrical System.	\$2,379,559.81	Completed	2015 - Q2	2017 - Q4
C001	B	HMGP - Modifications to Oak Street Raw Intake Station	Upgrades to Oak Street Raw Intake Station.	\$26,231,874.85	Construction	2017 - Q2	2019 - Q4
C002	A	HMGP - Emergency Fuel Storage	Construction of New Fuel Storage Tanks.	\$11,029,650.09	Construction	2015 - Q3	2019 - Q1
C004	A	HMGP- Structural General	Structural Repairs from Hurricane Katrina Damage.	\$4,662,846.12	Construction	2015 - Q4	2018 - Q2
C007	A	HMGP - Generator 4 Retrofit	Installation of new generators.	\$13,452,101.27	Construction	2013 - Q2	2018 - Q2
C009	D, A, B	HMGP - Retrofit Power Distribution Network	Repairs to Power System. Gentilly Blvd @ St. Bernard Ave	\$32,272,982.72	Construction	2015 - Q2	2019 - Q2
C010	A	HMGP - Generator Load Bank	Installation of new generators. Load bank in plant.	\$7,317,063.33	Construction	2014 - Q3	2019 - Q1
C011	C, D, E, A, B	Service Connections - new installation	Installation of new water, sewer, and drainage service connections at various sites throughout Orleans Parish	\$2,336,550.00	Construction		
D002	B	SELA Louisiana Ave Canal	Construction of 7300 LF box culvert.	\$87,691,469.81	Construction	2014 - Q1	2018 - Q2

Water Sewerage Drainage Combo/Power Joint Project Emergency Repair Note: Joint Projects are part of the Joint Infrastructure Program with the City of New Orleans, with DPW as facilitator.

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
D003.1	E	SELA Florida Ave Canal- PH II & III	Construction of 4500 LF concrete culvert from Mazant to St. Ferdinand.	\$120,694,876.25	Construction	2014 - Q3	2018 - Q4
D003.2	E	SELA Florida Ave Canal- PH IV	Construction of pile founded flume & pile founded culverts.	\$150,597,492.09	Construction	2014 - Q3	2022 - Q4
D005.1	B	SELA S. Claiborne Ave Canal- PH I	Construction of 2500 LF concrete box Monticello to Leonidas.	\$33,360,008.66	Construction	2017 - Q1	2019 - Q4
D005.2	B	SELA S. Claiborne Ave Canal- PH II	Construction of 3500 LF concrete box Leonidas to Lower line.	\$30,216,421.08	Construction	2012 - Q2	2017 - Q3
D006	B	SELA Jefferson Ave- PH I	Construction of 4400 LF Concrete Box for Claiborne to Dryads.	\$62,766,590.60	Construction	2013 - Q3	2018 - Q2
D009	D	Broad Underpass Drainage Pump Station	Restoration of Underpass Drainage Pump Station from Hurricane Katrina Damage.	\$1,293,819.95	Construction	2016 - Q4	2018 - Q1
D015	A	Metairie Relief Canal	Joint project with Jefferson Parish - Widen existing Metairie Relief Canal from Palmetto to Airline Hwy	\$7,535,000.00	Construction	2016 - Q3	2017 - Q4
D019	E	DPS 17 - Station D Mechanical/Structural Repairs		\$1,459,711.51	Construction		2017 - Q4
DPW059	A	Fleur de Lis Phase III (30th St - Hammond Hwy)	Reconstruction of existing roadway, including the replacement of affected utilities	\$5,555,935.00	Construction	2017 - Q1	2018 - Q3
DPW120	E	Michoud Blvd (Chef Menteur Blvd – Dwyer Rd)	Full reconstruction, rehabilitatin of water & drain lines	\$1,122,488.09	Construction	2017 - Q1	2018 - Q2
DPW441	B	S. Galvez (Toledano - MLK BLVD)	Full reconstruction of concrete roadway including all underground utilities. Installation of ADA compliant curb ramps, new sidewalks, driveways, landscaping, street lights and striping of crosswalks and a dedicated bike lane.	\$910,490.00	Construction	2016 - Q4	2018 - Q2
DPW445	D	Youth Study Center	May include underground infrastructure improvements, roadway resurfacing and installation of ADA compliant curb ramps, sidewalks and driveway aprons near the Youth Study Center.	\$130,171.80	Construction	2016 - Q3	2017 - Q4
DPW585	C	French Quarter Safety	Safety improvements and insfrastructure repairs to French Quarter streets, including installation of bollards to prevent automobile traffic, etc.	\$2,264,483.50	Construction		
DPW589	C	Bourbon St (Canal St - Dumaine St)	May include replacement of existing drain lines, existing water mains/house connections, sewer mains/house connections	\$0.00	Construction		2017 - Q4
DPW595		Henry Clay (St Charles Ave - Hurst)			Construction		
ER.DPS05.CD2	E	DPS 5 - Constant Duty Pump 2 L/R	Repair impellar failure and damaged shaft	\$586,176.00	Construction	2017 - Q3	2017 - Q4
ER.DPS06.CD2	A	DPS 6 - Constant Duty Pump 2	Repair impellar failure and damaged shaft	\$142,447.50	Construction	2017 - Q3	2017 - Q4
ER.DPS06.I	A	DPS 6 - Pump I	Shaft, bearings and impellar repairs	\$1,690,216.00	Construction	2017 - Q3	2017 - Q4
ER.DPS11.B	C	DPS 11 - Pump B	Repair pump - seized	\$240,930.00	Construction	2017 - Q3	2017 - Q4
ER.DPS15.2	E	DPS 15 - Pump 2	Repair gear box and reinstall	\$497,376.00	Construction	2017 - Q3	2017 - Q4
ER.DPS20.1	E	DPS 20 "Amid" - Pump 1	Repair and reinstall angle drive, shaft, impellar and casing	\$1,312,810.00	Construction	2017 - Q3	2017 - Q4

Water Sewerage Drainage Combo/Power Joint Project Emergency Repair Note: Joint Projects are part of the Joint Infrastructure Program with the City of New Orleans, with DPW as facilitator.

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
ER.PS.C	C, D, E, A, B	CH2M - Professional Services - Program Management	Emergency Operations Maintenance for DPS Repairs	\$3,000,000.00	Construction	2017 - Q3	2017 - Q4
ER.PS.D	A	Diving Inspections	Emergency diving inspection services	\$300,000.00	Construction	2017 - Q3	2017 - Q4
ER.PS.V	C, D, E, A, B	Veolia - Professional Services - Resiliency & Assets Management Study	Resiliency & Assets Management Study	\$3,000,000.00	Construction	2017 - Q3	2017 - Q4
ER.T5	A	Turbine #5 Emergency Repairs	Emergency repairs to Turbine #5	\$1,200,000.00	Construction	2017 - Q3	2017 - Q4
ER.UPS02.PG	A	Underpass Pump Station 02 - Canal Street	Installation of Permanent Generator.	\$252,890.00	Construction	2017 - Q3	2017 - Q4
ER.UPS03.PG	D	Underpass Pump Station 03 - Franklin Ave	Installation of Permanent Generator.	\$278,050.00	Construction	2017 - Q3	2017 - Q4
ER.UPS05.PG	A	Underpass Pump Station 05 - New Carrollton	Installation of Permanent Generator.	\$269,420.00	Construction	2017 - Q3	2017 - Q4
ER.UPS07.PG	D	Underpass Pump Station 07 - Paris Ave	Installation of Permanent Generator.	\$277,250.00	Construction	2017 - Q3	2017 - Q4
ER.UPS09.PG	A	Underpass Pump Station 09 - Press Dr	Installation of Permanent Generator.	\$361,000.00	Construction	2017 - Q3	2017 - Q4
RR083	A	RR3 - Lakeview North Group A (INC)	Replace identified damaged water main segments in Lakeview.	\$396,917.06	Construction	2017 - Q2	2018 - Q1
S003	E	Electrical Modifications to the Effluent Pump House	Adjustments to Effluent Pump House electrical system.	\$5,771,314.81	Construction	2016 - Q3	2018 - Q1
S004	C	Horace, Huntlee, Eton, Holiday SPS EDC's	Restoration of Sewer Pump Station from Hurricane Katrina Damage.	\$338,707.00	Construction	2017 - Q3	2017 - Q3
S006	E	BISI Sludge Dryer Purchase	Acquisition of new BISI sludge dryer.	\$4,684,027.87	Construction	2016 - Q4	2017 - Q4
S010	E	New Orleans East Basin Plum Orchard Sewer Rehabilitation	Restoration of basin under consent decree	\$6,827,860.00	Construction	2017 - Q1	2019 - Q4
S011	E	New Orleans East Basin Read Blvd West / West Lake Forest Rehabilitation	Restoration of basin under consent decree	\$3,397,886.73	Construction	2016 - Q4	2019 - Q4
S012	E	New Orleans East Basin Read Blvd East/Viavant Sewer Rehabilitation	Restoration of basin under consent decree	\$5,801,851.80	Construction	2017 - Q2	2019 - Q4
S019	D	Rewind of the sewage pump motor at Sewage Pumping Station 21	Repairs to SPS 21 Motor.	\$93,610.00	Construction	2017 - Q1	2017 - Q3
S028	E	New Orleans East Basin/Village de L'Est/Venetian Isles Sewer Rehabilitation	Sewer system rehab of existing gravity sewer mains via replacement of CIPP lining manhole in association with SSERP	\$3,654,490.00	Construction	2017 - Q2	2017 - Q4
S084	D	SPS #8	Construction of New Sewer Pump Station on Lafitte St.	\$9,545,231.83	Construction	2017 - Q1	2018 - Q3
S085	C, D, E, A, B	Gravity Sewer Mains	Restoration of existing gravity flow sanitary sewers by excavation from manhole-to- manhole, CIPP Lining from manhole-to- manhole, CIPP lining of service laterals and point repair at various Sites throughout the City of New Orleans	\$3,988,738.00	Construction		

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S086	C, D, E, A, B	Gravity Sewer Mains restoration	Restoration of existing gravity flow sanitary sewers by excavation from manhole-to- manhole, CIPP Lining from manhole-to- manhole, CIPP lining of service laterals and point repair at various Sites throughout the City of New Orleans	\$4,771,990.44	Construction		
W003	A	Filter backwash equipment	Replacement of Backwash Equipment. Current Construction Location 8800 S. Claiborne Ave.	\$1,435,908.58	Construction	2017 - Q3	2018 - Q3
W004	B	Turbine 4 Repairs	Repair Turbine #4 and ancillary equipment.	\$17,484,866.14	Construction	2012 - Q1	2018 - Q2
W015	B	Carrollton Water Plant: boiler , duct and elevator	Repair to Plant from Hurricane Katrina Damage.	\$19,422,074.04	Construction	2014 - Q4	2017 - Q3
W016	A	SFG air compressor	Replacement of Air Compressor.	\$375,000.00	Construction	2017 - Q1	2017 - Q3
W019	E	Painting of Concrete Water Storage Tanks @ MWP	Paint (4) Four Million Gallon Concrete Storage Tanks at CWP	\$740,163.02	Construction	2014 - Q4	2017 - Q4
W022	E	Secondary chlorination station at Venetian Isles	Installation of Secondary Chlorination @ Venetian Isles.	\$891,300.00	Construction	2017 - Q2	2017 - Q3
W024	A	Water Hammer HMP - Elevated Storage Tanks	Construction of New Elevated Storage Tanks. CWP	\$38,131,457.73	Construction	2016 - Q4	2019 - Q2
W025	E	Improvements to Michaud Water Tower	Restoration from Hurricane Katrina Damage.	\$5,749,700.00	Construction	2017 - Q2	2017 - Q4
W029	B	CBD/French Quarter WLRP	Replace water lines and new pavement.	\$10,444,049.25	Construction	2013 - Q3	2017 - Q4
W038	D	Electrical equipment at Garage No. 2 and Main Power Building	Repairs to Electrical System in Garage No. 2 & Main Building.	\$2,081,125.91	Construction	2016 - Q3	2018 - Q1
W051	C, D, E, A, B	Water Main Line replacements	Water Main Line replacements and extensions throughout Orleans parish.	\$1,777,140.00	Construction		
DPW144	E	Old Spanish Trail (Nighthart St - Sherwood Dr)	Full Reconstruct - existing roadway, including replacement of affected utilities.	\$700,000.00	Bid & Award	2018 - Q3	2018 - Q4
DPW456	C, D, E, A, B	Isaac Drainage Point Repairs	Improve drainage conditions throughout the city, including cleaning of catch basins, manholes and point repairs to drainage lines	\$0.00	Bid & Award	2017 - Q4	2018 - Q4
ER.DPSGRANT.2	E	DPS "Grant" - Pump 2	New pump and new motor	\$51,940.00	Bid & Award	2017 - Q3	2017 - Q4
ER.DPSGRANT.4	E	DPS "Grant" - Pump 4	New pump and new motor	\$51,940.00	Bid & Award	2017 - Q3	2017 - Q4
ER.UPS04.PG	E	Underpass Pump Station 04 - Hospital	Installation of Permanent Generator.		Bid & Award	2017 - Q3	2018 - Q1
ER.UPS08.PG	D	Underpass Pump Station 08 - Ponchartrain Blvd	Installation of Permanent Generator (?)		Bid & Award	2017 - Q3	2017 - Q4
ER.UPS10.PG	D	Underpass Pump Station 10 - St Bernard Ave	Installation of Permanent Generator.		Bid & Award	2017 - Q3	2018 - Q1
RR051	D, E	RR3 - Gentilly Terrace Group A (INC)	Replace identified damaged water main segments in Gentilly Terrace.	\$726,678.48	Bid & Award	2017 - Q4	2018 - Q3
RR103	E	RR3 - LNW Northeast Group A (INC)	Replace identified damaged water main segments in lower Ninth Ward-South.	\$344,615.30	Bid & Award	2017 - Q3	2018 - Q3
RR108	E	RR3 - LNW Northwest Group A (PMOI)	Replace identified damaged water main segments in Lower Ninth Ward-South.	\$924,344.20	Bid & Award	2017 - Q4	2018 - Q4
RR144	E	RR3 - Read Blvd East Group A (PMOPI)	Replace identified damaged water main segments in Read Blvd East.	\$147,151.56	Bid & Award	2017 - Q4	2018 - Q4

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RR152	E	RR3 - Read Blvd West Group A (PMOI)	Replace identified damaged water main segments in Read Blvd West.	\$350,432.83	Bid & Award	2017 - Q3	2018 - Q2
RR187	E	RR3 - Village de L'Est Group A (PMOI)	Replace identified damaged water main segments in Village de L'Est.	\$188,962.63	Bid & Award	2017 - Q3	2018 - Q3
W030	C	Algiers Lock Forebay	12" watermain replacement.	\$323,000.00	Bid & Award	2017 - Q3	2018 - Q4
W093	C	New River Intake - silt removal	Removing Silt from the New River Intake		Bid & Award	2018 - Q1	2018 - Q3
W094	C	Algiers Water Plant improvments	Demolition of an existing clarifier, pumps, and piping, construction of a new clarifier, installation of a new vertical turbine pump, replacement of launders and troughs in existing clarifiers, installation of four (4) chemical induction mixers and davit cranes, installation of water quality instruments, abrasive blasting and coating of interior and submerged metals of three (3) existing clarifiers, installation of new fluoride chemical storage and feed system, installation of new CMU walls, CMU wall repairs, door replacements, installation of new doors, installation of gaseous ammonia feed control valves, installation of two large diameter valves and valve vaults, replacement of backflow preventers, exposed piping, yard piping, site work, landscaping, coatings, HVAC, electrical, instrumentation and control improvements, and miscellaneous appurtenances.		Bid & Award	2018 - Q1	2019 - Q3
C003	A	HMGP - Power House	Refurbish of boilers 1,2,3,4,5, and 6. Turbine 3	\$50,342,120.90	Design	2018 - Q2	2020 - Q4
C005	A	HMGP -Turbine 5 Refurbishment	Refurbish & upgrade of electrical generators and turbine controls.	\$18,449,587.90	Design	2019 - Q3	2021 - Q3
C006	A	HMGP - Turbine 3 Refurbishment	Refurbish & upgrade of electrical generators and turbine controls.	\$24,324,249.90	Design	2018 - Q4	2019 - Q4
D001	A	Demolition of C7/C8 Basin	Demo of Basins C7 & C8.	\$3,190,607.76	Design	2017 - Q4	2018 - Q4
D008	B	New Carrollton Underpass Drainage Pump Station	Construction of New Carrollton UPSPS.	\$807,567.84	Design	2018 - Q1	2019 - Q1
D010	D	Paris Rd. Underpass Drainage Pump Station	Restoration of Underpass Drainage Pump Station from Hurricane Katrina Damage.	\$1,074,368.88	Design	2018 - Q1	2019 - Q1
D011	B	Hospital Underpass Drainage Pump Station	Restoration of Underpass Drainage Pump Station from Hurricane Katrina Damage.	\$807,571.95	Design	2018 - Q1	2019 - Q1
D012	D	Press Dr. Underpass Drainage Pump Station	Restoration of Underpass Drainage Pump Station from Hurricane Katrina Damage.	\$1,073,542.65	Design	2018 - Q1	2019 - Q1
D013	B	Marconi Underpass Drainage Pump Station	Restoration of Underpass Drainage Pump Station from Hurricane Katrina Damage.	\$699,349.73	Design	2018 - Q1	2019 - Q1

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ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
D016	C	Gen DeGaulle Canal (Wall to Behrman)	Design improvements to canal - no construction contract associated with this	\$1,500,000.00	Design	2014 - Q3	2025 - Q1
D017	C, D, E, A, B	Hydraulic Modeling of Drainage Basins throughout city (for SWB)	Hydraulic modeling of drainage basins (SWB)	\$963,291.86	Design	2015 - Q1	2017 - Q4
D018	C, D, E, A, B	Hydraulic Modeling of Drainage Basins throughout city for Green Infrastructure Project (HMGP)	Hydraulic modeling of drainage basins (Green Infrastructure)	\$569,000.00	Design	2015 - Q1	2019 - Q1
DPW020		Canal Blvd Reconstruction (Robert E Lee Blvd - Amethyst St)		\$666,398.90	Design		
DPW068	D	Gardena (St. Bernard - Paris)	Reconstruction of existing roadway, including the replacement of affected utilities.	\$1,300,000.00	Design	2018 - Q1	2018 - Q3
DPW087	A	Homedale, Milne, Walker & Center	Reconstruction of existing roadway, including the replacement of affected utilities.	\$1,400,000.00	Design	2018 - Q2	2019 - Q4
DPW111	A	Magazine St Phase II (East Dr - Broadway)	FRC-Reconstruction of existing roadway, including the replacement of affected utilities.	\$644,381.23	Design	2018 - Q2	2019 - Q3
DPW112		Magazine St Phase I (Nashville - East Dr)		\$538,694.50	Design		
DPW199	B	Camp Street (Louisiana - Washington Ave)	Reconstruction of existing roadway, including the replacement of affected utilities.	\$1,285,935.00	Design	2018- Q1	2018 - Q3
DPW213	E	Wright Road (Chef Menteur Blvd - Dwyer Blvd)	Removal of existing roadways and replace with new hot mix asphalt or concrete roadways including new concrete curb and gutter bottom, rehabilitation of water and drain lines.	\$0.00	Design	2018 - Q3	2019 - Q4
DPW444	C	St. Claude Drainage Improvements	May include subsurface drainage improvements, installation of green infrastructure, 2 inch mill and overlay and installation of ADA compliant curb ramps.	\$297,276.40	Design	2018 - Q1	2018 - Q4
DPW457	A	Cherokee Phase II (Benjamin St. - Pearl St.)	Installing a new subsurface storm water collection and conveyance system in a two block region of Cherokee street for approximately 700 linear feet.	\$170,232.88	Design	2018 - Q1	2018 - Q2
DPW458	B	S. Dupre (Canal - Tulane) Gayoso (Canal - Banks)	Reconstruction of existing roadway, including the replacement of affected utilities.	\$1,097,600.00	Design	2018- Q1	2018 - Q4
DPW547		Broadmoor Drainage Updates & Green Infrastructure			Design		
DPW549		St Roch Drainage Improvements			Design		
DPW550	A	Hagan-Lafitte (Bayou St. John) drainage upgrades	This project is intended to help alleviate flooding by increasing the capacity of subsurface drainage between local streets and trunk lines, potentially utilizing the St. Louis Canal, as well as by using green infrastructure options which may include retention/detention basins, street basins, rain gardens, and street side bio swales.	\$0.00	Design	2018 - Q1	2018 - Q4
DPW551		Lakeview			Design		
DPW582		Oak Park Drainage Updates			Design		

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ER.DPS03.ARV	D	DPS 3 - Anti-Reverse mechanism	Identify & install Anti-Reverse Mechanism		Design	2017 - Q3	
ER.DPS03.BG	D	DPS 3 - Butterfly Gates	Replace/replacement of butterfly gates		Design	2017 - Q3	
ER.DPS04.ARV	D	DPS 4 - Anti-Reverse mechanism	Identify & install Anti-Reverse Mechanism		Design	2017 - Q3	
ER.DPS05.ARV	E	DPS 5 - Anti-Reverse mechanism	Identify & install Anti-Reverse Mechanism		Design	2017 - Q3	
ER.DPS06.ARV	A	DPS 6 - Anti-Reverse mechanism	Identify & install Anti-Reverse Mechanism		Design	2017 - Q3	
ER.DPS07.ARV	A	DPS 7 - Anti-Reverse mechanism	Identify & install Anti-Reverse Mechanism		Design	2017 - Q3	
ER.DPS07.DB	A	DPS 7 - Discharge bells	Investigate & assess replacement of discharge bells		Design	2017 - Q3	
ER.DPS11.ARV	C	DPS 11 - Anti-Reverse mechanism	Identify & install Anti-Reverse Mechanism		Design	2017 - Q3	
ER.DPS11.SC	C	DPS 11 - Screen cleaners	Investigation of screen cleaners		Design	2017 - Q3	
ER.DPS12.CD1	E	DPS 12 - Constant Duty Pump 1	Investigate & assess placement of CD1 - *Inactive for 30 years		Design	2017 - Q3	
ER.DPS12.D	E	DPS 12 - Pump D	Investigate & assess the addition of a flex expansion coupling system		Design	2017 - Q3	
ER.DPS13.SC	E	DPS 13 - Screen cleaners	Investigation of screen cleaners		Design	2017 - Q3	
ER.UPS06.PG	A	Underpass Pump Station 06 - Old Carrollton	(Different approach/not permanent generator)		Design	2017 - Q3	2018 - Q3
RR026	D, E	RR3 - Desire Group A (PMOPI)	Replace identified damaged water main segments in Desire/Development Area.	\$406,918.84	Design	2017 - Q4	2018 - Q1
RR037	D	RR3 - Filmore North Group A (PMOI)	Replace identified damaged water main segments in Fillmore.	\$1,345,714.34	Design	2017 - Q4	2018 - Q4
RR042	D	RR3 - Filmore South Group A (PMOPI)	Replace identified damaged water main segments in Filmore.	\$960,314.33	Design	2017 - Q4	2018 - Q4
RR069	D	RR3 - Lake Terrace & Oaks Group A (PCI)	Replace identified damaged water main segments in Lake Terrace & Oaks	\$1,574,149.67	Design	2017 - Q3	2018 - Q3
RR078	A	RR3 - Lakeshore Group A (INC)	Replace identified damaged water main segments in Lakeshore - Lake Vista	\$699,747.10	Design	2017 - Q4	2018 - Q4
RR090	A	RR3 - Lakeview South Group A (PMOPI)	Replace identified damaged water main segments in Lakeview.	\$396,917.06	Design	2017 - Q4	2018 - Q4
RR094	A	RR3 - Lakewood Group A (PMOI)	Replace identified damaged water main segments in Lakewood.	\$709,624.50	Design	2017 - Q3	2018 - Q2
RR130	D	RR3 - Milneburg Group A (PMOPI)	Replace identified damaged water main segments in Milneburg.	\$1,549,203.54	Design	2017 - Q4	2018 - Q4
RR133	D	RR3 - Pines Village Group A (PMOI)	Replace identified damaged water main segments in Pines Village.	\$6,860,725.18	Design	2017 - Q4	2019 - Q1
RR182	B	RR3 - Treme-Lafitte Group A (INC)	Replace identified damaged water main segments in Treme - Lafitte.	\$1,278,016.15	Design	2017 - Q4	2018 - Q3
RR185	B	RR3 - Uptown, West Riverside Group A (PMOPI)	Replace identified damaged water main segments in Uptown.	\$2,052,240.61	Design	2017 - Q4	2018 - Q4

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RR191	C	RR3 - West Bank Group A (VAR)	Scope of work may include replacing damaged underground water, sewer and drainage lines, repaving the roadway, repaving the asphalt roadway from curb-to-curb, replacing damaged portions of concrete with new concrete, patching the roadway with asphalt, replacing damaged sidewalks and driveway aprons, and installing ADA compliant curb ramps at intersections.	\$197,300.00	Design	2018 - Q1	2018 - Q4
RR192	C	RR3 - West Bank Group B (VAR)	Scope of work may include replacing damaged underground water, sewer and drainage lines, repaving the roadway, repaving the asphalt roadway from curb-to-curb, replacing damaged portions of concrete with new concrete, patching the roadway with asphalt, replacing damaged sidewalks and driveway aprons, and installing ADA compliant curb ramps at intersections.	\$0.00	Design	2018 - Q4	2019 - Q4
RR193	A	RR3 - West End Group A (PMOPI)	Replace identified damaged water main segments in West End.	\$1,836,909.02	Design	2017 - Q4	2018 - Q4
S005	E	Bio-Reactor Train #4 Clean-out	Clean out of Bio- Reactor Train #4.	\$2,211,255.88	Design	2017 - Q4	2018 - Q4
S007	E	Electrical Improvements at the EBWWTP -Phase II	Installation of new MCC's F &G, transformer T-6, and switchgear SG480-2.	\$2,696,334.78	Design	2018 - Q1	2019 - Q3
S008	C	Kansas Street Sewer Force	Sewer Force Main Replacement Kansas St. (Seine to Vespasion St.)	\$3,872,891.38	Design	2018 - Q1	2019 - Q2
S009	D	Jourdan Road Sewer force Mains	Sewer Force Main Replacement Jourdan Rd (Hayne Blvd to Interstate I-10)	\$6,372,891.38	Design	2018 - Q1	2019 - Q4
S021	A	SFG Equipment Purchase & Install	Replace Valves and Actuators for SFG Filter Operations.	\$4,200,000.00	Design		
S022	A	Inspection of Turbine 5	Inspection of electrical generators and turbine controls.	\$491,203.00	Design	2018 - Q2	2019 - Q2
S026	C, D, E, A, B	Sewer Catch-all (various locations)	Misc Katrina repairs, various locations	\$3,649,798.60	Design	2018 - Q3	2019 - Q2
S027	C, D, E, A, B	Sewer Collection Systems Hydraulic Model Update E/W	Hydraulic modeling for sewer collection systems on eastbank and westbank	\$2,507,700.00	Design	2014 - Q3	2018 - Q3
S068	C	SPS-A Switchgear Retrofit	Retrofitting the medicum voltate 60 Hz switchgear at SPS-A	\$150,000.00	Design	2018 - Q1	2018 - Q2
W001	A	Sludge Line to the River	36" sludge line from plant to river.	\$6,150,000.00	Design	2018 - Q1	2019 - Q4
W002	A	Structural Improvements	Structural rehab to Sycamore Filter Gallery pipe supports.	\$863,500.00	Design	2017 - Q3	2018 - Q1
W013	A	Water Hammer HMP - Panola/Pump Room	Restoration of Panola water pump station.	\$21,406,455.51	Design	2021 - Q2	2023 - Q4
W014	A	Water Hammer HMP - Claiborne/Off Site	Restoration of Claiborne water pump station.	\$16,906,455.49	Design	2019 - Q2	2021 - Q4
W017	A	SFG Backwash Pumping Facility	Construct New Backwash Pumping Facility & Modify SFG Piping	\$6,390,500.00	Design	2017 - Q4	2018 - Q4
W018	C	Algiers Filters	Restoration of Filters from Hurricane Katrina Damage.	\$800,000.00	Design	2017 - Q3	2018 - Q4
W020	C	Arc Flash Analysis, Assessment of Storage Tank Mixing, and Lauder Trough Replacement	Upgrades to drainage mixing electrical system.	\$6,117,258.50	Design	2018 - Q1	2019 - Q4

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W021	C, A	Tank Mixing Study, Design, Implementation	Upgrades to drainage mixing system. Relying on completion of CV17-0003	\$3,117,258.50	Design	2019 - Q1	2020 - Q3
W023	C	Algiers water tanks	Repairs to Algiers Water Tank from Hurricane Katrina Damage.	\$300,000.00	Design	2017 - Q2	2017 - Q4
W026	A	Claiborne Filter Rehab	Restoration of Filters from Hurricane Katrina Damage.	\$2,400,000.00	Design	2017 - Q3	2018 - Q4
W027	A	River Intake Stations	Restoration from Hurricane Katrina Damage.	\$3,149,227.38	Design	2017 - Q4	2018 - Q2
W031	B	Rehabilitation of Clarifier #2	Restoration of Clarifiers # 2.	\$1,349,140.41	Design	2017 - Q3	2018 - Q3
W033	E	BISI Sludge Dryer Installation	Installation of New Sludge Dryer	\$4,233,994.36	Design	2018 - Q1	2019 - Q2
W046	A	SWBNO Resiliency Complex	Renovations to Head House, Engineering Building & new infill structure.	\$23,171,363.67	Design	2019 - Q1	2022 - Q2
W047	A	S Carrollton Bulk Chemical Storage & Feed Facility	Design and construction of a storage facility	\$6,094,665.04	Design	2018 - Q1	2019 - Q3
DPW577		Virginia St (Conte-Rosedale) Conti St (City Park - Rosedale), Rosedale Dr (Virginia-Canal Blvd)			Planning		
DPW594		Bullard Ave (Hayne - Chef Menteur)			Planning		
RR001	B	RR3 - Audubon Group A (PMOPI)	Replace identified damaged water main segments in Audubon.	\$2,018,616.64	Planning	2018 - Q1	2019 - Q2
RR003	C, A	RR3 - Bayou St John, Fairgrounds, Seventh Ward Group A (INC)	Replace identified damaged water main segments in Bayou St. John.	\$2,723,286.57	Planning	2018 - Q1	2018 - Q4
RR004	D, A	RR3 - Bayou St John, Fairgrounds, Seventh Ward Group B (PMOPC)	Replace identified damaged water main segments in Bayou St. John.	\$7,340,739.00	Planning	2018 - Q2	2019 - Q2
RR008	B	RR3 - Black Pearl Group B (FRC)	Replace identified damaged water main segments in Black Pearl.	\$2,062,817.00	Planning	2018 - Q4	2019 - Q4
RR009	B	RR3 - Black Pearl, East Carrollton Group A (PMOPI)	Replace identified damaged water main segments in Black Pearl.	\$5,291,153.09	Planning	2018 - Q1	2019 - Q2
RR010	B	RR3 - Broadmoor Group A (PMOPI)	Replace identified damaged water main segments in Broadmoor.	\$2,430,091.96	Planning	2018 - Q1	2019 - Q2
RR011	A, B	RR3 - Broadmoor Group C (FRC)	Replace identified damaged water main segments in Broadmoor.	\$1,546,363.00	Planning	2018 - Q3	2019 - Q3
RR014	A, B	RR3 - BW Cooper, Gert Town, Dixon Group A (PMOI)	Replace identified damaged water main segments in B. W. Copper.	\$1,662,141.05	Planning	2018 - Q3	2019 - Q3
RR015	A, B	RR3 - BW Cooper, Gert Town, Dixon Group B (PMOI)	Replace identified damaged water main segments in B. W. Copper.	\$3,874,373.04	Planning	2018 - Q4	2019 - Q4
RR020	C	RR3 - Bywater-Marigny Group A (FRCPI)	Replace identified damaged water main segments in Bywater & Marigny.	\$1,439,912.92	Planning	2018 - Q2	2019 - Q2
RR021	B	RR3 - Central City Group A (FRC)	Replace identified damaged water main segments in Central City.	\$1,848,431.00	Planning	2019 - Q2	2020 - Q2
RR025	A	RR3 - City Park Group A (VAR)	Replace identified damaged water main segments in City Park.	\$2,060,348.76	Planning	2018 - Q3	2019 - Q4

Water Sewerage Drainage Combo/Power Joint Project Emergency Repair Note: Joint Projects are part of the Joint Infrastructure Program with the City of New Orleans, with DPW as facilitator.

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
RR035	B	RR3 - East Riverside, Garden District, Irish Channel, St Thomas Group A (PMOI)	Replace identified damaged water main segments in East Riverside.	\$1,305,819.38	Planning	2018 - Q4	2019 - Q4
RR038	D	RR3 - Filmore North Group B (FRC)	Replace identified damaged water main segments in Filmore.	\$1,543,905.00	Planning	2018 - Q2	2019 - Q2
RR043	D	RR3 - Filmore South Group B (FRC)	Replace identified damaged water main segments in Filmore.	\$1,517,716.00	Planning	2018 - Q2	2019 - Q2
RR046	D	RR3 - Florida Area & Dev Group A (PMOI)	Replace identified damaged water main segments in Florida Area.	\$1,542,785.00	Planning	2018 - Q4	2019 - Q4
RR050	B	RR3 - Ferret Group A (PMOI)	Replace identified damaged water main segments in Ferret.	\$628,841.34	Planning	2018 - Q1	2018 - Q2
RR062	A	RR3 - Hollygrove Group B (PMOPC)	Replace identified damaged water main segments in Hollygrove.	\$2,858,155.00	Planning	2018 - Q3	2019 - Q4
RR067	A	RR3 - Hollygrove, Leonidas Group A (INC)	Replace identified damaged water main segments in Hollygrove.	\$4,664,604.90	Planning	2018 - Q1	2018 - Q2
RR072	D	RR3 - Lake Terrace & Oaks Group D (FRC)	Replace identified damaged water main segments in Lake Terrace & Oaks	\$1,576,692.00	Planning	2018 - Q4	2019 - Q4
RR073	D	RR3 - Lake Vista Group A (PMOPI)	Replace identified damaged water main segments in Lakeshore - Lake Vista	\$89,765.00	Planning	2018 - Q1	2019 - Q1
RR085	A	RR3 - Lakeview North Group C (PMO)	Replace identified damaged water main segments in Lakeview.	\$1,209,362.00	Planning	2018 - Q4	2019 - Q4
RR097	A	RR3 - Leonidas Group B (PMOPC)	Replace identified damaged water main segments in Leonidas.	\$3,593,289.44	Planning	2018 - Q2	2019 - Q2
RR100	D, E	RR3 - Little Woods Group A (PMOPI)	Replace identified damaged water main segments in Little Woods.	\$3,153,467.75	Planning	2018 - Q3	2019 - Q4
RR104	E	RR3 - LNW Northeast Group B (FRCP)	Replace identified damaged water main segments in Lower Ninth Ward-North.	\$3,298,230.00	Planning	2018 - Q4	2019 - Q4
RR109	E	RR3 - LNW Northwest Group B (FRC)	Replace identified damaged water main segments in Lower Ninth Ward-North.	\$1,989,420.00	Planning	2018 - Q3	2019 - Q3
RR112	E	RR3 - LNW South Group A (PMOI)	Replace identified damaged water main segments in Lower Ninth Ward-South.	\$2,084,230.61	Planning	2018 - Q3	2019 - Q3
RR116	A, B	RR3 - Marlyville-Fontainebleau Group A (PMOPI)	Replace identified damaged water main segments in Marlyville - Fontainebleau.	\$8,192,262.31	Planning	2017 - Q4	2018 - Q4
RR118	A, B	RR3 - Marlyville-Fontainebleau Group C (FRC)	Replace identified damaged water main segments in Marlyville - Fontainebleau.	\$1,005,459.00	Planning	2018 - Q4	2019 - Q4
RR124	A, B	RR3 - Mid-City Group A (INC)	Replace identified damaged water main segments in Mid - City.	\$1,774,872.94	Planning	2017 - Q4	2018 - Q3
RR125	A, B	RR3 - Mid-City Group B (PMOPC)	Replace identified damaged water main segments in Mid - City.	\$7,804,991.00	Planning	2018 - Q4	2019 - Q4
RR129	B	RR3 - Milan Group A (PMOPI)	Replace identified damaged water main segments in Milan.	\$1,059,758.70	Planning	2018 - Q3	2019 - Q3
RR131	D	RR3 - Milneburg Group B (FRC)	Replace identified damaged water main segments in Milneburg.	\$1,992,715.00	Planning	2018 - Q4	2019 - Q4

Water Sewerage Drainage Combo/Power Joint Project Emergency Repair Note: Joint Projects are part of the Joint Infrastructure Program with the City of New Orleans, with DPW as facilitator.

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
RR132	A	RR3 - Navarre Group A (FRCPI)	Replace identified damaged water main segments in Navarre.	\$892,848.79	Planning	2018 - Q1	2019 - Q1
RR134	D	RR3 - Pines Village Group B (FRC)	Replace identified damaged water main segments in Pines Village.	\$882,104.00	Planning	2018 - Q2	2019 - Q2
RR138	E	RR3 - Plum Orchard/West Lake Forest Group A (PMOPI)	Replace identified damaged water main segments in Pines Orchard.	\$2,475,099.24	Planning	2019 - Q2	2020 - Q3
RR139	E	RR3 - Plum Orchard/West Lake Forest Group B (PMOPI)	Replace identified damaged water main segments in Pines Orchard.	\$2,425,491.23	Planning	2018 - Q4	2019 - Q4
RR140	D	RR3 - Pontchartrain Park Group A (PMOI)	Replace identified damaged water main segments in Pontchartrain Park.	\$2,184,038.94	Planning	2018 - Q1	2019 - Q1
RR145	E	RR3 - Read Blvd East Group B (PC)	Replace identified damaged water main segments in Read Blvd East.	\$51,257.00	Planning	2018 - Q1	2019 - Q1
RR146	E	RR3 - Read Blvd East Group C (PC)	Replace identified damaged water main segments in Read Blvd East.	\$72,113.00	Planning	2018 - Q3	2019 - Q3
RR147	E	RR3 - Read Blvd East Group D (PMOPC)	Replace identified damaged water main segments in Read Blvd East.	\$420,476.00	Planning	2018 - Q2	2019 - Q2
RR153	E	RR3 - Read Blvd West Group C (PMOPC)	Replace identified damaged water main segments in Read Blvd West.	\$3,737,067.00	Planning	2018 - Q1	2019 - Q1
RR159	D	RR3 - St. Anthony Group A (PMOPI)	Replace identified damaged water main segments in St. Anthony.	\$4,098,827.78	Planning	2019 - Q2	2020 - Q2
RR165	D	RR3 - St. Bernard Group A (VAR)	Replace identified damaged water main segments in St. Bernard Area.	\$1,115,298.59	Planning	2018 - Q2	2019 - Q2
RR166	C, D	RR3 - St. Claude Group A (PMOI)	Replace identified damaged water main segments in St. Claude.	\$1,908,457.45	Planning	2017 - Q4	2018 - Q4
RR167	C, D	RR3 - St. Claude Group B (PMOI)	Replace identified damaged water main segments in St. Claude.	\$644,710.00	Planning	2018 - Q3	2019 - Q3
RR168	C, D	RR3 - St. Claude Group C (FRC)	Replace identified damaged water main segments in St. Claude.	\$2,227,242.00	Planning	2018 - Q2	2019 - Q2
RR170	C, D	RR3 - St. Claude Group E (FRC)	Replace identified damaged water main segments in St. Claude.	\$1,940,361.00	Planning	2018 - Q3	2019 - Q3
RR180	C, D	RR3 - St. Roch South Group A (PMOI)	Replace identified damaged water main segments in St. Roch.	\$2,100,888.70	Planning	2018 - Q4	2019 - Q4
RR181	C, D	RR3 - St. Roch South Group B (FRC)	Replace identified damaged water main segments in St. Roch.	\$2,219,453.70	Planning	2018 - Q2	2019 - Q2
RR183	C, D	RR3 - Treme-Lafitte Group B (FRCP)	Replace identified damaged water main segments in Treme - Lafitte.	\$1,896,266.00	Planning	2018 - Q4	2019 - Q4
RR186	E	RR3 - Viavant-Lake Catherine Group C (VAR)	Replace identified damaged water main segments in Viavant.	\$3,427,816.04	Planning	2018 - Q3	2019 - Q3
RR188	E	RR3 - Village de L'Est Group B (PMOPC)	Replace identified damaged water main segments in Village de L'Est.	\$1,517,969.00	Planning	2018 - Q2	2019 - Q2

Water Sewerage Drainage Combo/Power Joint Project Emergency Repair Note: Joint Projects are part of the Joint Infrastructure Program with the City of New Orleans, with DPW as facilitator.

ID	Council District	Name	Scope	Budget	Current Project Phase	Est Start Qtr	Est Complete Qtr
RR189	E	RR3 - Village de L'Est Group C (FRC)	Replace identified damaged water main segments in Village de L'Est.	\$2,036,421.00	Planning	2018 - Q4	2019 - Q4
RR194	A	RR3 - West End Group B (FRC)	Replace identified damaged water main segments in West End.	\$1,702,714.00	Planning	2018 - Q3	2019 - Q4
S025	A	Network Extensions and replacement of sewer FM	sewer FM replacement on Memphis (from Filmore to Lane St)	\$1,700,000.00	Planning	2018 - Q3	2019 - Q3

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# Completed Capital Projects



## Replacement of VTSH Pumps (Construction Complete - Q3 2017)



# Drainage Pump Station 1 Constant Duty Pump 1 (Construction Complete - Q3 2017)



# Drainage Pump Station 1 - Vertical Pump 1-2 (Construction Complete - Q3 2017)



# Drainage Pump Station 11 - Pump D (Construction Complete - Q3 2017)



**Drainage Pump Station 7- Pump C (Construction Complete - Q3 2017)**



# Capital Projects in Construction



**Water Hammer #1 - Elevated Storage Tank  
(Est. Construction Complete - Q4 2018)**



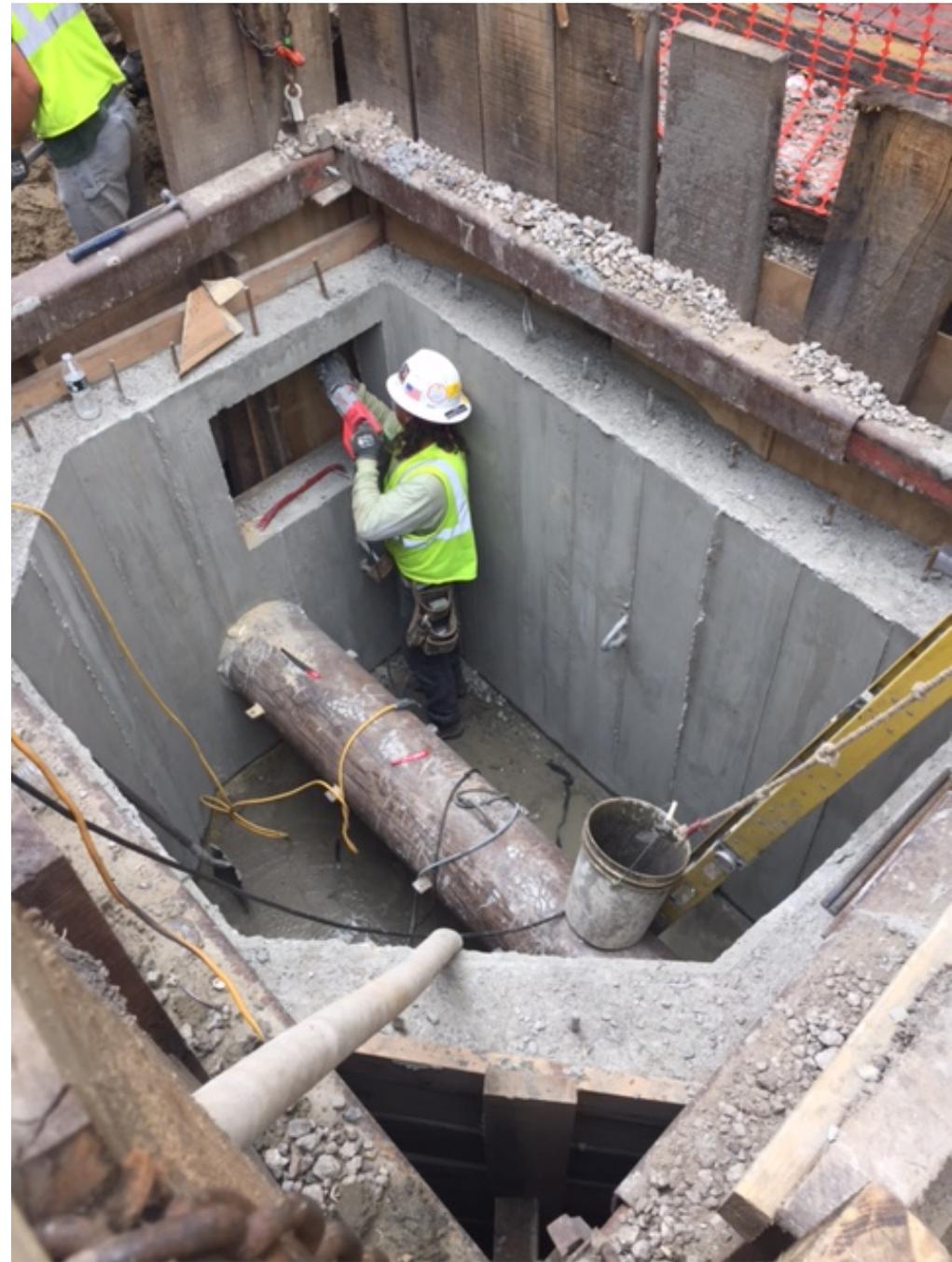
**Water Hammer #2 - Elevated Storage Tank  
(Est. Construction Complete - Q4 2018)**



# Water Storage Tanks (Est. Completion - Q4 2017)



## Bourbon Street - Joint Project (Est. Completion - Q4 2017)



**Secondary Chlorination Station - Venetian Isle (Est Construction Complete - Q3 2017)**



**Michoud Water Tower - HMGP 006  
(Est. Completion - Q3 2018)**



## Sycamore Filter Gallery - Air Compressor (Est. Completion - Q4 2019)



**Powerhouse Basement – Structural Repairs  
(Est. Completion - Q2 2018)**



## Filter Backwash Equipment - Carrollton Water Treatment Plant (Est. Completion - Q3 2018)



# HMGP Retrofit Power Distribution Network (Est Construction Complete - Q2 2018)



# Capital Projects in Design Phase



**SWBNO Resiliency Complex**  
**(Est. construction complete - Q1 2022)**



SWBNO RESILIENCY COMPLEX

# Capital Expenditures & Revenue



# Capital Expenditures from S&WB and Contributed Capital 2014-2016

System	2014	2015	2016
Water	\$46.6 million	\$42.6 million	\$46.1 million
Sewer	\$58.9 million	\$56.4 million	\$50.0 million
Drainage	\$152.2 million	\$155.8 million	\$167.1 million
Total	\$257.7 million	\$254.8 million	\$263.2 million

# S&WB Funding Availability through October 2017

System	Funds from Bonds
Water	\$59.3 million
Sewer	\$9.1 million
Drainage	\$0
Total	\$68.4 million

Funding is available to accomplish the water and sewer capital program as identified in the 2017-2026 Financial Plan



Quarter	Total # of Contracts to all Contractors	Total Value of Contracts to all Contractors	Total # of Local Contracts to Businesses % of Total	Businesses % of Total Value of Contracts	Fifty-Fifty Joint Venture Enterprise
MARCH	3	\$26,320,350.00	100%	100%	NONE
JUNE	4	\$3,483,815.00	100%	100%	NONE
SEPTEMBER	1	\$1,428,310.00	100%	100%	NONE
DECEMBER	2	\$8,377,140.00	100%	100%	NONE

## 2017 EMERGENCY CONTRACTS

	DATE	CONTRACT #	DESCRIPTION	AWARDED BIDDER	CONTRACT AMOUNT	RESOLUTION #
1	9/20/2017	EE170005	REPAIRS OF PUMP MOTORS C, D, F, CD1, CD2 AT DPS NO. 6 AND PUMP MOTOR C AT DPS NO. 7	BOLLINGER QUICK REPAIR, LLC	\$160,955.00	R-074-2017
2	9/20/2017	EE170007	FURNISH TEMPORARY GENERATORS DRAINAGE PUMPING STATION NO. 17	ARCCO POWER SYSTEMS	\$5,766,491.48	R-076-2017
3	9/20/2017	EE170006	FURNISH TEMPORARY GENERATORS AND HVAC EQUIPMENT AT VARIOUS LOCATIONS	UNITED RENTALS POWER & HVAC	\$8,237,025.00	R-075-2017
4	9/20/2017	EE170008	PURCHASE OF FIVE (5) GENERATOR SETS FOR BACKUP POWER LOCATED AT THE CARROLLTON WATER PLANT FACILITY.	ARCCO POWER SYSTEMS	\$11,878,409.09	R-077-2017
5	9/20/2017	EE170009	ELECTRICAL SERVICES TO CONNECT THE TEMPORARY GENERATORS AT DPS NO. 17.	WALTER J. BARNES ELECTRIC CO., INC.	\$790,000.00	R-078-2017
6	9/20/2017	EE170010	ELECTRICAL SERVICES TO CONNECT FIVE (5) 2.5MW, 6600V, 3 PHASE 25HZ GENERATORS FOR BACKUP POWER AT THE CARROLLTON WATER PLANT.	WALTER J. BARNES ELECTRIC CO., INC.	\$4,720,000.00	R-079-2017
7	9/20/2017	ME170008	FURNISH SPARE PARTS AND ONE (1) SPARE PUMP AT THE OLD CARROLLTON UNDERPASS DRAINAGE PUMPING STATION.	DELTA PROCESS EQUIPMENT	\$28,563.00	R-080-2017
8	9/20/2017	ME170009	REPAIR AND RE-INSTALL ANGLE DRIVE, SHAFT, IMPELLER, AND CASING OF DRAINAGE PUMP 1 AT THE DRAINAGE PUMPING STATION 20 (AMID).	MR PITTMAN GROUP, LLC	\$1,124,000.00	R-081-2017
9	9/20/2017	ME170010	REPAIR IMPELLER, CASING, AND SHAFT AND REPLACE BEARINGS AND BEARING HOUSING OF DRAINAGE I-PUMP AT THE DRAINAGE PUMPING STATION 6.	ALFRED CONNHAGEN, INC.	\$1,690,216.00	R-082-2017
10	9/20/2017	ME170011	REPAIR THE IMPELLER AND DAMAGED SHAFT OF DRAINAGE VERTICAL PUMP 2 AT DRAINAGE PUMPING STATION 1, REPAIR OF BEARING FAILURE AND SEAT DAMAGE OF CONSTANT DUTY PUMP 1 AT THE DRAINAGE PUMP D AND PUMP E AT DRAINAGE PUMPING STATION 11.	ALFRED CONNHAGEN, INC.	\$659,900.00	R-083-2017
11	9/20/2017	ME170012	REASSEMBLE AND REALIGN PUMP AND SHAFT OF CONSTANT DUTY PUMP 1 AT DRAINAGE STATION 1 AND TO REPAIR IMPELLER, CASING, AND MOTOR OF CONSTANT DUTY PUMPS 2L/2R AT THE DRAINAGE PUMPING STATION 5.	BOLLINGER SHIPYARDS, LLC	\$586,176.00	R-084-2017

## 2017 EMERGENCY CONTRACTS

12	9/20/2017	ME170013	UNCOUPLE AND INSPECT PUMP BEARINGS, MOTOR BEARINGS, AND MANUALLY ROTATE DRAINAGE PUMP B AT DRAINAGE STATION 11.	BOLLINGER SHIPYARDS, LLC	\$121,420.00	R-085-2017
13	9/20/2017	ME170014	PROCURE TWO (2) NEW DRY-PIT PUMPS AND MOTOR ASSEMBLIES AT OLD CARROLLTON UNDERPASS DRAINAGE PUMPING STATIONS.	ADVANCED INDUSTRIAL PRODUCTS, INC.	\$43,578.00	R-086-2017
14	9/20/2017	ME170015	REPLACE DRAINAGE PUMP 2 AND DRAINAGE PUMP 4 AT DRAINAGE PUMPING STATION.	INDUSTRIAL & MECHANICAL CONTRACTORS, INC.	\$103,880.00	R-087-2017
15	9/20/2017	ME170016	PROCURE EMERGENCY DIVING INSPECTIONS TO INSPECT CURRENT CONDITION OF DISCHARGE BELLS AT DRAINAGE PUMPING STATION 7 AND TO ISOLATE DISCHARGE PIPING OF CD 2L/2R AT DRAINAGE PUMPING STATION 5.	SPECIALTY DIVING COMPANIES	\$300,000.00	R-088-2017
16	9/20/2017	ME170017	PROCURE EMERGENCY BYPASS PUMPS TO ENHANCE PUMPING CAPACITY AT DRAINAGE PUMPING STATION 7 AND DRAINAGE PUMPING STATION 5.	MWI CORPORATION	\$178,247.50	R-089-2017
17	9/20/2017	ME170018	INSTALL EMERGENCY BYPASS PUMPS TO ENHANCE PUMPING CAPACITY AT DRAINAGE PUMPING STATION 7 AND DRAINAGE PUMPING STATION 5.	MWI CORPORATION	\$20,000.00	R-090-2017
18	9/20/2017	ME170019	PROVIDE CRANE SUPPORT DURING INSTALLATION OF EMERGENCY BYPASS PUMPS TO ENHANCE PUMPING CAPACITY AT DRAINAGE PUMPING STATION 7 AND DRAINAGE PUMPING STATION 5.	ALL CRANE RENTAL	\$52,972.25	R-091-2017
19	9/20/2017	ME170020	PROCURE TEMPORARY GENERATORS FOR EIGHT (8) UNDERPASS PUMPING STATIONS TO PROVIDE BACKUP POWER IF NEEDED.	INDUSTRIAL & MECHANICAL CONTRACTORS, INC.	\$623,841.16	R-092-2017
20	9/20/2017	MS170140	REPAIR AND REINSTALL THE GEARBOX OF DRAINAGE PUMP 2 AT DRAINAGE PUMPING STATION 15.	PHILADELPHIA GEAR	\$517,604.93	R-093-2017
21	9/20/2017	ME170023	INSTALLATION OF PERMANENT GENERATORS AT 5 UNDERPASS STATIONS	INDUSTRIAL & MECHANICAL CONTRACTORS, INC.	\$392,113.42	R-129-2017
22			REPAIRS TO TURBINE 3	SIEMENS	\$4,500,000.00	
23			REPAIRS TO TURBINE 5	GENERAL ELECTRIC	\$1,200,000.00	
24			SWITCH GEAR REPLACEMENT FOR TURBINE 4	POINT EIGHT POWER	\$426,424.00	
			<b>TOTAL</b>		<b>\$44,121,816.83</b>	

**2017 EMERGENCY CONTRACTS**

Quarter	Total # of Contracts to all Contractors	Total Value of Contracts to all Contractors	Total # of Contracts to Local Businesses % of Total	Contracts to Local Businesses % of Total Value of Contracts	Fifty-Fifty Joint Venture Enterprise
SEPTEMBER	24	\$44,883,253.83	13	\$11,442,503.58	NONE

**Sewerage & Water Board New Orleans Contracts with SLDBE Participation January 2016 - September 2017**

Category	Category Dollar Amount	SLDBE Dollar Value
<b>Goods and Services Contracts</b>	\$ 1,243,346	\$ 376,210
<b>Construction Contracts</b>	\$ 36,934,225	\$ 6,878,525
<b>Professional Services Contracts</b>	\$ 320,269	\$ 122,094
<b>Grand Total</b>	\$ 38,497,840	\$ 7,376,829

**Sewerage & Water Board of New Orleans Contracts with DBE Participation January 2017 - September 2017**

**Goods & Services Contracts**

<b>Contract Description</b>	<b>Contract Dollar Amount</b>	<b>Prime Contractor</b>	<b>DBE Subcontractor</b>	<b>DBE %</b>	<b>DBE Dollar Value</b>	<b>Award Date</b>
YW 17-0005; Furnishing Rubber PVC Hip Boots and Knee Boots	\$199,996.00	Southeast Safety and Supply	Assorted Products	31.00%	<b>\$62,000.00</b>	2/15/2017
YW 17-0010;Furnishing Riversand and Mason Sand to the SWBNO	\$295,540.00	Trucking Innovations, LLC	Blakely AA Trucking LLC	30.00%	<b>\$88,662.00</b>	3/15/2017
YW 17-0013;Furnishing Safety Supplies	\$120,298.85	Southeast Safety and Supply	Assorted Products	31.00%	<b>\$37,293.00</b>	9/20/2017
YW 17-0014;Furnishing Paper Products and Janitorial Supplies	\$70,561.50	Assorted Products	Westbank Paper & Janitorial Supply, Inc.	30.00%	<b>\$21,170.25</b>	9/20/2017
YW 17-0063; Hand Tools, Hardware Supplies, Paint & Paint Supplies	\$316,826.65	Assorted Products	Westbank Paper & Janitorial Supply, Inc.	30.00%	<b>\$95,048.00</b>	9/20/2017
YW 17-0064; Aerosol, Janitorial & Industrial Chemicals	\$240,123.00	Assorted Products	Westbank Paper & Janitorial Supply, Inc.	30.00%	<b>\$72,036.90</b>	9/20/2017
<b>Total Goods &amp; Services Contracts</b>	<b>\$1,243,346.00</b>			30.26%	<b>\$376,210.15</b>	

**Sewerage & Water Board of New Orleans Contracts with DBE Participation January 2017 - September 2017**

**Goods & Services Contracts**

<b>Contract Description</b>	<b>Contract Dollar Amount</b>	<b>Prime Contractor</b>	<b>DBE Subcontractor</b>	<b>DBE %</b>	<b>DBE Dollar Value</b>	<b>Award Date</b>
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**Sewerage & Water Board Contracts with DBE Participation January 2017 - September 2017**

**Construction Contracts**

Contract Description	Contract Dollar Amount	Prime Contractor	DBE Sub-Contractor	Awarded DBE %		Awarded DBE Dollar Value	Award Date
#1368 - HMGP Oak Street Pump Station Upgrade and Rehabilitation Project	\$23,492,500.00	M.R. Pitmann Group, LLC	The Beta Group	0.21%	\$50,000.00		
			JEI Solutions	9.70%	\$2,279,000.00		
			Landrieu Concrete & Cement Inc.	0.64%	\$150,000.00		
			C.Watson Group	1.43%	\$336,000.00		
			<b>Total</b>	<b>11.98%</b>	<b>\$2,815,000.00</b>		1/18/17
#6260 - Rewind of Constant Duty Motors #1 and #2 at the DPS #6 and Ammortissuer Winding Replacement and Cleaning of Motor "C" at DPS #6 and DPS #7	\$595,000.00	Bollinger Armature Services, LLC	Next Generation Logistics, LLC	5.07%		\$30,166.00	3/15/17
			#6261 - 2017 Rewind of the Sewage Pump Motor at Sewage Pump Station #21	\$93,610.00	Houma Armature Works & Supply, LLC	JEI Solutions	5.02%
#2126 - 2017 Water Main Point Repair, Water Service Connection, Water Valve, and Fire Hydrant Point Replacement at Various Sites throughout Orleans Parish	\$2,944,440.00	Wallace C. Drennan, Inc.	Prince Dump Truck Service	7.68%	\$226,000.00		
			C&M Construction Group, Inc.	28.53%	\$840,000.00		
<b>Total</b>			<b>36.20%</b>		<b>\$1,066,000.00</b>		3/15/17
#2127 - Algiers Lock Forebay Waterline Replacement	\$271,375.00	BLD Services, LLC	Choice Supply Solutions	12.25%		\$33,250.00	3/15/17
#30210 - Restoration of Gravity Flow Sanitary Sewers by Point Repair of Sewer Mains at Various Sites throughtout the City of New Orleans	\$1,503,700.00	Grady Crawford Construction Co., Inc.	Purnell Construction Co., LLC	36.24%		\$545,000.00	7/19/17
			Hebert's Trucking and Equipment Service, LLC	2.90%	\$35,000.00		
#2128 - Water Main Point Repair, Water Service Connection, Water Valve, and Fire Hydrant Replacement at Various Sites throughout Orleans Parish	\$1,207,050.00	Fleming Construction Co., LLC	EFT Diversified, Inc.	24.85%	300,000.00		
			Cooper Contracting Group, LLC	8.28%	100,000.00		
			<b>Total</b>	<b>36.04%</b>	<b>\$435,000.00</b>		7/19/17
#1384 - Replacement of Backwash Equipment	\$5,387,940.00	Industrial & Mechanical Contractors, Inc.	EFT Diversified, Inc.	12.84%	\$691,845.00		
			APC Construction Co., Inc.	13.12%	707,162.00		
<b>Total</b>			<b>25.97%</b>		<b>\$1,399,007.00</b>		9/20/17

**Sewerage & Water Board Contracts with DBE Participation January 2017 - September 2017**

**Construction Contracts**

<b>Contract Description</b>	<b>Contract Dollar Amount</b>	<b>Prime Contractor</b>	<b>DBE Sub-Contractor</b>	<b>Awarded DBE %</b>	<b>Awarded DBE Dollar Value</b>	<b>Award Date</b>
#6259 - Installation of Permanent Generators at five Drainage Pumping Stations	\$1,438,610.00	Industrial & Mechanical Contractors, Inc.	EFT Diversified, Inc.	38.26%	\$550,401.50	9/20/17
<b>Total Construction Contracts</b>	<b>\$36,934,225.00</b>			18.62%	<b>\$6,878,524.50</b>	

**Sewerage & Water Board Contracts with DBE Participation January 2017 - September 2017**

**Construction Contracts**

Contract Description	Contract Dollar Amount	Prime Contractor	DBE Sub-Contractor	Awarded DBE %	Awarded DBE Dollar Value	Award Date
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**Sewerage & Water Board Contracts with DBE Participation January 2017 - September 2017**

**Professional Service Contracts**

<b>Contract Description</b>	<b>Contract Dollar Amount</b>	<b>Prime Contractor</b>	<b>DBE Sub-Contractor</b>	<b>DBE %</b>	<b>DBE Dollar Value</b>	<b>Awarded DBE Value</b>	<b>Award Date</b>
Communication/Marketing Firm	\$200,000.00	The Ehrhardt Group, Inc.	The Hawthorne Agency, Inc.				2/15/2017
				40.00%		<b>\$80,000.00</b>	
404 Hazard Mitigation Grant Program Contract 3664 Replacement of Sewage Pumping Station 8 Testing Services	\$120,268.67	Gulf South Engineering and Testing, Inc.	Kenall, Inc.	35.00%		<b>\$42,094.03</b>	4/3/2017
<b>Total Professional Services Contracts</b>	<b>\$320,268.67</b>			38.12%		<b>\$122,094.03</b>	



## **Section C.**

# **Statistics and Reports**

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### ***Standard Industry Metrics***





**“RE-BUILDING THE CITY’S WATER SYSTEMS FOR THE 21<sup>ST</sup> CENTURY”**

# **Sewerage & Water Board of NEW ORLEANS**

*MITCHELL J. LANDRIEU, President*  
*SCOTT JACOBS, President Pro-Tem*  
*CEDRIC S. GRANT, Executive Director*

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NEW ORLEANS, LA 70165 • 504-529-2837 OR 52-WATER  
[www.swbno.org](http://www.swbno.org)

Date: June, 2017

To: Sewerage and Water Board Customers

From: Lisa Martin

Deputy Director of Communications

Re: Water Quality 2016 Report

Every Sewerage and Water Board customer will receive an informational insert in their water bill advising them that their drinking water, supplied by the Sewerage and Water Board of New Orleans, is of the highest quality. It also describes the water treatment process. The mailer is called 2016 Report of the State of Tap Water in New Orleans “Quality Water 2016.”

This is the 19<sup>th</sup> time the Board has distributed this Consumer Confidence Report. It is a requirement of the U. S. Environmental Protection Agency (EPA) and must be mailed to all customers once a year, advertised in the Times-Picayune newspaper, posted on the Board’s website and be available at government offices and libraries.

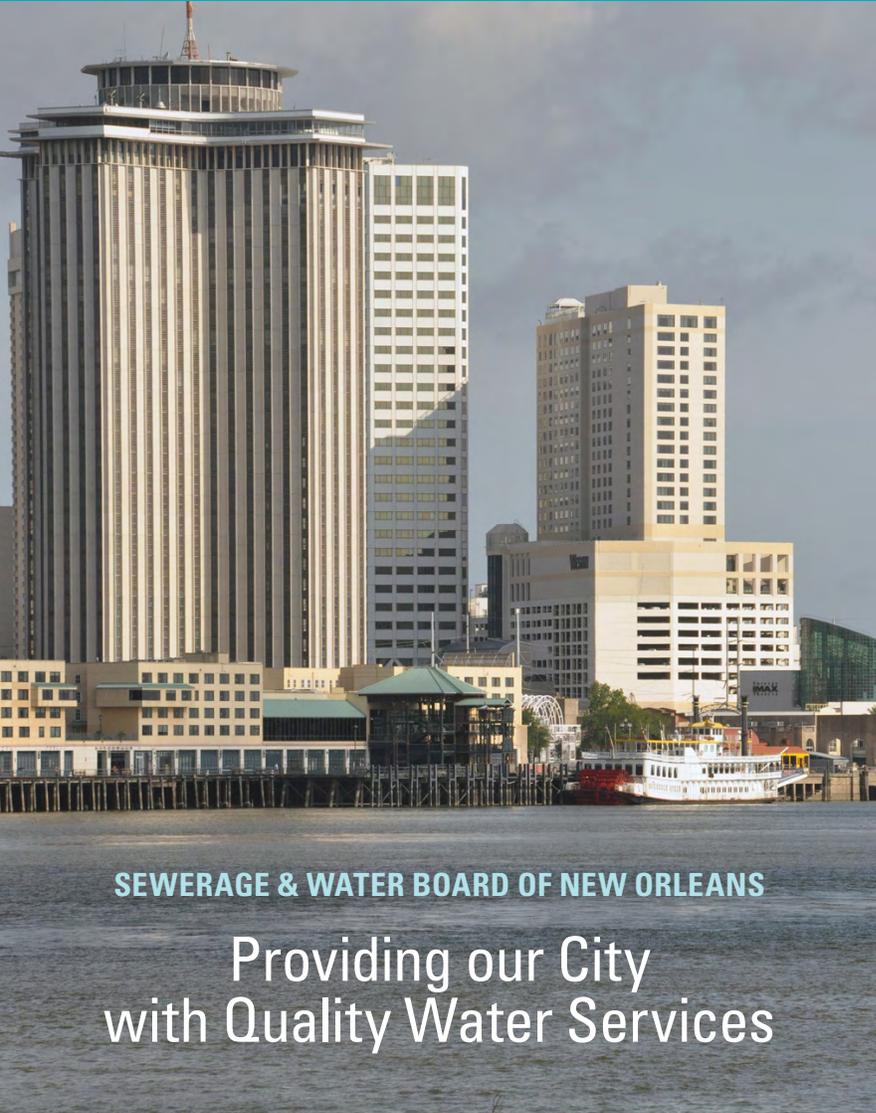
It is named “Quality Water 2016” because all of the water tests results are from 2016. You may have some questions, simply because the report is technical in nature and many chemical names and terms are used. While we would have liked to make it simpler, most of the wording used (including the names of all the chemical compounds) is required by the EPA.

If you have any questions that are technical in nature, please call the S&WB Water Quality Laboratory, (504) 865-0420. We are pleased to provide this very positive report, which shows that the water supplied by the Sewerage and Water Board is of the highest quality. The entire report is posted here on the website. We hope that you will review it to learn about the purification process and the high quality of your drinking water.

**Please scroll to view the entire report.**

# 2016 Quality WATER

**A REPORT ON THE STATE OF TAP WATER IN NEW ORLEANS** The Sewerage and Water Board is pleased to provide you with this Annual Water Quality Report (also known as the Consumer Confidence Report) for the year 2016. *(Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien).* The Board is proud to provide the citizens of New Orleans each day with an abundant supply of quality water for personal and business needs and fire protection.



**SEWERAGE & WATER BOARD OF NEW ORLEANS**

Providing our City  
with Quality Water Services

## Sustaining Life Through Safe and Steadfast Water Quality System

From its scanty beginnings in 1718 supporting the city's original 14 blocks, the drainage, sewerage and water infrastructure have made it possible to build and later expand the City of New Orleans. In 1899, the Louisiana Legislature authorized the creation of the Sewerage & Water Board of New Orleans (S&WB) to provide vital water and sewerage services. The Sewerage & Water Board of New Orleans is proud of its 118 year history of providing safe, reliable water to the City of New Orleans including Algiers.

Today, the Sewerage & Water Board supports a thriving and vibrant city more than 350 square miles and a population of more than 401,967 including both the East Bank and West Bank service areas. The Sewerage & Water Board provides New Orleans with high quality water, sewerage and drainage services 24 hours a day, 365 days a year, where and when they are needed. On a normal day, New Orleans and Algiers combined uses approximately 141.3 million gallons of water for essential health,

[continued page 7](#)

## SOURCE & TREATMENT

Presented by the Sewerage and Water Board of New Orleans.  
Serving the East and West Banks of Orleans Parish.

The Mississippi River water is treated at the Carrollton Water Purification Plant for East Bank customers in Orleans Parish and at the Algiers Water Purification Plant for West Bank customers in Orleans Parish. In 2016, the Carrollton Water Purification Plant provided an average of 131.6 million gallons of drinking water per day to an estimated population of 348,420. The Algiers Water Plant provided an average of 9.7 million gallons of drinking water per day to an estimated population of 53,547. (Source of population figures is GCR, Inc). The treatment process at each plant is similar. The raw water is treated with chemicals called "coagulants" which cause the small particles in the water to come together to form larger particles which are then allowed to settle out of the water. Rapid sand filtration is used to remove even smaller particles. During the process, chloramine is added to disinfect the water. Lime is added to provide corrosion control and to increase the pH of the water to stabilize the disinfectant. Fluoride is added to prevent tooth decay.

# How contaminants can get into SOURCE WATER

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulates and establishes limits for contaminants in bottled water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Our water source is the Mississippi River, a surface water source. A Source Water Assessment has been conducted by the State of Louisiana Department of Environmental Quality. This is an assessment of a delineated area around our water source through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources. According to the Source Water Assessment, our water system had a susceptibility rating of high. If you would like to review the Source Water Assessment, contact the Sewerage and Water Board Laboratory at (504) 865-0420 or [waterinfo@swbno.org](mailto:waterinfo@swbno.org).

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline: (1-800-426-4791).



The Water Quality Laboratory is located within the Carrollton Water Purification Plant. It monitors river water and finished water from both the East Bank and Algiers. The Water Quality Laboratory assures the safety and purity of the city's water by testing for organic, inorganic and microbiological compounds.

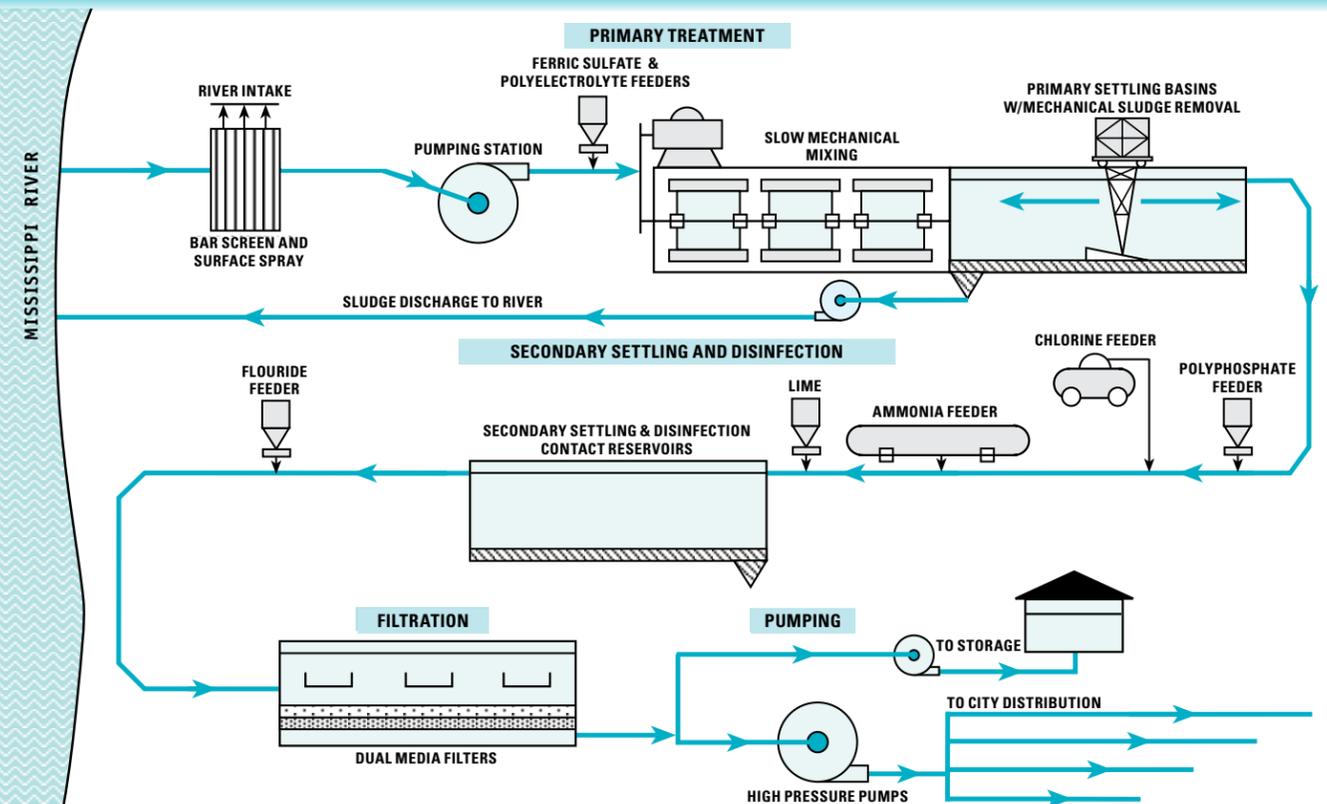
## Cryptosporidium

Cryptosporidium is a microscopic organism which, if ingested, can cause diarrhea, nausea, cramps, fever, and other gastrointestinal symptoms. It is found in sewage and animal waste which is washed into rivers and streams when it rains. Cryptosporidium can be found in nearly all surface waters in the United States. The best defense a water utility can provide is an effective treatment process which includes the multiple barriers of effective and continuous coagulation, disinfection, and filtration.

In healthy persons, symptoms usually last two to three days. However, cryptosporidiosis can be very serious for people with severely weakened immune systems, such as chemotherapy and transplant patients and people with HIV infections. These people should consult a physician about extra protection, including boiling water, using certified bottle water, or using a home water filter capable of removing Cryptosporidium.

While we occasionally detect low levels of Cryptosporidium in our source water (Cryptosporidium was not detected in any of our 2016 monthly Mississippi River samples), it has only been detected in our tap water three times – twice in 1998 and once in March 2014. In each instance, the concentration was 1 oocyst or less per 100 liters of water. The test for Cryptosporidium cannot determine if an oocyst is viable or capable of causing illness, and an occasional oocyst in the drinking water of utilities that use surface water is not unusual and does not necessarily indicate a health problem.

## General flow diagram of water purification process



# DRINKING WATER Quality Results

from 2016 Compliance Monitoring

From January 1st thru December 31st 2016, monitoring was carried out to determine if the quality of the drinking water met State and Federal Regulations. This is called compliance monitoring.

## definitions

In the table (right), you will find many terms and abbreviations, some with which you might not be familiar. To help you better understand these terms, we provide the following definitions:

**Parts per million (ppm)** – This is a measure of concentration which corresponds to one milligram of a substance in one liter of water (mg/L), or about one drop in 10 gallons.

**Parts per billion (ppb)** – This is a measure of concentration which corresponds to one microgram of a substance in one liter of water (ug/L), or about 1 drop in 10,000 gallons.

**Parts per trillion (ppt)** – This is a measure of concentration which corresponds to one nanogram of a substance in one liter of water (ng/L), or about one drop in 10,000,000 gallons.

**Running Annual Average (RAA)** – Average of data from the previous 12 months, calculated after each monitoring event or period.

**Locational Running Annual Average (LRAA)** – Average of data at a specific monitoring location from the previous 12 months, calculated after each monitoring event or period.

**Nephelometric Turbidity Unit (NTU)** – This is a measure of the cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the average person. We monitor turbidity because it is a good indicator of the effectiveness of our treatment process.

**Action Level (AL)** – The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.

**Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Contaminant Level (MCL)** – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Residual Disinfectant Level (MRDL)** – The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Contaminant	Meets Requirements?	Units	Amounts Detected		Highest Level Allowed (MCL)	MCL Goal (MCLG)	Likely Sources
			East Bank	West Bank			
<b>REGULATED CONTAMINANTS detected in 2016</b>							
Total Coliform Bacteria	Yes	% Positive samples per month	0 – 1.3	0 – 4.0	5	0	Naturally present in the environment
Turbidity <sup>1</sup>	Yes	NTU: Lowest monthly % of samples ≤ 0.3:	0.05 – 0.3 100.0	0.06 – 0.3 100.0	1.49 for any one sample; 95% of samples each month should be ≤ 0.3	N/A	Soil runoff
Fluoride	Yes	ppm	0.26 – 0.92 Avg. = 0.71	0.53 – 0.92 Avg. = 0.76	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate+Nitrite (as Nitrogen)	Yes	ppm	1.7 – 1.7	1.9	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Copper	Yes	90th percentile ppm: No. sites exceeding AL:	0.2 0 of 60 sampled	0.1 0 of 47 sampled	Action Level = 1.3 for 90th percentile	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	Yes	90th percentile ppb: No. of sites exceeding AL:	7 1 of 60 sampled	3 1 of 47 sampled	Action Level = 15 ppb for 90th percentile	0	Corrosion of household plumbing systems, erosion of natural deposits
Barium	Yes	ppm	0.046 – 0.047	0.025	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Selenium	Yes	ppb	ND	0.52	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Uranium	Yes	ppb	0.53 – 0.54	0.87	30	0	Erosion of natural deposits
Combined Radium	Yes	pCi/L	ND – 2.3	ND	5	0	Erosion of natural deposits
Gross Beta Particle Activity <sup>2</sup>	Yes	pCi/L	2.5 – 3.9	1.4	50	0	Decay of natural and man-made deposits
Total Chlorine Residual	Yes	ppm	0.5 – 5.0 highest RAA = 3.4	0.0 – 4.9 highest RAA = 2.7	MDRL: RAA should be ≤ 4	MDRLG: RAA ≤ 4	Disinfectant added during water treatment
Total Organic Carbon Removal <sup>3</sup>	Yes	ratio	1.00 – 2.08 lowest RAA = 1.19	1.00 – 1.58 lowest RAA = 1.01	TT RAA should be ≥ 1	N/A	Naturally present in the environment
Total Trihalomethanes (TTHMs)	Yes	ppb	15 – 39 highest LRAA = 30	11 – 57 highest LRAA = 34	LRAA should be ≤ 80	N/A	Byproduct of drinking water disinfection
Total Haloacetic Acids (HAA5s)	Yes	ppb	6 – 29 highest LRAA = 26	7 – 46 highest LRAA = 31	LRAA should be ≤ 60	N/A	Byproduct of drinking water disinfection
<b>UNREGULATED CONTAMINANTS <sup>4</sup> detected in 2014 and 2015 (from EPA's Unregulated Contaminant Monitoring Regulation 3)</b>							
1,4-Dioxane	N/A	ppb	ND – 0.40 Avg = 0.18	0.10 – 0.21 Avg = 0.15	N/A	N/A	Used in the manufacture of paper, cotton, textile products, automotive coolant, cosmetics, and shampoos.
Vanadium	N/A	ppb	0.5 – 1.1 Avg = 0.8	0.5 – 4.1 Avg = 2.4	N/A	N/A	Naturally present in the environment; used as vanadium pentoxide which is a chemical intermediate and a catalyst.
Molybdenum	N/A	ppb	ND – 2.6 Avg = 1.6	ND – 2.2 Avg = 1.2	N/A	N/A	Naturally present in the environment; molybdenum trioxide is a commonly used chemical reagent.
Strontium	N/A	ppb	120 – 230 Avg = 176	110 – 180 Avg = 139	N/A	N/A	Naturally present in the environment; was used in the glass of CRT televisions.
Chromium – total	N/A	ppb	ND – 0.26 Avg = 0.06	ND – 0.80 Avg = 0.27	N/A	N/A	Naturally present in the environment; used in the manufacture of steel and other alloys.
Chromium – hexavalent	N/A	ppb	ND – 0.09 Avg = 0.03	ND – 0.12 Avg = 0.09	N/A	N/A	Naturally present in the environment; used in the manufacture of steel and other alloys, chrome plating, dyes and pigments, leather tanning, and wood preservation.
Chlorate	N/A	ppb	120 – 490 Avg = 273	92 – 1100 Avg = 438	N/A	N/A	Byproduct of disinfection of drinking water; agricultural defoliant; used in the production of chlorine dioxide.

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Its sources include soil runoff.

<sup>2</sup> The MCL for Beta Particles is 4 mrem/yr. EPA considers 50 pCi/L to be the level of concern for Beta Particles.

<sup>3</sup> Total Organic Carbon Removal is reported here as the ratio of TOC removal credits to that required by regulation.

<sup>4</sup> Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. Monitoring for these contaminants helps EPA decide whether these contaminants should have a standard.

N/A = not applicable

## Tips for Reducing Lead Exposure from Drinking Water

1. **Flush** your tap if your water has not been used for several hours. Depending on the source of lead, this may take from 30 seconds to 5 minutes. Lead can dissolve into drinking water from lead-containing plumbing when it sits in pipes for several hours.
2. **Use only cold water** for cooking and preparing beverages and infant formula. Lead dissolves more easily in hot water.
3. **Do not** boil water to remove lead. Boiling your water will not reduce lead.
4. **Ask your physician** to test your child's blood lead levels. Louisiana Law requires primary medical providers to perform lead testing on children ages 6 months to 6 years.
5. **Test** your water for lead. Contact the S&WB at 52-WATER for more information.
6. **Regularly clean** your faucets' aerators. Lead particles can collect in aerators.
7. **Install** "lead-free" fixtures. Prior to January 2014, fixtures containing up to 8% lead were allowed to be labeled lead-free. Now all fixtures are required to contain less than 0.25% lead.
8. **Replace** galvanized plumbing. Lead from lead service lines can build up in galvanized pipes and later be released.
9. **Replace** lead service lines. **The service line from the meter to the house is the property owner's responsibility.** If water testing finds high lead levels in your water, the S&WB may replace the service line from the water main to your meter if it is lead. **Be aware** that service line replacements may cause a temporary increase in lead in your drinking water. Studies have found elevated lead levels lasting from days to 6 months after a lead service line replacement.
10. **Consider** using a water filter. Not all filters remove lead. **Be sure the filter meets NSF Standard 53 for lead. Be sure** to replace and maintain the filter according to the manufacturer's instructions.

## Is There Lead in New Orleans' Tap Water?

**Answer:** There is no lead in the treated water leaving our purification plants.

However, homes that are unoccupied and homes that are undergoing or have recently undergone plumbing renovation may experience elevated lead concentrations in their tap water. Homeowners should thoroughly flush all household plumbing before re-occupying the property.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Sewerage and Water Board of New Orleans is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the US EPA Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

## Who Tests Your Water?

Testing to determine if New Orleans' drinking water complies with State and Federal drinking water quality standards is performed by the Louisiana Department of Health and Hospitals, the Sewerage and Water Board Water Quality Laboratory, and DHH certified contract laboratories. Where a contaminant was detected in compliance monitoring, we have reported it in the table on the back of this page.

In addition to the compliance monitoring required by drinking water regulations, the S&WB performs daily quality control testing in its laboratory as well as continuous online monitoring of important water quality parameters.

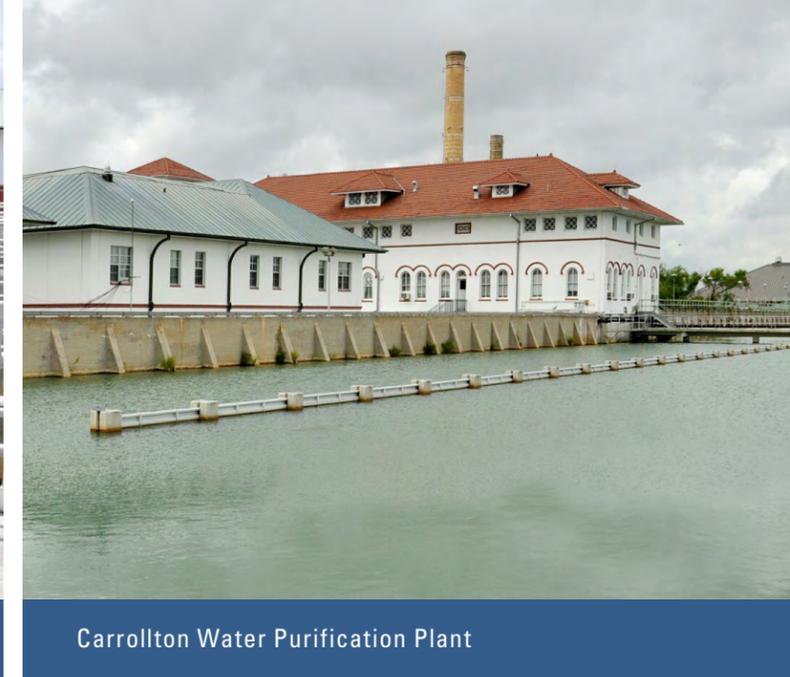
## Checking for Chemical Spills in the Mississippi River

The Sewerage and Water Board participates in a program set up by the Louisiana Department of Environmental Quality called the Early Warning Organic Compound Detection System (EWOCDS). DEQ provides equipment at locations along the Mississippi River from Baton Rouge to New Orleans to check for volatile organic contaminants in the river.

The New Orleans location is the Sewerage and Water Board Water Quality Laboratory. Lab personnel analyze river samples each day and report any contamination to DEQ. The S&WB in turn benefits from advance notification of spills provided by upriver EWOCDS locations.



Algiers Water Purification Plant



Carrollton Water Purification Plant

continued from cover

household, commercial, industrial and fire-fighting purposes.

Reliable, high quality water is a basic need essential to everyone. It is, therefore, worth knowing the specific details about your water quality. The Sewerage & Water Board 2016 Water Quality Report explains where New Orleans' water comes from, what's in it, how it's monitored, tested, treated, delivered and more.

The Sewerage & Water Board employees are proud that, once again, the first-rate quality drinking water they produced in 2016 met or exceeded all U.S. Environmental Protection Agency water quality standards and regulations. The Sewerage & Water Board delivered this high quality and abundant water supply to homes and businesses in Orleans Parish for drinking, personal care and fire-fighting needs. A team of expert managers, engineers, operators, machinists, laboratory chemists, technicians, environmental experts, pumping and power professionals, experienced pipe, valve and fire hydrant repair crews and administrative support personnel all work to achieve a single goal. That goal is a safe and steadfast water supply for the citizens of New Orleans.

The Sewerage & Water Board manages a complex water supply system stretching from the East Bank to the West Bank and featuring an intricate series of pipelines and treatment systems. Two features of this system stand out. First, the drinking water provided is among the safest in the country. Second, the system for delivering that water leads the nation in infrastructure waterline replacement.

The Mississippi River is New Orleans' only source of potable water. The river flows past New Orleans at an average rate of 300 billion gallons per day. Raw river water is brought into two treatment plants by four intakes. The intakes are protected from ships and barges by concrete barriers and wooden pilings. The water is then treated via a complex purification process at the Carrollton Water Purification Plant for East Bank customers and at the Algiers Water Treatment Plant for West Bank customers. Combined, the two plants treat approximately 52 billion gallons of water per year. The plants remove about 23,000 tons of solid material from the raw river water. In 2016, the Carrollton Plant provided an average of 131.6 million gallons

of drinking water per day to a population estimated to be about 348,420 people. The Algiers Water Plant provided an average of 9.7 million gallons to a population estimated to be about 53,547 people.

Safe drinking water from the treatment plants is distributed through 2,000 miles of pipes, mains and 143,600 service connections. The water is also carried to approximately 17,000 fire hydrants for fire-fighting purposes.

### Water Quality Laboratory Conducts Continuous Monitoring

The Sewerage & Water Board maintains a state-of-the-art Water Quality Laboratory to safeguard continuous and consistent superior water quality. The lab occupies 8,500 square feet of floor space in the Carrollton Water Plant. It is a cutting-edge environmental analysis facility, employing state-of-the-art technology for detecting and identifying contaminants in water at sub part per billion concentrations. The overall laboratory is divided into areas specifically designed and equipped for organic, inorganic, microbiological and plant production analyses.

The Water Quality Laboratory is staffed by chemists, microbiologists and technicians. Key instrumentation used by the lab includes a gas chromatograph-mass spectrometer system, a gas chromatograph, and a total carbon analyzer. The laboratory performs analyses for monitoring the quality of river water and finished water sampled from locations throughout the East Bank and West Bank sections of the city. Information generated in the laboratories is used to control plant treatment processes and research methods to improve those processes and the drinking water.

The Water Quality Laboratory works in conjunction with the Louisiana Department of Health & Hospitals (DHH) on water testing. The Water Quality Laboratory regularly collects and tests water samples from designated sampling points throughout the system. These tests ensure the water delivered to New Orleans meets or exceeds federal and state drinking water standards and regulations.

continued page 8



(left) This photo shows crews replacing a 48" waterline in the construction of the Florida Avenue Canal Project, a part of the relocation and replacement of waterlines included in the Southeast Louisiana Urban Flood Control Program (SELA). Besides waterline replacement being a part of SELA, the city has a larger city-wide multi-year infrastructure repair/recovery waterline replacement program funded by FEMA. This program is designed to restore the city's water distribution system. To ensure that the city is maximizing available funding, various agencies are involved in the co-ordination efforts of the program.

(right) The two new elevated water storage tanks planned for the Carrollton Plant will be a compliment to those tanks currently in service. These tanks will have a combined capacity of 4 million gallons and not exceed 200 feet in height. They will help mitigate the loss of water pressure due to power interruptions.

continued from page 7

### New Orleans Trailblazer In Replacing Aging Infrastructure

The ongoing issues with water quality in Flint, Michigan have raised concerns over aging infrastructures in cities across the country. In most U.S. cities these outdated infrastructures include lead piping. But, while most cities are scratching their heads trying to figure out how to pay the enormous costs of an infrastructure overhaul, New Orleans is currently engaged in the most massive waterline replacement in the city's history. The Sewerage & Water Board of New Orleans is able to undertake this colossal endeavor because of FEMA and other funding secured post Hurricane Katrina.

The S&WB is currently implementing a \$188 million Waterline Replacement Program which is part of a larger City-wide, multi-year infrastructure repair/recovery effort funded by FEMA. The S&WB is coordinating design activities with the Department of Public Works' (DPWs') Recovery Roads Program. The water lines are being replaced concurrently with the Recovery Roads Program. FEMA worked with the S&WB and Department of Public Works (DPW) to develop a systematic, cost effective approach to restore the water distribution system. Approximately 135 miles of water lines qualified for replacement citywide. The program affects residents citywide and is being managed on a neighborhood-by-neighborhood basis.

### A Rigorous Purification Process Safeguards High Quality Water

The Sewerage & Water Board utilizes a stringent, 3-stage water purification process to ensure water safety. The water that leaves the Eastbank and Westbank treatment plants is safe, high quality drinking water that is lead-free. As a municipal water utility, the S&WB is highly regulated by both the Environmental Protection Agency (EPA) and the Louisiana Department of Health & Hospitals

(DHH). EPA regulations indicate that 90 percent of the homes sampled must have no greater than 15 parts per billion (ppb) of lead in the drinking water. Samples in New Orleans have consistently been below EPA's action levels.

Once water leaves the treatment plant it may pass through lead service lines between the water main and the residence or building. The pipes do, however, have a protective coating and corrosion control chemicals are used to minimize lead contamination. The Waterline Replacement Program will replace existing pipes with concrete and PVC pipe. Since the Sewerage & Water Board is only responsible for service lines up to the meter, homeowners with old lead pipes are encouraged to replace them with PVC piping. If the homeowner is unable to replace the plumbing, water filters are available in varying price ranges that filter out lead. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the US EPA Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

### Annual Water Quality Report

Since 1998, the U.S. Environmental Protection Agency (EPA) has required all water utilities to produce and distribute annual water quality reports. The report is extensive and elaborates in its discussions on how the board meets EPA water standards and regulations. The EPA, with further enforcement by the Louisiana Department of Health and Hospitals (DHH), regulates for contaminants that are selected for enforcement. The board has been vigilant and proactive in its water purification mandates and complies with all regulations.

# 2016 Quality WATER

Sewerage and Water Board of New Orleans

**Mayor Mitchell J. Landrieu**  
*President*

**Scott B. Jacobs**  
*President Pro Tem*

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Dr. Tamika Duplessis

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**Cedric Grant**  
*Executive Director*

**Joseph R. Becker**  
*General Superintendent*



# WATER



# is LIFE

Drinking water is one of the essential ingredients for life.

We at the Sewerage and Water Board of New Orleans are committed to supplying safe drinking water of a quality that surpasses the requirements of State and Federal Regulations.



## Conclusion

We are confident that a review of this report will help you better understand your water system and the complete dedication of the Sewerage and Water Board members and staff to provide the highest quality water for its customers—the citizens of New Orleans. After all, the Board members and employees are customers too. We are proud of our water, which has been judged the "Best Tasting" in competition with other water from cities throughout the United States. Taste is important, but equally important are the other water quality parameters described in this report. The Sewerage and Water Board will continue to produce high quality water through the use of proven treatment processes, as well as modern technology.

### FOR MORE INFORMATION — Sewerage and Water Board of New Orleans

Laboratory: (504) 865-0420 | Emergency Department: (504) 52-WATER (529-2837) | E-mail address: [waterinfo@swbno.org](mailto:waterinfo@swbno.org)  
Internet Home Page: [www.swbno.org](http://www.swbno.org)

More information can be obtained at Sewerage and Water Board meetings which are held on the third Wednesday of every month at 625 St. Joseph St., New Orleans, LA 70065, at 9 a.m.

U.S. E.P.A. Safe Drinking Water Hotline: 1-800-426-4791 | U.S. E.P.A. Drinking Water Internet Home Page: [www.epa.gov/safewater](http://www.epa.gov/safewater)

**Nora Freeman**

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# **Water Audit**

## **FY 2008 – FY 2015**

*Technical Memorandum*

*Sewerage and Water Board of New Orleans*

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*March 15, 2017*

# Water Audit

## Sewerage and Water Board of New Orleans

### Fiscal Years 2008 – 2015

#### Technical Memorandum

**To:** Bob Miller, Deputy Director SWBNO

**From:** Nora Freeman, Freeman LLC

**Date:** March 15, 2017

#### Executive Summary

A water audit update for the Sewerage and Water Board of New Orleans (SWBNO) was performed by the consultant using the standard methodology outlined in the American Water Works Association's (AWWA) M36 Manual: Water Audits and Loss Control (4<sup>th</sup> edition). This methodology was co-developed by AWWA and the International Water Association (IWA) and includes clear steps to conduct the audit along with standard definitions.

The objectives of the water audit update were to prepare the 2015 Infrastructure Leak Index (ILI) without additional data development and field work, document source data, trend water audit key indicators over the last eight years (2008 – 2015), compare the SWBNO ILI results to similar utilities in size, age and infrastructure and to present recommendations for a reasonable ILI target and associated actions for improvement.

Based on the data inputs provided, SWBNO's ILI and Non-Revenue Water (NRW) annual performance for the past eight years is as follows:

<u>FISCAL YEAR</u>	<u>ILI</u>	<u>NRW % by Cost</u>
2008	46.0	22.9%
2009	46.6	24.3%
2010	41.9	20.1%
2011	44.7	16.2%
2012	43.2	16.5%
2013	36.8	17.1%
2014	37.1	16.5%
2015	35.9	17.9%

SWBNO's 2015 ILI was the lowest (35.9) of the eight years of calculations. SWBNO's 2013 ILI was second lowest with a result of 36.8. The 2015 ILI result is driven by two factors: 1) Reduction in Real Losses in FY2015 and 2) the Unavoidable Annual Real Loss (UARL) in FY2015 is the highest it has been over the eight years of water audit calculations. The UARL increase in FY2015 was driven most significant by the 1.5% increase in the number of customers in FY2015 over FY2014. UARL is a reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. It is a theoretical value formulated based on factors provided by the AWWA methodology.

NRW is defined as the difference between System Input Volume and Billed Authorized Consumption. Said another way, NRW is all Unbilled Water, plus Real Losses plus Apparent Losses.

SWBNO's ILI and NRW annual performance continues to indicate an opportunity for significant improvement. One improvement that can be more directly implemented is the development of methodology to account for SWBNO Real Losses and Apparent Losses. In this current analysis, the majority of losses in both the Real Losses and Apparent Losses categories were input at zero since SWBNO does not currently have estimates they feel are accurate. SWBNO NRW will certainly decrease as accurate estimates can be obtained.

In order for SWBNO to improve water accounting, staff should consider indentifying a single point of accountability for updating the water audit and ILI performance. This accountability could be with a single manager or a team of managers. It is recommended that the accountable individual(s) focus on making incremental year-over-year improvements to the inputs of the water audit data in two categories: Real Losses and Apparent Losses. Real Losses include water loss that could be recoverable within the distribution system such as assumed leaks on active water mains or abandoned service lines, any type of errors or overflows that are captured through the SCADA system and leaks that occur on private property (after the meter).

Improvements to water audit data inputs should also be made to the Apparent Losses category of the audit. The Apparent Losses are "paper" losses of water that can occur in the billing system. For instance, "paper" losses happen when accounts are not entered into the billing system correctly or when there are conversion errors when data is transferred into the billing system either from meter reading or when new services are set up. Apparent Losses also include water losses due to broken or malfunctioning meters, adjustments made to customer accounts due to the customer's water leak and any unauthorized use of water (e.g., theft).

Furthermore, SWBNO should examine and ensure the accuracy of the Water System Input Volume number. This figure relies almost exclusively on the exactness of the SWBNO production master meters. The testing results and routines for these production meters should be considered, and adjustments to the System Input Volume made accordingly.

SWBNO should also continue its efforts to improve the integrity of its distribution system. These two undertakings, working on improving water audit data inputs and improving the distribution system integrity performed in parallel, will bring consistent improvement in the ILI and NRW indicators.

Finally, it needs to be pointed out that SWBNO provides significant amounts of free water to local government institutions, according to state statutes. SWBNO should continue to evaluate whether changes in the number and types of institutions receiving free water is reasonable. The water industry as a whole as moved to greater accountability for all its water use, including water that is provided for public or charitable purposes. Many utilities in the country use an inter-fund transfer for payment of water and related services to other city or public agencies/departments.

SWBNO should also seek to lower the caps in the amount of free water provided to the revenue-generating public agencies. These caps are almost 30 years old and water usage trends nationally have declined dramatically in the last 10 years.

With regard to a recommended ILI target for SWBNO, the focus again should be on achieving year-over-year improvements to the ILI. SWBNO has shown improvements in driving down the ILI over the last 3 years. Based on the ILI results in 2008 - 2015, an annual goal of reducing the eight year average ILI by 4 appears to be a reasonable target. Using a multi-year ILI average reduces the variability in year-to-year results. The eight year ILI average is 41.5 and decreasing it 4 points between 2016 and 2020 translates into a recommended ILI target goal of reaching 21.5 by 2020. At that time, hopefully the distribution system integrity and economic conditions are both greatly improved and an ILI target consistent with industry ranges can be planned.

SWBNO is in a unique operating and economic environment due to the destruction and damage caused twelve years ago by the 2005 Hurricane Katrina. Its circumstances and performance is not readily comparable to any other utility in the country nor was its exceptional situation considered by the Water Loss Control Committee when they were drafting the target range recommendations for the M36 manual (that can be found later in this report). Thus, ILI comparisons to other utilities will be of minimal value now and likely into the near future as well. Available ILI data is presented later in this report, however, for reference.

## Introduction

The consultant performed a water audit using data available from SWBNO and the standard methodology outlined in the 2009 AWWA M36 Manual: Water Audits and Loss Control. This methodology was co-developed by AWWA and the IWA and includes clear steps to conduct the audit along with standard definitions.

The scope of work for the SWBNO water audit included:

- Customizing the basic AWWA water audit spreadsheet software application for SWBNO
- Gathering the data needed to populate the water audit model without additional field work
- Documenting source data and identifying estimates used for the calculations
- Reviewing SWBNO's Water Contributed for Public Purposes
- Computing SWBNO's ILI for the past five years
- Obtaining ILI data from other utilities using the AWWA and IWA standards
- Preparing a final water audit report along with the electronic version of the water audit model.

To accompany the new M36 Manual: Water Audits and Loss Control, free water audit software, in Excel format, is available on AWWA's website. The software, updated in 2014, can be found by copying or typing the below into your web browser:

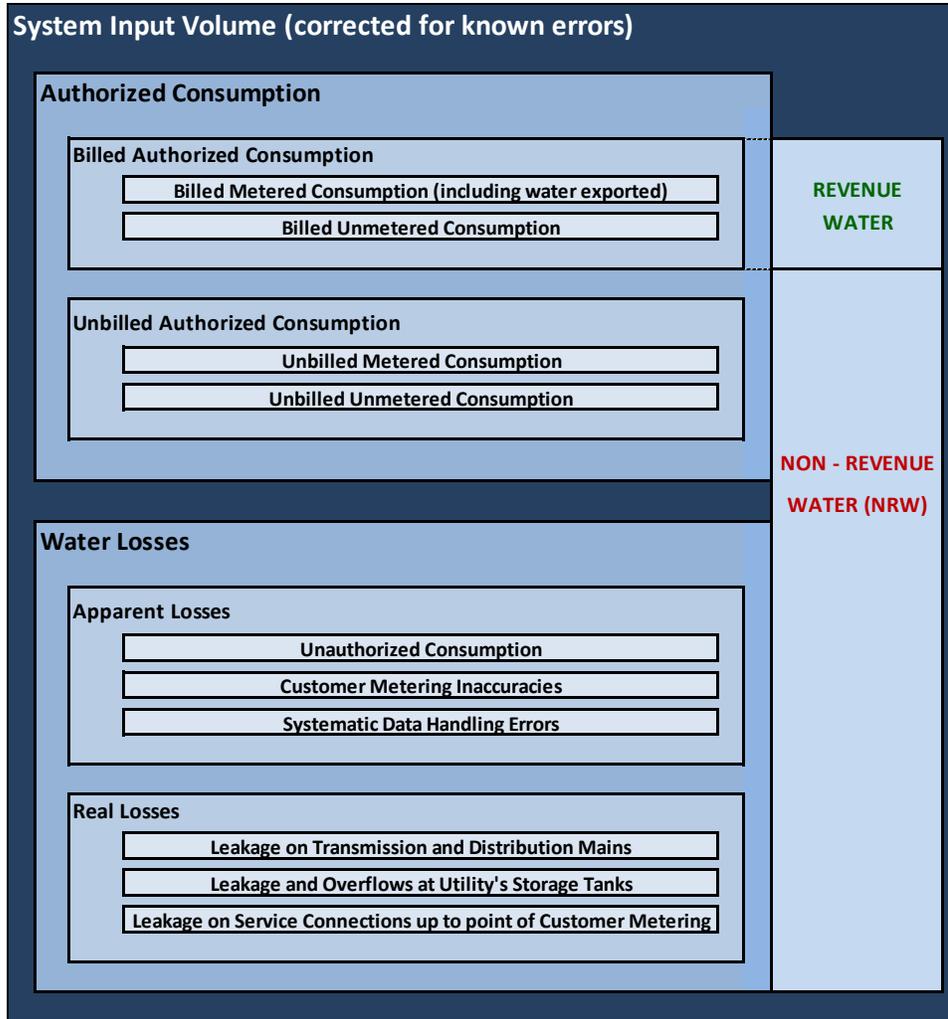
<http://www.awwa.org/home/awwa-news-details/articleid/2641/awwa-free-water-audit-software-version-5-0-now-available.aspx>

This software is an elementary start for those utilities that want to complete a water audit for a single year. Since SWBNO desired multiple years of data for this water audit, a more detailed water audit Excel model and workbook was built exclusively for SWBNO. This Detailed Water Audit workbook is based upon the work of the Philadelphia Water Department (PWD) and George Kunkel, a national leader in water auditing, and the Louisville Water Company (LWC), which has been piloting annual water audits using the new methodology, in beta form beginning in 2005. This customized Excel model will also be maximally beneficial for SWBNO's future water auditing work.

It should be pointed out that 2010 was first time SWBNO has conducted a water audit using the new AWWA/IWA methodology. This methodology is currently only being used by the most progressive and/or most water-challenged utilities around the country. SWBNO staff are to be commended for their forward-thinking in taking this first step in improved water accounting and setting a baseline upon which future improvements can be quantitatively measured.

## AWWA Water Audit Methodology: A Review

The AWWA M36 Manual: Water Audits and Loss Control that was first published in 2009, and is in its 4<sup>th</sup> edition in 2016, provides standard definitions to calculate water loss for the first time in US water industry’s history. These standard definitions and calculations assist with target-setting for the utility along with benchmarking across utilities (although most utilities have yet to implement the model and the few utilities that are using it are often reluctant to share their data). The AWWA methodology is based on the IWA’s own methodology and is summarized in the following diagram:



Definitions for the components of the water audit can be found in Appendix A.

## SWBNO Water Audit Results

The Water Audit Model and calculation spreadsheets that comprise the SWBNO Detailed Water Audit for FY2008 – FY2015 can be found in Appendix B. The results of the water audit performance indicators for fiscal years 2008 -2015 are summarized below. The change in the key result indicators from FY2008 and FY2015 are presented, and green indicates a change that shows stronger performance.

PERFORMANCE INDICATOR	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	Change	5 Year AVG
									FY15 vs. 08	FY11-15
<b>Financial Indicators</b>										
Non-Revenue Water as percent by Volume	75.1%	75.2%	71.3%	73.5%	73.8%	71.1%	72.1%	70.7%	-4.4%	72.2%
Non-Revenue Water as percent by Cost	22.9%	24.3%	20.1%	16.2%	16.5%	17.1%	16.5%	17.9%	-5.0%	16.8%
<b>Water Resources Indicators</b>										
Inefficiency of use of Water as a Resource	58.3%	59.7%	53.9%	57.0%	57.6%	54.6%	55.4%	54.2%	-4.1%	55.8%
<b>Operational Efficiency Indicators</b>										
Apparent Losses as % of System Input Volume	0.75%	0.74%	0.86%	0.80%	0.79%	0.87%	0.84%	0.88%	0.1%	0.8%
Real Losses per Service Connection per Day	819.4	811.8	704.5	725.7	707.5	616.9	620.0	597.0	-222.49	653.4
Real losses per Mile of Main per Day	46,931	49,695	48,565	56,731	53,730	43,074	43,752	42,600	-4,331.08	47,977.3
Real Losses per Serv Conn per Day per psi	13.2	13.1	11.4	11.7	11.4	9.9	10.0	9.6	-3.59	10.5
Unavoidable Annual Real Losses (UARL)	1.83	1.91	1.84	1.93	1.99	2.11	2.13	2.16	0.33	2.1
Infrastructure Leakage Index (ILI)	46.0	46.6	41.9	44.7	43.2	36.8	37.1	35.9	-10.17	39.6

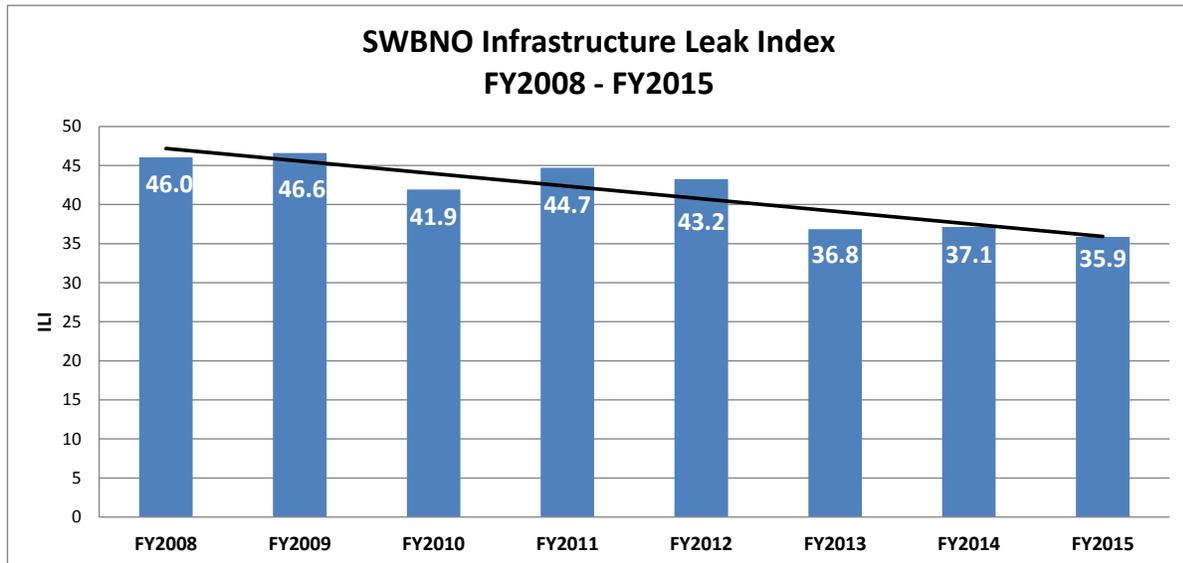
### Infrastructure Leak Index

The ILI is a key performance indicator in the water audit. SWBNO's lowest ILI performance was this latest year of analysis, FY2015, with a result of 35.9. The FY2013 ILI performance was the second lowest of the eight year study period with a result of 36.8. The SWBNO ILI ranges from a low of 35.9 in FY2015 to a high of 46.6 in FY2009.

The low ILI results in FY2015, FY2014 and FY2013 are driven by two factors: 1) Reduction in Real Losses in these 3 most recent years over prior years and 2) the Unavoidable Annual Real Loss (UARL) in FY2015, FY2014 and FY2013 are higher than in any of the previous years of water audit calculations.

The UARL increase in FY2013-FY2015 was driven by both the increase in miles of main, which increased almost 13% between FY2012 and FY2013 and number of customers, which increased almost 4% between FY2012 and FY2013, and approximately 1.5 percent a year since. UARL is a reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. It is a theoretical value formulated based on factors provided by the AWWA methodology.

Future improvements in estimating Real and Apparent Losses within the water audit will directly impact the ILI indicator in a positive direction. The following chart illustrates SWBNO's ILI performance from FY2008 - FY2015.



The ILI is calculated by taking the Real Losses in the distribution system and dividing by the UARL. Again, the UARL is a reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. It is a theoretical value formulated based on factors provided by the AWWA methodology

SWBNO's ILI performance greatly exceeds any other large water utility in the United States currently performing water auditing and publically sharing their results, as demonstrated in the next section of the report. SWBNO staff is to be commended, however, for establishing their ongoing ILI baseline as part of this study and should seize the opportunity to make significant improvements to its water accounting and auditing in the coming years.

*Non-Revenue Water*

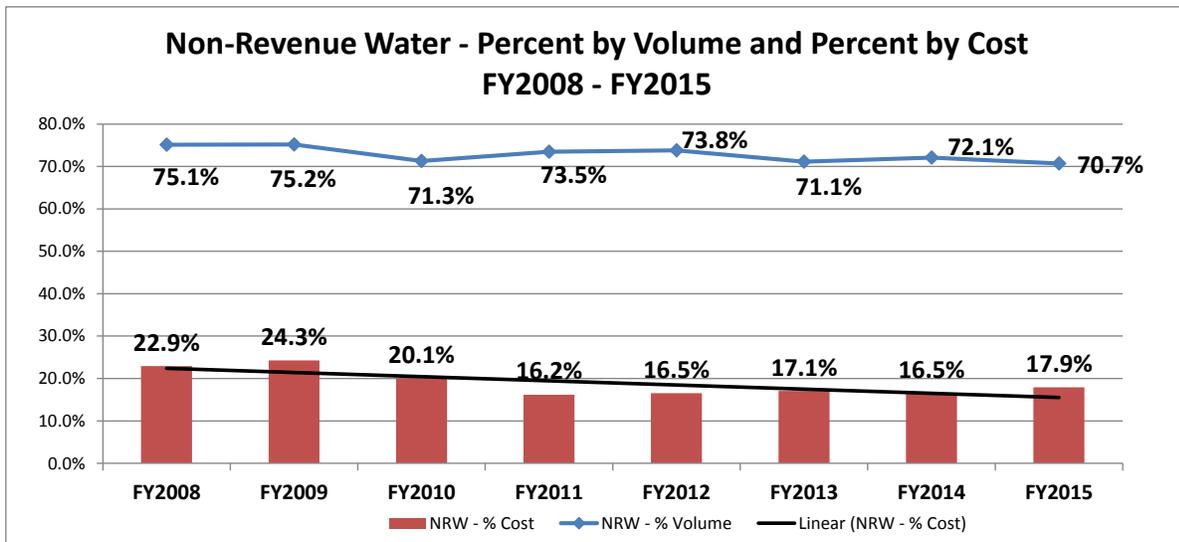
Non-Revenue Water (NRW) is calculated both as a percent of water volume and a percent of cost. Along with the ILI, both are key performance indicators to track as a part of the water audit.

*NRW as a Percent of Cost*

NRW as a percent of cost in FY2015 was 17.9%. NRW as a percent of cost ranged from a low of 16.2% in FY2011 to high of 24.3% in FY2009. NRW as a percent of cost in FY2015 was 17.9%. NRW as a percent of cost has remained relatively stable for the last five years ranging between 16-18%.

*NRW as a Percent of Volume*

NRW as a percent of volume was it’s lowest in eight years of water audit analysis in FY2015 and was 70.7%. NRW as a percent of volume was its highest in FY2009 with a result of 75.2%. NRW as a percent of volume has remained fairly consistent over the eight year study period. The following chart illustrates NRW as a percent of cost and volume for FY2008-2015.



It should be noted that SWBNO’s NRW by volume (70+%) is extremely high for municipal water utilities. This is due in part to the amount of free water that is contributed by SWBNO for public purposes. For comparative purposes, the Philadelphia Water Department (PWD) may be a good example to look at due to the fact that the utility has been conducting water audits for many years and it is of similar age, size, demographics and infrastructure to SWBNO. PWD’s NRW by volume has ranged from a high of 36.3% to a low of 32.1% between the years 2000 and 2008.

### ILI Comparisons

Research into ILI performance at other water utilities using AWWA's water audit methodology was performed as part of this analysis for SWBNO. This water audit approach is still becoming standard for many US water utilities and only a select few states, where water is a scarce resource, are moving to mandate water auditing. Utilities that have begun to use this approach are just starting to share their water audit and ILI data.

In 2011, twenty one water utilities provided their water audit data to members of the AWWA Water Loss Control Committee for review and careful validation of the data. This is the first validated ILI data set from individual North American water utilities, and this work remains unrepeated since 2011. This data was presented at the 2011 AWWA Annual Conference and Exposition and at the 2011 AWWA Distribution System Symposium.

The key performance indicators for these twenty one utilities are shown below where average and a minimum and maximum range for each key performance indicator versus SWBNO's FY2015 results are presented.

Key Performance Indicator	# of utilities	Average	Range	SWBNO FY2015 Results
NRW - % by Volume	21	22.6%	6.8% - 45.5%	70.7%
NRW - % by Cost	21	10.0%	1.7% - 23.0%	17.9%
NRW - Total Annual Cost (million \$)	21	5.81	0.04 - 42.97	43.64
Apparent Losses (gals/conn/day)	21	14.95	2.36 - 65.89	0.9%
Real Losses (gals/conn/day)	18	63.32	17.07 - 149.71	597
Real Losses (gals/mile of main/day)	3	1,821.15	645.42 - 3,496.21	42,600
Infrastructure Leak Index (ILI)	21	3.57	1.15 - 12.68	35.9

As SWNBO is a large utility, the below table may be most helpful for comparison purposes as it outlines the differences in the water audit key performance indicators for large and small utilities (defined as less than and greater than 50,000 connections).

Key Performance Indicator	# connections < 50,000			# connections > 50,000		
	# of utilities	Average	Range	# of utilities	Average	Range
NRW - % by Volume	10	24.1%	12.2% - 45.5%	11	21.4%	6.8% - 39.6%
NRW - % by Cost	10	9.3%	3.1% - 17.5%	11	10.6%	1.7% - 23.0%
Apparent Losses (gals/conn/day)	7	10.38	2.36 - 20.64	11	19.11	6.45 - 65.89
Real Losses (gals/conn/day)	3	58.71	26.08 - 149.71	11	66.24	17.07 - 124.36
Real Losses (gals/mile of main/day)	10	1,821	645 - 3,496	0		
Infrastructure Leak Index (ILI)	10	3.51	1.24 - 12.68	11	3.62	1.15 - 9.89

The twenty one utilities that participated in this 2011 AWWA water audit data validation study include:

1. City of Asheboro (NC)
2. Austin Water Utility (TX)
3. City of Belmont (NC)
4. Birmingham Water Works Board (AL)
5. City of Calgary, Alberta (Canada)
6. Greater Cincinnati Water Works (OH)
7. Cobb County Water System (GA)
8. Dalton Utilities (GA)
9. DC Water and Sewer Authority (Washington DC)
10. Golden State Water Company, Clearlake (CA)
11. Golden State Water Company, Ojai (CA)
12. Halifax Regional Water Commission, Nova Scotia (Canada)
13. Louisville Water Company (KY)
14. Orange County Utilities Department (FL)
15. Philadelphia Water Department (PA)
16. Pennsylvania American Water, Pittsburgh (PA)
17. City of Rio Rancho (NM)
18. Washington County Service Authority (VA)
19. City of Wauwatosa Water Utility (WI)
20. City of Wilmington (DE)
21. Water and Wastewater Authority of Wilson County (TN)

For more specific utility ILI performance, below is 2012 ILI data provided by the American Water Works Association. Of the utilities on this list, DC Water and Sewer is probably the most comparable to SWBNO given the age, urban demographics and complexity of infrastructure.

Utility	2012 ILI
<b>DC Water &amp; Sewer Authority (Washington DC)</b>	7.2
<b>Greater Philadelphia (107 systems)</b>	4.0
<b>Birmingham Water Works</b>	4.0
<b>Pennsylvania American Water, Pittsburgh</b>	3.3
<b>Metro Water Services (Nashville)</b>	3.3
<b>Austin Water Utility</b>	3.0
<b>Louisville Water Company</b>	2.4
<b>Greater Cincinnati Water Works</b>	2.4
<b>Orange County (FL) Utilities Department (Orlando)</b>	1.3
<b>Cobb County Water System (Atlanta)</b>	1.1

It needs to be pointed out that many utilities found in the table above have been conducting water audits for many years and over that time have developed sophisticated methods for estimating water losses across the audit. As SWBNO continues to refine its water audit methodology and develop confident estimates of water loss, their ILI will reduce.

## Recommendations for ILI Target and Actions for Improvement

The AWWA M36 Manual recommends that ILI target-setting be an internal process for each utility and that the goal should be improvement to the ILI over time, not reaching some “ideal target” or mean ILI of comparable utilities. AWWA’s Water Loss Control Committee and their M36 Manual recommends the following financial, operational and water resource considerations be evaluated by a utility when looking to set an ILI target:

Target ILI Range	Financial Considerations	Operational Considerations	Water Resource Considerations
<b>&lt;1.0</b>	Two possibilities exist if the ILI is less than 1.0: 1) You are maintaining your leakage at low levels in a class with the top worldwide performers in leakage control or 2) A portion of your data may be flawed, causing your losses to be greatly understated. This is likely if you calculate a low ILI but do not employ extensive leakage control practices in your operations.		
<b>1.0 – 3.0</b>	Water resources are costly to develop or purchase; ability to increase revenues via water rates is greatly limited because of regulations or low ratepayer affordability.	Operating with system leakage above this level would require expansion of existing infrastructure and/or additional water resources to meet the demand.	Available resources are greatly limited and are very difficult and/or environmentally unsound to develop.
<b>&gt;3.0 – 5.0</b>	Water resources can be developed or purchased at reasonable expense; periodic water rate increases can be feasibly imposed and are tolerated by the customer population.	Existing water supply infrastructure capability is sufficient to meet long-term demand as long as reasonable leakage management controls are in place.	Water resources are believed to be sufficient to meet long-term needs, but demand management interventions are included in the long-term planning.
<b>&gt;5.0-8.0</b>	Cost to purchase or obtain/treat water is low, as are rates charged to customers.	Superior reliability, capacity and integrity of the water supply infrastructure make it relatively immune to supply shortages.	Water resources are plentiful, reliable, and easily extracted.
<b>Greater than 8.0</b>	Although operational and financial considerations may allow a long-term ILI greater than 8.0, such a level of leakage is not an effective use of water as a resource. Setting a target level greater than 8.0, other than as an incremental goal to a smaller long-term target, is discouraged.		

As previously noted, SWBNO is in a unique operating environment due to the destruction and damage caused by Hurricane Katrina in 2005. Its circumstances and performance is not readily comparable to any other utility in the country nor was its exceptional situation considered by the Water Loss Control Committee when they were drafting the above target range recommendations for the M36 manual. SWBNO needs to focus, therefore, not on reaching a certain target ILI range, but rather on the incremental year-over-year improvement to the ILI as part of its internal processes and annual goal-setting. Based on the ILI results in 2008 - 2015, an annual goal of reducing the ILI by 4, based on the 8 year ILI average, appears to be a reasonable target. Using a multi-year average reduces the variability in year-to-year results, and the eight year ILI average is 41.5. This translates into a recommended 5 year ILI target goal of reaching 21.5 by 2020. At that time, hopefully the distribution system integrity and economic conditions are both improved and a 5-10 year ILI target in the range of similar utilities can be planned.

The following suggestions are offered to SWBNO as ways to improve its ILI performance over time:

1. **Update the Water Audit Annually.** The water audit should be updated on an annual basis. A single manager or group of managers should be identified to take responsibility for SWBNO's water audit and the identified person(s) should be held accountable for the utility's water auditing progress. The responsible person(s) should select a cross-functional team consisting of in-house staff from distribution operations, treatment plant operations, billing and customer service, finance, information technology and engineering. Finance will be a key player on the team and it may be useful to consider having one of the accountable persons be named from the finance department. The water audit should receive the same rigorous attention as the annual financial audit and ideally the updating of the water audit should coincide with the financial audit. The water audit should become part of a long-term strategy to track changes in SWBNO operations management, customer demand and utility policy. The implementation of water auditing is growing in popularity all across the US and water audits are now part of state reporting requirements for California, Texas, North Georgia, New Mexico and the Delaware River Basin Commission (DRBC) which encompasses New York, Pennsylvania, Delaware and the Army Corps of Engineers.
2. **Add and Refine Estimates of Unbilled and Unmetered Water Loss in the Audit.** Potentially the most cost-effective and most impactful way to improve the ILI is to continue data collection to confidently estimate Authorized Water Consumption in the Unbilled and Unmetered category. Authorized Unbilled and Unmetered water is part of every water utility's water loss. Current SWBNO databases should be examined to identify low-cost data capture techniques and estimating for water lost during activities including:
  - all water main flushing, including after a main break repair, after a new main installation and to address and maintain distribution water quality
  - fire hydrant testing
  - finished water storage tank draining.

3. **Add and Refine Estimates of Apparent Losses.** Apparent Losses are “paper” losses and consist of customer water use that is not recorded due to metering error, billing error, leak adjustments/credits and incorrect assumptions of unmeasured use or unauthorized consumption. The economic impact of Apparent Losses is greater than Real Losses, since the marginal cost of Apparent Losses occurs at the retail rate charged to customers. For this audit, SWBNO Apparent Losses were all input at zero since accurate estimates of loss could not be confidently obtained, with the exception of customer meter under registration. A conservative estimate of 3% loss for each customer class was used to estimate loss. Apparent Losses are absolutely occurring with the SWBNO metering and billing systems. For reference and perhaps a future benchmark, PWD Apparent Losses for its 2008 water audit (including meter inaccuracy, unauthorized consumption and systematic data handling errors) were 8.2% of total system input volume. Current SWBNO databases should be examined to identify low-cost data capture techniques and estimating methods for Apparent Losses including:

- unauthorized consumption or theft. This includes illegal connections by-passing the meter, water taken out of fire hydrants for heat relief, irrigation, etc. and illegal water restorations of water service after a turn-off for non-payment.
- billing procedure errors. This can include occurrences of accounts not entered into/created in the billing system but a customer is receiving water service and accounts with active consumption but not billed (or held) for some reason. The losses associated with these types of errors are generally more complicated for utilities to discover and estimate but internal discussions and options for estimating these losses should be considered by SWBNO.
- broken or defective meters. There are Apparent Losses for the utility between the time a broken or defective meter is identified in the field and ultimately repaired or exchanged.
- missing meter. There are Apparent Losses for the utility between the time a meter is identified as missing in the field and ultimately replaced.
- leak adjustments. These are adjustments made to customer accounts, through internal policies, for leaks that occur on the customer side of the meter.

4. **Add and Refine Estimates of Real Losses.** Real Losses are the physical escape of water from the distribution system and include leakage and overflows prior to the point of end use (customer meter). This is water loss that could be recoverable within the distribution system. For this audit, SWBNO Real Losses were all input at zero since accurate estimates of loss could not be confidently obtained. Real Losses are absolutely occurring with the SWBNO distribution system, and are typically the largest volume of water lost by utilities within the water audit framework. SWBNO is not likely to be an exception to this rule. For reference and perhaps a future benchmark, PWD Real Losses for its 2008 water audit were 9.9% of total system input volume. Current SWBNO databases should be examined to identify low-cost data capture techniques and estimating methods for Real Losses including:

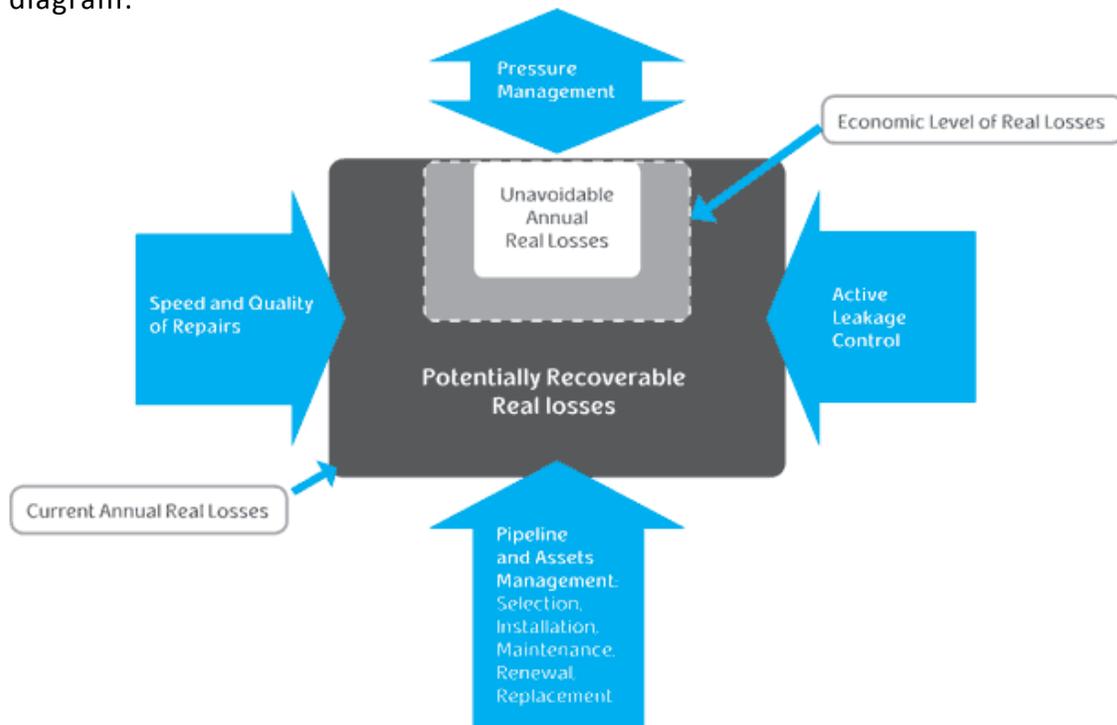
- water lost before a transmission or distribution main break is repaired, both for reported breaks and breaks/leaks that SWBNO thinks goes unreported

- unreported and reported leaks on fire hydrants
- unreported and reported leaks on distribution system valves
- assumed leaks on abandoned service lines before detection and service discontinuance
- storage tank errors or overflows that are captured through the SCADA system
- water leakage or seepage that occurs at the finished water storage sites.

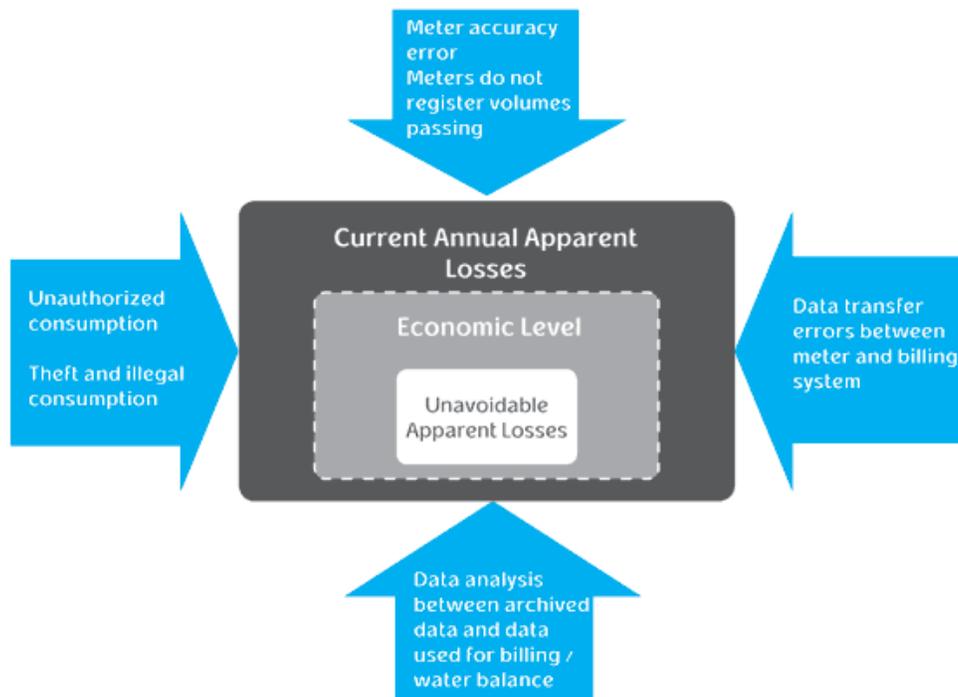
Although real water loss occurs at the cost of production (involving treatment, operations and maintenance costs), improvements in distribution system integrity should be a high priority for SWBNO. It should be noted, however, that even with improvements to the distribution system and added water audit refinement to Apparent Loss volumes, Real Losses are always likely to be higher.

5. **Validate the Accuracy of the System Input Volume.** The System Input Volume is perhaps the most important piece of data in the water audit. All water loss categories are calculated and figured from this number. Therefore, is it vital that the System Input Volume be recorded as accurately as possible. The System Input Volume should include corrections for meter accuracy of the master production meters at the water treatment plants. SWBNO staff should look at the last time the production meters were tested and include appropriate adjustments to System Input Volume within the water audit based on the testing frequency and results. Other factors to consider are SCADA and plant instrumentation outage/maintenance histories, mass balance comparisons of flows into and out of water treatment plants and any specific operational history at the treatment plant facility that could impact production meter accuracy or data reporting.
6. **Identify and Implement Processes to reduce Real and Apparent Loss.** Once confident estimates of Real and Apparent Loss are developed – and this process can take several years - and an updated water audit has been validated, methods to reduce Real and Apparent Loss volumes through field and billing process improvements should be evaluated. This evaluation should include calculating the economic level of loss for both Real and Apparent Losses. This should be balanced with the cost-effectiveness of any new process or procedure implemented.

Factors to consider in the management of Real Losses are outlined in the below diagram:



Factors to consider in the management of Apparent Losses are outlined in the below diagram:



7. **Review and Revise the Quantity of Free Water Provided** – The caps that have been set for the three revenue-generating public agencies (City Park, Audubon Park and the New Orleans Museum of Art) are almost 30 years old. Water Conservation philosophies and the installation of water conservation fixtures has been a continual national trend since these caps were established. Utilities all over the country have seen their water consumption decline across each customer class as a result and this trend is most pronounced in the water utilities serving an urban population. These caps need to be analyzed against actual consumption and re-setting should be considered. Corresponding to the water conservation trend, the water industry has experienced an increased accountability in tracking and ensuring payment for the water consumed. This development can be seen in the establishment of revenue protection units and departments within water utilities and also in the decline of water provided for completely free, even for public or charitable purposes. Many water utilities track water use at public agencies many times inter-fund transfers are charged for the water and related services. SWBNO should consider investigating changes in the state statutes to the number and types of institutions being provided free water.

### **Summary**

The goal of the water audit is to as accurately as possible document all the places – in the street and on paper – that water is lost within the utility. As more water is accounted for within the audit confidently, improvements to the performance indicators will be seen. Then, decisions can be considered about process changes needed to drive increased recovery of operational costs. The water audit data can drive, for instance, discussions on whether it is more economical to implement a program to stop leaking abandoned service lines and ferrules (real loss) or to implement a replacement program to update failing meters (apparent loss).

SWBNO has taken the first step required to quantitatively discuss its water loss and related improvements in economic terms. SWBNO has significant opportunities for improvement to its water auditing and can be successful in their future audit efforts by focusing internally on incremental improvement over time, not on comparisons to other utilities.

# **Appendix A**

# **Water Audit**

# **Components and**

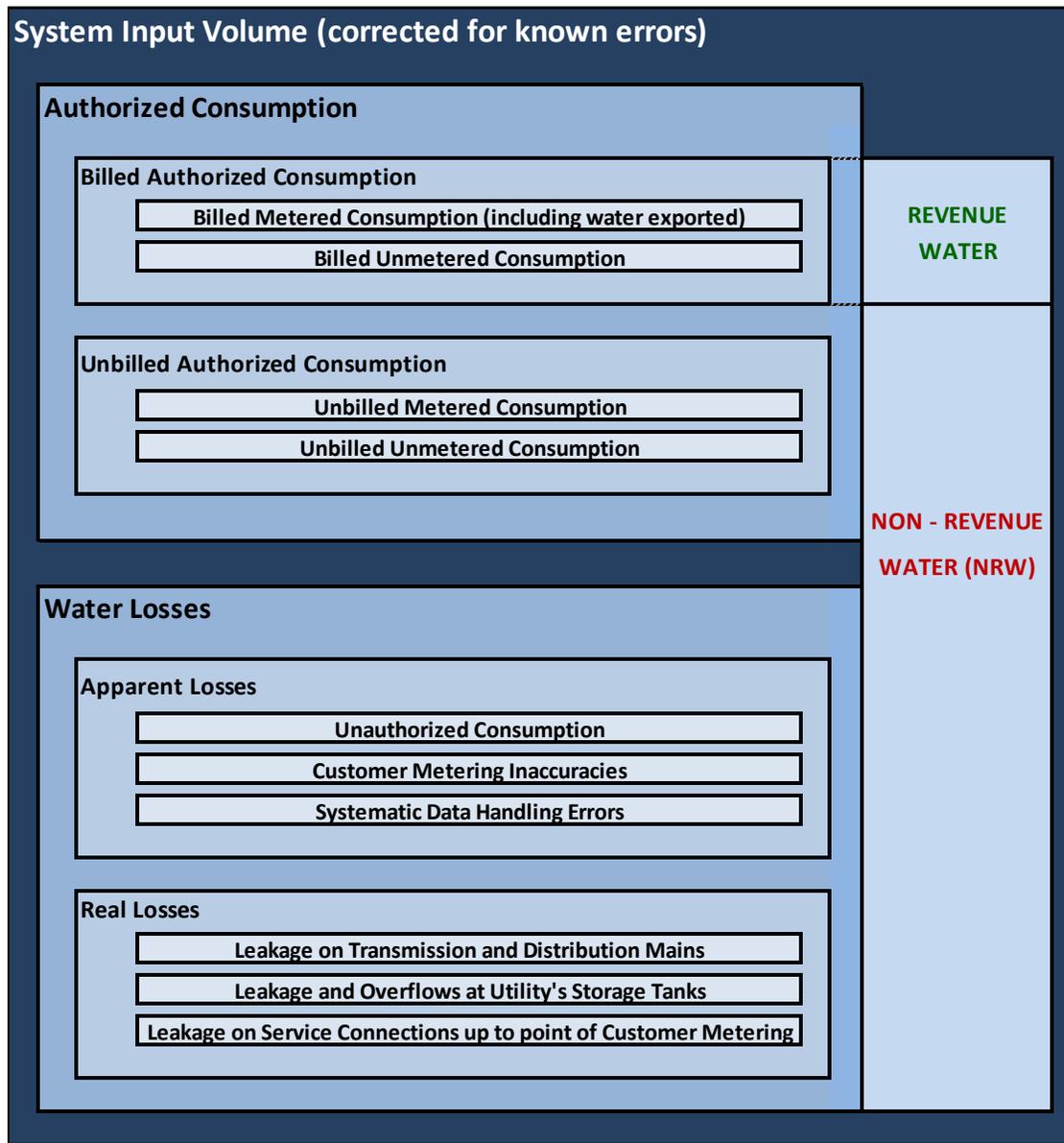
# **Definitions**

*Sewerage and Water Board of New Orleans*

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*March 15, 2017*

The format and components of the water audit are as follows:



The components of the water audit are defined as follows:

**System Input Volume:** The annual volume input to the water supply system.

**Authorized Consumption:** The annual volume of metered and/or unmetered water taken by registered customers, the water supplier and others who are authorized to do so.

**Water Losses:** The difference between system Input Volume and Authorized Consumption, consisting of Apparent Losses plus Real Losses.

**Apparent Losses:** Unauthorized Consumption, all types of metering inaccuracies and systematic data handling errors.

**Real Losses:** The annual volumes lost through all types of leaks, breaks and overflows on mains, service reservoirs and service connections, up to the point of customer metering.

**Revenue Water:** Those components of System Input Volume which are billed and produce revenue.

**Non-Revenue Water (NRW):** The difference between System Input Volume and Billed Authorized Consumption.

**Unavoidable Annual Real Losses (UARL):** A theoretical reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. A key variable in the calculation of the ILI.

$$\text{UARL (gallons/ day)} = 5.41L_m + 0.15N_c + 7.5L_p \times P \text{ where}$$

$L_m$  = length of water mains, miles

$N_c$  = number of service connections

$L_p$  = total length of private pipe, miles =  $N_c \times$  average distance from curbstop to customer meter

$P$  = average pressure in the system, psi

**Infrastructure leak Index (ILI):** Ratio of Current Annual Real Losses (CARL) to Unavoidable Annual Real Losses (UARL); good for operational benchmarking for Real Loss control.

Definitions are taken from the 2009 M36 Manual: [Water Audits and Loss Control](#).

# **Appendix B**

## **Detailed Water Audit FY 2008 – 2015**

### **Excel Workbook Model and Spreadsheets**

*Sewerage and Water Board of New Orleans*

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*March 15, 2017*

**SWBNO Detailed Water Audit for FY 2008 - 2015**  
using American Water Works Association Format

Category / Components		Consumption Amount								Annual Cost								Source and Notes	
		FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08		
1	<b>I. System Input Volume</b>																		
2	<b>I.a. Finished water delivered from plants</b>	51,301	52,195	51,958	54,469	55,151	52,264	54,451	52,656									2013 & 2014 CAFR IV-20 & IV-21, 2012, 2011, 2010 CAFR Table IV-E, 2009 CAFR IV-8, 2008 CAFR IV-8	
3	<b>II. Authorized Usage</b>																		
4	<b>a. Billed Metered</b>																		
5	<b>Retail customers</b>																		
6	<b>Residential</b>	7,734	7,366	7,511	6,639	6,801	7,122	7,153	6,674									2013 & 2014 Report SABR190, 2012, 2011, 2010, 2009 and 2008 CAM Residential + Multi-Family	
7	<b>Commercial</b>	7,326	6,977	7,323	7,434	7,625	7,632	6,024	6,067									2013 & 2014 Report SABR190, 2012, 2011, 2010, 2009 and 2008 CAM Commercial	
8	<b>Industrial</b>	238	227	158	194	203	261	327	362									2013 & 2014 Report SABR190, 2012, 2011, 2010, 2009 and 2008 CAM Industrial	
9	<b>b. Billed Unmetered</b>	0	0	0	0	0	0	0	0										
10	<b>c. Unbilled Metered</b>																		
11	<b>Non-Revenue Water</b>																		
12	<b>City of New Orleans &amp; public instit.</b>	1,450.4	1,415	1,339	1,295	1,423	1,744	972	1,599	\$512,722	\$465,091	\$336,751	\$278,014	\$308,489	\$439,384	\$267,378	\$554,120	2013 & 2014 Tiffany Julien, 2012, 2011, 2010, 2009 and 2008 Water Contributed for Public Purpos	
			2.7%	2.6%	2.4%	2.6%	3.3%	1.8%	3.0%										
13	<b>d. Unbilled Unmetered</b>																		
14	<b>Capital main construction flushing</b>	1	1	1	1	1	1	1	1									Estimate based on 49 chlorination jobs in 2011 and 51 in 2012 with 25K gallons used to flush on each job. (25K estimate is based on 12.5K gal/hr measured on auto flushing device used in system for 2 hour flush).	
15	<b>Fire-fighting, street cleaning, flushing sewers, cleaning public spaces</b>	5130	5,220	5,196	5,447	5,515	5,226	5,445	5,266									Assume 10% of water pumped in each of 2014 - 2008.	
16	<b>Distribution Water Quality</b>																		
17	<b>Flushing for Carrollton &amp; Algiers</b>	33.9	57.5	27.8	38.3	36.3	10.0	6.7	34.7									Carrollton estimate based on metered automatic flushing (in 2009) and manual flushing (2008 & 2009). Manual flushing during June-Sept, 3 time per week, 8 hrs per flush. Auto flushing gal/hr used to estimate manual flushing volume. Only data for Venetian Isles subdivision used for this estimate. Other flushing amounts not quantified (very few). Estimate of additional 30 MG used during boil advisory in Sept - Oct of 2008 due to hurricanes Gustav & Ike. Algiers (.1MG per year) estimate based on 2-3 flushing events per year for 2-3 hour duration. Flushing volume not metered but assumed to be approximately equal to 12K gallons/hr. 2010 assumes similar auto and manual flushing in Venetian Isles to maintain water quality. No emergency flushing in 2010. Limited flushing in Algiers.	
18	<b>Plant Usage</b>																		
19	<b>Carrollton</b>	1428.0	1,450.4	1,435.3	1,507.2	1,526.1	1,501.2	1,513.0	1,466.0									Estimate based on approximately 3% of production.	
20	<b>Algiers</b>	111.0	107.7	123.5	126.8	128.4	123.2	118.1	113.7									Estimate based on approximately 3% of production.	
21	<b>Total Authorized Water Consumption</b>	23,452	22,822	23,114	22,683	23,258	23,621	21,560	21,583										
22	<b>III. Water Losses (Item I - Item II)</b>	27,849	29,373	28,844	31,786	31,893	28,643	32,891	31,073										

**SWBNO Detailed Water Audit for FY 2008 - 2015**  
using American Water Works Association Format

IV. Documented Water Losses																	
A. Apparent Losses																	
Customer meter under registration	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	
<b>Residential, Commercial, Industrial</b>	459	437	450	428	439	450	405	393	\$162,258	\$143,636	\$113,215	\$ 91,872	\$ 95,175	\$113,461	\$111,464	\$136,196	Assume 3% loss of consumption for each customer class.
Unauthorized Consumption (theft)	0	0	0	0	0	0	0	0									
Customer meter malfunction (broken meter)	0	0	0	0	0	0	0	0									
Accounts lacking proper billing	0	0	0	0	0	0	0	0									
Accounts not entered into system																	
Conversion of data																	
Internal process failures																	
Leak adjustments (actual revenue loss)	0	0	0	0	0	0	0	0									
<b>Apparent Loss Total</b>	<b>459</b>	<b>437</b>	<b>450</b>	<b>428</b>	<b>439</b>	<b>450</b>	<b>405</b>	<b>393</b>									
B. Real Losses	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	
Operator error /overflows	0	0	0	0	0	0	0	0									
Known																	
Unknown-SCADA problems																	
<b>Unavoidable annual real loss (UARL)</b>	<b>782</b>	<b>779</b>	<b>771</b>	<b>727</b>	<b>704</b>	<b>682</b>	<b>697</b>	<b>668</b>									See UARL worksheet for calculation.
Recoverable leakage																	
Transmission and distribution main leaks	0	0	0	0	0	0	0	0									
Service lines	0	0	0	0	0	0	0	0									
Leaks on private properties	0	0	0	0	0	0	0	0									
Other Estimated Loss from Distribution Sys	0	0	0	0	0	0	0	0									
<b>Real Loss Total</b>	<b>782</b>	<b>779</b>	<b>771</b>	<b>727</b>	<b>704</b>	<b>682</b>	<b>697</b>	<b>668</b>	\$276,424	\$256,123	\$193,920	\$156,064	\$152,577	\$171,830	\$191,818	\$231,517	
Documented Water Losses	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08	
	1,241	1,216	1,221	1,155	1,142	1,133	1,102	1,061	\$438,682	\$399,759	\$307,134	\$247,936	\$247,752	\$285,290	\$303,282	\$367,713	
Undocumented Water Losses	FY15	FY14	FY13	FY12	FY11	FY10	FY09	FY08									
	26,608	28,157	27,623	30,631	30,750	27,510	31,789	30,011	Item III - Item IV. Also referred to "Balancing Error (Gap)"								

Unavoidable Annual Real Loss Calculation FY2008 - FY2015

**Assumptions**

	FY2015	FY2014	FY2013	FY2012	FY2011	FY2010	FY2009	FY2008	Notes
Miles of Main	1,819	1,812	1,806	1,599	1,519	1,590	1,791	1,791	2014, 2013, 2012, 2011, 2010 CAFR IV-32. 2008 CAFR. 2009 data duplicated 2008 values. Post Katrina East Bank psi avg is 62-68 psi. West Bank maintains 62 psi exiting treatment plants (Info on Recovery Drive).
Average psi	62	62	62	62	62	62	62	62	
Days in year	365	365	365	366	365	365	365	366	2008 and 2012 were leap years w/ 366 days.
Curb stop to meter connections	129,809	127,876	126,106	121,435	118,745	111,834	109,640	102,575	B&V Final Report on Operations
Average length of curb-stop to meter (ft)	30	30	30	30	30	30	30	30	Estimated used based on industry average (30)
	1.5%	1.4%		3.8%					

**Calculation**

Component	UARL factor	FY 2015 Calculation	
Mains (gal/mile/day/psi)	5.41	222,697,078	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	434,075,082	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	125,180,867	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2015 Total</b>		<b>781,953,026</b>	<b>781.95</b>

Component	UARL factor	FY 2014 Calculation	
Mains (gal/mile/day/psi)	5.41	221,840,080	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	434,075,082	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	123,316,785	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2014 Total</b>		<b>779,231,946</b>	<b>779.23</b>

Component	UARL factor	FY 2013 Calculation	
Mains (gal/mile/day/psi)	5.41	221,105,510	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	428,066,817	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	121,609,891	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2013 Total</b>		<b>770,782,218</b>	<b>770.78</b>

Component	UARL factor	FY 2012 Calculation	
Mains (gal/mile/day/psi)	5.41	196,299,188	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	413,340,453	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	117,426,265	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2012 Total</b>		<b>727,065,906</b>	<b>727.07</b>

Component	UARL factor	FY 2011 Calculation	
Mains (gal/mile/day/psi)	5.41	185,968,588	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	403,079,903	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	114,511,336	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2011 Total</b>		<b>703,559,826</b>	<b>703.56</b>

Component	UARL factor	FY 2010 Calculation	
Mains (gal/mile/day/psi)	5.41	194,715,233	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	379,620,513	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	107,846,737	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2010 Total</b>		<b>682,182,482</b>	<b>682.18</b>

Component	UARL factor	FY 2009 Calculation	
Mains (gal/mile/day/psi)	5.41	219,269,085	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	372,172,980	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	105,730,960	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2009 Total</b>		<b>697,173,026</b>	<b>697.17</b>

Component	UARL factor	FY 2008 Calculation	
Mains (gal/mile/day/psi)	5.41	219,869,823	Mains x miles of main x avg. psi x days
Service Connections			
Units rate per gal/service connection/day/psi	0.15	349,144,785	units rate per gal x connections x avg. psi x days
Units rate per gal/mile/day/psi	7.5	99,188,859	units rate per gal/mile/day/psi x connections x avg. psi x days x avg length of curb-stop to meter
<b>FY 2008 Total</b>		<b>668,203,467</b>	<b>668.20</b>

**FY 2015 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>			Plant Pumpage
Total System Input Volume:	52,195	143.00	
<b>AUTHORIZED CONSUMPTION</b>			
Billed Metered:	15,298.00	41.91	
Billed Unmetered:	-	0.00	
Unbilled Metered:	1,450.40	3.97	
Unbilled Unmetered:	6,703.90	18.37	
<b>Total Authorized Consumption:</b>	<b>23,452.30</b>	<b>64.25</b>	

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
Unauthorized Consumption:	0.00	0.00	Theft or illegal use
Customer Metering Inaccuracies & Leak Adjustments:	459	1.26	3% Customer meter under registration and leak adjustments
Data Handling Errors:	-	0.00	Accounts lacking proper billing (no estimation available)
<b>Total Apparent Losses:</b>	<b>459</b>	<b>1.26</b>	"Paper loss"
<b>Real Losses</b>			
<b>Total Real Losses:</b>	<b>28,284</b>	<b>77.49</b>	Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>	<b>28,743</b>	<b>78.75</b>	Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
Length of Mains:	1,819	1,819	length (miles) of all pipelines except service connections
Number of Service Connections:	129,809	129,809	number of customers
<b>Connection Density:</b>	<b>71</b>	<b>71</b>	# of connections / length of mains (miles)
(pipe length between curbside customer meter or property boundary) Average Length (feet) of Private Pipe:	30.0	30	length between stop & main (not included in length of main)
Average Operating Pressure:	62.00	62	psi

<b>COST DATA</b>			
Total Annual Cost of Operating Water System Per Year:	\$ 84,854,293	Total O&M	
Customer Retail Unit Cost Per MG:	\$ 5,066.41	Total O&M / Total Consumption Sold	Total Consumption is Billed and Unbilled Metered
Short-Term Marginal Production Cost Per MG:	\$ 353.50	Energy & Chemicals / Total Finished Water Delivered	

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
Non-revenue water as percent by volume:		70.7%	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume
* Non-revenue water as percent by cost:		17.9%	See footnote for formula
<b>Water Resources Indicators</b>			
Inefficiency of use of water as a resource:		54.2%	Total Real Losses / Total System Input Volume
<b>Operational Efficiency Indicators</b>			
Apparent Losses per as percent of system input volume:		0.9%	Total Apparent Losses / Total System Input Volume
Real losses per service connection per day (when system is pressurized):		596.95	Total Real Losses / Number of Service Connections
Real losses per mile of main per day (when system is pressurized):		42,600	Total Real Losses / Length of Mains
Real losses per service connection per day per psi (when system is pressurized):		9.63	Total Real Losses / Number of Service Connections / Average Operating Pressure
** Unavoidable Annual Real Losses (UARL):		2.16	UARL estimated using IWA method (See footnote)
Infrastructure Leakage Index (ILI) [Real Losses/UARL]:		35.87	

<b>* Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	35,290.35
total apparent losses x customer retail unit cost	6,371.19
total nonrevenue water x 365 days	15,206,461.31
total nonrevenue water per day / total annual cost of operating water system	17.92%
<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2015:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	9,841
# of service connections x unit rate for UARL per gal/service/day/psi	19,471.35
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	5,531.63
add totals	34,843.77
total x avg operating pressure	2,160,313.96
divide by 1,000,000 to calculate per MG per day	2.16

**FY 2014 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>	<b>Total System Input Volume: 52,195 143.00</b> Plant Pumpage		
<b>AUTHORIZED CONSUMPTION</b>	Billed Metered: 14,570.00	39.92	
	Billed Unmetered: -	0.00	
	Unbilled Metered: 1,415.00	3.88	
	Unbilled Unmetered: 6,836.61	18.73	
<b>Total Authorized Consumption:</b>		<b>22,821.61</b>	<b>62.52</b>

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
	Unauthorized Consumption:	0.00	0.00 Theft or illegal use
	Customer Metering Inaccuracies & Leak Adjustments:	437	1.20 3% Customer meter under registration and leak adjustments
	Data Handling Errors:	-	0.00 Accounts lacking proper billing (no estimation available)
	<b>Total Apparent Losses:</b>	<b>437</b>	<b>1.20</b> "Paper loss"
<b>Real Losses</b>			
	<b>Total Real Losses:</b>	<b>28,936</b>	<b>79.28</b> Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>		<b>29,373</b>	<b>80.48</b> Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
	Length of Mains:	1,812	1,812 length (miles) of all pipelines except service connections
	Number of Service Connections:	127,876	127,876 number of customers
	<b>Connection Density:</b>	<b>71</b>	<b>71</b> # of connections / length of mains (miles)
(pipe length between curbside customer meter or property boundary)	Average Length (feet) of Private Pipe:	30.0	30 length between stop & main (not included in length of main)
	Average Operating Pressure:	62.00	62 psi

<b>COST DATA</b>			
	Total Annual Cost of Operating Water System Per Year:	\$ 88,562,278	Total O&M
	Customer Retail Unit Cost Per MG:	\$ 5,540.34	Total O&M / Total Consumption Sold <span style="float: right;">Total Consumption is Billed and Unbilled Metered</span>
	Short-Term Marginal Production Cost Per MG:	\$ 328.69	Energy & Chemicals / Total Finished Water Delivered

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
	Non-revenue water as percent by volume:	72.1%	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume
	* Non-revenue water as percent by cost:	16.5%	See footnote for formula
<b>Water Resources Indicators</b>			
	Inefficiency of use of water as a resource:	55.4%	Total Real Losses / Total System Input Volume
<b>Operational Efficiency Indicators</b>			
	Apparent Losses per as percent of system input volume:	0.8%	Total Apparent Losses / Total System Input Volume
	Real losses per service connection per day (when system is pressurized):	619.96	Total Real Losses / Number of Service Connections
	Real losses per mile of main per day (when system is pressurized):	43,752	Total Real Losses / Length of Mains
	Real losses per service connection per day per psi (when system is pressurized):	10.00	Total Real Losses / Number of Service Connections / Average Operating Pressure
	** Unavoidable Annual Real Losses (UARL):	2.13	UARL estimated using IWA method (See footnote)
	Infrastructure Leakage Index (ILI) [Real Losses/UARL]:	37.13	

<b>Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	33,488.19
total apparent losses x customer retail unit cost	6,633.22
total nonrevenue water x 365 days	14,644,315.69
<b>total nonrevenue water per day / total annual cost of operating water system</b>	<b>16.54%</b>

<b>IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2014:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	9,803
# of service connections x unit rate for UARL per gal/service/day/psi	19,181.40
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	5,449.26
add totals	34,433.58
total x avg operating pressure	2,134,882.04
divide by 1,000,000 to calculate per MG per day	2.13

**FY 2013 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>	<b>Total System Input Volume: 51,958 142.35</b> Plant Pumpage		
<b>AUTHORIZED CONSUMPTION</b>	Billed Metered: 14,992.00	41.07	
	Billed Unmetered: -	0.00	
	Unbilled Metered: 1,338.50	3.67	
	Unbilled Unmetered: 6,783.53	18.59	
<b>Total Authorized Consumption: 23,114.03 63.33</b>			

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
	Unauthorized Consumption:	0.00	0.00 Theft or illegal use
	Customer Metering Inaccuracies & Leak Adjustments:	450	1.23 3% Customer meter under registration and leak adjustments
	Data Handling Errors:	-	0.00 Accounts lacking proper billing (no estimation available)
	<b>Total Apparent Losses:</b>	<b>450</b>	<b>1.23</b> "Paper loss"
<b>Real Losses</b>			
	<b>Total Real Losses:</b>	<b>28,394</b>	<b>77.79</b> Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES: 28,844 79.02</b> Apparent Losses plus Real Losses			

<b>SYSTEM DATA</b>			
	Length of Mains:	1,806	1,806 length (miles) of all pipelines except service connections
	Number of Service Connections:	126,106	126,106 number of customers
	<b>Connection Density:</b>	<b>70</b>	<b>70</b> # of connections / length of mains (miles)
(pipe length betw een curbside customer meter or property boundary)	Average Length (feet) of Private Pipe:	30.0	30 length between stop & main (not included in length of main)
	Average Operating Pressure:	62.00	62 psi

<b>COST DATA</b>			
	Total Annual Cost of Operating Water System Per Year:	\$ 64,170,327	Total O&M
	Customer Retail Unit Cost Per MG:	\$ 3,929.48	Total O&M / Total Consumption Sold <span style="float: right;">Total Consumption is Billed and Unbilled Metered</span>
	Short-Term Marginal Production Cost Per MG:	\$ 251.59	Energy & Chemicals / Total Finished Water Delivered

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
	<b>Non-revenue water as percent by volume:</b>	<b>71.1%</b>	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume
	<b>* Non-revenue water as percent by cost:</b>	<b>17.1%</b>	See footnote for formula
<b>Water Resources Indicators</b>			
	<b>Inefficiency of use of water as a resource:</b>	<b>54.6%</b>	Total Real Losses / Total System Input Volume
<b>Operational Efficiency Indicators</b>			
	<b>Apparent Losses per as percent of system input volume:</b>	<b>0.9%</b>	Total Apparent Losses / Total System Input Volume
	<b>Real losses per service connection per day (when system is pressurized):</b>	<b>616.88</b>	Total Real Losses / Number of Service Connections
	<b>Real losses per mile of main per day (when system is pressurized):</b>	<b>43,074</b>	Total Real Losses / Length of Mains
	<b>Real losses per service connection per day per psi (when system is pressurized):</b>	<b>9.95</b>	Total Real Losses / Number of Service Connections / Average Operating Pressure
	<b>** Unavoidable Annual Real Losses (UARL):</b>	<b>2.11</b>	UARL estimated using IWA method (See footnote)
	<b>Infrastructure Leakage Index (ILI) [Real Losses/UARL]:</b>	<b>36.84</b>	

<b>* Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	25,169.83
total apparent losses x customer retail unit cost	4,844.56
total nonrevenue water x 365 days	10,955,254.03
total nonrevenue water per day / total annual cost of operating water system	17.07%

<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2013:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	9,770
# of service connections x unit rate for UARL per gal/service/day/psi	18,915.90
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	5,373.84
add totals	34,060.20
total x avg operating pressure	2,111,732.10
divide by 1,000,000 to calculate per MG per day	2.11

**FY 2012 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>	<b>Total System Input Volume:</b>		Plant Pumpage
	54,469	149.23	
<b>AUTHORIZED CONSUMPTION</b>			
	Billed Metered:	14,267.00	39.09
	Billed Unmetered:	-	0.00
	Unbilled Metered:	1,295.20	3.55
	Unbilled Unmetered:	7,120.36	19.51
<b>Total Authorized Consumption:</b>		<b>22,682.56</b>	<b>62.14</b>

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
	Unauthorized Consumption:	0.00	0.00 Theft or illegal use
	Customer Metering Inaccuracies & Leak Adjustments:	428	1.17 3% Customer meter under registration and leak adjustments
	Data Handling Errors:	-	0.00 Accounts lacking proper billing (no estimation available)
	<b>Total Apparent Losses:</b>	<b>428</b>	<b>1.17 "Paper loss"</b>
<b>Real Losses</b>			
	<b>Total Real Losses:</b>	<b>31,358</b>	<b>85.91</b> Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>		<b>31,786</b>	<b>87.09</b> Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
	Length of Mains:	1,599	1,599 length (miles) of all pipelines except service connections
	Number of Service Connections:	121,435	121,435 number of customers
	<b>Connection Density:</b>	<b>76</b>	<b>76</b> # of connections / length of mains (miles)
(pipe length betw een curbside customer meter or property boundary)	Average Length (feet) of Private Pipe:	30.0	30 length between stop & main (not included in length of main)
	Average Operating Pressure:	62.00	62 psi

<b>COST DATA</b>			
	Total Annual Cost of Operating Water System Per Year:	\$ 61,988,096	Total O&M
	Customer Retail Unit Cost Per MG:	\$ 3,983.25	Total O&M / Total Consumption Sold <span style="float: right;">Total Consumption is Billed and Unbilled Metered</span>
	Short-Term Marginal Production Cost Per MG:	\$ 214.65	Energy & Chemicals / Total Finished Water Delivered

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
	<b>Non-revenue water as percent by volume:</b>	<b>73.8%</b> Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume	
	<b>* Non-revenue water as percent by cost:</b>	<b>16.5%</b> See footnote for formula	
<b>Water Resources Indicators</b>			
	<b>Inefficiency of use of water as a resource:</b>	<b>57.6%</b> Total Real Losses / Total System Input Volume	
<b>Operational Efficiency Indicators</b>			
	<b>Apparent Losses per as percent of system input volume:</b>	<b>0.8%</b> Total Apparent Losses / Total System Input Volume	
	<b>Real losses per service connection per day (when system is pressurized):</b>	<b>707.49</b> Total Real Losses / Number of Service Connections	
	<b>Real losses per mile of main per day (when system is pressurized):</b>	<b>53,730</b> Total Real Losses / Length of Mains	
	<b>Real losses per service connection per day per psi (when system is pressurized):</b>	<b>11.41</b> Total Real Losses / Number of Service Connections / Average Operating Pressure	
	<b>** Unavoidable Annual Real Losses (UARL):</b>	<b>1.99</b> UARL estimated using IWA method (See footnote)	
	<b>Infrastructure Leakage Index (ILI) [Real Losses/UARL]:</b>	<b>43.25</b>	

<b>* Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	23,390.31
total apparent losses x customer retail unit cost	4,670.88
total nonrevenue water x 365 days	10,242,331.32
total nonrevenue water per day / total annual cost of operating water system	16.52%

<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2012:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	8,651
# of service connections x unit rate for UARL per gal/service/day/psi	18,215.25
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	5,174.79
add totals	32,040.63
total x avg operating pressure	1,986,518.87
divide by 1,000,000 to calculate per MG per day	1.99

**FY 2011 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>	<b>Total System Input Volume:</b>		Plant Pumpage
	55,151	151.10	
<b>AUTHORIZED CONSUMPTION</b>	Billed Metered:	14,629.00	40.08
	Billed Unmetered:	-	0.00
	Unbilled Metered:	1,422.50	3.90
	Unbilled Unmetered:	7,206.84	19.74
<b>Total Authorized Consumption:</b>		<b>23,258.34</b>	<b>63.72</b>

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
	Unauthorized Consumption:	0.00	0.00 Theft or illegal use
	Customer Metering Inaccuracies & Leak Adjustments:	439	1.20 3% Customer meter under registration and leak adjustments
	Data Handling Errors:	-	0.00 Accounts lacking proper billing (no estimation available)
	<b>Total Apparent Losses:</b>	<b>439</b>	<b>1.20 "Paper loss"</b>
<b>Real Losses</b>			
	<b>Total Real Losses:</b>	<b>31,454</b>	<b>86.17</b> Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>		<b>31,893</b>	<b>87.38</b> Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
	Length of Mains:	1,519	1,519 length (miles) of all pipelines except service connections
	Number of Service Connections:	118,745	118,745 number of customers
	<b>Connection Density:</b>	<b>78</b>	<b>78</b> # of connections / length of mains (miles)
(pipe length betw een curbside customer meter or property boundary)	Average Length (feet) of Private Pipe:	30.0	30 length between stop & main (not included in length of main)
	Average Operating Pressure:	62.00	62 psi

<b>COST DATA</b>			
	Total Annual Cost of Operating Water System Per Year:	\$ 64,677,227	Total O&M
	Customer Retail Unit Cost Per MG:	\$ 4,029.36	Total O&M / Total Consumption Sold <span style="float: right;">Total Consumption is Billed and Unbilled Metered</span>
	Short-Term Marginal Production Cost Per MG:	\$ 216.86	Energy & Chemicals / Total Finished Water Delivered

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
	<b>Non-revenue water as percent by volume:</b>	<b>73.5%</b>	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume
	<b>* Non-revenue water as percent by cost:</b>	<b>16.2%</b>	See footnote for formula
<b>Water Resources Indicators</b>			
	<b>Inefficiency of use of water as a resource:</b>	<b>57.0%</b>	Total Real Losses / Total System Input Volume
<b>Operational Efficiency Indicators</b>			
	<b>Apparent Losses per as percent of system input volume:</b>	<b>0.8%</b>	Total Apparent Losses / Total System Input Volume
	<b>Real losses per service connection per day (when system is pressurized):</b>	<b>725.71</b>	Total Real Losses / Number of Service Connections
	<b>Real losses per mile of main per day (when system is pressurized):</b>	<b>56,731</b>	Total Real Losses / Length of Mains
	<b>Real losses per service connection per day per psi (when system is pressurized):</b>	<b>11.71</b>	Total Real Losses / Number of Service Connections / Average Operating Pressure
	<b>** Unavoidable Annual Real Losses (UARL):</b>	<b>1.93</b>	UARL estimated using IWA method (See footnote)
	<b>Infrastructure Leakage Index (ILI) [Real Losses/UARL]:</b>	<b>44.71</b>	

<b>* Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	23,815.29
total apparent losses x customer retail unit cost	4,844.83
total nonrevenue water x 365 days	10,460,945.02
total nonrevenue water per day / total annual cost of operating water system	16.17%

<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2011:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	8,218
# of service connections x unit rate for UARL per gal/service/day/psi	17,811.75
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	5,060.16
add totals	31,089.70
total x avg operating pressure	1,927,561.17
divide by 1,000,000 to calculate per MG per day	1.93

**FY 2010 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>			
Total System Input Volume:	52,264	143.19	Plant Pumpage
<b>AUTHORIZED CONSUMPTION</b>			
Billed Metered:	15,015.00	41.14	
Billed Unmetered:	-	0.00	
Unbilled Metered:	1,744.40	4.78	
Unbilled Unmetered:	6,861.80	18.80	
<b>Total Authorized Consumption:</b>	<b>23,621.20</b>	<b>64.72</b>	

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
Unauthorized Consumption:	0.00	0.00	Theft or illegal use
Customer Metering Inaccuracies & Leak Adjustments:	450	1.23	3% Customer meter under registration and leak adjustments
Data Handling Errors:	-	0.00	Accounts lacking proper billing (no estimation available)
<b>Total Apparent Losses:</b>	<b>450</b>	<b>1.23</b>	"Paper loss"
<b>Real Losses</b>			
<b>Total Real Losses:</b>	<b>28,192</b>	<b>77.24</b>	Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>	<b>28,643</b>	<b>78.47</b>	Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
Length of Mains:	1,590	1,590	length (miles) of all pipelines except service connections
Number of Service Connections:	109,640	109,640	number of customers
<b>Connection Density:</b>	<b>69</b>	<b>69</b>	# of connections / length of mains (miles)
(pipe length betw een curbside customer meter or property boundary) Average Length (feet) of Private Pipe:	30.0	30	length between stop & main (not included in length of main)
Average Operating Pressure:	62.00	62	psi

<b>COST DATA</b>			
Total Annual Cost of Operating Water System Per Year:	\$ 53,161,832	Total O&M	
Customer Retail Unit Cost Per MG:	\$ 3,172.06	Total O&M / Total Consumption Sold	
Short-Term Marginal Production Cost Per MG:	\$ 251.88	Energy & Chemicals / Total Finished Water Delivered	

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
Non-revenue water as percent by volume:	<b>71.3%</b>	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume	
* Non-revenue water as percent by cost:	<b>20.1%</b>	See footnote for formula	
<b>Water Resources Indicators</b>			
Inefficiency of use of water as a resource:	<b>53.9%</b>	Total Real Losses / Total System Input Volume	
<b>Operational Efficiency Indicators</b>			
Apparent Losses per as percent of system input volume:	<b>0.9%</b>	Total Apparent Losses / Total System Input Volume	
Real losses per service connection per day (when system is pressurized):	<b>704.48</b>	Total Real Losses / Number of Service Connections	
Real losses per mile of main per day (when system is pressurized):	<b>48,565</b>	Total Real Losses / Length of Mains	
Real losses per service connection per day per psi (when system is pressurized):	<b>11.36</b>	Total Real Losses / Number of Service Connections / Average Operating Pressure	
** Unavoidable Annual Real Losses (UARL):	<b>1.84</b>	UARL estimated using IWA method (See footnote)	
Infrastructure Leakage Index (ILI) [Real Losses/UARL]:	<b>41.91</b>		

<b>* Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	25,394.29
total apparent losses x customer retail unit cost	3,914.67
total nonrevenue water x 365 days	10,697,769.69
total nonrevenue water per day / total annual cost of operating water system	20.12%

<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2010:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	8,604
# of service connections x unit rate for UARL per gal/service/day/psi	16,446.00
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	4,672.16
add totals	29,722.46
total x avg operating pressure	1,842,792.25
divide by 1,000,000 to calculate per MG per day	1.84

**FY 2009 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>			
Total System Input Volume:	54,451	149.18	Plant Pumpage
<b>AUTHORIZED CONSUMPTION</b>			
Billed Metered:	13,504.00	37.00	
Billed Unmetered:	-	0.00	
Unbilled Metered:	971.80	2.66	
Unbilled Unmetered:	7,083.86	19.41	
<b>Total Authorized Consumption:</b>	<b>21,559.66</b>	<b>59.07</b>	

<b>WATER LOSSES</b>			
<b>Apparent Losses</b>			
Unauthorized Consumption:	0.00	0.00	Theft or illegal use
Customer Metering Inaccuracies:	405.12	1.11	Customer meter under registration
Data Handling Errors:	-	0.00	Accounts lacking proper billing (no estimation available)
<b>Total Apparent Losses:</b>	<b>405.12</b>	<b>1.11</b>	"Paper loss"
<b>Real Losses</b>			
<b>Total Real Losses:</b>	<b>32,486.22</b>	<b>89.00</b>	Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>	<b>32,891.34</b>	<b>90.11</b>	Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
Length of Mains:	1,791	1,791	length (miles) of all pipelines except service connections
Number of Service Connections:	109,640	109,640	number of customers
<b>Connection Density:</b>	<b>61</b>	<b>61</b>	# of connections / length of mains (miles)
(pipe length between curbside customer meter or property boundary) Average Length (feet) of Private Pipe:	30.0	30	length between stop & main (not included in length of main)
Average Operating Pressure:	62.00	62	psi

<b>COST DATA</b>			
Total Annual Cost of Operating Water System Per Year:	\$ 51,983,969	Total O&M	
Customer Retail Unit Cost Per MG:	\$ 3,591.09	Total O&M / Total Consumption Sold <span style="float: right; font-size: small;">Total Consumption is Billed and Unbilled Metered</span>	
Short-Term Marginal Production Cost Per MG:	\$ 275.14	Energy & Chemicals / Total Finished Water Delivered	

<b>PERFORMANCE INDICATORS</b>			
<b>Financial Indicators</b>			
Non-revenue water as percent by volume:	<b>75.2%</b>	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume	
* Non-revenue water as percent by cost:	<b>24.3%</b>	See footnote for formula	
<b>Water Resources Indicators</b>			
Inefficiency of use of water as a resource:	<b>59.7%</b>	Total Real Losses / Total System Input Volume	
<b>Operational Efficiency Indicators</b>			
Apparent Losses per as percent of system input volume:	<b>0.7%</b>	Total Apparent Losses / Total System Input Volume	
Real losses per service connection per day (when system is pressurized):	<b>811.78</b>	Total Real Losses / Number of Service Connections	
Real losses per mile of main per day (when system is pressurized):	<b>49,695</b>	Total Real Losses / Length of Mains	
Real losses per service connection per day per psi (when system is pressurized):	<b>13.09</b>	Total Real Losses / Number of Service Connections / Average Operating Pressure	
** Unavoidable Annual Real Losses (UARL):	<b>1.91</b>	UARL estimated using IWA method (See footnote)	
Infrastructure Leakage Index (ILI) [Real Losses/UARL]:	<b>46.60</b>		

<b>Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	30,560.51
total apparent losses x customer retail unit cost	3,985.82
total nonrevenue water x 365 days	12,609,409.84
total nonrevenue water per day / total annual cost of operating water system	24.26%
<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2009:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	9,689
# of service connections x unit rate for UARL per gal/service/day/psi	16,446.00
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	4,672.16
add totals	30,807.47
total x avg operating pressure	1,910,063.08
divide by 1,000,000 to calculate per MG per day	1.91

**FY 2008 PERFORMANCE INDICATORS**

	MG		
	Per Year	Per Day	
<b>FINISHED WATER DELIVERED</b>	Total System Input Volume:		Plant Pumpage
	52,656	144.26	
<b>AUTHORIZED CONSUMPTION</b>			
	Billed Metered:	13,103.00	35.90
	Billed Unmetered:	-	0.00
	Unbilled Metered:	1,599.30	4.38
	Unbilled Unmetered:	6,880.99	18.85
<b>Total Authorized Consumption:</b>		<b>21,583.29</b>	<b>59.13</b>

<b>WATER LOSSES</b>			
<u>Apparent Losses</u>			
	Unauthorized Consumption:	0.00	0.00 Theft or illegal use
	Customer Metering Inaccuracies:	393.09	1.08 Customer meter under registration
	Data Handling Errors:	-	0.00 Accounts lacking proper billing (no estimation available)
	<b>Total Apparent Losses:</b>	<b>393.09</b>	<b>1.08 "Paper loss"</b>
<u>Real Losses</u>			
	<b>Total Real Losses:</b>	<b>30,679.62</b>	<b>84.05</b> Physical loss of water from the distribution system
<b>TOTAL WATER LOSSES:</b>		<b>31,072.71</b>	<b>85.13</b> Apparent Losses plus Real Losses

<b>SYSTEM DATA</b>			
	Length of Mains:	1,791	1,791 length (miles) of all pipelines except service connections
	Number of Service Connections:	102,575	102,575 number of customers
	<b>Connection Density:</b>	<b>57</b>	<b>57</b> # of connections / length of mains (miles)
(pipe length betw een curbside customer meter or property boundary)	Average Length (feet) of Private Pipe:	30.0	30 length between stop & main (not included in length of main)
	Average Operating Pressure:	62.00	62 psi

<b>COST DATA</b>			
	Total Annual Cost of Operating Water System Per Year:	\$ 66,989,084	Total O&M
	Customer Retail Unit Cost Per MG:	\$ 4,556.37	Total O&M / Total Consumption Sold <span style="float: right;">Total Consumption is Billed and Unbilled Metered</span>
	Short-Term Marginal Production Cost Per MG:	\$ 346.48	Energy & Chemicals / Total Finished Water Delivered

<b>PERFORMANCE INDICATORS</b>			
<u>Financial Indicators</u>			
	<b>Non-revenue water as percent by volume:</b>	<b>75.1%</b>	Unbilled Metered & Unmetered plus Total Water Losses / Total System Input Volume
	<b>* Non-revenue water as percent by cost:</b>	<b>22.9%</b>	See footnote for formula
<u>Water Resources Indicators</u>			
	<b>Inefficiency of use of water as a resource:</b>	<b>58.3%</b>	Total Real Losses / Total System Input Volume
<u>Operational Efficiency Indicators</u>			
	<b>Apparent Losses per as percent of system input volume:</b>	<b>0.7%</b>	Total Apparent Losses / Total System Input Volume
	<b>Real losses per service connection per day (when system is pressurized):</b>	<b>819.44</b>	Total Real Losses / Number of Service Connections
	<b>Real losses per mile of main per day (when system is pressurized):</b>	<b>46,931</b>	Total Real Losses / Length of Mains
	<b>Real losses per service connection per day per psi (when system is pressurized):</b>	<b>13.22</b>	Total Real Losses / Number of Service Connections / Average Operating Pressure
	<b>** Unavoidable Annual Real Losses (UARL):</b>	<b>1.83</b>	UARL estimated using IWA method (See footnote)
	<b>Infrastructure Leakage Index (ILI) [Real Losses/UARL]:</b>	<b>46.04</b>	

<b>* Non-Revenue Water as Percent by Cost:</b>	
(unbilled metered + unbilled unmetered + total real losses) x short-term marginal production cost	37,172.58
total apparent losses x customer retail unit cost	4,907.02
total nonrevenue water x 365 days	15,359,055.14
<b>total nonrevenue water per day / total annual cost of operating water system</b>	<b>22.93%</b>

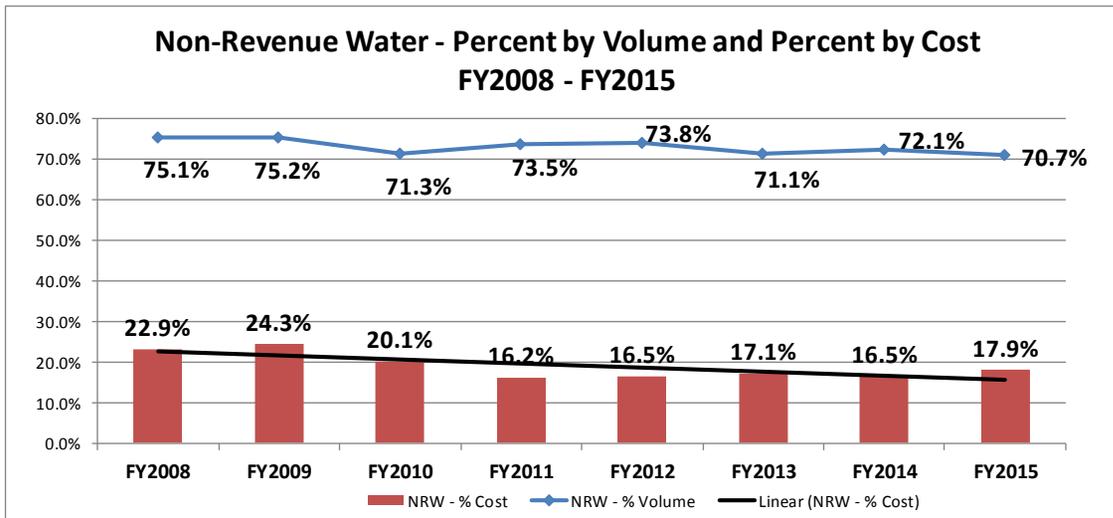
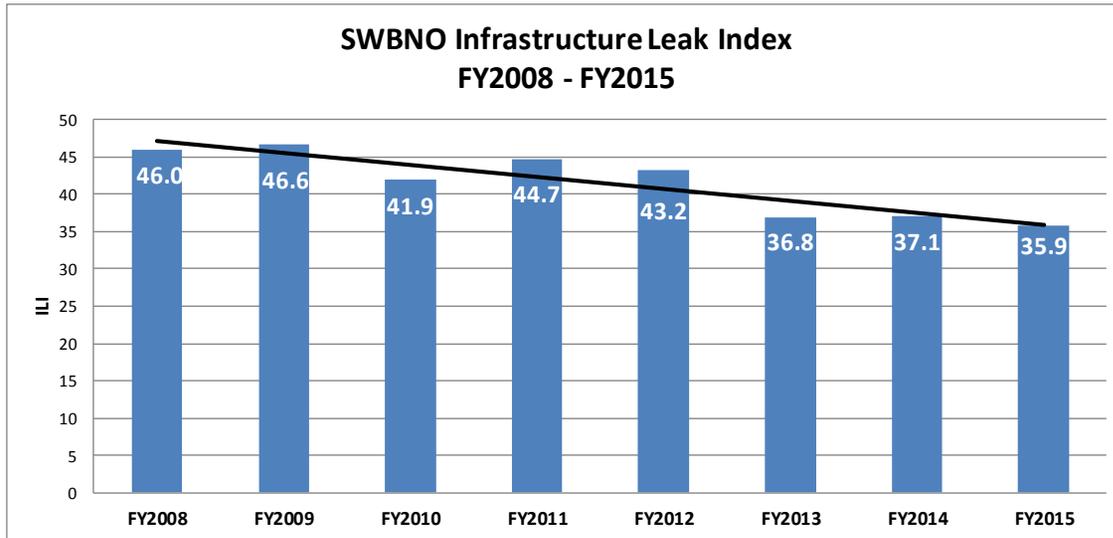
<b>** IWA/AWWA Calculation for Unavoidable Annual Real Loss (UARL) for FY2008:</b>	
length of mains x unit rate for UARL per gal/miles/day/psi	9,689
# of service connections x unit rate for UARL per gal/service/day/psi	15,386.25
(# of service connections x avg length of pipe / 5280 ft/mile) x unit rate per gal/mile/day/psi	4,371.09
add totals	29,446.65
total x avg operating pressure	1,825,692.53
divide by 1,000,000 to calculate per MG per day	1.83

**SWBNO Detailed Water Audit  
Cost Data**

**FY 2008 - FY2015**

Annual Costs									Source
	<u>FY2015</u>	<u>FY2014</u>	<u>FY2013</u>	<u>FY2012</u>	<u>FY2011</u>	<u>FY2010</u>	<u>FY2009</u>	<u>FY2008</u>	
O&M Costs	84,854,293	88,562,278	\$64,170,327	\$61,988,096	\$64,677,227	\$53,161,832	\$51,983,969	\$66,989,084	2014 CAFR II-71, Schedule 2, 2013 CAFR II-67, 2012, 2011, 2010 CAFR II-258, 2009 and 2008 CAFR II-57
Total Chem and Energy	18,135,108	17,155,785	\$13,072,012	\$11,691,736	\$11,960,257	\$13,164,393	\$14,981,504	\$18,244,072	AFIN 880C-13th 2014, 2013, 2012, 2011, 2010, 2009, 2008
Total Metered Sales Revenue									Source
	<u>FY2015</u>	<u>FY2014</u>	<u>FY2013</u>	<u>FY2012</u>	<u>FY2011</u>	<u>FY2010</u>	<u>FY2009</u>	<u>FY2008</u>	
	78,007,937	70,818,255	\$64,398,609	\$60,256,304	\$59,890,312	\$55,079,772	\$50,677,054	\$43,995,732	2014 CAFR II-71, Schedule 2, 2013 CAFR II-67, 2012, 2011, 2010 CAFR II-58, 2009 and 2008 CAFR II-57
Total Consumption									Source
	<u>FY2015</u>	<u>FY2014</u>	<u>FY2013</u>	<u>FY2012</u>	<u>FY2011</u>	<u>FY2010</u>	<u>FY2009</u>	<u>FY2008</u>	
	13,810	13,353	13,600	13,802	14,083	13,745	13,379	13,284	2013 & 2014 CAFR IV-8, 2012, 2011, 2010, 2009, 2008 CAFR IV-9
Revenue / Consumption									Source
	<u>FY2015</u>	<u>FY2014</u>	<u>FY2013</u>	<u>FY2012</u>	<u>FY2011</u>	<u>FY2010</u>	<u>FY2009</u>	<u>FY2008</u>	
	564,866	530,355	473,519	436,577	425,267	400,726	378,781	331,193	Total metered sales revenue / total consumption

**SWBNO Detailed Water Audit  
ILI and NRW Charts  
FY 2008 - FY2015**



**SWBNO Detailed Water Audit  
FY2008 - FY2015  
Performance Indicator Summary**

PERFORMANCE INDICATOR	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	Change FY15 vs. 08	5 Year AVG FY11-15
<b>Financial Indicators</b>										
Non-Revenue Water as percent by Volume	75.1%	75.2%	71.3%	73.5%	73.8%	71.1%	72.1%	70.7%	-4.4%	72.2%
Non-Revenue Water as percent by Cost	22.9%	24.3%	20.1%	16.2%	16.5%	17.1%	16.5%	17.9%	-5.0%	16.8%
<b>Water Resources Indicators</b>										
Inefficiency of use of Water as a Resource	58.3%	59.7%	53.9%	57.0%	57.6%	54.6%	55.4%	54.2%	-4.1%	55.8%
<b>Operational Efficiency Indicators</b>										
Apparent Losses as % of System Input Volume	0.75%	0.74%	0.86%	0.80%	0.79%	0.87%	0.84%	0.88%	0.1%	0.8%
Real Losses per Service Connection per Day	819.4	811.8	704.5	725.7	707.5	616.9	620.0	597.0	-222.49	653.4
Real losses per Mile of Main per Day	46,931	49,695	48,565	56,731	53,730	43,074	43,752	42,600	-4,331.08	47,977.3
Real Losses per Serv Conn per Day per psi	13.2	13.1	11.4	11.7	11.4	9.9	10.0	9.6	-3.59	10.5
Unavoidable Annual Real Losses (UARL)	1.83	1.91	1.84	1.93	1.99	2.11	2.13	2.16	0.33	2.1
Infrastructure Leakage Index (ILI)	46.0	46.6	41.9	44.7	43.2	36.8	37.1	35.9	-10.17	39.6

WATER CONTRIBUTED DURING 2016 FOR PUBLIC PURPOSES

TYPE	DESCRIPTION	METERED S	UNMETERED ACCOUNTS	GALLONS PROVIDED		DIFFERENCE IN CONSUMPTION	WATER AND SEWER DOLLAR AMT
				2015 CONSUMPTION	2016 CONSUMPTION		
<b>MUNICIPAL</b>							
A	FOUNTAIN	10		4,357,100	5,181,200	824,100	\$51,667.75
B	N.O. FIRE DEPT	35	3	12,409,600	3,635,100	23,941,500	\$183,430.31
C	SWIMMING POOLS	16		4,929,500	4,905,000	24,500	\$123,413.04
D	LIBRARIES	20	3	7,060,600	9,411,800	2,351,200	\$105,378.70
E	CEMETERIES	10		70,800	112,535	41,735	\$3,306.53
F	CITY OF N.O.	59	2	14,006,300	47,671,800	41,735	\$294,776.81
G	DEPT OF HEALTH	9		395,000	109,820	33,665,500	\$23,619.63
H	DEPT OF PROP MGMT	13		58,903,100	91,521,700	285,180	\$637,183.38
I	SAFETY/PERMITS	5		222,100	270,500	32,618,600	\$6,552.81
J	SANITATION DEPT	9		2,740,400	1,658,700	48,400	\$57,078.35
K	PUBLIC WORKS	19		2,921,100	1,874,500	1,081,700	\$62,597.23
L	DEPT OF WELFARE	4		198,200	502,400	1,046,600	\$15,782.63
M	MUNICIPAL MISC	7		1,504,800	1,533,900	304,200	\$43,981.88
	<b>TOTALS (MUNICIPAL)</b>	<b>216</b>	<b>8</b>	<b>109,718,600</b>	<b>168,388,955</b>	<b>29,700</b>	<b>\$1,608,769.05</b>
<b>PARKS AND PLAYGROUNDS:</b>							
N	CITY PARK	8		37,139,800	23,627,600	13,512,200	\$308,107.47
O	N.O. MUSEUM OF AR	1		205,400	122,900	82,500	\$21,806.87
P	AUDBON PARK	13		106,828,100	62,807,000	44,021,100	\$75,246.24
Q	PARKS & PARKWAYS	126	4	55,223,000	74,397,500	19,174,500	\$533,687.78
R	NORD	117	3	44,426,700	95,621,900	51,195,200	\$564,801.54
	<b>TOTALS (PARK AND PLAYGROUNDS)</b>	<b>265</b>	<b>7</b>			<b>127,985,500</b>	<b>\$1,503,649.90</b>
<b>POLICE DEPARTMENT:</b>							
S	CRIMINAL SHERIFF	40	6	91,520,800	162,110,300	70,589,500	\$1,131,153.43
T	NOPD	39		38,548,100	50,695,300	12,147,200	\$441,283.01
	<b>TOTALS (POLICE)</b>	<b>79</b>	<b>6</b>	<b>130,068,900</b>	<b>212,805,600</b>	<b>82,736,700</b>	<b>\$554,436.44</b>
U	SCHOOLS*	291	16	169,716,400	404,950,900	235,234,500	\$2,415,355.69
	<b>GRAND TOTALS</b>	<b>851</b>	<b>37</b>	<b>653,326,900</b>	<b>1,087,139,000</b>	<b>433,812,100</b>	<b>\$4,542,228.57</b>

DOLLAR VALUE OF FREE WATER ACCOUNTS: \$ 2,289,631.00

TOTAL VALUE OF FREE SEWERAGE ACCOUNTS: \$ 3,596,783.00

TOTAL VALUE OF FREE WATER AND SEWERAGE ACCOUNTS: \$ 6,082,211.08

**WATER USED IN PROCESS BY SEWERAGE AND WATER BOARD**

---

	METERED ACCOUNTS	GALLONS PROVIDED 2015	GALLONS PROVIDED 2016	DIFFERENCE DECREASE
SEWERAGE & WATER BOARD	237	645,333,500	532,233,700	113,099,800

DOLLAR VALUE OF WATER AND SEWER USED IN PROCESS

\$5,682,198.58

**YEAR-TO-YEAR COMPARISON OF WATER USAGE**

---

**FREE WATER:**

City Agencies (EXCLUDING SCHOOLS)	TOTAL 2015	483,610,500
	TOTAL 2016	<u>682,188,100</u>
	29%	INCREASE
S&WB Process Water	TOTAL 2015	645,333,500
	TOTAL 2016	<u>532,233,700</u>
	18% Difference	DECREASE

WATER CAP ACCOUNTS

---

Dollar Value\*  
of Water and Sewer Quantity  
Provided Free of  
Charge

City Park:

Cap Amount	235,323,400	\$308,107.47
Water Provided	<u>33,610,400</u>	
Amount Under Cap	201,713,000	

Audubon Park:

Cap Amount	240,000,000	\$75,246.24
Water Provided	<u>107,929,200</u>	
Amount Under Cap	132,070,800	

Museum Of Art:

Cap Amount	2,553,800	\$21,806.87
Water Provided	<u>403,729</u>	
Amount Under Cap	2,028,500	

The above listed "water cap" accounts pay only for the water and sewerage service charges and water and sewerage quantity charges that exceed the "cap" amount.

\*The dollar values listed are the values of the free water quantity charges actually provided to the agencies.

# Sewerage and Water Board of New Orleans

## Calls Abandoned by Customers as a Percentage of Total

**Constituency:**  
Customer Ratepayers

**Objective:** Provide Timely Information and Respond Promptly to Requests

**Goal:** Respond to calls with less than 10% abandoned

**Currently Meeting Goal:** No

**Process Operating Within Control Limits:**  
No

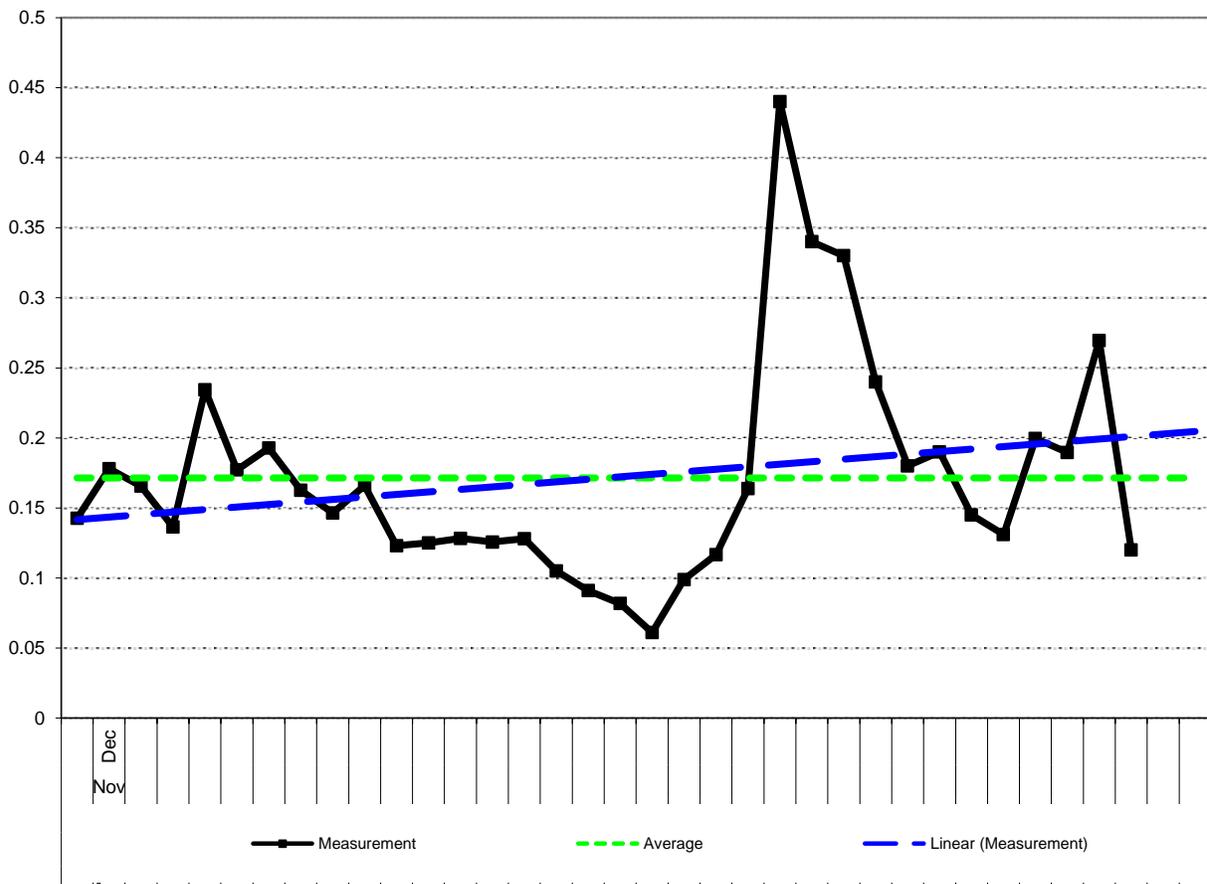
**Trend:** Unfavorable

### Analysis

Customers abandon their calls after waiting for an amount of time considered inconvenient, which varies from customer to customer. Some portion of the volume of abandoned calls is from customers calling and hanging up on multiple occasions.

### Plans for Improvement

Abandoned calls have returned to near historical levels following implementation of the new billing system.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	14.3%	17.8%	16.6%	13.7%	23.4%	17.7%	19.3%	16.3%	14.7%	16.6%	12.3%	12.5%
<b>2016</b>	12.8%	12.6%	12.8%	10.5%	9.1%	8.2%	6.1%	9.9%	11.7%	16.4%	44.0%	34.0%
<b>2017</b>	33.0%	24.0%	18.0%	19.0%	14.5%	13.1%	19.9%	19.0%	27.0%	12.0%		

# Sewerage and Water Board of New Orleans Total Accounts Turned Off for Non-Payment

**Constituency:**  
Customer  
Ratepayers

**Objective:** Ensure  
Collection of Payments for  
Services Provided

**Goal:** None  
Established

**Currently Meeting  
Goal:** Not Applicable

**Process Operating  
Within Control  
Limits:** Yes

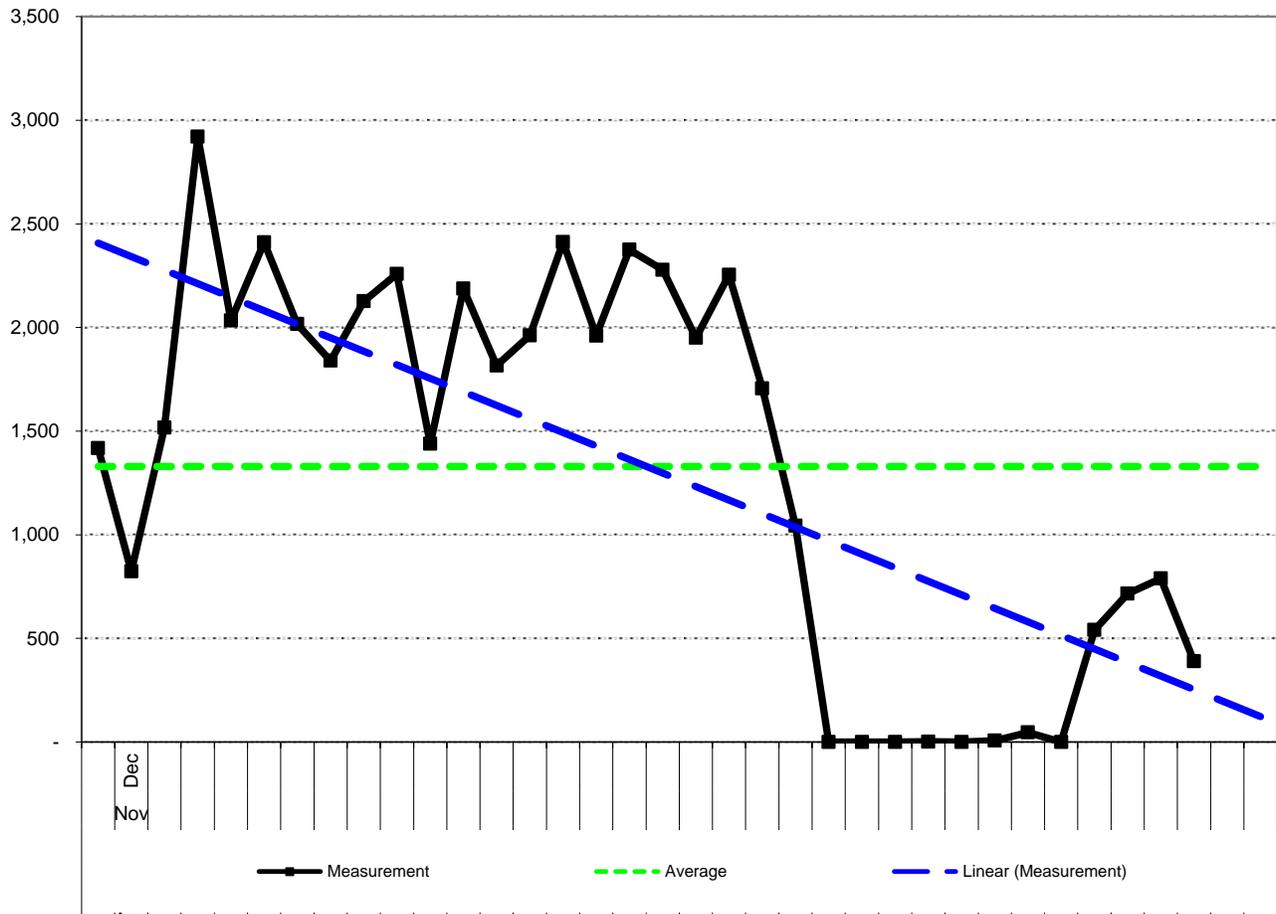
**Trend:** Stable

### Analysis

Customers accounts are turned-off for non-payment for balances more than \$50 and over sixty days past due. Turn-offs were temporarily suspended following go-live on the new system.

### Plans for Improvement

Non-payment turnoffs was be resumed on July 24, 2017 at a pace of approximately 50 accounts per day after contacting delinquent customers by mail and by phone.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	1,417	823	1,517	2,920	2,033	2,411	2,016	1,840	2,126	2,258	1,439	2,187
<b>2016</b>	1,816	1,962	2,412	1,960	2,375	2,278	1,950	2,254	1,706	1,043	-	-
<b>2017</b>	-	-	-	6	46	-	540	715	789	390	-	-

# Sewerage and Water Board of New Orleans

## Bills Adjusted as a Percentage of Total Bills Computed

**Constituency:**  
Customer Ratepayers

**Objective:** Provide  
Accurate Bills

**Goal:** Reduce  
percentage over time

**Currently Meeting  
Goal:** Yes

**Process Operating  
Within Control Limits:**  
Yes

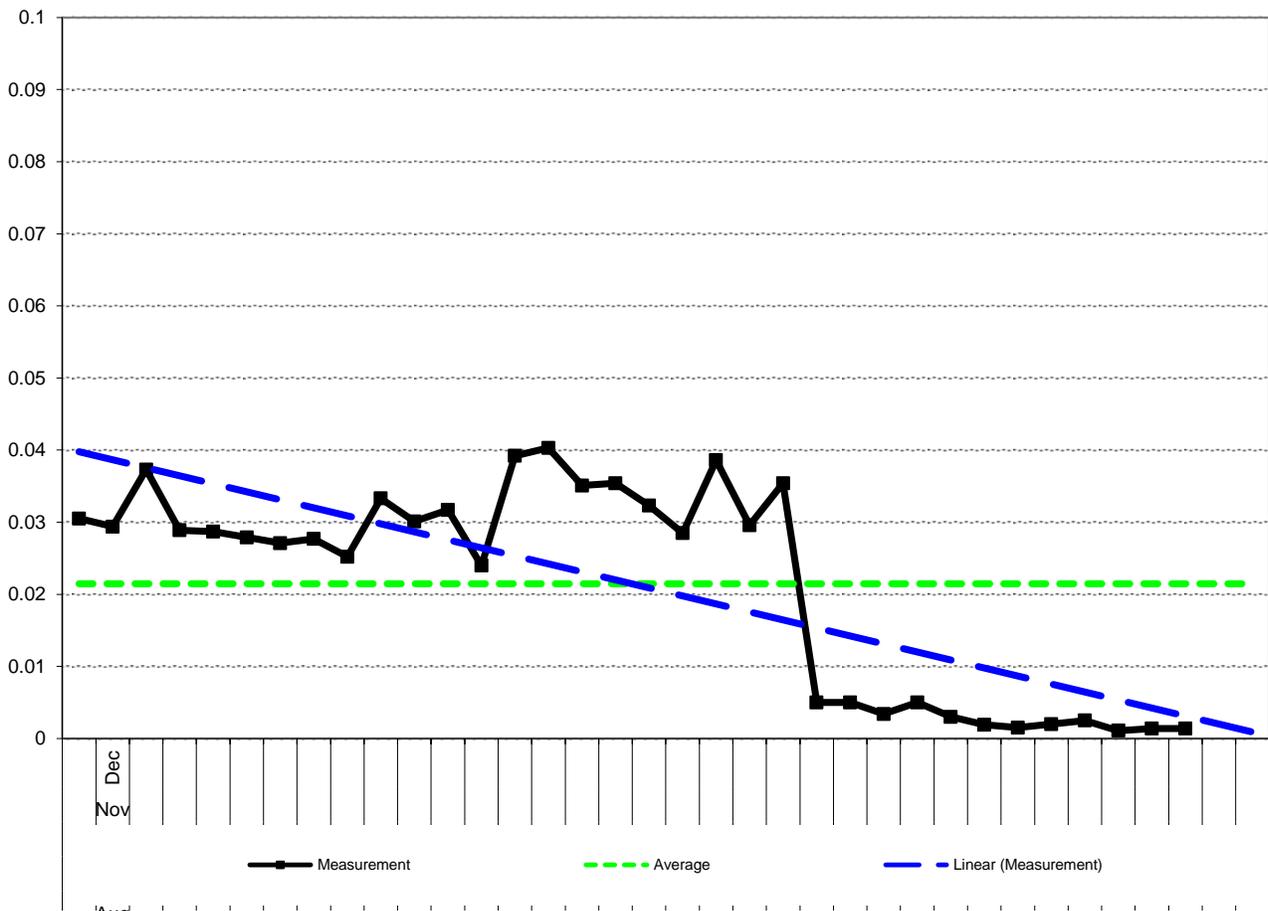
**Trend:** Favorable

### Analysis

Customers request adjustments to their bill due to higher than normal amounts. The higher billed amount may be due to: a leak; one or more estimated readings followed by an actual reading; an erroneous meter reading; or increased water, sewer, or sanitation rates. Before an adjustment can be made, an inspection of the meter and service line must be performed.

### Plans for Improvement

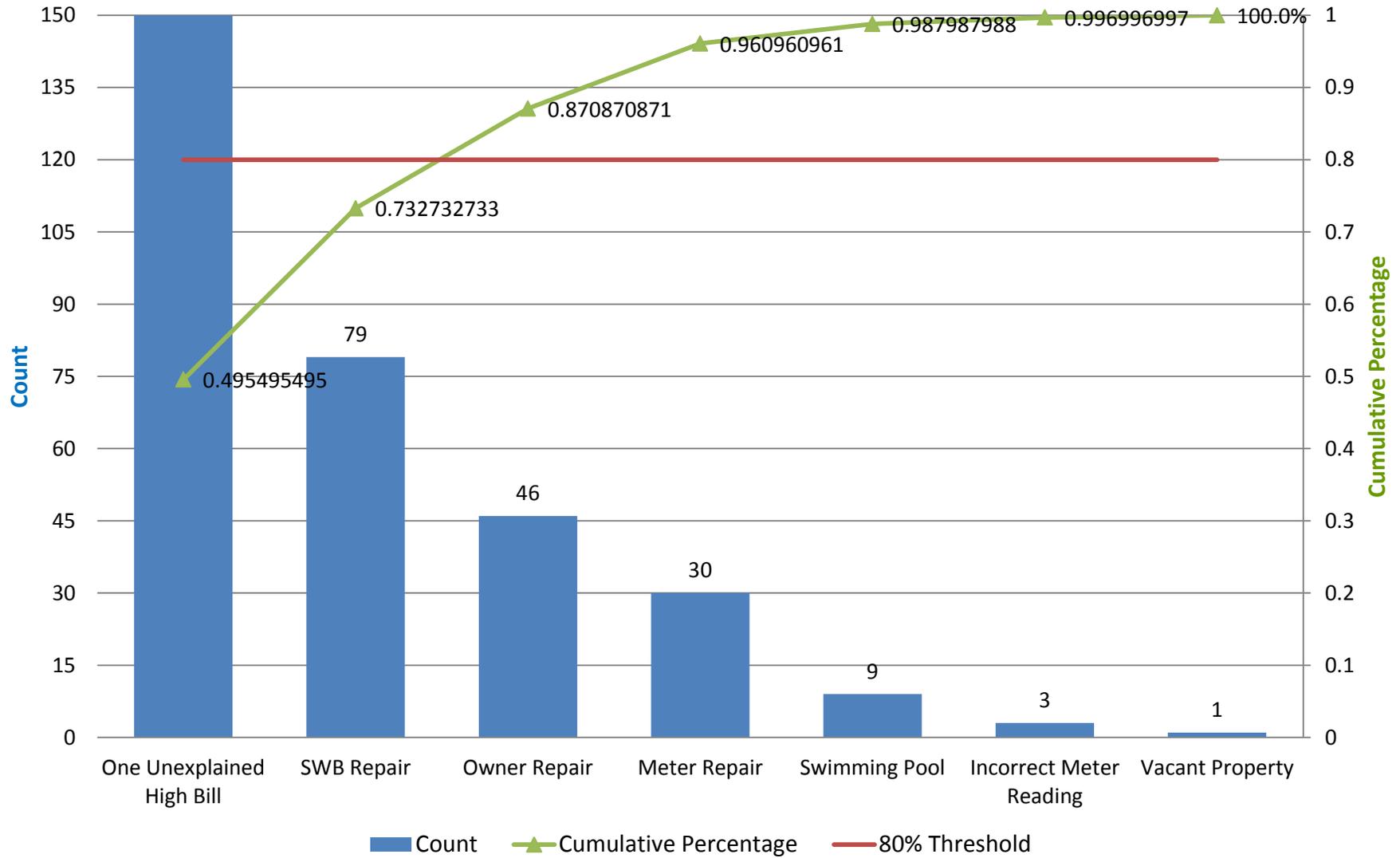
Adjustments have reduced sharply following implementation of the new billing system as a result of the ability to correct a bill by cancelling and rebilling rather than by adjustment.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	3.1%	2.9%	3.7%	2.9%	2.9%	2.8%	2.7%	2.8%	2.5%	3.3%	3.0%	3.2%
<b>2016</b>	2.4%	3.9%	4.0%	3.5%	3.5%	3.2%	2.9%	3.9%	3.0%	3.5%	0.5%	0.5%
<b>2017</b>	0.3%	0.5%	0.3%	0.2%	0.2%	0.2%	0.3%	0.1%	0.1%	0.1%		

# Sewerage and Water Board of New Orleans Reasons for Adjustments October 2017



# Sewerage and Water Board of New Orleans

## Average Call Wait Time for Calls Abandoned

**Constituency:**  
Customer Ratepayers

**Objective:** Provide  
Accurate Bills

**Goal:** Reduce over  
time

**Currently Meeting**  
**Goal:** Yes

**Process Operating**  
**Within Control Limits:**  
Yes

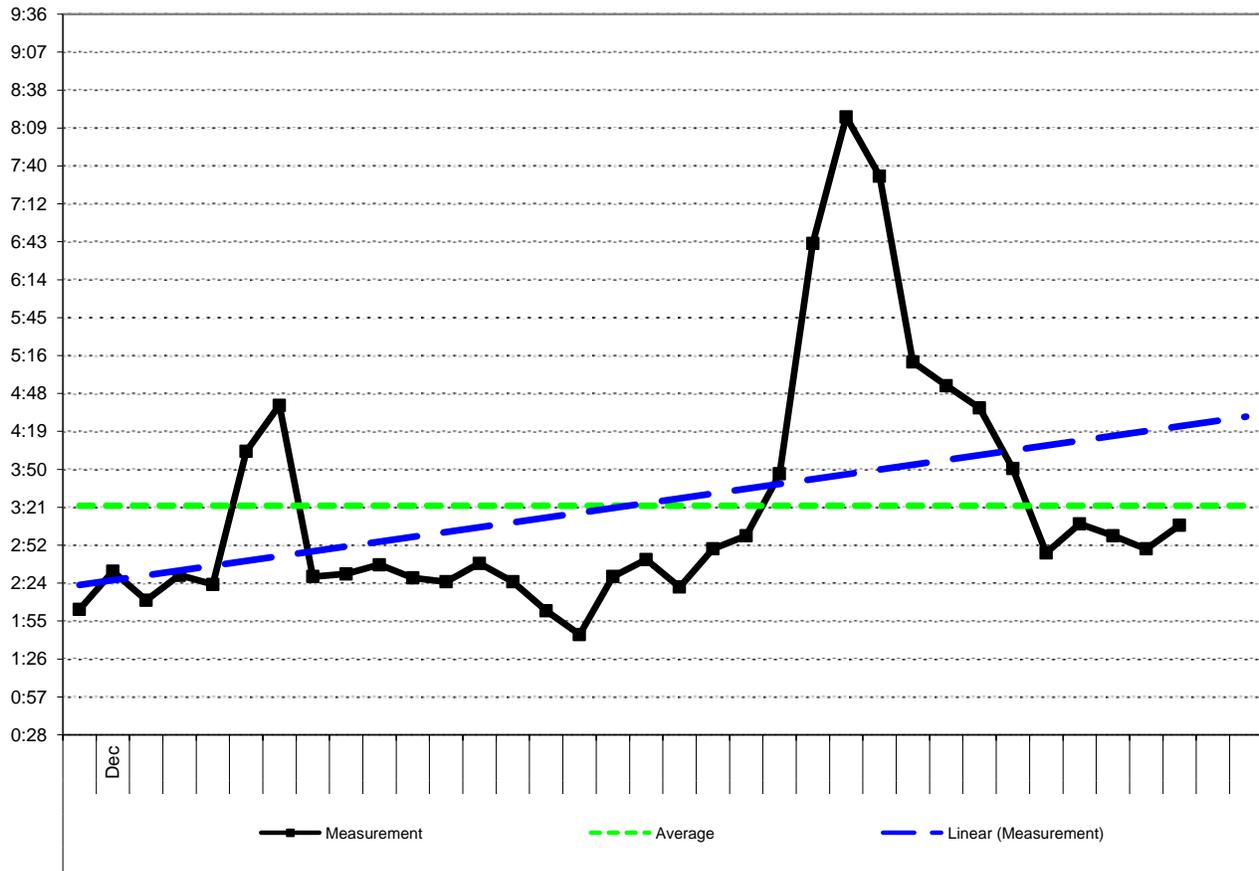
**Trend:** Favorable

### Analysis

Customers contact the Sewerage and Water Board to start or end service; to request information about their bill; to report concerns about their water service, sewer connection, street flooding, or solid waste sanitation service; and other matters. The Call Center for emergency repairs is operated continuously, while the Call Center for billing and non-emergency issues is operated from 7 AM to 7 PM. Call volumes can vary significantly month to month.

### Plans for Improvement

Interactive voice response capabilities were implemented in October 2016 with the intent to reduce the volume of calls requiring Call Center assistance. We have provided customers with the opportunity to leave their contact information at a link on our website so that we can call them back during non-peak times.



Data Table

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	2:04	2:33	2:11	2:30	2:23	4:04	4:39	2:29	2:31	2:38	2:28	2:25
<b>2016</b>	2:39	2:25	2:03	1:45	2:29	2:42	2:21	2:50	3:00	3:47	6:42	8:18
<b>2017</b>	7:33	5:12	4:54	4:37	3:51	2:47	3:09	3:00	2:50	3:08		

# Sewerage and Water Board of New Orleans Average Call Wait Time for Calls Answered

**Constituency:**  
Customer Ratepayers

**Objective:** Provide  
Accurate Bills

**Goal:** Reduce over  
time

**Currently Meeting  
Goal:** No

**Process Operating  
Within Control Limits:**  
Yes

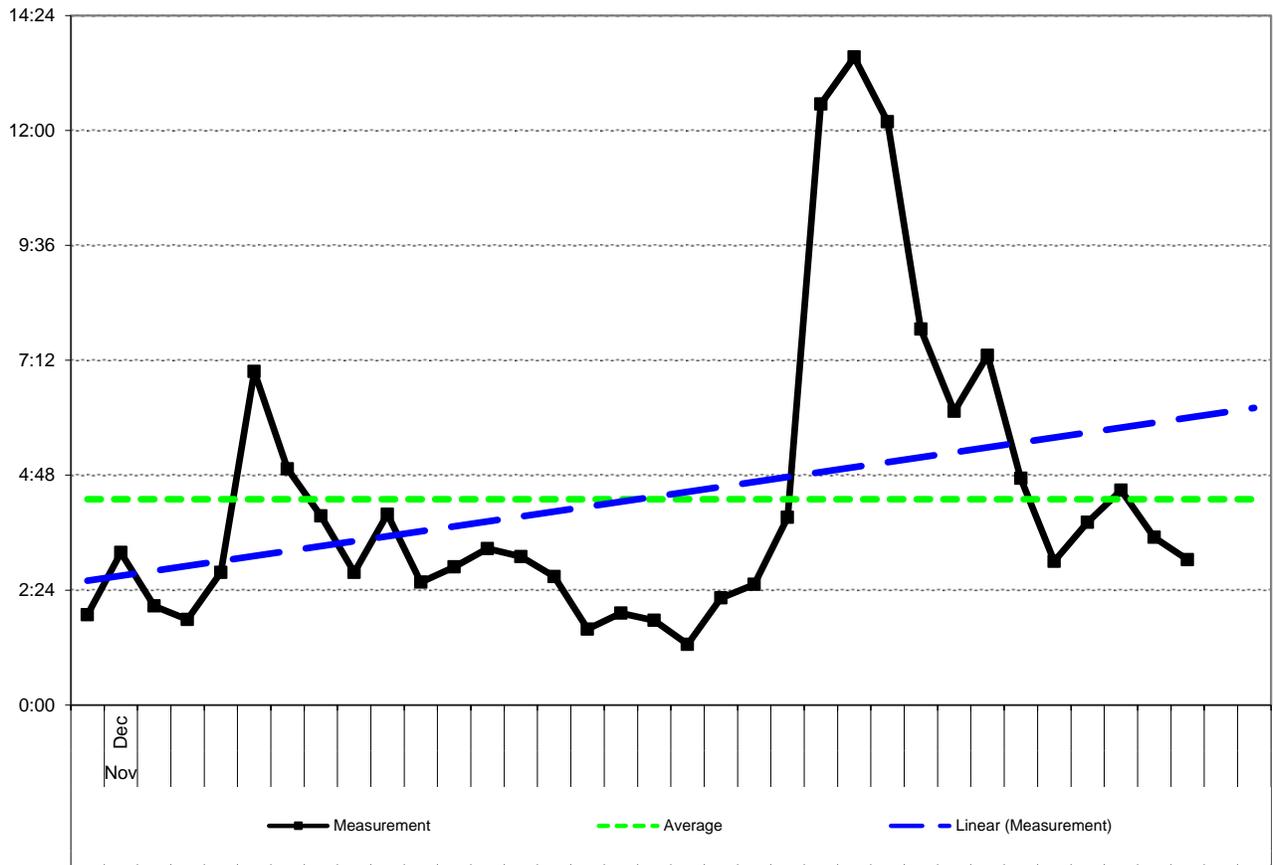
**Trend:** Unfavorable

### Analysis

Customers contact the Sewerage and Water Board to start or end service; to request information about their bill; to report concerns about their water service, sewer connection, street flooding, or solid waste sanitation service; and other matters. The Call Center for emergency repairs is operated continuously, while the Call Center for billing and non-emergency issues is operated from 7 AM to 7 PM. Call volumes can vary significantly month to month. Call wait times have increased sharply while training and implementation for the new billing system occurs.

### Plans for Improvement

Interactive voice response capabilities were implemented in October 2016 with the intent to reduce the volume of calls requiring Call Center assistance. We have provided customers with the opportunity to leave their contact information at a link on our website so that we can call them back during non-peak times..



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	1:53	3:11	2:04	1:47	2:46	6:58	4:56	3:57	2:46	3:59	2:34	2:53
<b>2016</b>	3:16	3:06	2:41	1:35	1:55	1:46	1:16	2:14	2:31	3:55	12:33	13:32
<b>2017</b>	12:11	7:51	6:08	7:18	4:44	3:00	3:49	4:29	3:30	3:02		

# Sewerage and Water Board of New Orleans

## Total Inbound Customer Contacts

**Constituency:**  
Customer  
Ratepayers

**Objective:** Provide Timely  
Information and Respond  
Promptly to Requests

**Goal:** Reduce  
Triggers of Customer  
Calls

**Currently Meeting  
Goal:** Close

**Process Operating  
Within Control  
Limits:** Yes

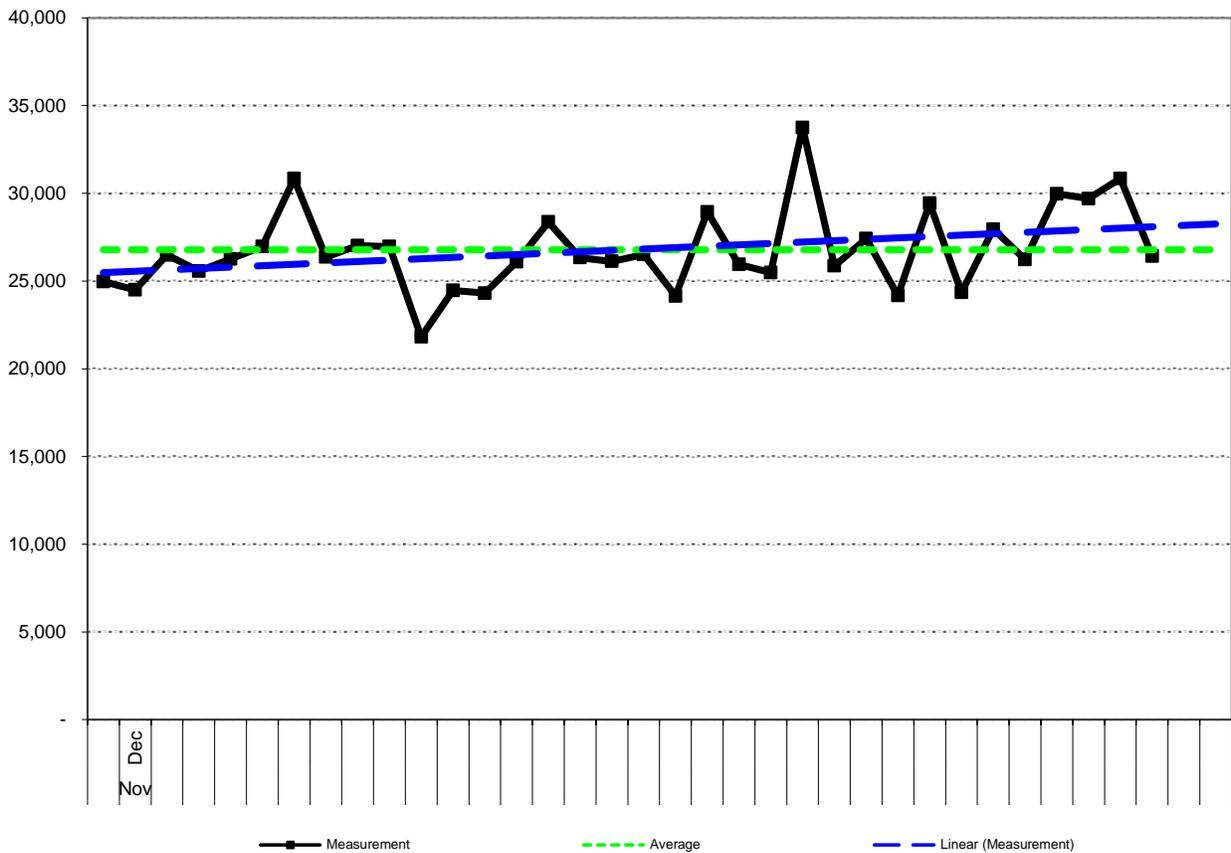
**Trend:** Unfavorable

### Analysis

Customers contact the Sewerage and Water Board to start or end service; to request information about their bill; to report concerns about their water service, sewer connection, street flooding, or solid waste sanitation service; and other matters. The Call Center for emergency repairs is operated continuously, while the Call Center for billing and non-emergency issues is operated from 7 AM to 7 PM. Call volumes can vary significantly month to month. Calls increased sharply after go-live on new system.

### Plans for Improvement

Engage a consultant to re-engineer the call center processes for receiving and handling calls.



Data Table												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2014</b>	24,967	24,496	26,486	25,565	26,261	26,963	30,836	26,368	27,019	26,973	21,816	24,469
<b>2015</b>	24,311	26,089	28,365	26,333	26,121	26,515	24,149	28,942	25,958	25,483	33,746	25,866
<b>2016</b>	27,425	24,169	29,436	24,346	27,955	26,222	29,969	29,698	30,844	26,417		

# Sewerage and Water Board of New Orleans

## Emergency Calls Abandoned by Customers as a Percentage of Total Emergency Calls

**Constituency:**  
Customer Ratepayers

**Objective:** Provide Timely Information and Respond Promptly to Requests

**Goal:** Respond to calls with less than 10% abandoned

**Currently Meeting Goal:** Yes

**Process Operating Within Control Limits:** Yes

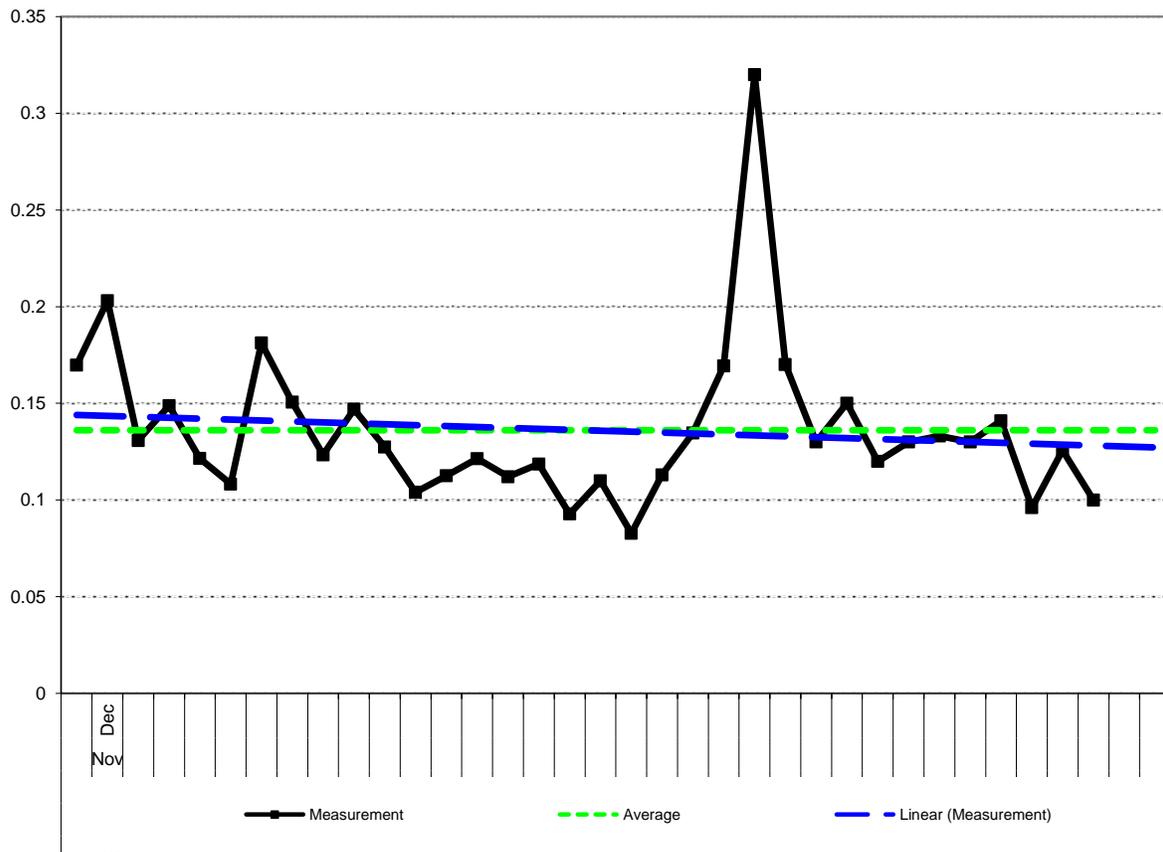
**Trend:** Level

### Analysis

Customers abandon their calls after waiting for an amount of time considered inconvenient, which varies from customer to customer. Some portion of the volume of abandoned calls is from customers calling and hanging up on multiple occasions.

### Plans for Improvement

Abandoned calls have returned to near historical levels following implementation of the new billing system.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	17.0%	20.3%	13.1%	14.9%	12.2%	10.8%	18.1%	15.1%	12.3%	14.7%	12.7%	10.4%
<b>2016</b>	11.3%	12.1%	11.2%	11.9%	9.3%	11.0%	8.3%	11.3%	13.5%	16.9%	32.0%	17.0%
<b>2017</b>	13.0%	15.0%	12.0%	13.0%	13.3%	13.0%	14.1%	9.6%	12.6%	10.0%		

# Sewerage and Water Board of New Orleans Bills Estimated as a Percentage of Total Bills

**EUM Attribute:**  
**Customer Satisfaction**

**Description:** Provides reliable, responsive, and affordable services in line with explicit, customer-accepted service levels. Receives timely customer feedback to maintain responsiveness to customer needs and emergencies.

**Constituency:**  
**Customer Ratepayers**

**Objective:** Provide Accurate Bills

**Goal:** Bill Accounts With Less Than 2% Estimated

**Currently Meeting Goal:** **No**

**Process Operating Within Control Limits:**  
**No**

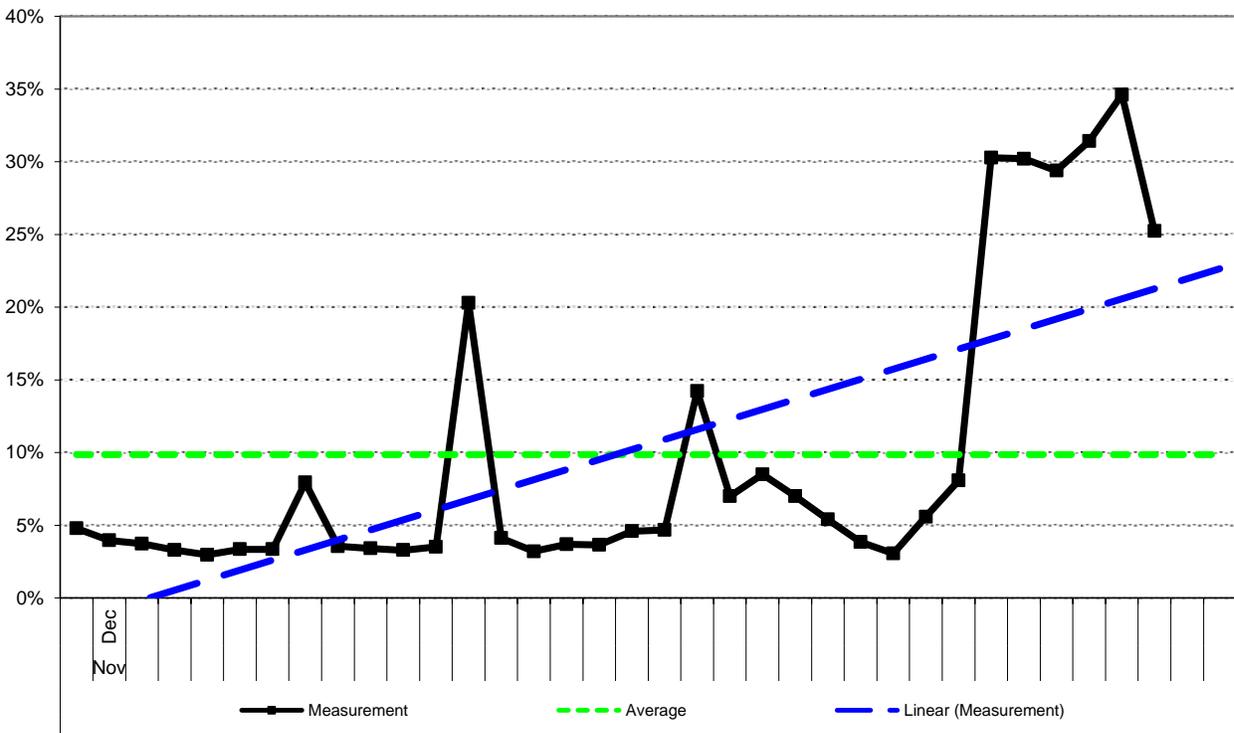
**Trend:** **Unfavorable**

### Analysis

A bill is estimated if the meter is not read by the designated billing date. Bills are also estimated when a meter is read and the reliability of the reading is doubtful and the account is placed on an exception report. If the reading is not verified by the billing date, the bill will be estimated. Spikes in estimated bills usually occur when the Meter Reading department is unable to read a large section of meters during extreme weather.

### Plans for Improvement

Current plans are focused on obtaining readings for accounts each month and verifying the reliability of each reading. Future plans will focus on advanced metering infrastructure that allows for readings to be obtained automatically several times daily.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	4.8%	4.0%	3.7%	3.3%	3.0%	3.4%	3.4%	7.9%	3.6%	3.4%	3.3%	3.5%
<b>2016</b>	20.3%	4.1%	3.2%	3.7%	3.7%	4.6%	4.7%	14.2%	7.0%	8.5%	7.0%	5.4%
<b>2017</b>	3.9%	3.1%	5.6%	8.1%	30.3%	30.2%	29.4%	31.4%	34.6%	25.2%		

# Sewerage and Water Board of New Orleans Investigations from High Bill Complaints as a Percentage of Total Bills

**Constituency:**  
Customer Ratepayers

**Objective:** Provide  
Accurate Bills

**Goal:** Reduce  
percentage over time

**Currently Meeting  
Goal:** **No**

**Process Operating  
Within Control Limits:**  
Close

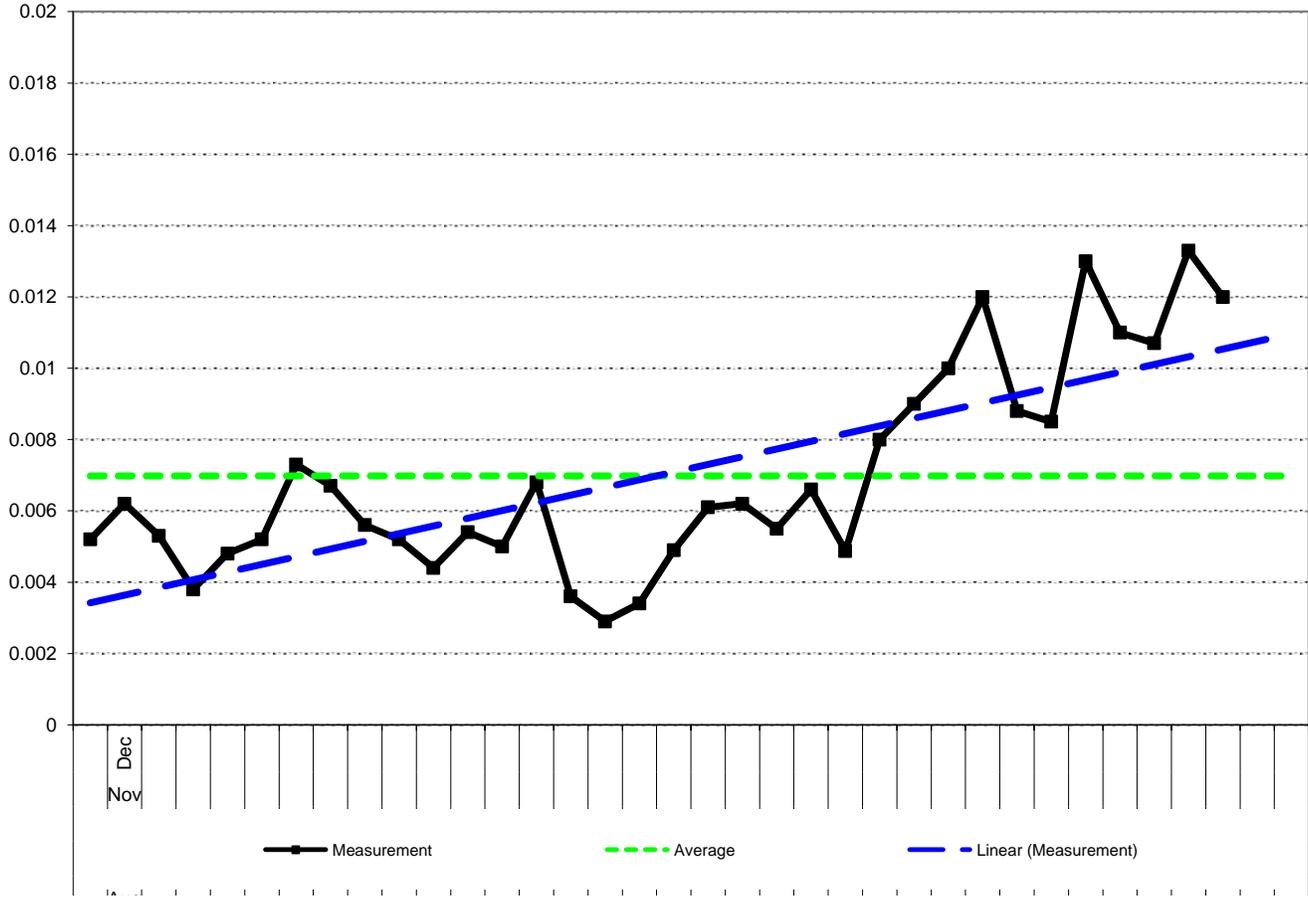
**Trend:** **Unfavorable**

**Analysis**

Customers request an investigation about their usage when the bill is higher than normal amounts. The higher billed amount may be due to: a leak; one or more estimated readings followed by an actual reading; an erroneous meter reading; or increased water, sewer, or sanitation rates. Before an adjustment can be made, an inspection of the meter and service line must be performed.

**Plans for Improvement**

Staff is working to reduce the number of estimated and erroneous readings. Also, the Automated Meter Reading pilot project is also intended to reduce the number of estimated and erroneous readings, as well as to reduce the cost of obtaining a validated reading.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	0.5%	0.6%	0.5%	0.4%	0.5%	0.5%	0.7%	0.7%	0.6%	0.5%	0.4%	0.5%
<b>2016</b>	0.5%	0.7%	0.4%	0.3%	0.3%	0.5%	0.6%	0.6%	0.6%	0.7%	0.5%	0.8%
<b>2017</b>	0.9%	1.0%	1.2%	0.9%	0.9%	1.3%	1.1%	1.1%	1.3%	1.2%		

# Sewerage and Water Board of New Orleans

## Total Service Requests about Low Water Pressure

**Constituency:**  
Customer  
Ratepayers

**Objective:** Provide Timely  
Information and Respond  
Promptly to Requests

**Goal:** Reduce  
Number of Service  
Requests

**Currently Meeting  
Goal:** Yes

**Process Operating  
Within Control  
Limits:** Yes

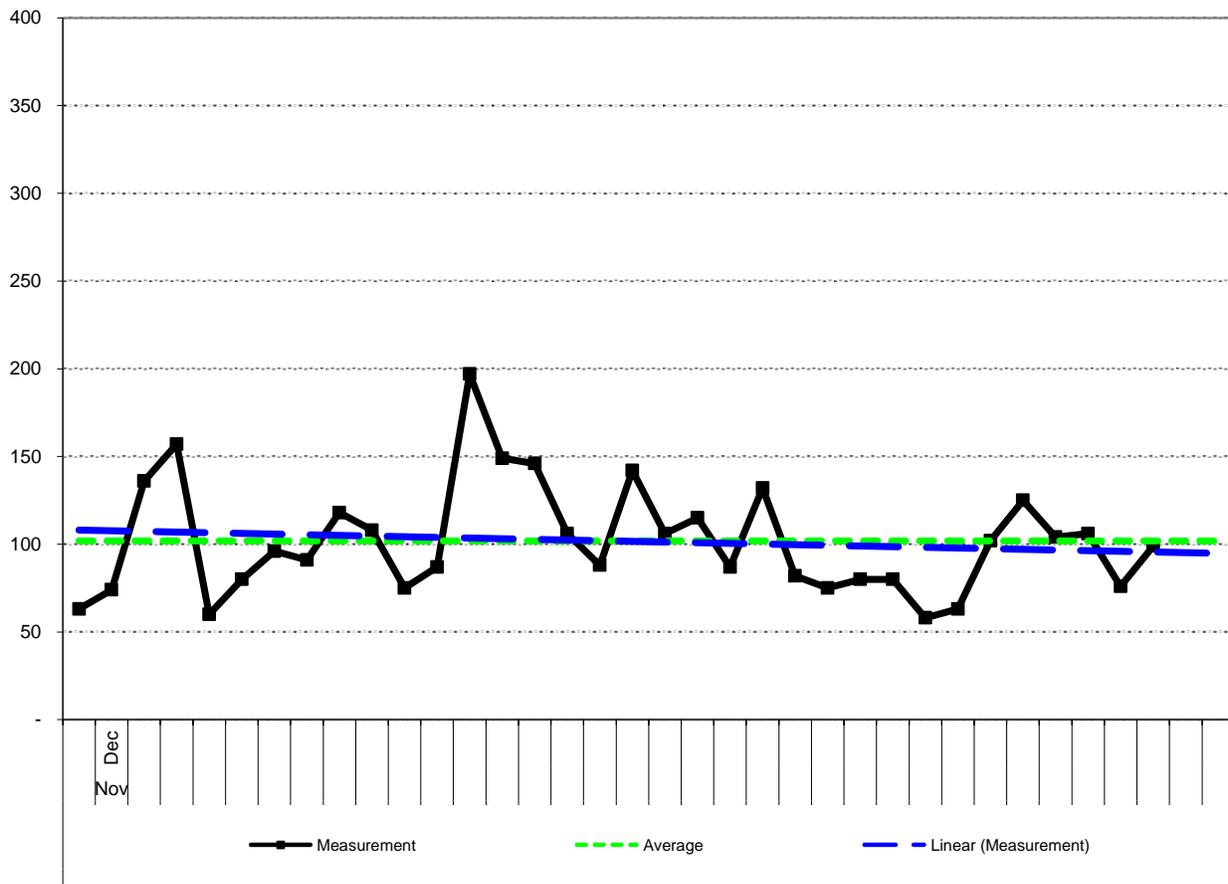
**Trend:** Favorable

### Analysis

Customers contact the Sewerage and Water Board to request resolution to low water pressure. System pressure can be impaired by power failures at the treatment plants, by water main breaks, and by certain types of repair activities.

### Plans for Improvement

Staff continues to make repairs to the water system to reduce the number of occasions of low pressure.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	63	74	136	157	60	80	96	91	118	108	75	87
<b>2016</b>	197	149	146	106	88	142	106	115	87	132	82	75
<b>2017</b>	80	80	58	63	102	125	104	106	76	99		

# Sewerage and Water Board of New Orleans

## Meters Read as a Percentage of Total Meters

**Constituency:**  
Customer Ratepayers

**Objective:** Provide  
Accurate Bills

**Goal:** Read 98% or  
more of meters each  
month

**Currently Meeting  
Goal:** **No**

**Process Operating  
Within Control Limits:**  
**No**

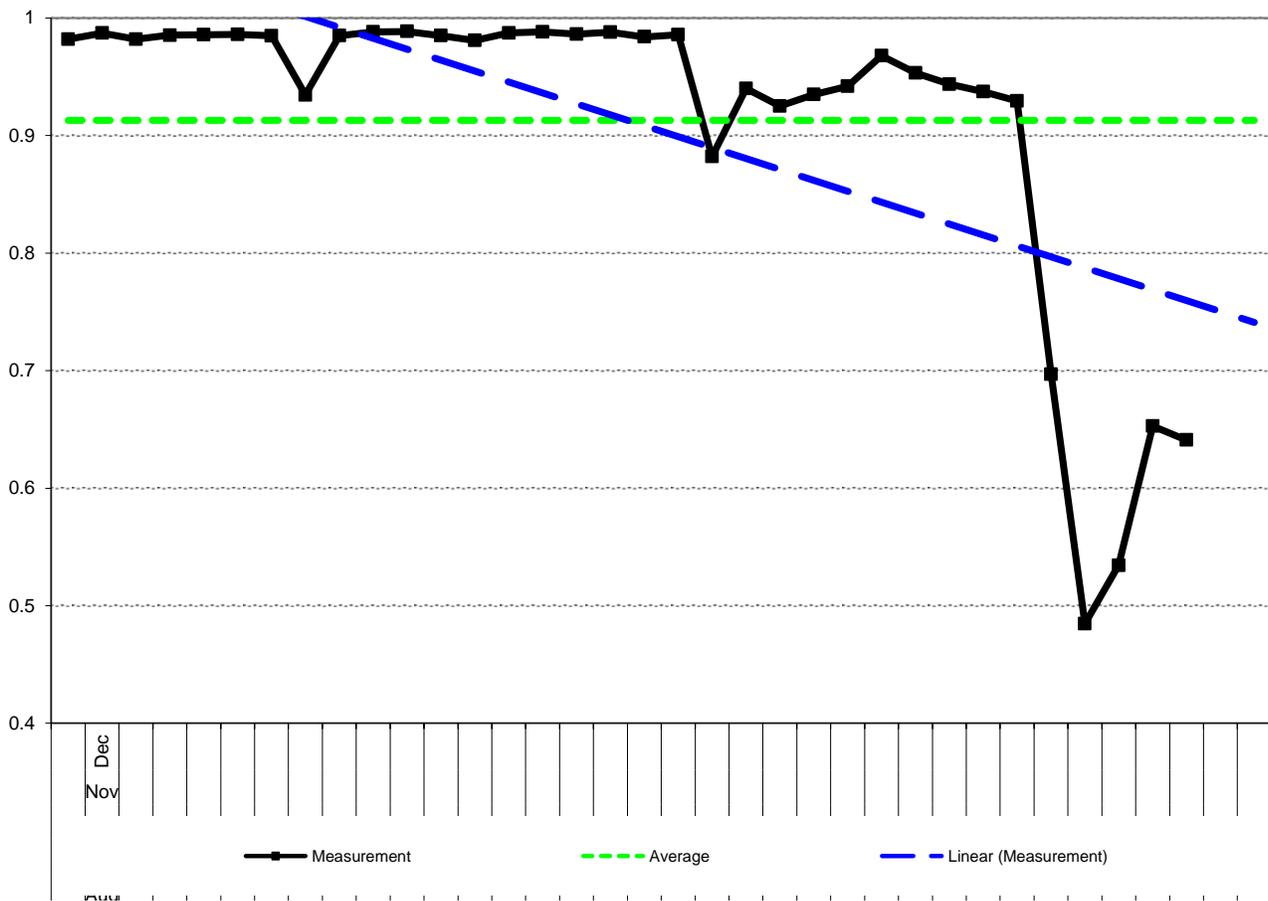
**Trend:** **Unfavorable**

### Analysis

The purpose of the customer billing and collection processes is to collect revenues from customer accounts that are billed according to the service rules and are based upon accurate metered consumption. Obtaining an accurate reading is the first step in that process. Staff has maintained a reading rate near or above the goal since April 2010 except for three months affected by weather events. Recent reductions in overtime have resulted in an increased number of occasions when entire routes are estimated.

### Plans for Improvement

Staff is working to reduce the number of estimated and erroneous readings. Also, the Automated Meter Reading pilot project is also intended to reduce the number of estimated and erroneous readings, as well as to reduce the cost of obtaining a validated reading.



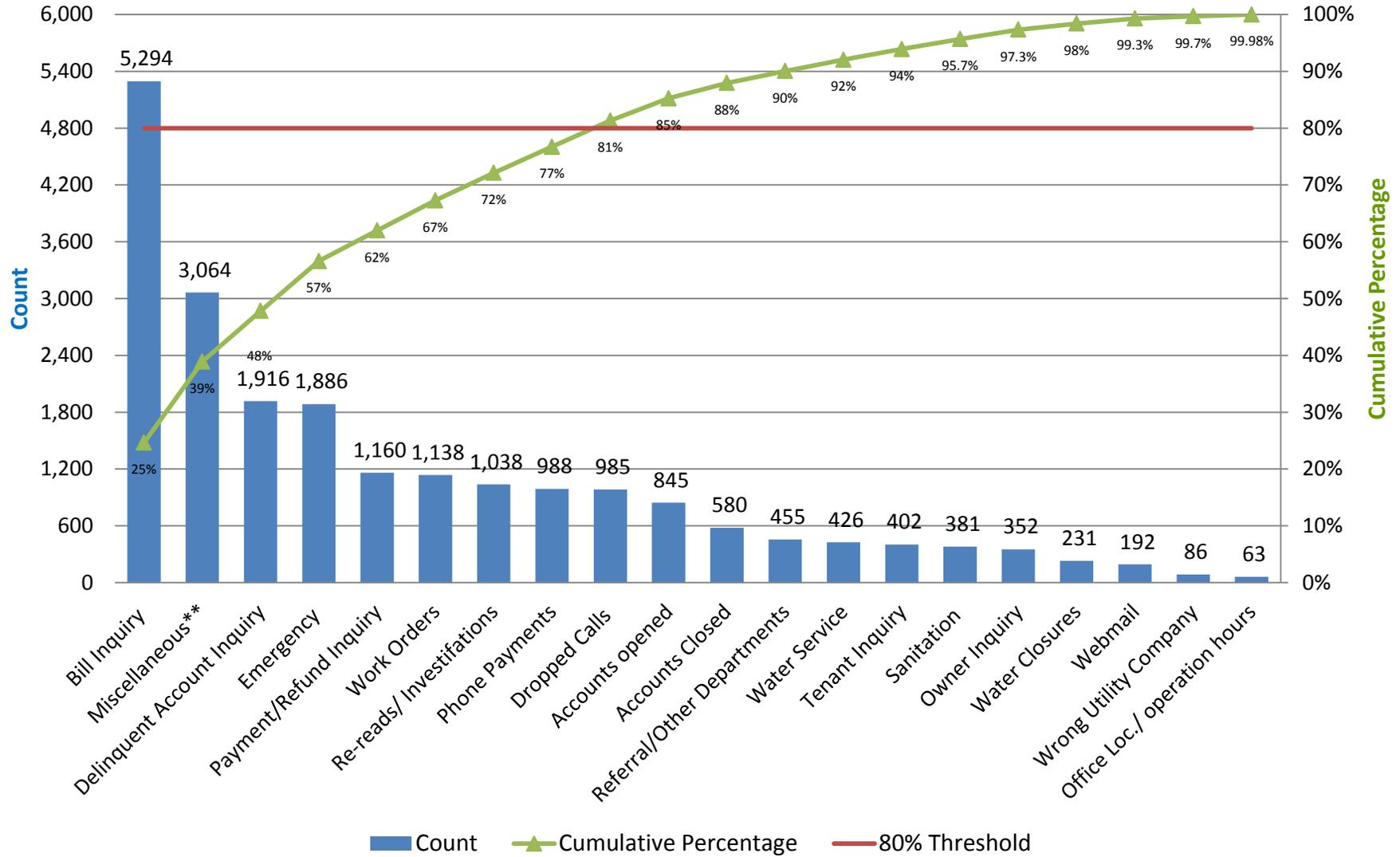
**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	98.2%	98.7%	98.2%	98.5%	98.6%	98.6%	98.5%	93.5%	98.5%	98.8%	98.9%	98.5%
<b>2016</b>	98.1%	98.7%	98.8%	98.6%	98.8%	98.4%	98.6%	88.2%	94.0%	92.5%	93.5%	94.2%
<b>2017</b>	96.8%	95.3%	94.4%	93.7%	93.0%	69.7%	48.5%	53.4%	65.3%	64.1%		

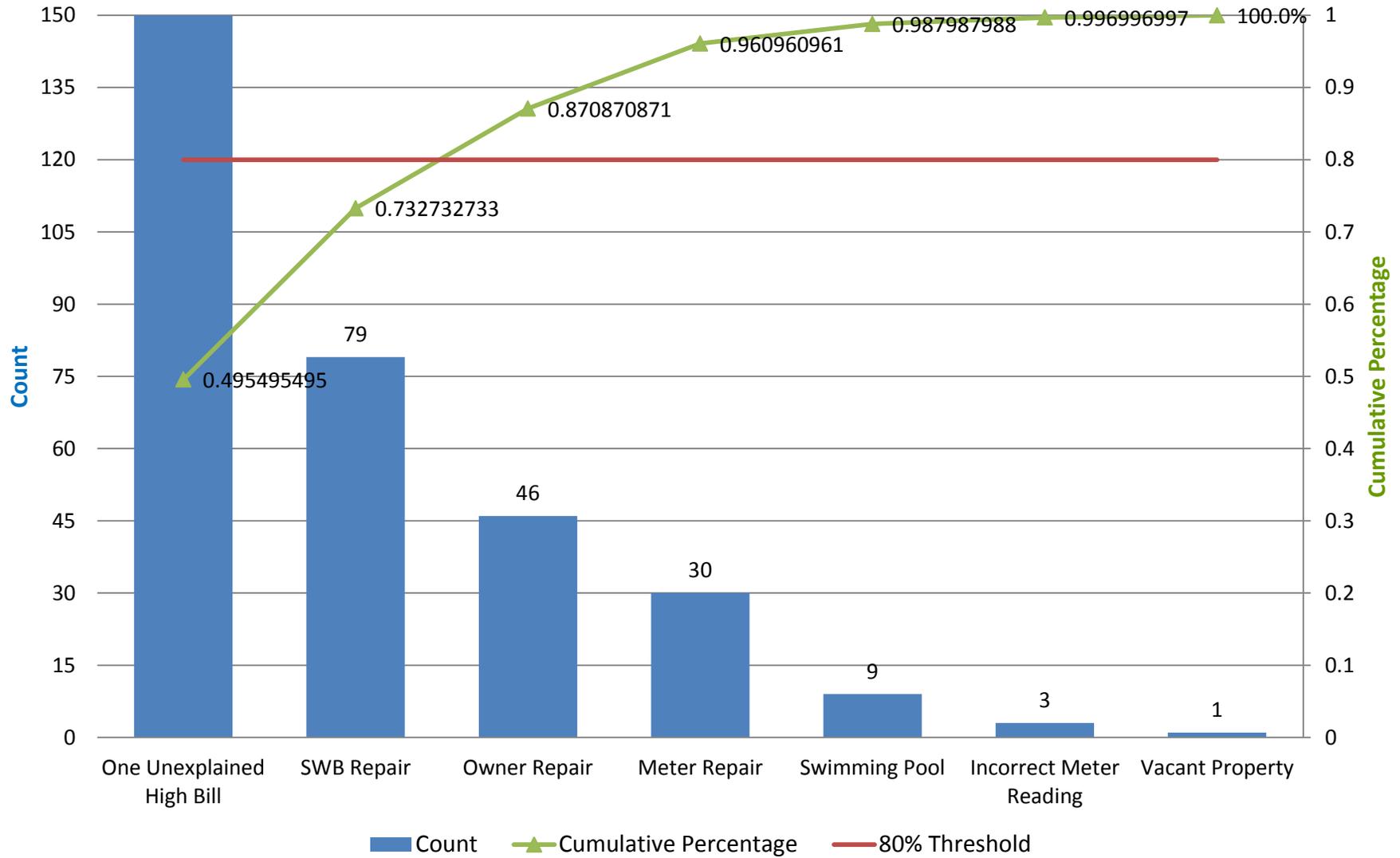
# Sewerage and Water Board of New Orleans

## Types of Customer Calls

### October 2017



# Sewerage and Water Board of New Orleans Reasons for Adjustments October 2017



# Sewerage and Water Board of New Orleans

## Water and Sewer Receivables 30 to 120 Days Old

**EUM Attribute: Financial Viability**

**Description: Establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues**

**Constituency: Customer Ratepayers**

**Objective: Efficient use of resources in providing services**

**Goal: None established**

**Currently Meeting Goal: Not Applicable**

**Process Operating Within Control Limits: Yes**

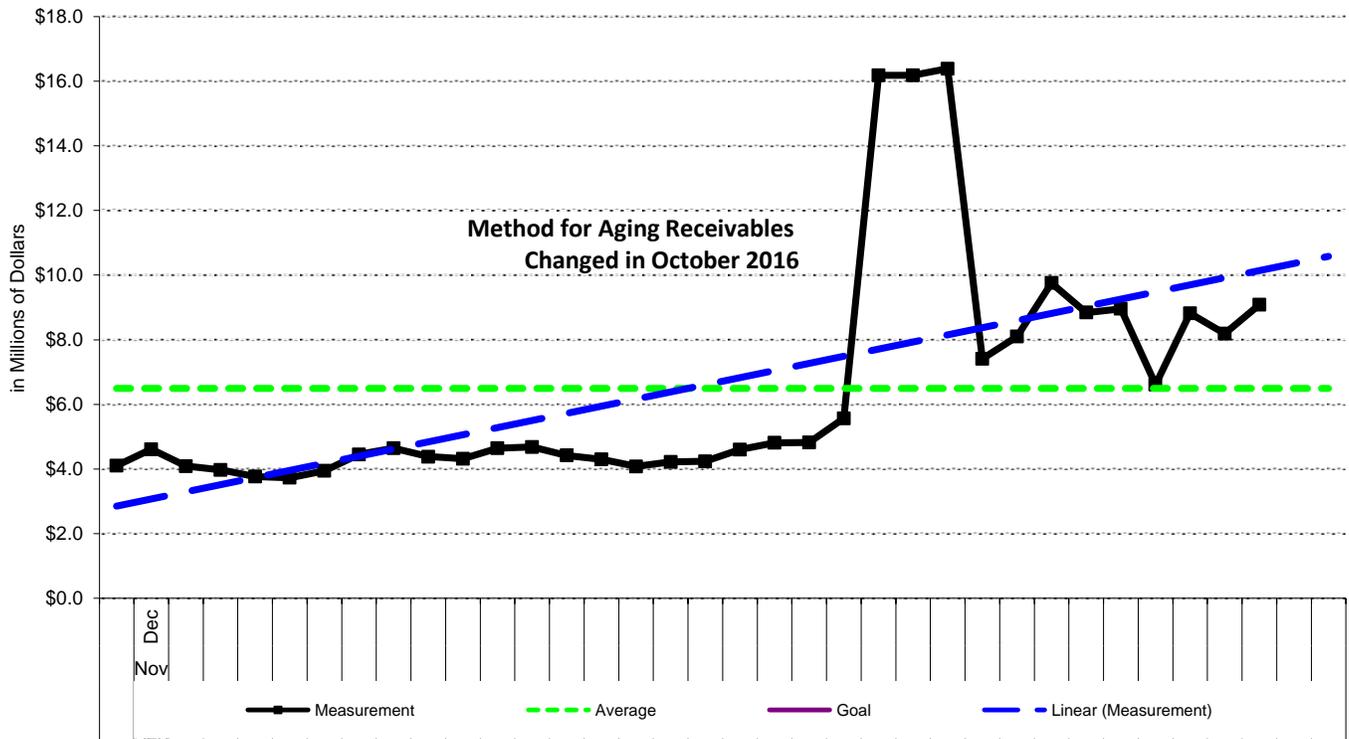
**Trend: Method for Aging Receivables Changed in October 2016**

### Analysis

Water and sewer accounts receivable that are 30 to 120 days old are handled by internal staff using service disconnection. When those accounts are turned-off and final bills sent, the remaining balances after 30 days are sent to a collection agency.

### Plans for Improvement

It appears that the higher post-Katrina accounts receivable balances have been resolved through standard collection practices and that annual collection rates now exceed 98% of annual billings. Staff intends to use standard process improvement methods to continue collection practices pending implementation of new billing and collection system.



Data Table

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	\$ 4.10	\$ 4.61	\$ 4.09	\$ 3.97	\$ 3.77	\$ 3.73	\$ 3.94	\$ 4.45	\$ 4.64	\$ 4.38	\$ 4.32	\$ 4.64
<b>2016</b>	\$ 4.68	\$ 4.42	\$ 4.30	\$ 4.08	\$ 4.22	\$ 4.24	\$ 4.60	\$ 4.81	\$ 4.82	\$ 5.57	\$ 16.18	\$ 16.18
<b>2017</b>	\$ 16.39	\$ 7.41	\$ 8.10	\$ 9.76	\$ 8.84	\$ 8.96	\$ 6.61	\$ 8.82	\$ 8.19	\$ 9.08		

# Sewerage and Water Board of New Orleans

## Water and Sewer Receivables 120 Days and Older

**EUM Attribute:**  
Financial Viability

**Description:** Establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues

**Constituency:**  
Customer Ratepayers

**Objective:** Efficient use of resources in providing services

**Goal:** None established

**Currently Meeting Goal:** Not Applicable

**Process Operating Within Control Limits:** Yes

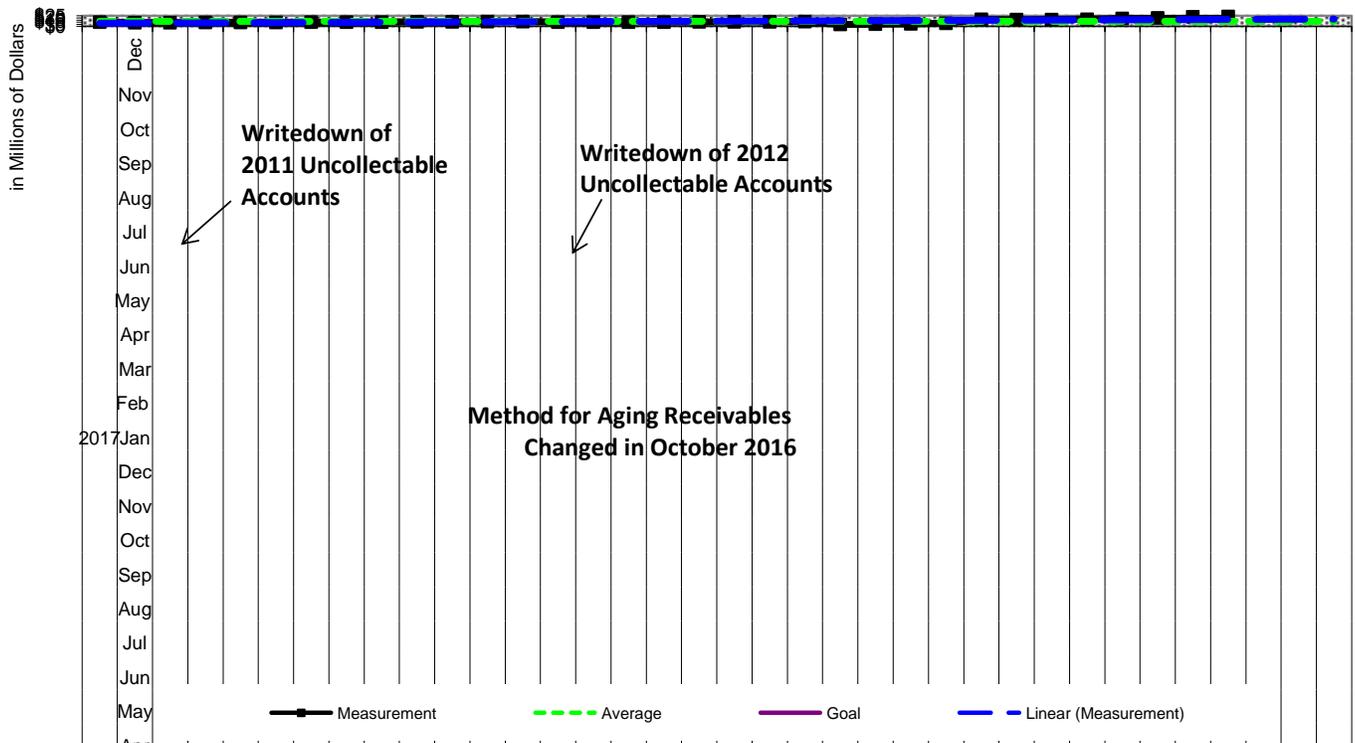
**Trend:** Method for Aging Receivables Changed in October 2016

### Analysis

Water and sewer accounts receivable that are 120 days and older are handled by a collection agency. When those accounts remain uncollected after three years, the balances are written off as part of an annual process.

### Plans for Improvement

It appears that the higher post-Katrina accounts receivable balances have been resolved through standard collection practices and that annual collection rates now exceed 98% of annual billings. Staff intends to use standard process improvement methods to continue collection practices pending implementation of new billing and collection system.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	\$ 10.32	\$ 8.78	\$ 9.01	\$ 9.19	\$ 9.47	\$ 9.62	\$ 9.80	\$ 10.02	\$ 10.26	\$ 10.51	\$ 10.87	\$ 11.25
<b>2016</b>	\$ 11.71	\$ 9.92	\$ 10.09	\$ 10.27	\$ 10.34	\$ 10.56	\$ 10.74	\$ 10.99	\$ 11.35	\$ 4.81	\$ 5.57	\$ 6.33
<b>2017</b>	\$ 7.35	\$ 16.93	\$ 15.78	\$ 16.40	\$ 16.96	\$ 18.60	\$ 20.19	\$ 22.80	\$ 23.70			

# Sewerage and Water Board of New Orleans

## Total Service Requests for Sewer System Leaks

**Constituency:**  
Customer  
Ratepayers

**Objective:** Provide Timely  
Information and Respond  
Promptly to Requests

**Goal:** Reduce  
Number of Service  
Requests

**Currently Meeting  
Goal:** Yes

**Process Operating  
Within Control  
Limits:** Yes

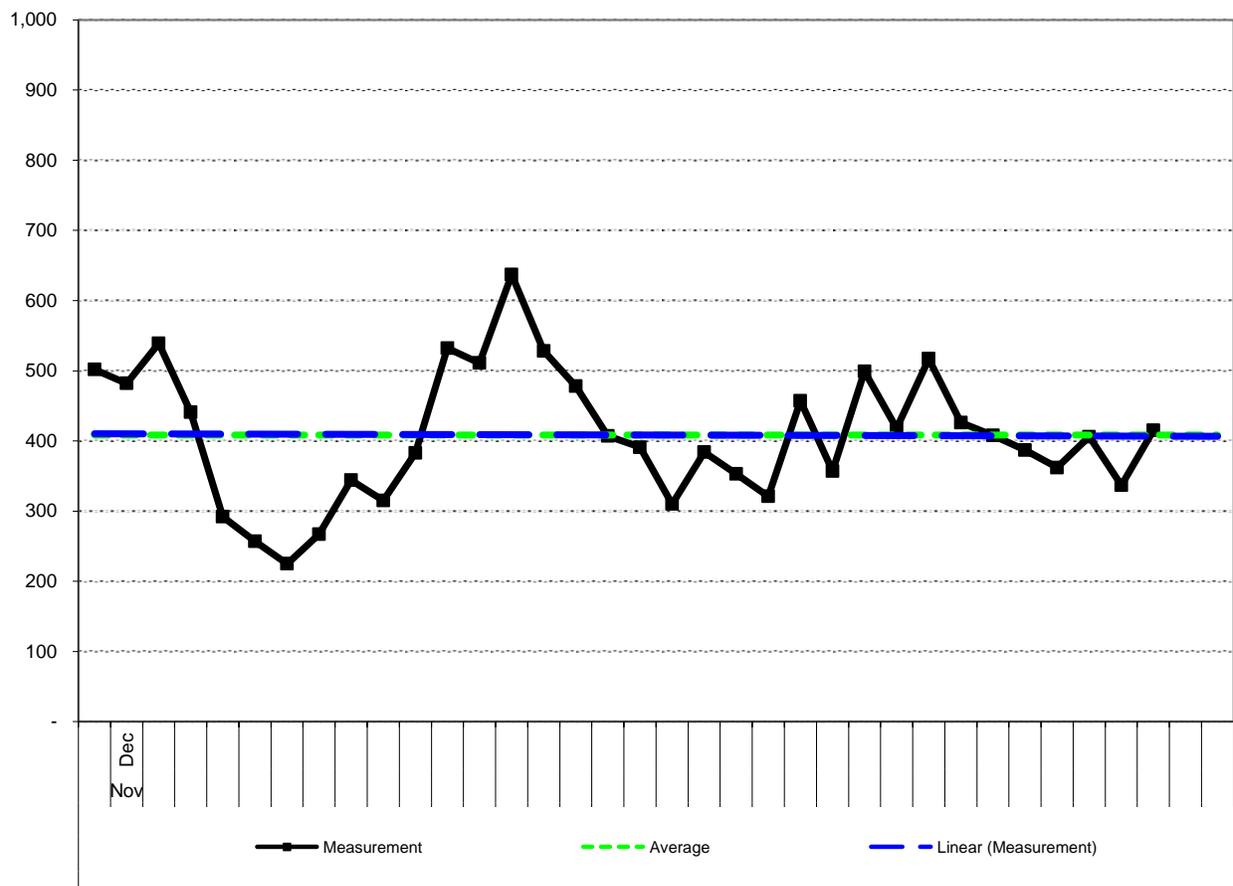
**Trend:** Favorable

### Analysis

Customers contact the Sewerage and Water Board to request repairs to leaking sewer collection mains and service lines.

### Plans for Improvement

Staff performs repairs as part of routine maintenance of the sewage collection system.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	502	482	539	441	292	257	225	267	344	315	383	532
<b>2016</b>	511	637	528	478	407	391	310	384	353	321	457	357
<b>2017</b>	499	418	517	426	408	387	362	406	337	415		

# Sewerage and Water Board of New Orleans

## Total Service Requests for Water System Leaks

**Constituency:**  
Customer  
Ratepayers

**Objective:** Provide Timely  
Information and Respond  
Promptly to Requests

**Goal:** Reduce  
Number of Service  
Requests

**Currently Meeting  
Goal:** No

**Process Operating  
Within Control  
Limits:** No

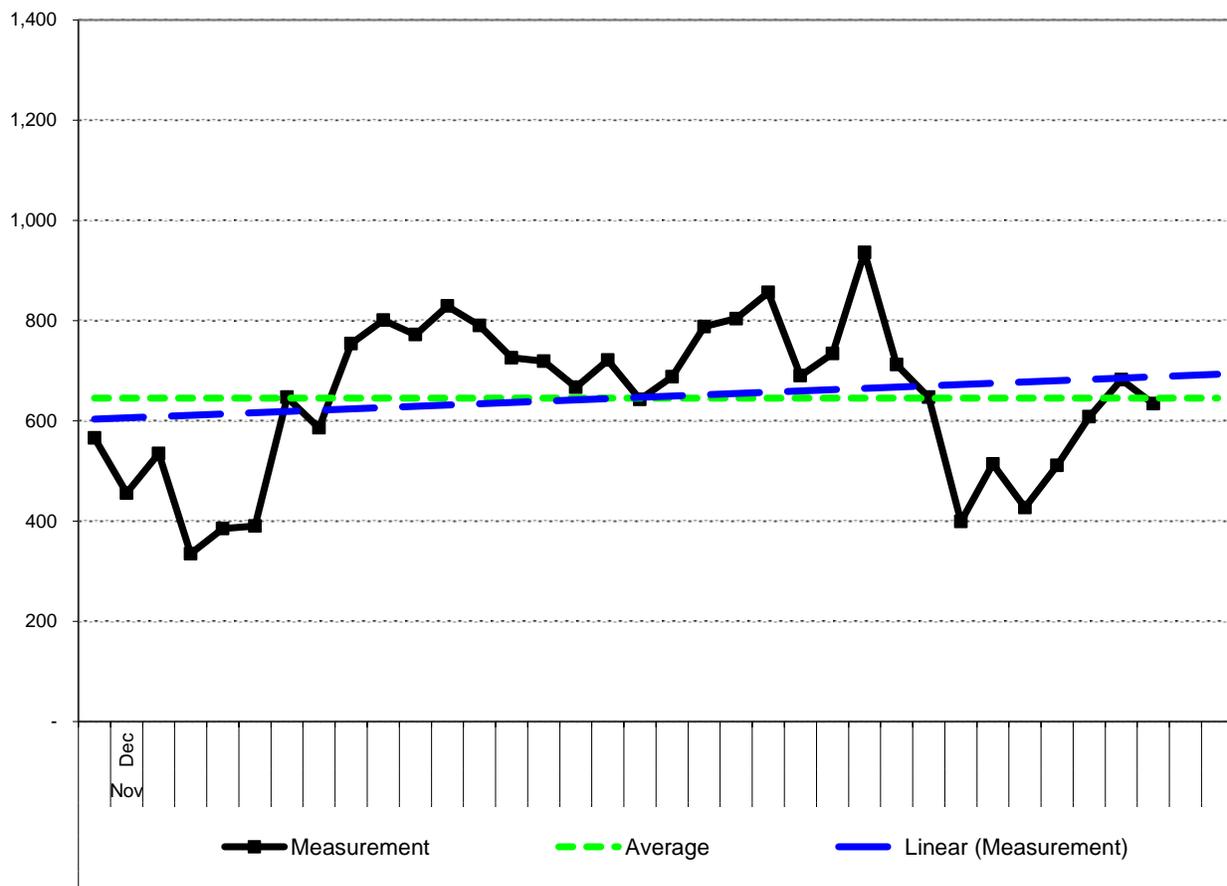
**Trend:** Unfavorable

### Analysis

Customers contact the Sewerage and Water Board to request repairs to leaking mains, services and fire hydrants.

### Plans for Improvement

Water mains with high frequency of failure are replaced as part of FEMA settlement.



**Data Table**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>2015</b>	566	456	535	335	385	390	647	586	754	801	772	829
<b>2016</b>	790	726	719	667	721	643	688	788	804	856	690	734
<b>2017</b>	936	712	647	399	514	427	511	608	682	634		



## **Section C.**

# **Statistics and Reports**

---

## ***Performance Metrics for Employees and Contractors***





## **Section C.**

# **Statistics and Reports**

---

***Benchmarks of Success Regarding  
Improved Coordination between  
the Board and the Department of  
Public Works***





CITY OF NEW ORLEANS

## Joint DPW-SWB Capital Improvement Program





# The Big Picture



- **More than \$2.4B worth of DPW / SWB is been designed and executed with DWP/SWBNO Joint Infrastructure Program**
  - Most comprehensive infrastructure program our region has seen in a generation.
  - Working together as one team to design and deliver projects
  - More than **200** individual projects - every neighborhood will feel a positive impact.
  - **Multiple Funding Sources:** FEMA-funded road / waterline work, FEMA-funded Hazard Mitigation Grant Program (HMGP) projects, HUD-funded National Disaster Resiliency Competition (NDRC) grant projects, SWB-funded Sewer System Evaluation and Rehabilitation Program (SSERP) (sewer consent decree) work and City-funded bond project work.
  - Aggressive project schedules coordinated to minimize construction-related impacts.
  - Work will create **thousands** of construction jobs across the city and maximize economic opportunity for the City's small and disadvantaged businesses.





# The Big Picture



- Will address long overdue repairs and make infrastructure improvements to roads, drainage, water, and sewer systems concurrently to maximize FEMA settlement.
  - We have taken a comprehensive and programmatic approach to the work. We are coordinating daily with our team to design and implement this work.
  - Will leverage and link multiple funding sources with the results from the *Citywide Pavement Assessment* to improve drainage system capacity and resilience using green infrastructure.
  - Will meet all SWBNO sewer system consent decree milestones.





# Types of Work



- Each project will encompass multiple, different street blocks and may include one or more different categories of work
- Planned work on individual street blocks will fall into one of six broad categories:
  - Non-Paving Incidentals
  - Incidental Road Repairs
  - Patch, Mill, and Overlay
  - Patch Concrete
  - Full Depth Reconstruction





# Current Status



## Under Construction

- ✓ Lakeview North Group A
- ✓ Lower Ninth NW Group A
- ✓ Village De L'est Group A
- ✓ Read Blvd. East Group A



Lakeview North Group A

## To be in Construction – Next 90 days:

- ✓ Lake Terrace & Oaks Group A (Dec)
- ✓ Lower Ninth NE Group A (Jan)
- ✓ Read Blvd. West Group A (Jan)
- ✓ West Bank Group A (Feb)
- ✓ Lakeshore Group A (Feb)
- ✓ Desire Group A (Feb)



Village De L'est Group A





# Engaging the Community - *How*



- **Neighborhood Engagement:** Partnering with neighborhood association presidents / leaders to ensure an open line of communication throughout the program. Attending regular, established neighborhood association meeting to provide information about the CIP.
- **User-Friendly Web site:** [roadwork.nola.gov](http://roadwork.nola.gov) web site includes fact sheets, FAQs, current activities, construction impacts / mitigation, how to get engaged, etc.
- **Dedicated Construction Hotline & E-mail:** Established an official construction hotline between the hours of 7:30 and 5:00 pm that provides a “lifeline” for residents; responding to calls within 24-hours. [504-658-ROAD \(7623\)](tel:5046587623); established an official construction e-mail [roadwork@nola.gov](mailto:roadwork@nola.gov).
- **Social Media (Facebook, Twitter, Next Door, YouTube):** Established social media platforms to post real-time updates, respond to inquiries, share photos and videos, and link to resources.
- **Direct Mail:** An overview of the Capital Improvement Program was included in the December 2016 Sewerage & Water Board of New Orleans mailing to more than **140,000 households**.
- **First Programmatic Construction Newsletter Distributed in March 2017:** Distributed monthly with project updates, construction activities and their anticipated impacts, etc.
- **Educational Literature:** Placing information about the CIP in our NORDC recreation centers (12) and New Orleans Public libraries (14).





# Keeping You Informed Roadwork.nola.gov



**Enter your address here**

**Choose to view pavement condition, planned work or roads under construction now**

**Tell us what you think of the site or download the data**

**Get block-by-block information about the work schedule, type of repairs and what to expect during construction**

**CHECK OUT THE NEW FEATURES!**

- ✓ mobile-friendly
- ✓ clean design
- ✓ improved functionality
- ✓ enhanced content

**roadwork.nola.gov**

**6800 block of Vicksburg St**  
From Chalpele St to Mouton St in Lakeview C

Pavement Condition	
Failure	

Work Status	
<b>Project</b>	Street Repair Work
Project ID	RR088
Repair Type	Full Reconstruction
Status	Planned
<b>Schedule</b>	
Start	Jul-Sep 2021
End	Jul-Sep 2022

Water, Sewer, and/or Drainage Work	
Work Type	Drainage Line, Sewer Line and Water Line Replacement
Status	Planned

PLEASE NOTE: The content provided on roadwork.nola.gov is subject to change pending unforeseen site conditions, weather delays, constructability issues, etc.





# Stay Connected With Us



**Construction Hotline: 504.658.ROAD (7623)**



**Facebook.com/roadworkNOLA**



**@roadworkNOLA**



**We have also joined Next Door!**





## **Section C.**

# **Statistics and Reports**

---

***Processes and Indicators for  
Prevention of Waste and Fraud***





## **Section C.**

# **Statistics and Reports**

---

### ***Report on the Efficiency and Effectiveness of Information Systems***



**Sewerage and Water Board of New Orleans**  
**Report on Efficiency and Effectiveness of Information Systems**  
**December 2017**

**Summary.** Sewerage and Water Board utilizes automated information systems to support operations and maintenance activities of the water, sewer, and drainage systems:

- Tracking Maintenance Work Orders for the Water Distribution and Sewer Collection Systems
- Monitoring Systems Operations
- Project Management
- Creating and Updating Maps of Facilities
- Reading Meters
- Billing and Collecting Customer Accounts
- Tracking Information on Employees
- Paying Employees
- Paying Suppliers
- Preparing Financial Reports
- Supporting Facilities Security
- Supporting Office Communications
- Providing Access to Internet

Many of the major information systems are well beyond their designed lifespan and are in need of replacement. These systems remain effective due to the commitment by staff to support and maintain them during the extended period when funding for normal life cycle replacements was not available. The two primary deficiencies with existing systems are (1) the difficulty to maintain support on aged information technology architectures and software languages and (2) the difficulty in creating capabilities to meet evolving customer expectations.

Over the next five years, the Board will focus its information systems software replacements, upgrades, and enhancements in several directions:

- Replace all remaining mainframe systems
  - Dynamics GP HR/Payroll should go live in 2017
  - Dynamics GP Financial module implementation should begin 2018
- Enhance and improve GIS capabilities at the Board
- Replace current work order system (RJN Cassworks) with a GIS-based system
- Expand and enhance SCADA capabilities and reporting throughout the Board
- Enhance the Cogsdale CSM billing system with the implementation of Verint Customer Relationship / Scripting Software
- Implement Automated Meter Reading
- Replace telephone system with Voice over IP Telephony

Additionally, the Board is working on enhancing redundancy, resiliency, and security. A second fiber network for security camera systems is being built. Network security was recently

enhanced with the addition of a new firewall. The network was recently redesigned and upgraded. Monthly network scans are conducted and deficiencies are corrected quickly. Software security patches are quickly deployed.

The Board is planning a Resiliency Complex at its Carrollton Water Plant which will house key areas necessary for continued functioning in an emergency. A new Information Systems facility will be included in the complex. SWB Information Systems has been working closely with Board engineers and consultants in the design of that facility.

New information systems will allow for users to have significantly more direct access to information without the need to request special reports from Information Systems. The new payroll system will allow employees direct access to their own data on pay, leave balances, etc. as well as allow them to do electronic timekeeping. Also, in conjunction with the Dynamics GP HR project, the Board is implementing an online goal based evaluation system.

### **Current Software in Use at the Board.**

- Tracking Maintenance Work Orders for the Water Distribution and Sewer Collection Systems. Sewerage and Water Board utilizes asset management and work order software from RJN:

RJN Cassworks, Version 7

Networks

Plant

- Monitoring System Operations. Sewerage and Water Board utilizes Supervisory Control and Data Acquisition Software from:

GE PROFICY HMI / SCADA-iFIX, Version 5.5

GE PROFICY Historian Enterprise Server, Version 4.5

OSIsoft Pi Historian

Win911

- Project Management. Sewerage and Water Board utilizes project management software from both Oracle and Microsoft:

Oracle Primavera P6 Enterprise Portfolio Management

MS Project 2016

- Creating and Updating Maps of Facilities. Sewerage and Water Board utilizes GIS software from ESRI and drafting software from AutoCAD

ESRI ARC GIS Server and Desktop, Version 10.2

ESRI ARC GIS GeoEvent Server

ESRI ARC GIS Online

AutoCAD 2016

- Reading Meters. Sewerage and Water Board utilizes meter reading software from Itron to support the manual reading of water meters:

Itron MVRS, Version 8.2.5

Sewerage and Water Board has piloted software from Itron, Sensus, and Mueller as part of a larger procurement planning process. Implementation of automated meter reading capabilities will follow upon the successful implementation of the new billing system.

In preparation for that project, Sewerage and Water Board contracted to have an assessment of readiness to implement automated metering, guide the procurement and oversee the implementation of the automated metering system, and perform additional analysis as needed. The initial assessment has been completed.

- Billing and Collecting Customer Accounts. Sewerage and Water Board utilizes software resources from Cogsdale:

Cogsdale Customer Service Management (CSM) v12.28

Cogsdale Permitting

Cogsdale Mobile Work Management

Vocantas IVR

Matrix IT ACD

Cogsdale Geolocation Management

Satori CASS Certification

- Tracking Information on Employee and Paying Employees. Sewerage and Water Board utilizes human resources software from CGI/AMS:

Advantage Human Resources GHRS System, Version 2.3.2

Personnel Management

Payroll Management

Position Control

Employee Benefits

Employee Relations

Sewerage and Water Board is implementing the Cogsdale Human Resources and Payroll System with go-live scheduled in 2018.

- Paying Suppliers and Preparing Financial Reports. Sewerage and Water Board utilizes accounting and financial software from CGI/AMS:

Advantage Financial AFIN System, Version 2.2

General Ledger  
Accounts Payable  
Accounts Receivable  
Workers' Comp  
Bank Recon  
Budget  
Purchasing  
Inventory Control  
Fixed Assets

- Supporting Facilities Security. Sewerage and Water Board utilizes security camera and badge access software from LENEL:

LENEL On Guard, Version 6

- Supporting Office Communications. Sewerage and Water Board utilizes Microsoft Office 2010 suite of software to support office automation:

Microsoft Access	Microsoft Project
Microsoft Excel	Microsoft Publisher
Microsoft One Note	Microsoft Visio
Microsoft Outlook	Microsoft Word
Microsoft Power Point	

Sewerage and Water Board utilizes Microsoft and Symantec software to support email communications:

Microsoft Exchange 2010, 2013 Server Software  
Symantec Email Vault Server, Version 12  
Symantec Messaging Gateway, Version 10.6  
Symantec Mail Security for Microsoft Exchange  
Symantec Anti-Virus, Versions 11, 12  
Symantec Enterprise Vault, Version 12.6  
Symantec Discovery, Version 12

- Providing Access to Internet. Sewerage and Water Board utilizes these software products to provide employee access to the Internet:

Web Browsing Software: Microsoft Internet Explorer, Version 11  
Microsoft Edge 38  
Web Filtering Software: Websense Filtering Software, Version 7  
Streaming Software: Microsoft Media Services 2008, Version 2  
Firewall Hardware/Software: Palo Alto  
Terminal Emulation Software: Hummingbird HostExplorer Win32 v8;  
Open Text HostExplorer x64, v15



- Fleet Management. Sewerage and Water Board utilizes software from CYNDRUS and Motion Link for Fleet Management and Vehicle Tracking:

Fleet Management Software, CYNDRUS, Version 3.5

Fleet Tracking Software: Motion Link Vehicle Tracking and Monitoring

- Backflow Prevention. Sewerage and Water Board utilizes backflow prevention program software from BPMS for monitoring potential points of backflow:

BPM, Version 6.11a



## **Section C.**

# **Statistics and Reports**

---

## ***Report on Assessment and Status of Technologies***



DRAFT

# REPORT ON OPERATIONS FOR 2016

BLACK & VEATCH PROJECT NO. 195184

PREPARED FOR

Sewerage and Water Board of New Orleans

30 OCTOBER 2017





## **MISSION STATEMENT**

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

## **VISION STATEMENT**

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

## **OUR VALUES**

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



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## Introduction

### PURPOSE AND SCOPE

This report covers operations of the Sewerage and Water Board of New Orleans for the year ended December 31, 2016. This report presents findings of studies made in compliance with covenants of the 2014 General Water Revenue Bond Resolution and the 2014 General Sewerage Service Revenue Bond Resolution. This report also 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 General Water Revenue Bond Resolution and the General Sewerage Service Revenue Bond Resolution.
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 2014 General Water Revenue Bond Resolution or 2014 General Sewerage Service Revenue Bond Resolution.

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

### HISTORY

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

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

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

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

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

### Water Department

Act No. 541 increased the Board's ability to finance needed water system improvements by authorizing the Board to issue water revenue bonds. Subsequently, water revenue bonds in the amounts of \$6,200,000 in 1960, \$1,500,000 in 1961, \$2,500,000 in 1964, \$4,000,000 in 1971, \$6,000,000 in 1978, \$17,000,000 in 1980, \$3,000,000 in 1981, and \$5,000,000 in 1982 were issued. All water system revenue bonds outstanding in 1986 were defeased by the \$31,350,000 Series 1986 Water Revenue Refunding bond issue. Additional revenue bonds in the amount of \$16,000,000 were issued in 1998 and \$34,000,000 were issued in 2002. In 2014, the Board issued Water Revenue and Refunding Bonds in the amount of \$103,525,000. A portion of the proceeds were used to defease Series 1998 in the amount of \$5,570,000 and Series 2002 in the amount of \$22,085,000. In 2015, the Board issued Water Revenue Bonds in the amount of \$100,000,000. Principal payments will begin in 2018. As of December 31, 2016, total outstanding debt service on all outstanding revenue bonds totaled \$203,200,000.

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 to discontinue the free water allowance for sewerage purposes effective November 9, 1966.

### Sewerage Department

Act No. 567 gave the Board authority to set and collect sewerage service charges to be used for operational and capital costs of the Sewerage Department, and to issue sewerage service revenue bonds. This Act permitted the Board, for the first time in its history, to charge users of the sewerage system directly for related costs. Under the authority of Act No. 567, sewerage service charges were implemented May 1, 1967 and subsequently, sewerage service revenue bonds totaling \$33,000,000 were sold in 1968, 1976, 1982 (2 issues), and 1983. All sewerage system revenue bonds outstanding in 1986 were defeased by the \$21,280,000 Series 1986 Sewerage Service Revenue bonds. These bonds were fully retired in 1994. Sewerage system revenue bonds in the amount of \$30,000,000 were issued in 1997; \$25,000,000 in 1998; \$47,100,000 in 2000 (two issues); \$32,720,000 in 2001; \$57,000,000 in 2002; and \$5,500,000 in 2003. \$33,000,000 in revenue bonds, \$25,200,000 in Bond Anticipation Notes (BANs), and \$111,800,000 in Refunding BANs were issued in 2004. The 2004 BANs were defeased by the \$137,000,000 Refunding BANs Series 2005A. A portion of the 2005 BANs was refinanced with the Refunding BANs Series 2006. The remaining balance on the 2005 BANs were paid from funds on hand. The Refunding BANs Series 2006 were due July 15, 2009 and were paid in full by the issuance of Refunding Bonds Series 2009 in the amount of \$23,375,000. In 2014, the Board issued Sewerage Service Revenue and Refunding Bonds in the amount of \$158,990,000. A portion of the proceeds were used to defease all outstanding bonds with the exception of the Series 2011 bonds.

In November 2011, the Board and Louisiana Department of Environmental Quality (LADEQ) entered into a loan agreement whereby \$9,000,000 of proceeds from the Revolving Loan Fund were

borrowed through the issuance of Sewerage Service Subordinate Revenue Bonds, Series 2011. Debt service payments assume a 20-year term with a 0.45 percent interest rate plus an administrative fee of 0.5 percent. The Board began drawing down the funds during the first quarter of 2012 and as of December 31, 2014, had received a total of \$9,000,000 in disbursements. The Board began making principal payments in November of 2013. With the issuance of the Series 2014 bonds, the Series 2011 bonds became parity debt and entitled to the provisions of the General Sewerage Service Revenue Bond Resolution. In 2015, the Board issued Sewerage Service Revenue Bonds in the amount of \$100,000,000. Principal payments will begin in 2021. Total outstanding principal on all revenue bonds totaled \$242,668,000 as of December 31, 2016.

### Drainage Department

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

Under the Louisiana State Constitution, all assessments beginning in 1978 were equalized, with residential property assessed at 10 percent of its market value and commercial and personal property assessed at 15 percent of market value. The constitution also provides that no tax revenues shall be lost by reassessments; thus, it has been necessary to revise the millage rates in effect at various times. If reassessment results in a lower tax base, the millage rate may be adjusted upward. If a larger tax base results, the millage rates must be rolled back. However, by state law, the City Council, upon request and after a public hearing, may increase the millage rates to the prior year's level. The three-mill tax rate, 6.01 mills since 1988, was increased to 6.40 mills in 1992 due to reassessment, and remained at that level through 2007. In 2007, it was reduced to 4.544 and in 2010 it was increased to the current rate of 4.66 mills.

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

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

In 1981, a nine-mill ad valorem tax was approved and became effective January 1, 1982. It was reauthorized in December 2016. 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 additional nine-mill bonds in the amount of \$20,000,000 were issued in 2002. In 2014, the Board issued Drainage System Refunding Bonds in the amount of \$14,900,000 for the purpose of refunding Series 1998 and Series 2002. The total nine-mill Drainage System Bonds outstanding as of December 31, 2016 was \$11,100,000.

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 2007. In 2007, it was reduced to 6.89 and in 2010 it was increased to the current rate of 7.06 mills.

Collection of the three-mill ad valorem tax levy is authorized through 2046; six-mill tax through 2026; and nine-mill tax through 2031.

### General

During January 2006, the Board entered into a long-term agreement with the Federal Emergency Management Agency (FEMA) under the Community Disaster Loan Act of 2005. The Board has drawn down \$61,956,747 of the funds available. In December 2010, the Board was granted a partial forgiveness in the amount of \$36,790,000 of principal and \$4,648,410 of accrued interest, leaving a balance of \$25,166,747 in principal. In September of 2013, the Board was granted full forgiveness of the remaining balance of \$25,166,747.

In July of 2006 the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247, which was the total amount available to the Board. Of that amount, \$31,500,000 was used to make a partial payment on the Sewerage Service Refunding BANs Series 2005A that matured on July 26, 2006. The remainder was used to make debt service payments on the Drainage System special tax bonds, the Sewerage Service revenue bonds, and the Water revenue bonds that were due on December 1, 2006; June 1, 2007; December 1, 2007; and June 1, 2008. Principal payments on the bonds began in July 2012 and continue through July 2026. As of December 31, 2016, the amount outstanding was \$51,844,281.

The Board is currently receiving funds from the U.S. Army Corps of Engineers (COE) sponsored and congressionally authorized Southeast Louisiana Urban Flood Control (SELA) Project. This funding will allow additional construction projects which were identified in the 1970s, 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 2020.

The Board provides water and sewer for public services to the City of New Orleans and its public institutions as mandated by state law in accordance with R.S. 33:4096 and R.S. 33:4121, respectively. During 2016, the Board provided 1,062,993,239 gallons of water for public services to agencies of the City of New Orleans. The value of this water, at current rates, is \$46,141,187.68. The value of the sewerage charges is \$110,153,094.86.

The three revenue-generating public agencies - the New Orleans Museum of Art, City Park, and Audubon Park – continued to receive water for public services under “caps”, or maximum annual limits, established by the Legislature in 1982. The Museum of Art used 119,800 gallons or 2,434,000 below its annual “cap” of 2,553,800 gallons. City Park used 25,021,600 gallons or 210,301,800 below its annual “cap” of 235,323,400 gallons. Audubon Park used 97,490,200 gallons or 142,509,800 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 2016. 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 2016 includes a summary of the number of bills issued, billed volume, and revenues by customer class for both the Water and Sewerage Departments.

Operation and maintenance expenses are summarized by supplemental accounts that 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 2016 have complied with the requirements set forth in the 2014 General Water Revenue Bond Resolution.

## Summary of 2016 Operations

Based upon a tabulation of water bills rendered during the year, the Water Department provided water service to an average of 134,872 regular billed customers and 1,107 governmental accounts, the latter of which are served without charge. According to data provided by the Board, of the 51,561.3 million gallons of water pumped by the Department during the year, 13,106.7 million gallons were sold, 1,042.7 million gallons were metered to customers without charge, treatment plant process water totaled 532.2 million gallons, and unmetered uses accounted for the remaining 36,681.2 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 increased from \$82,956,619 in 2015 to \$88,358,817 in 2016. Operation and maintenance expenses (excluding claims paid) increased from \$78,264,668 in 2015 to \$76,886,448 in 2016. After adding claims of \$1,847,021 and debt service payments of \$10,222,220, a negative balance of \$596,872 was available for capital related expenditures in 2016, unadjusted for depreciation.

## Ability to Finance Future Operations and Proposed Improvements

A summary of projected financial operations of the Water Department for the period 2017 through 2021 is shown in Table 12 of the report. Revenues shown on Line 1 of Table 12 are based on rates that became effective January 1, 2017. Revenue from future annual water system revenue increases of 10 percent effective January 1, 2017 through January 1, 2020, followed by 6 percent effective January 1, 2021 are shown on Line 2 of Table 12.

Future long term debt financing of \$178,000,000 in 2018 and \$103,000,000 in 2021 is indicated to fund the proposed capital improvement program.

As demonstrated in Tables 11 and 12, 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 2017-2021 study period examined herein.

## Sewerage Department

### Sewerage Service Revenue Bond Resolution Requirements

Sewerage and Water Board financial operations for 2016 have complied with the requirements set forth in the 2014 General Sewerage Service Revenue Bond Resolution.

## Summary of 2016 Operations

The total revenue from sewer charges, delinquent fees, interest income and other income increased from \$98,165,766 in 2015 to \$108,233,756 in 2016. Operation and maintenance expenses (excluding claims paid) increased from \$58,028,723 in 2015 to \$58,240,656 in 2016. After adding claims of \$2,380,775 and debt service payments of \$24,616,125, a balance of \$22,996,200 was available for capital related expenditures in 2016, unadjusted for depreciation.

## Ability to Finance Future Operations and Proposed Improvements

A summary of projected financial operations of the Sewerage Department for the period 2017 through 2021 is shown in Table 24 of the report. Revenues shown on Line 1 of Table 24 are based on

rates that became effective January 1, 2016. Revenue from future annual wastewater system revenue increases of 10 percent effective January 1, 2017 through January 1, 2020, followed by 1 percent effective January 1, 2021 are shown on Line 2 of Table 24.

Future long term debt financing of \$158,000,000 in 2018 and \$124,000,000 in 2020 is indicated to fund the proposed capital improvement program.

It is anticipated that current revenue sources will be adequate to readily finance both projected capital program requirements and estimated future operation expenses of the Sewerage Department during the 2017-2021 study period examined herein

## Drainage Department

### Summary of 2016 Operations

Total revenues received from all sources including interest income totaled \$57,349,315 in 2016, an increase of approximately 5.5 percent from \$54,367,386 reported for the same sources in 2015. Total operation and maintenance expenses decreased about 11.4 percent, from \$37,814,502 in 2015 to \$33,523,624 in 2016. After adding claims of \$2,223,009 and debt service payments of \$2,017,050, a balance of \$19,585,632 was available for capital related expenditures in 2016.

### Ability to Finance Future Operations and Proposed Improvements

An analysis of financial operations projected for the Drainage Department for the period 2017 through 2021 is summarized in Table 35 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 the current revenue sources are not adequate to meet operation and maintenance expenses and total debt service on existing bond issues beginning in 2021. In addition, the Drainage Department will not have the debt capacity to fund all of the capital requirements through 2021. Due to constraints on revenue, it is anticipated that capital projects during the 5-year period will exceed the amount of funding available from the Drainage Department. It is recommended that the Board defer capital projects until an additional source of operating revenue has been identified and the SWBNO has the capacity to debt finance more projects. This deferment is shown on Line 9 of Table 34.

### 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 2016 Comprehensive Annual Financial Report. In 2016, approximately 69.7 million kilowatt hour (kWh) of power was purchased and 33.2 million kWh of power was generated.

On a unit cost basis, the average cost of purchased power has increased over the past five years from about 9.3¢ per kWh in 2012 to about 10.2¢ per kWh in 2016. During the same period, the Board's unit cost for generated power has increased from about 20.5¢ per kWh to about 27.4¢ per kWh. In 2016, the cost of Board generated power was 2.7 times higher than that of purchased power; however, this

higher cost is offset by the fact that the Board generated power is much more reliable than the purchased power from the local utility company.

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.

## **2017 POWER AND PUMPING EMERGENCY EVENT**

The City of New Orleans experienced heavy rains on August 5th that resulted in flooding events throughout the City. At the time of the rain event, several drainage pump stations were down for repairs or not operating due to limited staffing availability. In addition, repairs necessary at the Carrollton power plant resulted in power limitations to some of the operable drainage pumps. On August 9th, the existing Executive Director of the SWBNO declared a state of emergency and authorized the purchase of necessary materials and furnishing of the labor necessary to make all emergency repairs to the system. On August 10th, the Board of Directors unanimously adopted a motion to repair the power and pumping facilities, conduct an independent analysis of the power generation and drainage systems, and provide for interim management of the SWBNO. On August 22nd City officials named an interim emergency management team to focus on the SWBNO's pumping and power capabilities.

The Facilities Evaluation included in this report reflects the findings of onsite assessments of the SWBNO facilities conducted by Black & Veatch from May 16 to May 20 and does not reflect the condition and operation of the system in August. Black & Veatch made no additional inspections, evaluations, or assessments after May 20th.

In December 2016, the Board adopted the 2017 capital program, 2017-2026 capital program and 2017 operating budget. On September 20, 2017, the Board adopted amended capital and operating budgets reflecting the acceleration of seven large capital projects necessary to repair the system, lower than anticipated water and sewer revenue, higher than anticipated drainage system expenses, and changes to other operation and maintenance expenses following a mid-year review of activities. The financial evaluations of the Water, Sewerage and Drainage departments presented in this report reflect the amended budgets authorized in resolutions R-112-2017 and R-113-2017.

## Facilities Evaluation - Operation, Maintenance, and Reconstruction

This evaluation summarizes the findings of the onsite assessments of the Sewerage and Water Board of New Orleans (SWBNO) facilities conducted by Black & Veatch from May 16 to May 20, 2017. Site visits were conducted at the water and wastewater treatment plants, Carrollton power plant facilities, and Central Yard facilities to evaluate the condition and operational capabilities of these facilities. In addition, the sewage and drainage pump stations were inspected to evaluate their condition. Interviews were conducted with SWBNO management and supervisors during the site visit to assess the current operations status of the various facilities.

### INTRODUCTION

The operations department of the SWBNO is comprised of four units: (1) Water Purification, (2) Sewage Treatment, (3) Water Pumping and Power, and (4) Sewage and Drainage Pumping. The SWBNO operates the Carrollton and Algiers Water Purification plants (WPPs), which purify raw water from the Mississippi River and supply potable water to New Orleans residents. The Carrollton Plant currently purifies approximately 135 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 10 mgd of water. The treated water from the two plants is pumped through approximately 1,800 miles of mains to the service connections within the city, as well as to several customers in adjacent parishes.

The sewerage collection system includes several miles of lateral sewers, trunk sewers, and 83 electrically-operated pump stations. Raw sewage is conveyed 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 24 hours a day.

The SWBNO operates two sewage treatment plants, one on the east bank and one on the west bank. The East Bank Sewage Treatment Plant has a treatment capacity of 122 mgd (dry weather) and treats sewage from the East Bank community. The West Bank Sewage Treatment Plant has a treatment capacity of 20 mgd (dry weather) and serves the West Bank community, as well as a few customers in Plaquemine Parish. Both plants were built or expanded in the 1970s and have been upgraded or expanded to increase reliability and capacity. The contract operator, Veolia Water, currently operates and maintains the plants for SWBNO.

In addition, the SWBNO is responsible for operating and maintaining the 24 major drainage pumping stations in New Orleans and 11 smaller (automatic) underpass stations. 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 in response to increasing water levels. Personnel routinely monitor these pumps and the numerous miles of drainage canals to ensure proper drainage in the area.

The 25 cycle power plant operated by the SWBNO provides power to portions of the WPPs and approximately 60 percent of the drainage pumps. Two large vertical sewage pumping units at Station A are also run on 25 cycle power. The following sections summarize key issues within several departments of the SWBNO.

## STAFFING

Adequate staffing continues to be an issue for most departments at the SWBNO. Additional maintenance is required for the SWBNO facilities as equipment ages and more equipment is added. Staffing levels have decreased as the system has aged and expanded within the SWBNO-owned facilities. Vacancies still exist in several departments, especially those departments requiring highly educated and skilled personnel. These shortages are reflected within the more technical disciplines such as mechanical maintenance, electrical maintenance, plant maintenance, welding and fabrication, and operations. Engineering is still understaffed, but it is improving because the slowdown of private industry in the local area.

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

In addition to those highly skilled positions, a significant portion of the SWBNO's leadership will retire within the next five years. Very few potential successors have been identified to assume the leadership positions of the personnel facing retirement.

Most departments have staffing issues related to being inadequately staffed to fulfill the current needs of the SWBNO. The table below summarizes the number of staff on the payroll for each department related to operations and maintenance, and the percentage of staff eligible for retirement within the next five years (as of May 2016). These conditions demonstrate the need for an effective succession plan for the department heads and supervisors.

### Current Number of Board Employees and Employees Eligible for Retirement

DEPARTMENT	EMPLOYEES ON PAYROLL	ELIGIBLE FOR RETIREMENT	% ELIGIBLE FOR RETIREMENT
Operations - Water Purification Plants	50	16	32.0
Operations - Water Quality Laboratory at Carrollton Plant	9	3	33.3
Operations - Water Pumping and Power	75	18	24.0
Operations - Sewage and Drainage Pumping Stations	105	30	28.6
Facility Maintenance	61	17	27.9
Engineering	48	18	37.5
Networks	319	57	17.9
Support Services	102	29	28.4
Environmental Affairs	12	4	33.3
<b>Total</b>	<b>781</b>	<b>192</b>	<b>24.6</b>

## WATER PURIFICATION PLANTS

The Black & Veatch representative accompanied the WPP superintendent on facility tours of the Carrollton and Algiers WPPs. The Carrollton and Algiers WPPs are currently operational and producing water that meets or exceeds federal drinking water standards. Treatment systems at both plants are functioning well and continue to produce potable water for the East Bank and West Bank.

The staffing levels at the Carrollton and Algiers WPPs have been able to consistently produce finished water that complies with federal and state regulations and meets the capacity of the service population. The SWBNO is facing the industry-wide problem of an aging workforce; therefore, there is an immediate need to hire and train personnel for the future sustainability of plant operations. The SWBNO has hired entry-level personnel and is in the process of hiring more to begin addressing those long-term needs. SWB has an internal training program that assists operations staff with passing their state certification exams. In addition, state certified operators are in short supply and are required onsite at all times because they are necessary to successfully operate the plants around the clock. The most senior operators will be retiring within the next few years and will need to be replaced in order to maintain compliance with the state requirements for operator certification in water treatment. At present, there are not enough certified water plant operators to cover all the shifts and the department is using overtime to ensure compliance is maintained.

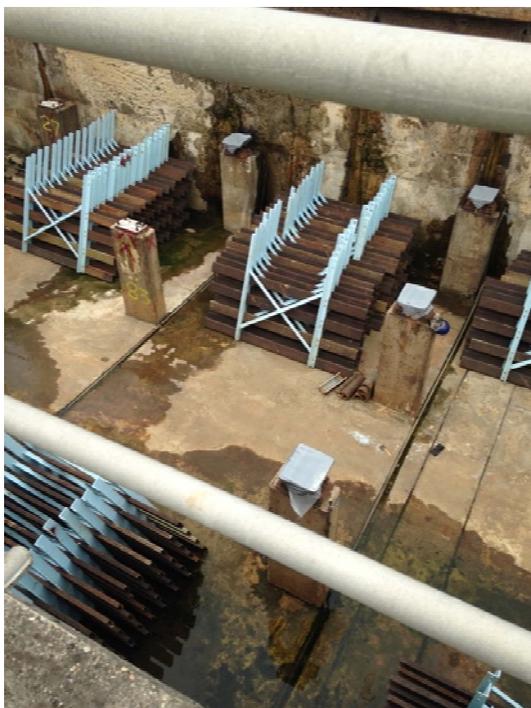
### Carrollton Water Purification Plant

The Carrollton WPP has a design capacity of 210 mgd. 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 sedimentation basins and traveling mechanical rakes remove the settled solids from the sedimentation basins for discharge to the Mississippi River.

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

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

The Carrollton WPP is currently treating approximately 135 mgd of water for the East Bank of Orleans Parish, partly due to leaks in the water distribution system. Leaks in the distribution network are a source of persistent problems. These leaks are currently being addressed under the water main replacement program funded by the Federal Emergency Management Agency (FEMA). The water delivery pressure, at 70 psi, has been consistent throughout the last year.



**L3 Sedimentation Basin Flocculator Rehab**



**Filter Media replacement at Filter 7**

**Figure 1 – Carrollton Water Purification Plant**

Improvements initiated and/or completed at the Carrollton WPP during 2015 include:

- The G4 Sedimentation Basin was placed back into service after the basin was cleaned and flocculator rehab was completed in 2015. After operating the basin, it was determined by operations staff that the basin had a leak, and was offline at time of visit.
- Claiborne Filter 1 Media Replacement and Rehab was completed and was recently returned to service. The filter is currently performing well.

The following maintenance and/or improvement projects for existing facilities at the SWBNO are planned or ongoing:

- L3 Sedimentation Basin is offline for flocculator rehab and maintenance of the basin's mechanical components.
- The bid for a contractor to do a chalk and water test for the G4 Basin will be advertised during the summer of 2016. This work is scheduled to be completed by the end of year.
- A tank mixing study was conducted on all tanks at the plant (including tanks at Algiers WPP) including hydraulic modeling. As a result, these storage tanks will be modified with manifold systems for better tank mixing.
- Four concrete 4 MG storage tanks are in the process of being repainted. The tanks were inspected and the tank structures were determined to be in good condition.

- A filter rehabilitation program is planned for the Sycamore and Claiborne filter galleries. Valves, actuators, corroded piping supports, and leaking pipes associated with the filters need to be repaired or replaced. Media replacement is ongoing for the Claiborne filter gallery.
- Media replacement for Claiborne filters is ongoing currently. Media was being taken out of Filter 7 at the time of the onsite visit. Filter 5 media is also being replaced. At the time of replacement, the filter structure is inspected (such as the underdrains) and additional repairs are made.
- The Sycamore filter wash water pump for the filters is planned for replacement. The packing seal was leaking during the site visit and the pump is nearing the end its service life. The project is currently in design.
- The recycle basin pumps are being replaced. Two of the four pumps are currently inoperable and the other two pumps are nearing the end of their service life. Construction is currently ongoing.
- Design for a new 30-inch sludge discharge line is underway. This new line will provide for much needed capacity and redundancy improvements for the Carrollton WPP. This improvement was in design at time of site visit and will be installed in 2017.
- An additional temporary ferric sulfate bulk storage facility (20,000 gallons of tanks and temporary containment) is in the process of being added due to limited local supply of the chemical.
- A new chemical storage and feed facility is currently under design. The facility will house most of the chemicals onsite.

### Algiers Water Purification Plant

The Algiers WPP has a design capacity of 40 mgd. The treatment process at the plant is similar to that of the Carrollton facility and uses the same chemicals with a slightly modified application scheme in the upflow clarifiers. At present, the plant is treating approximately 10 mgd of water and is serving the predominantly residential West Bank portion of the parish.

The facility has partially commissioned a new ferric storage and feed system for flocculation at the WPP. This equipment, along with the existing temporary ferric storage and feed equipment, is supporting the needs of the plant with the goal of a complete transition to the new facility by the end of 2016.

Other improvements needed or ongoing at the plant include the following:

- A new bulk sodium hypochlorite tank was added, along with metering pumps to supply bleach for disinfection. Two existing bulk tanks were repurposed from the decommissioned sodium hypochlorite generation system.
- Instrumentation was added to the filters to display flow (MGD) and headloss at each filter. These instruments currently are not tied into SCADA. Future SCADA upgrades will integrate these readings for filter monitoring.
- EIMCO Clarifiers No. 3 and 4 are under contract to design the replacement of the launder troughs. The troughs and steel structures have significant corrosion. The mechanical components of the clarifiers are operating well and are maintained by the maintenance staff.
- EIMCO Clarifier 2 was painted in 2015.

- In addition to the rehab and painting of the EIMCO clarifiers, flash mixing will be added to assist with better TOC removal in the clarifiers. The existing clarifiers will be modified to include an additional mixer near the chemical injection point.
- Fluoride storage and feed system needs to be upgraded to meet state requirements. The fluoride system will consist of a bulk storage tank, a day tank, and metering pumps and will be located in an existing building.
- Lime is currently slaked at the WPP. SWB is looking into replacement of the lime equipment pending a decision of process change (different type of lime) or direct replacement of existing slaking equipment.
- The raw water pumping and piping systems need to be improved in order to provide redundancy to the intake system.



**Corrosion on Clarifier Troughs**



**New Sodium Hypochlorite Storage Tank**

**Figure 2 – Algiers Water Purification Plant**

## **WATER QUALITY LABORATORY**

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

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

The laboratory continues to maintain its involvement in the Early Warning Organics Contamination Detection System (EWOCDS) run by the State Department of Environmental Quality (LDEQ), despite that several of the LDEQ 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.

The remaining reliable monitoring stations are connected by telecommunications to notify LDEQ if any of the 60 Environmental Protection Agency (EPA) listed pollutants are detected in the river water samples. The LDEQ disseminates the information to the program participants, allowing an early warning of possible problems. The LDEQ maintains EWOCDS equipment at all participating locations while the program participants provide the manpower to collect and analyze the samples.

The laboratory is currently under-staffed with one supervisor, one microbiologist, two chemists, and three technicians. The lab lost two chemists and a lab technician over the past year, which has created vacancies that SWB is working to fill. Much of the lab instrumentation and equipment is reaching or has reached the end of its service life and is in need of replacement. Newer analytical instruments and equipment, such as a new gas chromatograph/mass spectrometer (GC/MS), autoclaves for the microbiology lab, and fume hoods in the chemistry lab are needed. The autoclaves are being acquired for lab use. The laboratory staff obtained certification to analyze TOC at the SWBNO facility; however, the certification recently lapsed due to lack of lab staff (mainly chemists) to maintain the QA/QC requirements for TOC analysis.

## **WATER PUMPING AND POWER**

The primary function of the Water Pumping and Power unit of the Operations Department is to produce steam for the generation of 25 hertz (Hz) power in addition to pumping potable water to the City of New Orleans. The facilities at the Carrollton power plant include three pumping steam turbines and one gas turbine for a total theoretical capacity of 61 megawatts (MW of 25 cycle power). The steam required for the turbines is generated in the six boilers at a total capacity of 650,000 pounds of steam per hour. In addition to the 25 Hz turbine, newly installed Turbine No. 6 produces 15 MW of 60 Hz power, and was made operational in early 2016. The turbine only serves as back up, but is run every two weeks to ensure it is working properly.

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

The current capacity of the Carrollton power plant is 40 MW, which is less than the 61 MW design capacity. Turbine No. 4 is currently being repaired and will undergo testing to ensure it is operating capacity. Turbine 3 is currently online and scheduled to be repaired in 2016-2017 once Turbine 4 is back online. Rehabilitation of Boilers No. 4, 5, and 6 was completed in 2015-2016. Boiler 3 is currently being rehabbed and will be complete in 2016. Boiler 1 will be rehabbed once Boiler 3 is completed. Additional boiler piping is scheduled for repair and replacement. This project will occur once all the boilers are rehabbed and operational.

A 200 psi high pressure natural gas line supplies fuel for the 15 MW 60 cycle, dual fuel generator turbine package (Turbine No. 6) and the existing Turbine No. 5. The 15 MW, 60 Hz generator facility supplements the commercial power available from Entergy to provide power redundancy and

continued service in the event of a commercial power loss due to storms, hurricanes, etc. The generator serves the majority of the plant and raw water intake stations and provides additional drainage station capacity.

Two steam-driven distribution pumps are located at the power plant. Pump A rehabilitation was completed in March 2014 and Pump B was completed at the end of 2015. Pump B is currently being tested to ensure the pump is operating properly. The Claiborne Pumping Station, consisting of four water distribution pumps (two 60 Hz drive and two 25 Hz drive), and the Panola Station, consisting of two pumping units (each with a 25 and 60 Hz motor), are usually adequate (with 100% redundancy) for pumping finished water to the distribution network. The 25 Hz pump at Panola Station has been converted to operate on both 25 and 60 Hz power for more pumping operation redundancy. The water hammer program will provide for the replacement of equipment and associated valves at the Panola, A & B Pump Room and Claiborne pumping stations. Two elevated tanks will also be installed to provide surge protection to the distribution system. These projects are currently being bid.

Storm-proofing projects for critical SWBNO facilities, including the power buildings, were recently completed by USACE. Improvements for the power buildings include reinforcing the walls, roofing, doors, and windows. Additional damage-related work from Katrina primarily includes valve replacement and repair to electrical components and controls. Related items for the water pumping and power unit are in various stages of design or construction. Additional projects include replacement of the diesel storage tank with two new above ground-tanks that have a total capacity of 250,000 gallons. This project is currently under construction.

The water pumping and power unit has 75 current employees. Power for continued operations of the water, sewerage, and drainage 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 unit. In addition, approximately 18 senior operators or supervisors are set to retire in five years or less. Retirement was mentioned as the main staffing problem in this department, especially at higher pay levels, such as turbine and boiler operations positions. Additional staff will need to be hired and trained to fill these future vacancies due to retirement.

### Central Control

The Central Control Power Dispatching Department is primarily responsible for the delivery of an adequate supply of board-generated electrical power, the continuous monitoring of the operational status of all electrical switchgear, and the testing of related electrical feeders and equipment. This department is also responsible for verifying and enforcing the board's safety clearance procedures and associated clearances within the power distribution system. In addition, this department monitors local and regional weather to provide advance warning of storms, which could affect power generation requirements for the drainage and sewerage systems. Coordination of various power supplies, including alternative backup power supplies such as diesel generators and frequency changers, also comprise part of this department's responsibilities. The Central Control Power Dispatching Department plays a vital role in many emergency operational situations. Serving as a hub of communications, Central Control informs the board's management and senior level staff of changes in conditions that will affect the board's ability to provide adequate sewerage, water, and drainage services. Central Control also provides valuable information during emergencies such as hurricanes,

floods, freezes, etc., to the Office of Emergency Preparedness through established board protocols. Lack of staffing continues to be a major issue for this department.

## SEWAGE TREATMENT PLANTS

Operations and maintenance activities of both plants have been contracted to Veolia Water. A representative of the SWBNO oversees the contract operator. This representative works in the Operations Department, which is within the SWBNO, for the Operations Department. Both treatment plants were operational at the time of the site visits and were meeting the discharge limits according to treatment plant personnel. The contract to operate both facilities was recently bid; Veolia won the contract and will continue to be the contract operator for the next nine years.

### East Bank Sewage Treatment Plant

The East Bank Plant has a treatment capacity of 122 mgd (dry weather). The plant is currently receiving approximately 100 mgd of flow. In 2015, average flow for the plant was 94.07 mgd, which was greater than the 2014 average of 93.5 mgd. 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 (using belt filter presses), and finally incinerated. A new sludge dryer is currently under design as an alternative sludge treatment system to supplement the existing fluid bed incinerator (FBI).



**Effluent Pumps**



**New Mixer on Reactor 1**

### Figure 3 – East Bank Sewage Treatment Plant

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

- Reactors 1 and 4 were out of service during site visit. Trains 2 and 3 were online. Rehabilitation and reactor cleaning of Train 1 was completed recently and is awaiting startup. The mixers were replaced with eight new mixers during 2015-2016. Reactor 4 will be rehabbed (currently scheduled for 2017) once Reactor 1 is online.

- LEL sensors were installed in the reactors to monitor explosive gases along its automated valves to make the process safe to operate. This work was completed in 2016.
- There is no automation for the mechanical rake on the bar screens and raking must be conducted manually at regular intervals. A project to install automated rakes with controls is being performed in house and will be completed by the end of 2016.
- A temporary, above ground replacement line is being used to return sludge from the return activated sludge pump stations to the influent channel. The permanent repair design was completed and awarded in 2015. The construction was completed in early 2016 and RAS Pumps 6 and 9 are currently tied into the line. RAS Pumps 7 and 8 will be tied into the line by the end of 2016 and at that point, the temporary line will be taken out of service.
- The scum arm on the secondary clarifiers was not in operation at time of field visit; however the plant operator indicated that the clarifiers needed additional steel repairs and that the repair will be included as part of that project when it goes out to bid in 2016.
- The operator noted the liquid oxygen tank is near the end of its useful life. High purity oxygen system components appeared in good condition. Currently, the contract operator is waiting for quotes from vendors for the tank replacement and is planning to complete in 2016.
- Several mechanical mixers on aerobic reactors were out of service due to regular preventative maintenance. These mixers will not be repaired due to the pending installation of the new mixing system in 2017.
- Effluent pumps appeared to be in fair condition. The operator noted that there have been difficulties keeping these pumps operating reliably due to electrical system issues. The electrical system is being evaluated and will likely require upgrades to increase the reliability of the effluent pumps. A 2400 V Effluent Pump electrical distribution system along with switchgear and VFDs is in design phase and was bid in 2015. Project will begin in August 2016.
- Piping installation from the clarifiers to the wetlands demo and expansion cells were completed in 2016.
- The FBI wet scrubber will be replaced in 2016 or 2017. The incinerator will be taken offline for several months and at that time bricks will be replaced in the walls and ceiling of the FBI.
- The multi-hearth incinerator was decommissioned and removed from the site in 2016.
- A new waste pump in the south pump house will be added to satisfy the EPA's request for pump redundancy.
- A new concrete wall was installed in the sedimentation basin to prevent wastewater from entering the effluent channel to prevent future fecal hits in effluent.
- Replacement of the VSA oxygen system equipment (blowers, motors) is currently being solicited for quotes by the contract operator.
- The ferrator is in service and disinfects the effluent to the wetlands.
- The auto transfer switch is needed to automatically transfer power from two onsite feeders if one fails. Currently this is done manually and requires special personal protective equipment (PPE) and time (at least 30 minutes) to transfer power from one feeder to another to keep the plant online.

- A project to convert gas chlorine to sodium hypochlorite is being considered because of safety concerns. Currently the plant uses rail cars to obtain gas chlorine for disinfection.

The average influent TSS and BOD concentrations for 2015 were approximately 130 milligrams per liter (mg/L) and 96 mg/L, respectively. Effluent quality has been adequate over the last year, with an average effluent TSS concentration of 12.8 mg/L and an average effluent BOD concentration of 17.8 mg/L. Seven permit violations occurred in 2015. Five fecal coliform maximum day limit violations occurred in June 2015. The fecal violations in June 2015 were due to a contractor pumping grit from Reactor 1 when solids were accidentally released into the effluent channel. This facility's permit expired two years ago and a renewal was sent to DEQ on time. SWB is in communication with DEQ and is awaiting a draft permit to review and accept.

### West Bank Sewage Treatment Plant

The West Bank Plant has a treatment capacity of 20 mgd (dry weather). The plant is currently receiving approximately 9 mgd of flow. The West Bank treatment facility consists of bar screens, primary clarifiers, trickling filters, final clarifiers, and chlorine disinfection. Primary and secondary solids are co-thickened in a gravity thickener and hauled to the East Bank facility for incineration.



**New Grit Pumps**



**Valve repair on West Primary Clarifier in progress**

### Figure 4 – West Bank Sewage Treatment Plant

The following items summarize the improvements that will be or have recently been performed at the West Bank Plant:

- Concrete and pavement adjacent to the bar screens and aerated grit basins showed cracks and settling.
- Bar Screens 1, 2, and 4 are operational. Bar Screen 3 was recently rehabbed and needs additional adjustments to treat at full screen capacity.

- Grit cyclones for collecting grit from the grit basins exhibited significant corrosion. Two grit classifiers were replaced in 2014 and 2015.
- Three grit pumps were replaced in 2016.
- Aerated Grit Basin 2 was cleaned in 2016.
- Primary sedimentation basins' weirs and rotating arms showed significant corrosion.
- The West Primary Clarifier was rehabbed in 2015-2016 and will be painted by the end of this year.
- The West Primary Clarifier also had a leaking valve during the site visit. The Central Primary Clarifier will have center well repairs conducted, but as of the site visit the time frame was not known.
- Main Collection Basin Pump 3 had impeller replacements and rehabilitation work completed in 2016. Pumps 1 and 2 will be checked and rehabbed later this year or early 2017.
- The structural condition of the trickling filters appeared to be good. Minor structural issues with Trickling Filter No. 1 were noted and are getting worse since the site visit in 2015.
- The drive motor for the arms on the trickling filters is currently inoperable and operates based on hydraulics; however, treatment is still acceptable.
- Pump 2 was offline during the 2015 site visit due to an additional inoperable valve. Maintenance removed and repaired the valve in 2015.
- The SCADA system was down during site visit conducted in 2015. The SCADA was reloaded and is currently online and operational. Minor upgrades to the system are ongoing and should be complete by the end of 2016.
- Influent flow meter is currently not operational. The meter is ordered but requires coordination between contract operator and SWB staff to complete installation.
- A sludge pump on East Primary Clarifier needs to be replaced and is scheduled to be replaced in 2016 or 2017.
- Auto transfer switch is needed to automatically transfer power during a plant outage. Currently this is done manually and requires special PPE and time (at least 30 minutes) to transfer power to keep the plant online.
- A project to convert gas chlorine to sodium hypochlorite is being considered due to safety concerns. The project was bid and awarded in 2016. Construction should begin later in 2016. Currently the plant uses one-ton cylinders to obtain gas chlorine for disinfection.
- A valve replacement program is underway and requires a utility locate a contractor to assist in locating lines and buried valves. The contract operator is currently working with 811 (call before you dig) for assistance before digging.

The monthly average TSS and BOD influent concentrations for 2015 were approximately 106 and 97 mg/L, respectively. The monthly average effluent TSS and BOD concentrations for 2015 have been approximately 10.1 and 8.3 mg/L, respectively. The average flow for 2015 was 9.1 mgd, which is approximately the same as in 2014 at 9.2 mgd. For 2015, this plant has met or exceeded all permitted effluent limits.

## SEWERAGE AND DRAINAGE PUMPING STATIONS

Site assessments of the drainage pump stations (DPS) and sanitary sewer lift stations (SLS) of both the East Bank and West Bank of New Orleans were conducted from late May to the first week of June. A Black & Veatch operations specialist was present for the inspections conducted on May 19, 2016, with Julien Engineering representative and SWB staff. The observation report and accompanying table details the operational status of each SLS and DPS across the city of New Orleans. Pumps that were not turned on at the time of the observations were deemed to be either “in service” or “out of service” based on direction from Sewerage and Water Board supervisors or pump station operators.

Upon inspection, all DPSs and SLSs are considered operational either from permanent pumps or the use of temporary pumps. Storm related construction repair and various station improvements have been recently completed at some stations but are ongoing at others. These repairs will increase the probability that the stations remain functional in the event of a major storm or power loss. The repairs include, but are not limited to, the installation of industrial capacity generators, fuel storage tanks, electrical transformers, and storm proofing of pump motors. Several of the stations have undergone structure-related storm proofing measures, as well as including new storm windows and doors. Additionally, many station rooftops, wall framings, and doors have been reinforced to provide greater resistance to the forces sustained due to hurricane wind gusts.

It should be noted that some stations did not have completed repaired at time of inspection or are out of service due to pump maintenance issues. Three SPSs (Station 6, Dodt, and Plum Orchard) are under construction and are using portable pumps at each of these locations. Five SPSs (Burke, Lawrence, Bullard, Lamb, and Lake Forest) have been recently completed and are now in service. There are no DPSs under construction, as the last two stations have been recently completed at Dwyer and Station 5 within the past two years. While all stations are operational, several stations are not at full capacity due to inoperable pumps or the use of temporary pumps.

## FACILITY MAINTENANCE

The Facility Maintenance Department consists of four units: (1) Plant Maintenance, (2) Welding & Fabrication, (3) Electrical Maintenance, and (4) Mechanical Maintenance. These units provide meter repairs, removals and installations, major electrical, welding, and fabrication, as well as mechanical maintenance for all SWBNO facilities throughout the system, with the exception of Veolia Water operated sewage treatment plants. The Facility Maintenance Department possesses the specialized equipment and technology necessary to maintain the plant process equipment, drainage pumping stations, sewage pump stations, power generation equipment, and water meter servicing. Automated lathes and mills located in the machine shop and break press, as well as shear and other specialized repair equipment located in the welding and fabrication shop, provide the ability to fabricate parts when replacement parts are excessively expensive or no longer available due to equipment vintage such as gears and parts for older valves.

In addition, new facilities such as Turbine No. 6 have been built within the SWBNO system, which requires additional staff to both operate and maintain. These additional assets prevent in house rehabilitation and preventative maintenance from being completed, which creates a large backlog of work for this department. Currently, one of their major rehab projects, L3 Sedimentation Basin, includes a complete rebuild of gearboxes, drives, paddles, and other equipment and is planned to be completed in about a month, but is not able to keep on schedule due to limited staff. Previous basins

were contracted out; however, this department mentioned that many times that requires them to inspect and at times redo the work contractors have done to keep the system online. Additional rehab work includes bearing work on Drainage Pump Station 11, which is also delayed due to current staffing levels.

Currently, the Facility Maintenance Department has 60 authorized positions. Most of the highly skilled positions (welding and fabrication, electrical, mechanical maintenance) remain vacant. The department is working on getting those vacancies reopened through Civil Service. It was noted during the interview that the residency requirement, as well as pay scales, prevented hiring permanent staff in this department. Additionally, staff mentioned equipment used to conduct work has reached its useful life, such as equipment used to find high voltage lines, bucket truck, welding trucks, and other equipment.

Currently, overtime is necessary to compensate for the limited workforce. More work is being contracted out to subcontractors that was usually done in-house prior to Hurricane Katrina. Many of these contractors are not local and are not always able to provide timely service for critical pieces of equipment. The department is presently facing a lack of qualified personnel to adequately supervise or oversee subcontractors. Approximately 27.9 percent of the Facility Maintenance employees are currently eligible for retirement or will be eligible to retire within five years, including the department head. Thirteen positions (mostly high level senior supervisors in the machine shop) are currently on drop and could leave in the next five years. Three supervisors personnel, including the department head, are all scheduled to retire by the end of 2016 and do not have a planned replacement. The department is actively recruiting at job fairs, and trade schools. SWBNO is working on a partnership with a local community college to start a trade program for skilled trades and plans on hiring from that pool of students. Staff noted that they are working with Civil Service Department to assist in creating more representational job descriptions to gain experience and interested personnel.

## ENGINEERING

The Engineering Department includes Mechanical Engineering, Electrical Engineering, Civil Engineering, Construction Administration and Inspection, and Networks Engineering. The Engineering Department administers major contracts throughout the SWBNO facilities and coordinates with other agencies for the design and construction activities impacting SWBNO-maintained facilities. Currently, the department manages over 60 project contracts for both FEMA and capital improvement projects.

The status of major contracts administered through the Engineering Department is itemized in the following list:

- New sludge line to the river from the Carrollton WPP is at 80 percent design. Construction should begin in 2017.
- L3 sedimentation basins improvements are ongoing, including replacing static mixers with vertical mixers, adding speed controllers, and repairing flocculator drives. Rehabilitation of L3 should be completed by the end of 2016.
- The SWBNO plans to add a sludge dryer to the East Bank plant. Part of that project is the addition of a new air emission system, which is currently under design.

- An arc flash study is being conducted on electrical equipment for safety purposes and as part of various electrical upgrades at WPPs.
- Chemical feed storage improvements to add additional chemical storage at the Carrollton WPP.
- The filter backwash pump replacement is currently in design phase (60 percent) and will be under construction in 2017
- The water hammer project, which will install two new elevated tanks at Carrollton WPP, is currently out to bid.
- The recycle pump improvements design is complete and construction will end in 2016.
- Rehabilitation of Turbine 4 is ongoing and will be completed by the end of 2016.
- Filter media rehab at Algiers WPP is currently scheduled but has not begun. New instrumentation was added to the filter galleries to display flow and headloss.
- Building or upgrading the city canal system at Florida and Louisiana avenues is currently under construction.
- G4 Basin repairs at Carrollton WPP are currently in the bid phase.
- A recent emergency repair of river intake stations hit by a ship is in progress.
- Rehab of Clarifier 2 at East Bank plant is in the design phase.
- New sludge dryer at East Bank plant is currently at 60 percent design.
- New RAS line at East Bank plant is complete and work is being done to tie the RAS pumps into the line before taking the temporary line off-line. This tie-in should be completed in 2016.
- The piping from the East Bank plant to the expansion and demonstration cells was completed in 2016 and tree planting should start in 2016. The A2 project is currently on hold.
- Flood mitigation contracts for nine sewage pump stations were awarded and the Engineering Department is supervising these contracts. Eight stations are currently under construction and scheduled to be completed by the end of 2016 and one Station is currently under design.
- At Carrollton WPP, fuel tanks are being replaced with a 250,000 gallon above-ground storage tank, which is currently under construction.
- A power plant project to improve valves, steam line, auxiliary power, and address steel was bid and work is ongoing.
- 10 major underground 25 cycle electrical feeders are being replaced throughout the SWBNO facilities. The project is currently under construction. This project is the first design-build project for the SWBNO.

Additional projects planned by the Engineering Department include the following:

- Old River Intake Station rehabilitation.
- The bulk sodium hypochlorite systems at the East and West Bank wastewater treatment plants are being replaced with gas chlorine.
- Turbines No. 5 and 3 are being rehabilitated.

- New lime storage and feed facilities at both WPPs.
- A new chemical storage and feed facility at Carrollton WPP.
- A new filter gallery addition at the Carrollton WPP.
- Various water projects that include filter rehab, valve rehab, and pump replacement.

In addition to contract administration, the Engineering Department is currently adding geographical information system (GIS) technology to further enhance tracking water distribution and sewer piping capabilities. The FEMA-funded water main replacement and emergency sewer system assessment requires GIS to identify and fix broken or leaking pipes in the water distribution and collection system. It was noted during the interview that funding for drainage improvements projects is needed. In terms of staffing, the department needs to hire more electrical engineers (due to upcoming retirements) to manage electrical contracts and review electrical design work.

## NETWORKS

The Networks Department is charged with maintaining the sanitary sewer system and the potable water distribution system. The water distribution network that was damaged by uprooted trees and other debris during Hurricane Katrina has not been fully repaired. Consequently, the Carrollton WPP is currently purifying approximately 135 mgd of water while serving 92 percent of the pre-Katrina number of accounts. Prior to the levee failure caused by Hurricane Katrina, the plant was purifying approximately 115 mgd of water.

The Networks Department is divided into seven zones. Zone 2 operates the barricade unit making street and lane closures, providing visibility around maintenance sites, and performing preventive maintenance activities such as exercising valves and maintaining fire hydrants. Zone 7 has the after-hours crews, which respond to emergency calls and provide limited surface restorations for repair excavations. Zones 1, 3, 4, 5, and 6 represent geographical areas in New Orleans that provide repair services for their respective areas. Each zone has a staff of approximately 20 to 35 persons who are responsible for repairs within the designated areas. Typically, a three-man crew will complete a work order. More complex work orders may require additional crews on a single work order. Contractors are used to supplement repair work performed within each of the areas, if sufficient manpower within the SWBNO is not available to perform necessary repairs.

According to SWBNO personnel, the biggest challenge is to keep up with the rate of repairs needed due to the increased decay rate of the distribution and collection systems. The Networks Department is finding it harder to keep up with the amount of reactive repairs occurring within the systems with current staffing levels. It was also noted that the increase in residential development (new installations) and increase in city events (runs, bike-a-thons etc.) has also created additional work load, as well as delays in completing work within the systems. Lastly, equipment (backhoes, excavators, flush trucks) and fleet breakdowns have also been an issue over the last year.

The SWBNO conducted a system evaluation of the piping system to detect leaks. The effort to find leaks is ongoing and the department is trying to focus more on lining and replacement, as well as repairs in both the water distribution system and sewer collection system. In terms of staffing, the department is very short-staffed both in engineering and maintenance. The department recently lost

several key engineering personnel that provided technical support and contract management. More senior level engineering staff, as well as engineering interns, is needed to train less experienced staff, provide technical support to the crews, and manage contracts. Additionally, high turnover was noted as a problem in the crews by civil service due to a lack of qualified candidates. The department does have an internal training program for maintenance and engineering staff. Over 1,500 water mains were repaired in 2015. Identification of leaks is ongoing and the SWBNO will continue to incorporate identified leaks into the water main replacement program funded by FEMA. As part of the ESSA program, manholes are also being inspected as an ongoing inspection of the sewer system. Over 1,900 sewer repairs were completed in 2015. In addition to the FEMA-funded projects, Networks also responds to requests for valve closures by contractors and the city.

The Networks Department works in conjunction with the New Orleans Fire Department to monitor and maintain all fire hydrants located in the SWBNO's service area. The Networks Department inspects all fire hydrants within the system. All city hydrants have been mapped and assigned an identification number. The fire hydrants program requires the 16,500 fire hydrants in the database be inspected once every two years to supplement the semiannual inspection cycle of the Fire Department. In 2015, the department inspected over 6,300 hydrants.

The Networks Department completed over 4,000 paving projects in 2015, both in-house and in cooperation with contractors. This department has several maintenance contracts to assist with the maintenance of the water distribution, wastewater collection, and drainage stations. These contracts have increased the amount of work accomplished within the division.

## **SUPPORT SERVICES**

The SWBNO owns 790 pieces of rolling stock, which includes trucks, backhoes, and sewer cleaning equipment. The available equipment is being assigned to the various divisions based on the needs of all departments. Forty six new pieces of stock (trucks, pump trailers etc.) were obtained by the department in 2015 and an additional 38 pieces of new stock were obtained as of May 17, 2016.

The Support Services Department performs most all-ground maintenance functions. In addition, Support Services operates the warehouse that stores valves, pipe, hydrants, tools, etc., required by the Networks Department for repair of existing water distribution and sewer pipelines.

Support Services also operates garages for vehicle repair. The garage areas were heavily damaged during Hurricane Katrina. Garage 1 was rehabbed in 2015-2016. Currently, the contractor is working on punch list items with substantial completion scheduled for July 2016. Additional electrical work needs to be completed by the SWBNO and once that work is completed, an occupancy permit will be issued by the building department. This work and permit are expected to be completed by 2016. Garage 2 is currently being rehabbed and has been delayed due to electrical work and should be complete in early 2017.

A new Site Relocation Facility was constructed in 2014 to house personnel until the garage renovations are completed. Currently staff and materials from both garages are being stored in the site relocation building. Ultimately, the Site Relocation Building will also be used to house the Body Repair Shop of Garage 2.

FEMA continues to reimburse equipment and tools for each garage lost to the hurricane in addition to replacing some of the buildings, such as the Annex Building, which will be used to house locker rooms, shower facilities, training rooms, CDL training unit, etc. Various other projects being completed or being conducted within Support Services are:

- Six new vacuum trucks were purchased in 2015 and arrived on site in 2016. Support services are currently leasing five trucks to ensure enough trucks are available.
- Reduction in take home vehicles is ongoing from 2015.
- A new contractor was assigned to mitigate problematic vegetation (lilies) in the canal systems in 2015 and has made significant headway on the reduction of lilies. The department continues to use this contractor for mitigation.
- New contract for security for all SWBNO facilities was recently awarded and went into effect using a new security contractor.
- Support Services is now required to coordinate with Facility Maintenance for day-to-day activities and needs at the WPPs. This department is focusing on staffing the ground maintenance department to maintain a larger portion of the SWBNO facilities. Currently, a contractor is used for the East Bank and the department maintains the West Bank.
- Major change to janitorial services occurred in 2016 to include more facilities.
- Hiring new employees in all areas of support services including mechanics etc. to help support all departments within SWBNO. The department noted that most of the staff is approaching retirement age and, as a result of these retirements, will be short staffed.

Future projects/concerns:

- HVAC system at the St. Joseph building is in need of rehabilitation. Currently, it is not effective in keeping the building cool at all times. The conceptual design was completed in early 2016 and is scheduled to rehab the HVAC in late 2016.
- One elevator in the St. Joseph building is inoperable. Repairs or replacement is needed. The Engineering Department is working on bid documents and the project should be completed in 2017.
- A new building generator is being installed at the St. Joseph building. The building is currently on a portable generator. The project will include a new generator with an automatic transfer switch.
- The Central Yard Facility plans to add an additional parking lot and replace the fence around the building. This project is on hold due to planned street work.
- Support Services phone system will be upgrade once the Carrollton WPP is completed. This project is still pending.

## **ENVIRONMENTAL AFFAIRS**

The Environmental Affairs Department oversees the consent decree and all administrative orders. This department reports there are sewer bypasses and overflow to the Region 6 EPA. Some activities being undertaken by the department include those listed below:

- Continue to monitor industrial users through the pretreatment program.
- Permit compliance in air, water, wastewater, storm water management, solid waste, and underground fuel storage tanks.

The construction of the piping for the East Bank Sewage Treatment Plant wetlands assimilation has been completed. The piping allows treated effluent to be discharged to the demonstration and expansion cells. Currently, SWBNO has a permit from LDEQ to discharge to the demonstration cells but currently no permit has been issued to discharge into the expansion cells. SWBNO began discharging to the demonstration cell in May 2016. Cypress and tupelo trees will be planted in the demonstration cells in 2016. LDEQ has not processed the permit application for the East Bank Wastewater Treatment Plant and cannot discharge into the expansion cells until a permit is issued. The construction of the A2 project, a joint agreement of a wetlands assimilation project between St. Bernard Parish and SWBNO has not been finalized and construction has not begun.

The components of the pretreatment program include monitoring the discharge of the East and West Bank Sewage Treatment Plants in addition to other significant industrial users during the year. One additional user was permitted in 2015 (Churchill Downs Louisiana Horseracing Company, LLC d/b/a Fair Grounds Race Course). An annual report is also submitted to LDEQ to demonstrate pretreatment performance.

In addition, yearly revenue has been received from the following sources associated with the pretreatment program:

- Industrial users billed monthly for excess strength surcharges.
- Sanitary sewerage discharged to the wastewater plant from special events.
- Septage disposal program.

The total revenue received in 2015 from these sources was \$1,034,527.61.

No air permits were obtained in 2015. The use of diesel powered units to provide emergency power to drainage pump stations and other SWBNO facilities required these facilities to meet air quality regulations.

SWBNO continues to utilize compliance software for air quality programs at the Carrolton WPP. All Title V Air Permit reports for the East Bank Sewage Treatment Plant and were filed on time and there were no permit violations in 2015.

The Municipal Separate Storm sewer system (MS4) Permit for Orleans Parish is managed by the SWBNO. The Board, along with co-permittees, met the requirements found in the permit and was documented in the annual report filed on May 1, 2015.

Environmental Affairs used a contractor for stormwater sampling required for the M4 permit. The department purchased sampling equipment in 2016 and sampling is now done completely in-house by department staff. All required samples were successfully collected by department staff to meet 2015 permit requirements. Additional projects this department includes starting a Fats, Oils and Grease (FOG) program where the SWBNO will be issuing permits to restaurant with grease traps. The SWBNO will also continue with its green infrastructure pilot program which focuses on community outreach and education. The Environmental Affairs Department needs to hire more staff for the tasks

necessary to maintain compliance with all the various rules and regulations which apply to the SWBNO. They are in the process of hiring more staff such as a Senior, Associate and Intern level City Planners, one Environmental Technician II, and five Environmental Technicians I to assist with ongoing tasks. The department did not express concerns about finding qualified candidates for these vacancies.

## **STATUS OF CONSENT DECREE FOR SEWERAGE SYSTEM**

The SWBNO is complying with the EPA Region 6 and Department of Justice consent decree, which requires cessation of unauthorized discharges and the development of a schedule for repairs to both the collection system and the treatment plant.

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

- Quarterly and annual reporting requirements are to be submitted to the regulatory agency.
- The SWBNO will meet the preventive maintenance requirements of the consent decree.
- Collection system repairs will begin once the hurricane damage to the sewage pump stations has been repaired.

The SWBNO is in compliance with the consent decree. It has met every construction and reporting deadline in the decree and has had no fines related to construction or reporting schedules in 2015.

## **SUMMARY OF FINDINGS**

The following items are a summary of the findings during the site inspections:

- The management team consists of individuals with significant water, sewerage, and drainage experience. This experience has been developed both internally at SWBNO and at other respected water and sewer utilities.
- Similar to water and sewer utilities across the U.S., the SWBNO departments are faced with a significant number of pending retirements. Approximately 24 percent of current employees are either on the deferred retirement option plan (DROP) or are eligible for retirement. Unless these employees are replaced with qualified individuals, these pending retirements pose a significant threat to SWBNO's ability to perform its core operational and administrative functions. Succession planning and recruitment of qualified employees will be a key element for SWBNO to mitigate the pending retirements.
- Many key system-wide projects that were in design phase in 2015 are currently out to bid and will be under construction such as the water hammer project.
- Several departments are experiencing vacancies, including the Water Purification unit of the Operations Department, as well as the Facilities Maintenance and Networks departments. SWBNO needs to address these vacancies as soon as possible to ensure effective operational and maintenance performance and administrative oversight. Additionally, it was noted while on-site that there is a need for training programs, especially for WPPs operations staff. It was recommended at the site inspection that process operations manuals be developed for the WPPs to provide guidance to entry level and senior level operators to ensure the WPPs are operated consistently.

- The SWBNO has a clear understanding of the existing conditions of the drainage, water and sewage facilities, and is aware of the immediate needs within each division and area; however, funding is needed for the SWBNO to address these issues. Water and sewer customer rate increases have been approved and the SWBNO is currently prioritizing immediate needs such as filter rehabilitation at the Carrollton WPP.
- The SWBNO has started to initiate the filter rehabilitation program at the Carrollton WPP, as the filter system is in need of extensive repairs due to leaking pipes, broken valves, broken actuators, and filter media being at the end of its expected service life. Media rehab is underway at the Claiborne filter gallery and scheduled for the Algiers WPP.
- The rate of decay of the potable water distribution network and the sanitary sewer collection system presents the two biggest challenges. Lines are being replaced or repaired where leaks have been detected by the contractor. Networks Department has experienced high turnover rates in staff in the maintenance crews as well as in the Engineering Department recently. This situation has added to the stress of dealing with the rate of decay and system needs.
- Based on the SPS and SLS inspection, all DPSs and SLSs are considered operational either from permanent pumps or the use of temporary pumps. Three SPSs (Station 6, Dodt, and Plum Orchard) are under construction and are using portable pumps. Five SPSs (Burke, Lawrence, Bullard, Lamb and Lake Forest) have been recently completed and are now in service.
- The sewage plants are meeting permit except for seven excursions in 2015. The seven excursions occurred 7 days in a row at the East Bank WWTP; an onsite contractor accidentally placed grit into the effluent channel, which resulted in an exceedance of effluent maximum daily concentration for fecal coliforms. The SWBNO and the contract operator, Veolia, have addressed each issue.



## Water Department

### ADHERENCE TO WATER REVENUE BOND RESOLUTION REQUIREMENTS

In 2014, the Sewerage and Water Board sold \$103,525,000 of Water Revenue and Refunding Bonds. The sale of these 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 payment of indebtedness; limitations on indebtedness; covenants and representations of the Board; covenants with credit banks, insurers, etc.; operation and maintenance; free service, completing service, billing and enforcement of charges; sale or encumbrance of the system; insurance; damage, destruction, condemnation and loss of title; records and accounts, inspections and reports; and the capital budget. The Requirements of the 2014 General Water Revenue Bond Resolution adopted on May 21, 2014, (hereafter collectively called the General Resolution) are discussed in this section. Water Department tables are included at the end of this section.

The Board was in compliance with the 2014 General Water Revenue Bond Resolution in 2016.

#### Payment of Indebtedness; Limited Obligations

The General Resolution obligates the Board and the Board of Liquidation (BOL) to promptly pay the principal and interest on all senior and subordinate debt that are obligations payable from the net revenues of Board.

#### Limitations on Indebtedness

The Board must not issue bonds, other senior parity indebtedness or subordinate debt unless it complies with Sections 4.03, 4.04 or 4.05 of the General Resolution, as applicable.

#### Covenants and Representations of Board

The General Resolution gives the Board the power to issue bonds and pledge the revenues according to the resolution. In addition, the Board "... faithfully observe and perform all covenants, conditions and agreements on its part contained in this Resolution, in every issue of Indebtedness issued hereunder and in all proceedings of the Board pertaining thereto."

#### Covenants with Credit Banks, Insurers, etc.

The Board may make covenants and agreements in a supplemental resolution with any insurer, credit bank or other financial institution that agrees to insure or to provide a credit facility to the Board. These covenants and agreements shall be binding on the Board and all the holders of indebtedness the same as if such covenants were set forth in the General Resolution.

#### Operation and Maintenance

The Board "... shall establish and enforce reasonable rules and regulations governing the use of and the services furnished by the System, shall maintain and operate the System in an efficient and economical manner shall maintain the same in good repair and sound operating condition and shall make all necessary repairs, replacements and renewals." In addition, all compensation, salaries, fees and wages paid by the Board shall be reasonable. Finally, the Board shall observe and perform the terms and conditions contained in the Sewerage and Water Board Act (Part III of Chapter 9 of Titles

33 of the Revised Statutes of Louisiana, as amended), and “comply with all valid acts, rules, regulations, orders and directions of any legislative, executive, administrative, or judicial body applicable to the System or the Board.”

### **Free Service, Competing Service, Billing and Enforcement of Charges**

The Board shall not “... provide any services of the System without making a charge therefor in accordance with the Board’s schedule of rates, fees and charges ... other than those connections, use or services already in existence or as may be required by law ...” In addition, the Board may not “... provide, grant any franchise to provide or give consent for anyone else to provide such services which would compete with the System unless the Board determines that such franchise ... would provide services that the Board has determined are not in its best interest to provide and would not materially impair the interests of the holders of indebtedness.”

The Board will bill customers for services on the regular basis and if the rates, fee or other charges are not paid when due, the Board shall “... to the extent permitted by applicable laws and regulations, disconnect the premises from the System or otherwise suspend service to such premises until ...” delinquent rates, fees or other charges have been paid or a payment plan has become effective.

### **Sale or Encumbrance of System**

The General Resolution requires that, with exceptions, “... neither the System nor any integral part thereof shall be leased, sold, mortgaged or otherwise disposed of ...”

### **Insurance**

The Board “... shall continuously maintain insurance with recognized responsible commercial insurance companies against such risks and in such amounts as are customary for public bodies owning and operating similar systems ...”

### **Damage, Destruction, Condemnation and Loss of Title**

The Board shall restore “... property destroyed or damaged to substantially the same condition as before such destruction, damage; condemnation or loss of title ...”

### **Records and Accounts; Inspections and Reports**

The Board is required to “... keep proper books of records and accounts ... showing complete and correct entries of any transactions relating to the System....”

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 29 years.

### Capital Budget

The Board is required to adopt an annual multi-year financial plan for capital expenses for a minimum of 5 future years.

## 2016 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 2016 Water Department operations are discussed in the following paragraphs.

### Water Use

According to statistics provided by the Board during 2016 51,561,280,000 gallons of water were pumped by the Water Department. Water sales accounts for 13,106,735,840 gallons and 1,042,722,355 gallons were metered to City departments without charge. Metered treatment plant process water totaled 532,233,700 gallons. The remaining 36,879,588,105 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 2015 through 2021. Based on year-end billing summaries, the number of monthly billed customers during 2016 averaged 134,872 compared with 133,904 for 2015. Based on year-to-date customer data through August of 2017, it is projected that the Board will average approximately 135,535 open accounts in 2017 and that the number of accounts will continue to grow at approximately 0.3 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 2016 there were 1,107 connections in this group, compared with 1,119 for 2015.

### 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 13,107 million gallons of water sales were billed on a monthly basis in 2016, compared with a total of 13,266 million gallons in 2015. Over the past few years, the Board and other water utilities operating in the United States have experienced minimal to no growth in water usage and in some cases, a decline. As a result, a resistance factor is applied to the projected annual usage per customer for each customer class to reflect the impact of price elasticity and the trend of decreasing per capital demand due to conservation efforts and more efficient water fixtures. Projected water usage for 2017 is based on an analysis of water usage by customer class for 2016 and year-to-date water usage through August of 2017. As a result, the volume of water sold is projected to increase approximately 2.8% in 2017. Due to the application of a resistance factor, the volume of water sold is projected to decrease approximately 0.7 percent per year beginning in 2018.

## Operating Revenues

The 2017 schedule of rates for retail treated water service is presented in Table 3 and reflects a 10 percent rate increase over 2016 rates. 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 2012 through 2016. 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 2016 were \$82,060,525 which, when compared with \$76,719,113 for 2015, shows an increase of approximately 7.0 percent. Delinquent fee revenues were \$1,098,415 in 2016 which represent a 14.8 percent decrease over 2015 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 2016, non-operating revenue included \$2,097,442 of interest earned from the investment of available funds in the Water System Fund and the Water Revenue Bond Account and \$3,102,435 from other sources.

## Operation and Maintenance Expenses

Table 5 presents a summary of historical expenses. Expenditures in 2016 decreased about 1.8 percent from 2015 expenditures and increased about 10.8 percent from 2014 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 in Line 7 of Table 12.

## 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 2016 capital expenditures totaled \$40,135,472. 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 2016:

Total Revenues	\$88,358,817
Operation and Maintenance Expense	76,886,448
Claims	1,847,021
Debt Service Payments	10,222,220
<b>Revenue Primarily Available for Capital Expenditures<sup>a</sup></b>	<b>-596,872</b>

<sup>a</sup> Excludes depreciation.

## PROPOSED CAPITAL IMPROVEMENT PROGRAM

Table 7 presents a summary of the projected major capital improvement program for the period 2017 through 2021. Table 7 is based on the Board's amended 2017 Capital Budget and 2017 -2026 Capital Improvement Program. The five-year major capital improvement program costs are estimated to total \$534,212,030. About 56 percent of this amount, or \$299,282,030, is for recurring annual capital improvements, with the remaining \$234,930,000 for major improvements. The proposed routine annual capital expenditures for water system improvements and extensions include \$82,199,230 for the Water Department's share of power projects, and \$70,630,800 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 2017 through 2021 are shown in Table 8. These estimates reflect the rate schedule effective January 1, 2017 applied to the projected number of customers and water usage and are projected to decrease, on average, about 0.5 percent per year throughout the study period due the anticipated decline in water consumption. Projected revenue from adopted revenue increases is also shown in Table 8.

### Other Revenue Sources

Based upon past practices, the Water Department can expect to obtain revenues or funds from non-operating sources. These include interest earned on available funds, participation by others, house connection charges, fire connections, fire hydrant relocations, and various other income sources. Also, by Board policy, the Water Department receives one-half of the plumbing inspection and license fees currently projected at \$299,700 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 2017 through 2021 is shown in Table 9. Estimates of future expenses are based on anticipated future operating conditions and allowances for inflationary factors.

Projections of future operating and maintenance expenses for the study period are based on the Board's amended 2017 Operating Budget and an analysis of the current and anticipated operating conditions and trends.

## 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, 2016, outstanding debt obligations consisted of \$103,200,000 Water Revenue and Refunding Bonds, Series 2014 and \$100,000,000 Water Revenue Bonds, Series 2015.

To adequately fund the proposed capital improvements, additional revenue bonds are indicated as shown in Table 10. It is anticipated that the Board will issue revenue bonds in the amount of \$178,000,000 in 2018 and \$103,000,000 in 2021. Projected bonds shown in Table 10 for 2017 through 2021 are assumed to be sold at an average annual interest rate of 5.5 percent for a term of 30 years with 1 year of capitalized interest.

The Water Department has borrowed from the City of New Orleans Department of Public Works (DPW) and 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 examines the financing of the major capital improvement program and Table 12 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.

## Capital Projects Funding

Table 11 presents the major capital improvement financing plan which summarizes the projected source and application of funds over the five-year study period. The amount of Funds Available at Beginning of Year, shown on Line 1, is \$150,580,400. This amount is based on audited data provided by the Board.

Projected revenue bond proceeds, totaling \$281,000,000, are shown on Line 2. The amounts and years of issue are developed by 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 \$75,000,000 of operating revenue as shown on Line 3. 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 4 includes anticipated funding by the COE and FEMA. Interest earnings recognize an assumed 1.0 percent average annual interest rate and are shown on Line 5. Line 6 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2016, the Board had \$24,890,500 obligated for open contracts and capital jobs as shown on Line 7 of Table 11. Line 8 shows the projected Major Capital Additions to be funded. These costs reflect the total improvements shown Table 7 with 3 percent inflation beginning in 2018. Estimated issuance costs and capitalized interest related to the proposed bond issue amounts are shown on Lines 9 and 10.

Line 11 shows the required deposits into the Revenue Bond Reserve Fund associated with proposed bond issues. The debt service reserve on proposed debt is a three-prong test estimated as the lessor of (i) 10 percent of the original principal amount, (ii) the maximum annual debt service, or (iii) 125 percent of the average annual debt service.

The Total Application of Funds is shown on Line 12 of Table 11. The net End of Year Balance is shown on Line 13.

### Operating Fund

Line 1 of Table 12 shows projected Revenue from Charges under 2017 rates as previously presented in Table 8. In 2012, the New Orleans City Council approved eight consecutive annual 10 percent water rate increases beginning January 1, 2013. Revenue from these future annual revenue increases of 10 percent effective January 1, 2017 through January 1, 2020 is shown on Line 2. It is projected that a 6 percent revenue increase will be necessary effective January 1, 2021. The revenue from this proposed revenue increase is also included in Line 2. The date and magnitude of proposed revenue increase in 2021 is based on consideration of two principal criteria, which include: (1) total revenue necessary to meet cash requirements, and (2) total revenue required to meet minimum bond coverage requirements.

Other revenue available for system operations is shown on Line 4. Interest Income available to the operating fund, included in Line 4, is estimated to be 1.0 percent of the average of the beginning and end of year Net Annual Balance, except as the average is affected by identifiable nonrecurring major receipts, transfers, or expenditures during the year. Revenue from Plumbing Inspection and License Fees and Other Miscellaneous Revenue are also included in Line 4 Table 12. Total Operating Revenue is shown on Line 5.

Operation and Maintenance expense, previously projected in Table 9, is shown on Line 6 of Table 12. Line 7 includes the estimated allowance for claims and bad debt expense which is assumed to be 2 percent of projected revenue. Projected Net Operating Revenue from system operations is shown on Line 8.

Lines 9 through 11 present debt service requirements on currently outstanding and proposed senior revenue bonds. Existing debt includes the Series 2014 and Series 2015 bonds. Line 10 reflects projected principal and interest payments on additional revenue bond debt financing of \$178,000,000 in 2018 and \$103,000,000 in 2021. Proposed debt is assumed to be 30 year, 5.5

percent fixed interest rate bonds issued in March, with 1 year of capitalized interest and equal annual payments of principal and interest.

In July of 2006 the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247 on this agreement. No principal or interest was payable during the initial five-year period of the loan, but after that period, the loan began to bear an interest rate of 4.64 percent. Payments for the water portion of principal and interest began in July 2012 and are shown on Line 12 of Table 12 as subordinate debt.

Anticipated non-operating revenue is shown on Line 14.

Line 15 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 16 reflects repayment to the DPW and the Drainage Department as well as claimants.

The General Resolution requires an Operating Reserve Fund of 90 days of the previous year's operation and maintenance expense; however the SWBNO's Financial Management Policy requires an Operating Reserve Fund of not less than 180 days. Line 17 indicates the projected annual transfers available to meet this requirement throughout the study period. The General Resolution also sets forth the option to maintain a rate stabilization fund. The amount to be transferred to this fund, as well as the timing, is determined by the Executive Director. There are no transfers currently anticipated during the study period as shown on Line 18 of Table 12.

Line 19 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 2017, shown on Line 20, is comprised of the current cash assets and reflects a balance of \$6,005,200. The End of Year Balance, which is exclusive of the operating reserve fund and rate stabilization fund, is shown on Line 21.

Lines 22 through 27 demonstrate that the Board is maintaining an operating reserve equal to at least 180 days of the previous year's operation and maintenance expense beginning in 2018.

As demonstrated in Tables 11 and 12, 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 2017-2021 study period examined herein, with the adopted 10 percent revenue increases in 2017 through 2020, and a 6 percent revenue increase in 2021.

### **Bond Coverage Requirements**

An additional consideration in measuring the adequacy of revenues is the provision of sufficient debt service coverage to meet the bond covenant requirements for the issuance of parity revenue bonds. The General Resolution provides that rates shall be maintained at levels which are expected to yield net revenues (as defined in the resolution) equal to at least 125 percent of the annual principal and interest requirement for senior debt and 110 percent for senior and subordinate debt in each fiscal

year. The SWBNO's Financial Management Policy requires coverage at a minimum of 150 percent for senior debt and 125 percent for senior and subordinate debt.

The calculation of net revenue is shown on Lines 1 through 9 of Table 13. The ability of the Water Department revenues to meet revenue bond coverage requirements is shown on Lines 10 through 14. As shown on Lines 12 and 14, the indicated projected revenue and revenue increases will provide sufficient net revenue to meet coverage requirements during the study period.

The General Resolution further prescribes that additional parity revenue bonds may be issued if net revenue from a previous test year (any 12 consecutive months of the last 24 months) is equal to at least 125 percent of the maximum annual principal and interest requirement for senior debt and 110 percent for senior and subordinate debt. For purposes of the additional bonds test, net revenue may be adjusted to reflect any increases not in effect during the selected test year but have been approved by the Board, Board of Liquidation and City Council and will go into effect within the following five years.

The results of the additional bonds test are shown on Lines 15 through 21 of Table 13. Lines 19 and 21 of the table indicate that with the magnitude of the adopted annual revenue increases, required minimum levels of coverage are met in each year with indicated coverage levels ranging from 229 percent to 426 percent.

**Table 1**

**Insurance in Force as of December 31, 2016**

Insurer	Coverage	Deductible	Premium
Lexington	Commercial Property	5% per building subject to minimum \$500,000 per occurrence for named storm; \$50,000 earth movement deductible; \$1,000,000 minimum per occurrence for any other peril not excluded	\$513,765
Homeland	Commercial Property		\$48,930
RSUI	Commercial Property		\$28,306
Lloyds of London	Commercial Property		\$35,796
Lexington	Commercial Auto Physical Damage	\$150,000	\$200,827
ACE	Commercial Auto Liability	\$1,000,000 SIR/Deductible	\$250,000
RSUI	Excess Auto Liability		\$75,500
Endurance	Excess Auto Liability		\$68,125
Hudson	Fiduciary Liability	\$50,000	\$20,156
Illinois Union	Public Officials Liability	\$250,000	\$70,256
Zurich	Commercial Crime	\$5,000	\$6,335
Beazley	Cyber Security	\$25,000 per claim	\$33,514

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

Customer Class	Historical		Projected				
	2015	2016	2017	2018	2019	2020	2021
<b>Single Family Residential (b)</b>							
Customers	116,078	117,202	117,800	118,300	118,800	119,200	119,600
Sales (1,000,000 gal.)	6,567	6,330	6,680	6,645	6,613	6,578	6,546
Sales Per Customer (1,000 gal.)	57	54	57	56	56	55	55
<b>Multi-family Residential</b>							
Customers	4,666	4,678	4,700	4,700	4,700	4,700	4,700
Sales (1,000,000 gal.)	707	702	698	691	685	679	674
Sales Per Customer (1,000 gal.)	152	150	148	147	146	144	143
<b>Commercial</b>							
Customers	11,642	11,501	11,500	11,500	11,500	11,500	11,500
Sales (1,000,000 gal.)	3,234	3,311	3,278	3,247	3,218	3,190	3,164
Sales Per Customer (1,000 gal.)	278	288	285	282	280	277	275
<b>Industrial</b>							
Customers	38	35	35	35	35	35	35
Sales (1,000,000 gal.)	217	162	161	159	158	156	155
Sales Per Customer (1,000 gal.)	5,709	4,634	4,589	4,543	4,503	4,466	4,429
<b>Dual Service &amp; Metered Fire Service (c)</b>							
Customers	1,480	1,456	1,500	1,500	1,500	1,500	1,500
Sales (1,000,000 gal.)	2,541	2,602	2,654	2,628	2,605	2,582	2,561
Sales Per Customer (1,000 gal.)	1,717	1,787	1,769	1,752	1,736	1,722	1,708
<b>Total</b>							
Customers	133,904	134,872	135,535	136,035	136,535	136,935	137,335
Sales (1,000,000 gal.)	13,266	13,107	13,470	13,370	13,278	13,186	13,100

(a) Excludes customers receiving

(b) Includes duplex.

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

**Table 3**

**Water Department  
Existing Water Rates  
(Effective January 1, 2017)**

Rate Components	General Service	Dual Service (a)
	\$	\$

**Monthly Water Service Charge**

Meter Size  
Inches

5/8	6.53	8.87
3/4	7.99	10.79
1	10.14	14.18
1-1/2	16.74	22.07
2	22.07	31.57
3	49.93	70.06
4	86.97	122.41
6	170.72	238.36
8	252.86	354.31
10	343.04	479.93
12	402.63	563.68
16	536.29	750.51

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

First	3,000 gallons	4.35	4.35
Next	17,000 gallons	7.41	7.41
Next	980,000 gallons	5.83	5.83
Over	1,000,000 gallons	4.88	4.88

**Flat Rate Fire Service**

Meter Size  
Inches

2	14.81
3	20.13
4	37.04
6	64.42
8	85.35
10	135.28
12	175.55
16	241.58

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

**Table 4**

**Water Department**  
**Statement of Historical Revenue**

Revenue Source	2012	2013	2014	2015	2016
	\$	\$	\$	\$	\$
<b>Operating Revenue</b>					
Sales of Water	59,208,198	63,248,555	69,601,809	76,719,113	82,060,525
Delinquent Fee	1,048,107	1,150,054	1,216,445	1,288,824	1,098,415
Total Operating Revenue	<u>60,256,305</u>	<u>64,398,610</u>	<u>70,818,254</u>	<u>78,007,937</u>	<u>83,158,940</u>
<b>Nonoperating Revenue</b>					
Interest Earned	92,849	82,893	349,607	966,017	2,097,442
Plumbing Inspection and License Fees	343,903	321,518	339,176	305,384	319,991
Revenue Sharing	123,885	219,877	254,577	258,721	251,002
Other Income (a)	10,851,066	5,234,998	2,459,234	3,418,560	2,531,442
Total Nonoperating Revenue	<u>11,411,703</u>	<u>5,859,286</u>	<u>3,402,593</u>	<u>4,948,682</u>	<u>5,199,877</u>
Total Revenue	<u>71,668,008</u>	<u>70,257,896</u>	<u>74,220,847</u>	<u>82,956,619</u>	<u>88,358,817</u>

(a) Includes \$7,617,063 in operating and maintenance grants in 2012, \$1,981,568 in 2013, -\$381,876 in 2014, \$2,405 in 2015 and \$24,738 in 2016.

**Table 5**

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

	2012	2013	2014	2015	2016
	\$	\$	\$	\$	\$
Personal Services	31,410,463	32,375,467	34,802,991	42,333,498	39,659,020
Services & Utilities	12,230,597	15,964,882	16,936,254	17,408,686	17,603,566
Supplies & Materials	17,109,745	14,229,820	14,998,094	18,276,404	19,143,488
Special Current Charges	1,532,863	1,304,502	2,357,932	(103,530)	248,523
Furniture & Equipment	173,656	233,244	298,973	349,610	231,850
Repairs & Facility Maintenance	0	0	0	0	0
<b>Total Operation and Maintenance</b>	<b>62,457,322</b>	<b>64,107,915</b>	<b>69,394,244</b>	<b>78,264,668</b>	<b>76,886,448</b>

- (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 included in Table 12.

**Table 6**

**Water Department**  
**Capital Expenditures**  
**2016**

C.P. #	Project	Actual Expenditures
		\$
	<b>Waterworks</b>	
110	Normal Extensions & Replacements	3,483,175
156	Advanced Water Treatment	735,405
175	Water Hurricane Recovery Bonds	4,886,835
180	FEMA Review of Change Orders - Water	11,683,197
	Total Waterworks	<u>20,788,612</u>
	<b>Water Distribution</b>	
214	Normal Extensions & Replacements	2,142,181
215	Rehabilitation - Mains, Hydrants & Services	2,096,192
239	Mains DPW Contracts	(158,500)
	Total Water Distribution	<u>4,079,874</u>
	<b>Power Projects and General Budget</b>	
600	Water Share of Power Projects	5,864,914
700	Water Reserve for Emergencies	233,731
800	Water Share of General Budget Items	9,168,341
	Total Power Projects and General Budget	<u>15,266,986</u>
	Total Water Department	40,135,472

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

C.P.#	Project	2017	2018	2019	2020	2021	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
110	Normal Extension & Replacement	18,884,000	16,320,000	5,745,000	4,920,000	5,470,000	51,339,000
112	Modification to Oak St. Raw Water Intake Station	1,200,000	5,500,000	5,000,000	0	0	11,700,000
122	Sycamore and Claiborne Filter Rehabilitation	6,625,000	5,050,000	0	0	0	11,675,000
160	SELA Water Relocation Costs	1,300,000	603,000	237,000	578,000	2,145,000	4,863,000
214	Normal Extensions & Replacements	2,535,000	2,535,000	2,535,000	2,535,000	2,535,000	12,675,000
216	Water System Replacement Program	5,100,000	5,100,000	5,200,000	5,000,000	5,000,000	25,400,000
239	Mains In Streets Department Contracts	3,200,000	6,000,000	3,200,000	3,200,000	3,200,000	18,800,000
600	Water Share of Power Projects	51,397,230	15,570,000	9,072,000	3,780,000	2,380,000	82,199,230
701	Water Reserve for Emergencies	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
800	Water Share of General Budget Items	23,595,800	19,767,000	10,479,000	8,160,000	8,629,000	70,630,800
	<b>Total Routine Capital Improvements</b>	<b>115,837,030</b>	<b>78,445,000</b>	<b>43,468,000</b>	<b>30,173,000</b>	<b>31,359,000</b>	<b>299,282,030</b>
<b>Major Capital Improvements</b>							
135	Improvements to Chemical System	7,370,000	2,100,000	3,000,000	0	0	12,470,000
156	Advanced Carrollton Water Treatment	8,815,000	700,000	20,120,000	120,000	120,000	29,875,000
157	Advanced Algiers Water Treatment	6,940,000	3,900,000	1,000,000	0	0	11,840,000
158	Water Treatment Carr.	200,000	200,000	0	0	0	400,000
159	Water Plant Security Improvements	2,495,000	1,980,000	3,320,000	0	0	7,795,000
175	Water Hurricane Recovery Bonds	40,600,000	23,200,000	44,000,000	33,200,000	31,200,000	172,200,000
221	Feeder Main Extension, General	100,000	100,000	50,000	50,000	50,000	350,000
	<b>Total Major Capital Improvements</b>	<b>66,520,000</b>	<b>32,180,000</b>	<b>71,490,000</b>	<b>33,370,000</b>	<b>31,370,000</b>	<b>234,930,000</b>
	<b>Total Water Department Improvements</b>	<b>182,357,030</b>	<b>110,625,000</b>	<b>114,958,000</b>	<b>63,543,000</b>	<b>62,729,000</b>	<b>534,212,030</b>

(a) The improvements for 2017-2021 are based on the amended 2017 capital budget and 2017-2026 capital improvement program.

**Table 8**

**Water Department  
Projected Operating Revenue**

	(1)	(2)	(3)
<b>Year</b>	<b>Revenue From Charges</b>	<b>Additional Revenue (a)</b>	<b>Total Service Charge Revenue</b>
	\$	\$	\$
2017	91,193,500	0	91,193,500
2018	90,675,500	8,925,900	99,601,400
2019	90,198,400	18,704,000	108,902,400
2020	89,718,000	29,351,800	119,069,800
2021	89,273,400	30,077,900	119,351,300

(a) Reflects additional revenue from adopted revenue increases.

**Table 9**

**Water Department  
Projected Operation and Maintenance Expenses**

	<b>2017 (a)</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
	\$	\$	\$	\$	\$
Personal Services	36,692,100	37,792,900	38,926,600	40,094,400	41,297,300
Services & Utilities	16,286,600	16,775,200	17,278,500	17,796,800	18,330,700
Supplies & Materials	17,711,400	18,242,700	18,790,000	19,353,700	19,934,300
Special Current Charges	229,900	236,800	243,900	251,200	258,800
Furniture & Equipment	214,500	220,900	227,600	234,400	241,400
Repairs & Facility Maintenance	0	0	0	0	0
<b>Total Operation and Maintenance</b>	<b>71,134,500</b>	<b>73,268,500</b>	<b>75,466,600</b>	<b>77,730,500</b>	<b>80,062,500</b>

(a) Represents the amended operating budget approved on September 20, 2017.

**Table 10**  
**Water Department**  
**Debt Service Requirements**

	2017	2018	2019	2020	2021
	\$	\$	\$	\$	\$
<b>Existing Bonds</b>					
Series 2014	7,700,000	7,693,000	7,700,000	7,690,000	7,683,500
Series 2015	4,940,600	5,640,600	5,694,600	5,783,600	5,787,800
Total Existing Debt Service	12,640,600	13,333,600	13,394,600	13,473,600	13,471,300
<b>Projected Bonds</b>					
	Amount of Issue				
	\$				
2017	0	0	0	0	0
2018	178,000,000	0	10,767,500	12,921,000	12,921,000
2019	0		0	0	0
2020	0			0	0
2021	103,000,000				0
Total Projected Debt Service	0	0	10,767,500	12,921,000	12,921,000
Total Debt Service	12,640,600	13,333,600	24,162,100	26,394,600	26,392,300

**Table 11**  
**Water Department**  
**Capital Improvement Program Financing**

Line No.	Description	Fiscal Year Ending December 31,					Total
		2017	2018	2019	2020	2021	
		\$	\$	\$	\$	\$	\$
1	Funds Available at Beginning of Year	150,580,400	209,200	83,212,900	15,771,000	4,141,900	150,580,400
2	Revenue Bond Proceeds	0	178,000,000	0	0	103,000,000	281,000,000
3	Operation Fund Transfers	22,000,000	3,000,000	12,000,000	17,000,000	21,000,000	75,000,000
4	Participation By Others	33,944,000	40,265,000	41,917,000	40,648,000	33,035,000	189,809,000
5	Interest Income	932,300	1,063,500	600,000	158,100	782,500	3,536,400
6	Total Funds Available	207,456,700	222,537,700	137,729,900	73,577,100	161,959,400	699,925,800
7	Obligated Contracts & Capital Jobs	(24,890,500)	0	0	0	0	(24,890,500)
8	Major Capital Additions	(182,357,000)	(113,943,800)	(121,958,900)	(69,435,200)	(70,602,000)	(558,296,900)
9	Bond Issuance Expense	0	(2,670,000)	0	0	(1,545,000)	(4,215,000)
10	Capitalized Interest Requirement	0	(9,790,000)	0	0	(5,665,000)	(15,455,000)
11	Revenue Bond Reserve Fund	0	(12,921,000)	0	0	(7,476,700)	(20,397,700)
12	Total Application of Funds	(207,247,500)	(139,324,800)	(121,958,900)	(69,435,200)	(85,288,700)	(623,255,100)
13	End of Year Balance	209,200	83,212,900	15,771,000	4,141,900	76,670,700	76,670,700

Table 12

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

Line No.	Description	Fiscal Year Ending December 31,				
		2017	2018	2019	2020	2021
		\$	\$	\$	\$	\$
1	Revenue from Charges	91,193,500	90,675,500	90,198,400	89,718,000	89,273,400
2	Total Additional Revenue (a)	0	8,925,900	18,704,000	29,351,800	36,642,200
3	Total Service Charge Revenue	91,193,500	99,601,400	108,902,400	119,069,800	125,915,600
4	Other Operating Revenue	7,113,900	7,188,400	7,323,300	7,333,400	7,384,600
5	Total Operating Revenue	98,307,400	106,789,800	116,225,700	126,403,200	133,300,200
6	Operation & Maintenance	(71,134,500)	(73,268,500)	(75,466,600)	(77,730,500)	(80,062,500)
7	Non-Cash Expense Accruals	(3,130,100)	(3,337,400)	(3,563,800)	(3,808,800)	(3,988,500)
8	Net Operating Revenue	24,042,800	30,183,900	37,195,300	44,863,900	49,249,200
	Debt Service					
	Senior Lien Revenue Bonds					
9	Existing	(12,640,600)	(13,333,600)	(13,394,600)	(13,473,600)	(13,471,300)
10	Projected	0	0	(10,767,500)	(12,921,000)	(12,921,000)
11	Total Senior Lien Revenue Bonds	(12,640,600)	(13,333,600)	(24,162,100)	(26,394,600)	(26,392,300)
	Subordinate Revenue Bonds					
12	Gulf Opportunity Zone Act Loan	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)
13	Total Debt Service	(13,280,500)	(13,973,500)	(24,802,000)	(27,034,500)	(27,032,200)
14	Other Non-Operating Revenue	400,500	400,500	400,500	400,500	400,500
15	Transfer to Construction	(22,000,000)	(3,000,000)	(12,000,000)	(17,000,000)	(21,000,000)
16	Due from/(to) Other Departments	(436,000)	(436,000)	0	0	0
17	Transfer to Operating Reserve Fund	0	0	0	0	(208,100)
18	Transfer from/(to) Rate Stabilization Fund	0	0	0	0	0
19	Net Annual Balance	(11,273,200)	13,174,900	793,800	1,229,900	1,409,400
20	Beginning of Year Cash Balance (b)	6,005,200	(5,268,000)	7,906,900	8,700,700	9,930,600
21	End of Year Balance	(5,268,000)	7,906,900	8,700,700	9,930,600	11,340,000
22	Beginning of Year Cash Balance (b)	6,005,200	25,463,802	38,638,702	39,432,502	40,662,402
23	Customer Deposits	11,773,500	0	0	0	0
24	Operating Reserve Fund	18,958,302	0	0	0	208,100
25	Net annual Balance	(11,273,200)	13,174,900	793,800	1,229,900	1,409,400
26	End of Year Balance	25,463,802	38,638,702	39,432,502	40,662,402	42,279,902
27	Days of O&M Cash on Hand	125	184	182	182	184

(a) Reflects revenue from an eight-year series of annual 10% rate increases effective January 1, 2013; adopted by the City Council in 2012 and a proposed 6% annual increase in 2021.

(b) Reflects beginning of year balance in unrestricted and undesignated cash and cash equivalents and cash and cash equivalents designated for capital projects, less operating reserve requirement.

**Table 13**  
**Water Department**  
**Coverage Requirements**

Line No.	Coverage Requirements	2017	2018	2019	2020	2021
		\$	\$	\$	\$	\$
<b>Projected Net Revenues</b>						
1	Revenue Under Existing Rates	91,193,500	90,675,500	90,198,400	89,718,000	89,273,400
2	Additional Revenue Under Proposed Rate	0	8,925,900	18,704,000	29,351,800	36,642,200
3	Interest Income	1,396,300	1,602,000	1,273,400	841,600	1,517,200
4	Plumbing and Inspection Fees	299,700	299,700	299,700	299,700	299,700
5	Other Miscellaneous Revenue	4,155,100	4,155,100	4,155,100	4,155,100	4,155,100
6	Operation & Maintenance Grants	2,195,100	2,195,100	2,195,100	2,195,100	2,195,100
7	Transfer from Rate Stabilization Fund	0	0	0	0	0
8	Operation & Maintenance	(71,134,500)	(73,268,500)	(75,466,600)	(77,730,500)	(80,062,500)
9	Net Revenue	28,105,200	34,584,800	41,359,100	48,830,800	54,020,200
<b>Rate Covenant Coverage</b>						
10	Projected Net Revenues	28,105,200	34,584,800	41,359,100	48,830,800	54,020,200
	Annual Debt Service					
11	Senior Debt	12,640,600	13,333,600	24,162,100	26,394,600	26,392,300
12	Coverage (a)	222%	259%	171%	185%	205%
13	All Debt	13,280,500	13,973,500	24,802,000	27,034,500	27,032,200
14	Coverage (b)	212%	248%	167%	181%	200%
<b>Additional Bond Coverage</b>						
15	Preceding Year Projected Net Revenues	11,472,300	28,105,200	34,584,800	41,359,100	48,830,800
16	Future Additional Revenue	45,899,200	45,187,400	39,999,600	35,062,300	30,344,900
17	Adjusted Projected Net Revenues	57,371,500	73,292,600	74,584,400	76,421,400	79,175,700
	Maximum Debt Service					
18	Senior Debt	13,473,600	26,394,600	26,394,600	26,394,600	33,871,200
19	Coverage (a)	426%	278%	283%	290%	234%
20	All Debt	14,113,500	27,034,500	27,034,500	27,034,500	34,508,400
21	Coverage (b)	407%	271%	276%	283%	229%

(a) The General Bond Resolution requires net revenue to equal or exceed 125% of debt service.

(b) The General Bond Resolution requires net revenue to equal or exceed 110% of debt service.

## Sewerage Department

### ADHERENCE TO SEWERAGE SERVICE REVENUE BOND RESOLUTION

In 2014, the Board issued \$158,990,000 Sewerage Service Revenue and Refunding Bonds. Issuance of these bonds obligated the Board to adhere to the covenants of the Bond Resolution. Briefly, the covenants are concerned with:

- Payment of indebtedness; limited obligations.
- Limitations on indebtedness.
- Covenants and representations of Board.
- Covenants with credit banks, insurers, etc.
- Operation and maintenance.
- Free service, competing service, billing and enforcement of charges.
- Sale or encumbrance of system.
- Insurance
- Damage, destruction, condemnation and loss of title.
- Records and accounts; inspections and reports.
- Capital budget.

The provisions of the General Sewerage Service Revenue Bond Resolution are virtually identical to those of the General Water Revenue Bond Resolution described in the preceding section of this report. The Board was in compliance with these covenants in 2016. Sewerage Department tables are included at the end of this section.

### 2016 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 2016 operations of the Sewerage Department are discussed in the following paragraphs.

#### Wastewater Volumes

##### Number of Customers

Table 14 presents a summary of the historical and projected average number of sewer customers for the period 2015 through 2021. Based on year-end billing summaries, the number of monthly billed customers during 2016 averaged 133,277 compared with 132,264 for 2015. Based on year-to-date customer data through August of 2017, it is projected that the Board will average approximately 133,834 open accounts in 2017 and that the number of accounts will continue to grow at approximately 0.3 percent each year.

##### Billed Wastewater Volume

Table 14 also presents a summary of historical and projected billed wastewater volumes. Based on year-end billing summaries, a total of 9,992 million gallons of wastewater volume was billed in 2016,

compared with a total of 9,485 million gallons in 2015. Since 85 percent of residential water usage and 100 percent of non-residential usage is treated as billable sewer flows, the decrease in sewage volume billed is similar to the decrease in water usage. After factoring in the number of annual bills rendered, the average annual usage per customer for each customer class and the projected resistance factor, the resulting projected contributed wastewater volume reflects a decrease of approximately 0.7 percent per year.

### Operating Revenues

The 2016 schedule of rates for retail sewerage service is presented in Table 15 and reflects a 10 percent rate increase over 2015 rates. 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 16 for the period 2012 through 2016. The historical revenues shown in Table 16 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 2016 were \$104,060,458 which, when compared with \$94,775,797 for 2015, shows an increase of approximately 9.8 percent. Delinquent fee revenues were \$734,725 in 2016 which represent a decrease of approximately 14.7 percent over 2015 delinquent fees.

### Non-Operating Revenues

Also shown in Table 16, Sewerage Department non-operating revenue includes interest earned on the investment of available funds and other minor items of revenue. Interest earned in 2016 consisted of \$2,301,168 from investments in the Sewerage System fund, the capital projects and construction fund. Miscellaneous income was \$1,137,406 for 2016.

### Operation and Maintenance Expenses

Table 17 presents a summary of 2012 through 2016 historical operation and maintenance expenses of the Sewerage Department. Expenditures for 2016 increased about 0.4% percent from 2015 expenditures. Historical operation and maintenance expenses shown in Table 17 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 7 in Table 24.

### 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 2016 capital expenditures totaled \$40,544,444. Capital improvement expenditures for the year are shown in Table 18.

### Summary of Operations

The following tabulation shows a summary of the receipts and expenditures of the Sewerage Department during 2016:

Total Revenues	\$108,233,756
Operation and Maintenance Expense	58,240,656
Claims	2,380,775
Debt Service Payments	24,616,125
<b>Revenue Primarily Available for Capital Expenditures <sup>a</sup></b>	<b>22,996,200</b>

<sup>a</sup> Excludes depreciation.

### PROPOSED CAPITAL IMPROVEMENT PROGRAM

Table 19 presents a summary of the projected major capital improvement program for the period 2017 through 2021. Table 19 is based on the Board's amended 2017-2026 Capital Program and 2017-2026 Capital Improvement Program. The five-year major capital improvement program costs are estimated to total \$438,109,000. Of the projected total, \$351,179,000 is considered to be for recurring annual capital improvements. The remaining \$86,930,000 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 projects and general budget item costs for the five-year period 2017 through 2021 total \$37,266,200 and \$44,255,800, 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 19 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 19.

#### Operating Revenues

Future operating revenues of the Sewerage Department consist of sewerage service charge revenues which are summarized for 2017 through 2021 in Table 20. These estimates reflect the rate schedule effective January 1, 2017 applied to the projected number of customers and contributed wastewater flow and are projected to decrease, on average, about 0.2 percent per year throughout the study period due to the anticipated decline in water consumption. Projected revenue from adopted revenue increases is also shown in Table 20.

#### 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 \$326,100 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 2017 through 2021 is shown in Table 21. Estimates of future expenses are based on anticipated future operating conditions and allowances for inflationary factors.

Projections of future operating and maintenance expenses for the study period are based on the Board's amended 2017 Operating Budget and an analysis of the current and anticipated operating conditions and trends.

### **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, 2016 outstanding debt obligations consisted of \$7,333,000 Sewerage Revenue Bonds Series 2011, \$135,355,000 Sewerage Service Revenue and Refunding Bonds Series 2014, and \$100,000,000 Sewerage Service Revenue and Refunding Bonds Series 2015.

To adequately fund the proposed capital improvements, additional revenue bonds are indicated as shown in Table 22. It is anticipated that the Board will issue revenue bonds in the amount of \$158,000,000 in 2018 and \$124,000,000 in 2020. Projected bonds shown in Table 22 for 2017 through 2021 are assumed to be sold at an average annual interest rate of 5.5 percent for a term of 30 years.

The Sewerage Department has borrowed from the 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 23 examines the financing of the major capital improvement program and Table 24 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.

## Capital Projects Funding

Table 23 presents the major capital improvement financing plan which summarizes the projected source and application of funds over the five-year study period. The amount of Funds Available at Beginning of Year, shown on Line 1, is \$151,780,100. This amount is based on audited data provided by the Board.

Projected revenue bond proceeds, totaling \$282,000,000, are shown on Line 2. The amounts and years of issue are developed by 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 \$73,000,000 of operating reserves as shown on Line 3. 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 4 includes anticipated funding by the COE and FEMA. Interest earnings recognize an assumed 1.0 percent average annual interest rate and are shown on Line 5. Line 6 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2016, the Board had \$47,957,300 obligated for open contracts and capital jobs as shown on Line 7 of Table 23. Line 8 shows the projected Major Capital Additions to be funded. These cost reflect the total improvements shown in Table 19 with 3 percent inflation beginning in 2018. Estimated issuance costs related to the proposed bond issue amounts are shown on Line 9.

Line 10 shows the required deposits into the Revenue Bond Reserve Fund associated with proposed bond issues. The debt service reserve on proposed debt is a three-pronged test estimated as the lesser of (i) 10 percent of the original principal amount, (ii) the maximum annual debt service, or (iii) 125 percent of the average annual debt service.

The Total Application of Funds is shown on Line 11 of Table 23. The net End of Year Balance is shown on Line 12.

## Operating Fund

Line 1 of Table 24 shows projected Revenue from Charges under 2016 rates as previously presented in Table 20. In 2012, the New Orleans City Council approved eight consecutive annual 10 percent sewer rate increases beginning January 1, 2013. Revenue from these future annual revenue increases of 10 percent effective January 1, 2016 through January 1, 2020 is shown on Line 2. It is projected that a 1 percent revenue increase will be necessary effective January 1, 2021. The revenue from this proposed revenue increase is also included in Line 2. The date and magnitude of proposed revenue increase in 2021 is based on consideration of two principal criteria, which include: (1) total revenue necessary to meet cash requirements, and (2) total revenue required to meet minimum bond coverage requirements.

Other revenue available for system operations is shown on Line 4. Interest Income available to the operating fund, included in Line 4, is estimated to be 1.0 percent of the average of the beginning and end of year Net Annual Balance, except as the average is affected by identifiable nonrecurring major receipts, transfers, or expenditures during the year. Revenue from Plumbing Inspection and License

Fees and Other Miscellaneous Revenue are also included in Line 4 of Table 21. Total Operating Revenue is shown on Line 5.

Operation and Maintenance expense, previously projected in Table 21, is shown on Line 6 of Table 24. Line 7 shows the estimated allowance for claims and bad debt expense which is assumed to be 1 percent of projected revenue. Projected Net Operating Revenue from system operations is shown on Line 8.

Lines 9 through 11 present debt service requirements on currently outstanding and proposed senior revenue bonds. Existing bonds include the Series 2011, Series 2014 and Series 2015 bonds. Line 10 reflects projected principal and interest payments on additional revenue bond debt financing of \$158,000,000 in 2018 and \$124,000,000 in 2020. Proposed debt is assumed to be 30 year, 5.5 percent fixed interest rate bonds issued in March, with equal annual payments of principal and interest.

In July of 2006, the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247 on this agreement. No principal or interest was payable during the initial five-year period of the loan, but after that period, the loan began to bear an interest rate of 4.64 percent. Payments for the sewerage portion of principal and interest began in July 2012 and are shown on Line 12 of Table 24 as subordinate debt.

Anticipated non-operating revenue is shown on Line 14.

Line 15 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 16 reflects payment to the DPW as well as claimants.

The General Resolution requires an Operating Reserve Fund of 90 days of the previous year's operation and maintenance expense; however the SWBNO's Financial Management Policy requires an Operating Reserve Fund of not less than 180 days. Line 17 indicates the projected annual transfers available to meet this requirement throughout the study period. The General Resolution also sets forth the option to maintain a rate stabilization fund. The amount to be transferred to this fund, as well as the timing, is determined by the Executive Director. There are no transfers currently anticipated during the study period as shown on Line 18 of Table 24.

Line 19 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 2017, shown on Line 20, is comprised of the current cash assets and reflects a balance of \$47,055,200. The End of Year Balance, which is exclusive of the operating reserve fund and rate stabilization fund, is shown on Line 21.

Lines 22 through 26 demonstrate that the Board is maintaining an operating reserve equal to at least 180 days of the previous year's operation and maintenance expense beginning in 2018.

As demonstrated in Tables 23 and 24, it is anticipated that current revenue sources will be adequate to readily finance both projected capital program requirements as currently scheduled and estimated future operation expenses of the Sewerage Department during the 2017-2021 study period examined herein, with the adopted 10 percent revenue increases in 2017 through 2020, and a 1 percent revenue increase in 2021.

### **Bond Coverage Requirements**

An additional consideration in measuring the adequacy of revenues is the provision of sufficient debt service coverage to meet the bond covenant requirements for the issuance of parity revenue bonds. The General Resolution provides that rates shall be maintained at levels which are expected to yield net revenues (as defined in the resolution) equal to at least 125 percent of the annual principal and interest requirement for senior debt and 110 percent for senior and subordinate debt in each fiscal year. The SWBNO's Financial Management Policy requires coverage at a minimum of 150 percent for senior debt and 125 percent for senior and subordinate debt.

The calculation of net revenue is shown on Lines 1 through 9 of Table 25. The ability of the Sewerage Department revenues to meet revenue bond coverage requirements is shown on Lines 10 through 14. As shown on Lines 12 and 14, the indicated projected revenue and revenue increases will provide sufficient net revenue to meet coverage requirements during the study period.

The General Resolution further prescribes that additional parity revenue bonds may be issued if net revenue from a previous test year (any 12 consecutive months of the last 24 months) is equal to at least 125 percent of the maximum annual principal and interest requirement for senior debt and 110 percent for senior and subordinate debt. For purposes of the additional bonds test, net revenue may be adjusted to reflect any increases not in effect during the selected test year but have been approved by the Board, Board of Liquidation and City Council and will go into effect within the following five years.

The results of the additional bonds test are shown on Lines 15 through 21 of Table 25. Lines 19 and 21 of the table indicate that with the magnitude of the adopted annual revenue increases, required minimum levels of coverage are met in each year with indicated coverage levels ranging from 206 percent to 404 percent.

**Table 14**

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

Customer Class	Historical		Projected				
	2015	2016	2017	2018	2019	2020	2021
<b>Single Family Residential (b)</b>							
Customers	115,192	116,226	116,800	117,300	117,800	118,200	118,600
Sales (1,000,000 gal.)	5,919	5,899	5,722	5,692	5,665	5,635	5,608
Sales Per Customer (1,000 gal.)	51	51	49	49	48	48	47
<b>Multifamily Residential</b>							
Customers	4,639	4,647	4,600	4,600	4,600	4,600	4,600
Sales (1,000,000 gal.)	605	643	631	625	619	614	609
Sales Per Customer (1,000 gal.)	130	138	137	136	135	133	132
<b>Commercial</b>							
Customers	12,396	12,370	12,400	12,400	12,400	12,400	12,400
Sales (1,000,000 gal.)	2,918	3,414	3,303	3,272	3,242	3,214	3,188
Sales Per Customer (1,000 gal.)	235	275	266	263	261	259	257
<b>Industrial</b>							
Customers	37	34	34	34	34	34	34
Sales (1,000,000 gal.)	44	36	36	36	35	35	35
Sales Per Customer (1,000 gal.)	1,188	1,066	1,056	1,047	1,035	1,026	1,018
<b>Total</b>							
Customers	132,264	133,277	133,834	134,334	134,834	135,234	135,634
Sales (1,000,000 gal.)	9,485	9,992	9,692	9,624	9,561	9,498	9,440

(a) Excludes customers receiving free service.

(b) Includes duplex.

**Table 15**

**Sewerage Department  
Existing Sewer Rates  
(Effective January 1, 2017)**

Rate Components	General Service
-----------------	-----------------

\$

**Monthly Sewerage Service Charge**

Meter Size  
Inches

5/8	18.68
3/4	26.59
1	37.85
1-1/2	69.66
2	101.87
3	241.58
4	402.63
6	805.26
8	1,207.89
10	1,610.51
12	1,852.09
16	2,496.30

**Monthly Quantity Charge**

Per 1,000 Gallons 6.50

**Excessive Strength Charge per Pound**

BOD	0.43
SS	0.25

**Table 16**  
**Sewerage Department**  
**Statement of Historical Revenue**

Revenue Source	2012	2013	2014	2015	2016
	\$	\$	\$	\$	\$
<b>Operating Revenue</b>					
Sewerage Service Charges	70,707,230	77,767,114	85,740,367	94,775,797	104,060,458
Delinquent Fee	700,605	768,670	812,895	861,169	734,725
Total Operating Revenue	<u>71,407,835</u>	<u>78,535,785</u>	<u>86,553,262</u>	<u>95,636,965</u>	<u>104,795,182</u>
<b>Nonoperating Revenue</b>					
Interest Income	194,080	178,122	257,824	1,340,586	2,301,168
Plumbing Inspection and License Fees	343,903	321,518	339,176	305,384	318,511
Revenue Sharing	154,509	274,229	317,506	322,674	313,048
Other Income (a)	296,406	771,397	1,289,474	560,157	505,847
Total Nonoperating Revenue	<u>988,898</u>	<u>1,545,265</u>	<u>2,203,980</u>	<u>2,528,801</u>	<u>3,438,574</u>
Total Revenue	72,396,734	80,081,050	88,757,242	98,165,766	108,233,756

(a) Includes \$1,533,624 in operating and maintenance grants in 2011 , -\$7,463 in 2012, -\$5,367 in 2013 and -\$383,354 in 2014.

**Table 17**

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

	2012	2013	2014	2015	2016
	\$	\$	\$	\$	\$
Personal Services	24,403,860	24,785,716	23,301,162	30,903,283	27,619,358
Services & Utilities	17,225,768	17,463,783	18,342,982	17,148,698	20,269,282
Supplies & Materials	2,800,856	3,201,309	4,946,831	9,090,197	10,205,920
Special Current Charges	296,041	588,515	1,762,961	617,675	(56,248)
Furniture & Equipment	157,870	199,073	205,113	268,870	202,343
Repairs & Facility Maintenance	0	0	0	0	0
<b>Total Operation and Maintenance</b>	<b>44,884,396</b>	<b>46,238,396</b>	<b>48,559,050</b>	<b>58,028,723</b>	<b>58,240,656</b>

- (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 included in Table 24.

**Table 18**

**Sewerage Department  
Capital Expenditures  
2016**

C.P. #	Project	Actual Expenditures
		\$
	<b>Sewerage Systems</b>	
313	Extensions & Replacements - Sewer Force Mains EPA Consent Decree	321,042
317	Normal Extensions & Replacement of Gravity Mains	10,126,432
318	Rehabilitation Gravity Sewer System	3,015,865
326	Extensions & Replacements to Sewer Pumping Stations	839,571
339	Mains in Street Dept. Contracts	(1,610,845)
340	Sewerage Hurricane Recovery Bonds (FEMA)	4,466,847
348	Normal Extensions & Replacements	8,511,325
368	Wetlands Assimilation Project	1,052,444
375	Sewerage Hurricane Recovery Bonds	1,324,030
380	FEMA Review of Change Orders-Sewer	1,356,523
	Total Sewerage System	29,403,235
	<b>Power Projects and General Budget</b>	
600	Sewerage Share of Power Projects	2,110,436
700	Sewer Reserve for Emergencies	63,521
800	Sewerage Share of General Budget Items	8,967,253
	Total Power Projects and General Budget	11,141,209
	Total Sewerage Department	40,544,444

**Table 19**  
**Sewerage Department**  
**Projected Capital Improvements (a)**

C.P. #	Project	2017	2018	2019	2020	2021	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
317	Extensions and Replacements - Gravity Mains	22,200,000	29,000,000	25,700,000	23,700,000	23,700,000	124,300,000
318	Rehabilitation Gravity Sewer System	9,335,000	8,035,000	9,335,000	8,035,000	9,435,000	44,175,000
319	Extension and Replacements - Sanitary Sewer Mains Algiers	2,000,000	2,000,000	3,000,000	2,500,000	3,000,000	12,500,000
326	Extensions and Replacements to Pumping Stations	3,960,000	5,990,000	6,790,000	2,300,000	3,600,000	22,640,000
339	Mains in Streets Department Contracts	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	26,500,000
348	Extensions and Replacements - Treatment Plants	8,580,000	3,595,000	4,805,000	5,225,000	850,000	23,055,000
360	SELA Sewerage Relocation Costs	844,000	643,000	0	0	0	1,487,000
382	Paving Repair Contracts	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
600	Sewer Share of Power Projects	29,467,230	5,013,970	99,000	2,196,000	490,000	37,266,200
702	Sewer Reserve for Emergencies	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
800	Sewer Share of General Budget Items	11,136,800	9,092,000	9,296,000	7,131,000	7,600,000	44,255,800
	Total Routine Annual Improvements	95,823,030	71,668,970	67,325,000	59,387,000	56,975,000	351,179,000
<b>Major Capital Improvements</b>							
313	Extensions and Replacements - Sewer Force Mains	8,700,000	6,600,000	9,350,000	9,000,000	11,750,000	45,400,000
358	WWTP Normal Extensions & Replacements	0	0	10,000	0	0	10,000
368	Wetland Assimilation	4,300,000	300,000	0	0	0	4,600,000
375	Sewerage Hurricane Recovery Bonds	9,110,000	5,850,000	4,250,000	6,000,000	3,670,000	28,880,000
381	Modification and Expansion of WBSTP to 20/50 MGD	1,305,000	1,590,000	2,935,000	210,000	0	6,040,000
383	Sewerage Hurricane Recovery Bonds (Non FEMA)	2,000,000	0	0	0	0	2,000,000
	Total Major Improvements	25,415,000	14,340,000	16,545,000	15,210,000	15,420,000	86,930,000
	Total Sewerage System Improvements	121,238,030	86,008,970	83,870,000	74,597,000	72,395,000	438,109,000

(a) The improvements for 2017-2021 are based on the amended 2017 capital budget and 2017-2026 capital improvement program.

**Table 20**

**Sewerage Department  
Projected Operating Revenue**

	(1)	(2)	(3)
<b>Year</b>	<b>Revenue From Charges</b>	<b>Additional Revenue (a)</b>	<b>Total Service Charge Revenue</b>
	\$	\$	\$
2017	110,429,700	0	110,429,700
2018	110,204,900	10,863,100	121,068,000
2019	110,031,900	22,725,200	132,757,100
2020	109,833,100	35,674,100	145,507,200
2021	109,557,400	36,717,300	146,274,700

(a) Reflects additional revenue from adopted revenue increases.

**Table 21**

**Sewerage Department  
Projected Operation and Maintenance Expenses**

	<b>2017 (a)</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
	\$	\$	\$	\$	\$
Personal Services	35,409,700	36,472,000	37,566,200	38,693,100	39,853,900
Services & Utilities	25,986,500	26,766,100	27,569,100	28,396,200	29,248,000
Supplies & Materials	13,084,600	13,477,100	13,881,500	14,297,900	14,726,800
Special Current Charges	(72,100)	(74,300)	(76,500)	(78,800)	(81,100)
Furniture & Equipment	259,400	267,200	275,200	283,500	292,000
Repairs & Facility Maintenance	0	0	0	0	0
<b>Total Operation and Maintenance</b>	<b>74,668,100</b>	<b>76,908,100</b>	<b>79,215,500</b>	<b>81,591,900</b>	<b>84,039,600</b>

(a) Represents the amended operating budget approved on September 20, 2017.

**Table 22**

**Sewerage Department  
Debt Service Requirements**

Debt Issue	2017	2018	2019	2020	2021
	\$	\$	\$	\$	\$
<b>Existing Bonds</b>					
Series 2014	19,309,800	17,642,500	16,217,500	16,234,100	13,106,300
Series 2015	5,000,000	5,000,000	5,000,000	5,000,000	6,950,000
Series 2011 (LADEQ)	496,700	496,600	496,500	496,400	496,200
Total Existing Debt Service	24,806,500	23,139,100	21,714,000	21,730,500	20,552,500
<b>Projected Bonds</b>					
	Amount of Issue				
	\$				
2017	0	0	0	0	0
2018	158,000,000	9,059,417	10,871,300	10,871,300	10,871,300
2019	0		0	0	0
2020	124,000,000			7,109,917	8,531,900
2021	0				0
Total Projected Debt Service	0	9,059,417	10,871,300	17,981,217	19,403,200
Total Debt Service	24,806,500	32,198,517	32,585,300	39,711,717	39,955,700

**Table 23**  
**Sewerage Department**  
**Capital Improvement Program Financing**

Line No.	Description	Fiscal Year Ending December 31,					Total
		2017	2018	2019	2020	2021	
		\$	\$	\$	\$	\$	\$
1	Funds Available at Beginning of Year	151,780,100	350,300	76,729,400	10,261,200	67,525,000	151,780,100
2	Revenue Bond Proceeds	0	158,000,000	0	124,000,000	0	282,000,000
3	Operation Fund Transfers	17,000,000	5,000,000	15,000,000	18,000,000	18,000,000	73,000,000
4	Participation by Others	0	14,329,000	7,072,000	6,399,000	5,679,000	33,479,000
5	Interest Income	765,500	880,600	437,500	770,900	390,500	3,245,000
6	Total Funds Available	169,545,600	178,559,900	99,238,900	159,431,100	91,594,500	543,504,100
7	Obligated Contracts & Capital Jobs	(47,957,300)	0	0	0	0	(47,957,300)
8	Major Capital Additions	(121,238,000)	(88,589,200)	(88,977,700)	(81,514,200)	(81,481,200)	(461,800,300)
9	Bond Issuance Expense	0	(2,370,000)	0	(1,860,000)	0	(4,230,000)
10	Revenue Bond Reserve Fund	0	(10,871,300)	0	(8,531,900)	0	(19,403,200)
11	Total Application of Funds	(169,195,300)	(101,830,500)	(88,977,700)	(91,906,100)	(81,481,200)	(533,390,800)
12	End of Year Balance	350,300	76,729,400	10,261,200	67,525,000	10,113,300	10,113,300

Table 24

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

Line No.	Description	Fiscal Year Ending December 31,				
		2017	2018	2019	2020	2021
		\$	\$	\$	\$	\$
1	Revenue from Charges	110,429,700	110,204,900	110,031,900	109,833,100	109,557,400
2	Total Additional Revenue (a)	0	10,863,100	22,725,200	35,674,100	38,058,200
3	Total Service Charge Revenue	110,429,700	121,068,000	132,757,100	145,507,200	147,615,600
4	Other Operating Revenue	4,152,300	4,148,600	4,202,300	4,257,400	4,310,000
5	Total Operating Revenue	114,582,000	125,216,600	136,959,400	149,764,600	151,925,600
6	Operation & Maintenance	(74,668,100)	(76,908,100)	(79,215,500)	(81,591,900)	(84,039,600)
7	Non-Cash Expense Accruals	(2,361,100)	(2,512,500)	(2,676,500)	(2,853,300)	(2,914,100)
8	Net Operating Revenue	37,552,800	45,796,000	55,067,400	65,319,400	64,971,900
	Debt Service					
	Senior Lien Revenue Bonds					
9	Existing	(24,806,500)	(23,139,100)	(21,714,000)	(21,730,500)	(20,552,500)
10	Projected	0	(9,059,400)	(10,871,300)	(17,981,200)	(19,403,200)
11	Subtotal	(24,806,500)	(32,198,500)	(32,585,300)	(39,711,700)	(39,955,700)
	Subordinate Revenue Bonds					
12	Gulf Opportunity Zone Act Loan	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)
13	Total Debt Service	(31,041,700)	(38,433,700)	(38,820,500)	(45,946,900)	(46,190,900)
14	Other Non-Operating Revenue	462,100	462,100	462,100	462,100	462,100
15	Transfer to Construction	(17,000,000)	(5,000,000)	(15,000,000)	(18,000,000)	(18,000,000)
16	Due from/(to) Other Departments	(486,000)	0	0	0	0
17	Transfer to Operating Reserve Fund	0	(4,050,600)	(552,300)	(568,900)	(586,000)
18	Transfer from/(to) Rate Stabilization Fund	0	0	0	0	0
19	Net Annual Balance	(10,512,800)	(1,226,200)	1,156,700	1,265,700	657,100
20	Beginning of Year Cash Balance (b)	47,055,200	36,542,400	35,316,200	36,472,900	37,738,600
21	End of Year Balance	36,542,400	35,316,200	36,472,900	37,738,600	38,395,700
22	Beginning of Year Cash Balance (b)	47,055,200	36,542,400	39,366,800	41,075,800	42,910,400
23	Operating Reserve Fund	0	4,050,600	552,300	568,900	586,000
24	Net annual Balance	(10,512,800)	(1,226,200)	1,156,700	1,265,700	657,100
25	End of Year Balance	36,542,400	39,366,800	41,075,800	42,910,400	44,153,500
26	Days of O&M Cash on Hand	173	181	183	185	185

(a) Reflects revenue from an eight-year series of annual 10% rate increases effective January 1, 2013; adopted by the City Council in 2012 and a proposed 1% annual increase in 2021.

(b) Reflects beginning of year balance in unrestricted and undesignated cash and cash equivalents and cash and cash equivalents designated for capital projects, less operating reserve requirement.

**Table 25**  
**Sewerage Department**  
**Coverage Requirements**

Line No.	Coverage Requirements	2017	2018	2019	2020	2021
		\$	\$	\$	\$	\$
<b>Projected Net Revenues</b>						
1	Revenue Under Existing Rates	110,429,700	121,068,000	132,757,100	145,507,200	147,615,600
2	Additional Revenue Under Proposed Rates	0	10,863,100	22,725,200	35,674,100	38,058,200
3	Interest Income	1,799,400	1,910,800	1,521,400	1,909,900	1,582,100
4	Plumbing and Inspection Fees	326,100	326,100	326,100	326,100	326,100
5	Other Miscellaneous Revenue	597,300	597,300	597,300	597,300	597,300
6	Operation & Maintenance Grants	2,195,000	2,195,000	2,195,000	2,195,000	2,195,000
7	Transfer from Rate Stabilization Fund	0	0	0	0	0
8	Operation & Maintenance	(74,668,100)	(76,908,100)	(79,215,500)	(81,591,900)	(84,039,600)
9	Net Revenue	40,679,400	60,052,200	80,906,600	104,617,700	106,334,700
<b>Rate Covenant Coverage</b>						
10	Projected Net Revenues	40,679,400	60,052,200	80,906,600	104,617,700	106,334,700
	Annual Debt Service					
11	Senior Debt	24,806,500	32,198,500	32,585,300	39,711,700	39,955,700
12	Coverage (a)	164%	187%	248%	263%	266%
13	All Debt	31,041,700	38,433,700	38,820,500	45,946,900	46,190,900
14	Coverage (b)	131%	156%	208%	228%	230%
<b>Additional Bond Coverage</b>						
15	Preceding Year Projected Net Revenues	49,993,000	40,679,400	60,052,200	80,906,600	104,617,700
16	Future Additional Revenue	50,169,800	39,506,600	27,183,600	15,917,700	4,459,700
17	Adjusted Projected Net Revenues	100,162,800	80,186,000	87,235,800	96,824,300	109,077,400
	Maximum Debt Service					
18	Senior Debt	24,806,500	32,601,800	32,601,800	39,955,700	39,955,700
19	Coverage (a)	404%	246%	268%	242%	273%
20	All Debt	31,041,700	38,837,000	38,837,000	46,190,900	46,190,900
21	Coverage (b)	323%	206%	225%	210%	236%

(a) The General Bond Resolution requires net revenue to equal or exceed 125% of debt service.

(b) The General Bond Resolution requires net revenue to equal or exceed 110% of debt service.



## Drainage Department

### 2016 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, which is to be used for operation and maintenance as well as funding of capital improvements, was reauthorized in December 2016.

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 26 for the period 2012 through 2016. The historical revenue shown in Table 26 was developed from detailed records provided by Board Staff.

#### Operation and Maintenance Expenses

Table 27 presents a summary of 2012 through 2016 operation and maintenance expenses of the Drainage Department. Expenditures for 2016 decreased about 11.4% percent over 2015 expenditures. Historical operation and maintenance expenses shown in Table 27 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 5 in Table 35.

#### 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 2016 totaled \$39,267,762. The Drainage Department's capital improvement expenditures for the year are shown in Table 28.

**Summary of Operations**

The following tabulation shows a summary of receipts and expenditures of the Drainage Department during 2016:

Total Revenues	\$57,349,315
Operation and Maintenance Expense	33,523,624
Claims	2,223,009
Debt Service Payments	2,017,050
<b>Revenue Primarily Available for Capital Expenditures <sup>a</sup></b>	<b>19,585,632</b>

<sup>a</sup> Excludes depreciation.

**PROPOSED CAPITAL IMPROVEMENT PROGRAM**

Table 29 presents a summary of the projected major capital improvement program for the period 2017 through 2021. Table 29 is based on the Board’s amended 2017 Capital Budget and 2017-2016 Capital Improvement Program. The five-year major capital improvement program costs are expected to total \$437,343,100. About 46 percent of this amount, or \$235,361,700, is for recurring annual capital improvements, with the remaining \$201,981,400 for major improvements. The proposed routine annual capital expenditures for drainage system improvements and extensions include \$94,179,300 for the Drainage Department’s share of power projects, and \$46,093,000 for its share of general budget items.

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 30, future revenues from these sources are estimated by the Board in the 2017 through 2026 Capital Improvement Program according to capital project and amount to \$329,121,000, most of which is provided by the COE.

The Sewerage and Water Board is currently receiving funds from the COE sponsored and congressionally authorized SELA Project. This funding will allow additional construction of projects which were identified in the 1970s, 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 2020.

**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 2015, 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 31. 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 2016 assessed taxable value. It is assumed that the projected revenue from the ad valorem taxes will remain constant during the study period due to the roll-back provisions of Louisiana state law.

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 2017 through 2021 is based on 4.66, 4.71, and 7.06 mills for three-mill, six-mill, and nine-mill taxes, respectively.

### **Operation and Maintenance Expenses**

A summary of projected operation and maintenance expenses for the period 2017 through 2021 is shown in Table 32. Estimates of future expenses are based on anticipated future operating conditions and allowances for inflationary factors.

Projections of future operating and maintenance expenses for the study period are based on the Board's amended 2017 Operating Budget and an analysis of the current and anticipated operating conditions and trends.

### **Debt Service Requirements**

Future debt service requirements of the Drainage Department are made up of principal, interest, and reserve fund payments for currently outstanding and future drainage revenue bond issues. As of December 31, 2016, outstanding debt obligations consisted of \$11,100,000 of Drainage Revenue Bonds, Series 2014.

It is assumed that no future debt will be issued during the 2017 – 2021 study period.

The Drainage Department has borrowed from the 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 34 examines the financing of the major capital improvement program and Table 35 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.

### **Capital Projects Funding**

Table 34 presents the major capital improvement financing plan which summarizes the projected source and application of funds over the five-year study period. The amount of Funds Available at Beginning of Year, shown on Line 1, is \$42,299,000. This amount is based on audited data provided by the Board.

Projected revenue bond proceeds are shown on Line 2; however, it is projected that the Board will not have the capacity to issue additional bonds during the study period. In addition, it is anticipated that the Board will not have the capacity to finance the major capital improvement program with operating revenue as shown on Line 3.

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 4 includes anticipated funding by the COE and FEMA as well as others. Interest earnings recognize an assumed 1.0 percent average annual interest rate and are shown on Line 5. Line 6 of the table shows the projected major capital improvement funds available each year.

As of December 31, 2016, the Board had \$15,209,300 obligated for open contracts and capital jobs as shown on Line 7 of Table 34. Line 8 show the projected Major Capital Additions to be funded as shown in Table 29. Due to constraints on revenue, it is anticipated that a portion of the capital projects in 2021 will need to be deferred until an additional revenue source has been identified. This deferral is shown on Line 9.

The Total Application of Funds is shown on Line 12 of Table 34. The net End of Year Balance is shown on Line 13.

### 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 Line 1 of Table 35.

Other revenue available for system operations is shown on Line 2. Miscellaneous revenue includes rental income, gain or loss on the sale of assets and other miscellaneous income. Interest Income available to the operating fund which is included in Line 2, 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. Interest from the Bond Reserve Fund, also included in Line 2, is estimated to be 1.0 percent. Total Operating Revenue is shown on Line 3 of Table 35.

Operation and Maintenance expense, previously projected in Table 32, is shown on Line 4 of Table 35. Line 5 includes the estimated allowance for claims and bad debt expense which is assumed to be 0.5 percent of projected revenue. Projected Net Operating Revenue from system operations is shown on Line 6.

Lines 7 through 9 present debt service requirements on currently outstanding and proposed senior revenue bonds. Existing debt includes the Series 2014 bonds. As previously mentioned, it is projected that the Board will not have the capacity to issue additional bonds during the study period.

In July of 2006 the Board entered into a Cooperative Endeavor Agreement with the State of Louisiana to secure proceeds from the State's Gulf Opportunity Tax Credit Bond Loan Program to assist in payment of debt service requirements from 2006 through 2008. The Board has borrowed \$77,465,247 on this agreement. No principal or interest was payable during the initial five-year period of the loan, but after that period, the loan began to bear an interest rate of 4.64 percent. Payments for the drainage portion of principal and interest began in July 2012 and are shown on Line 10 of Table 35.

Line 11 reflects the estimated SELA repayments that will begin in 2020. Total debt service is shown on Line 12.

Anticipated non-operating revenue is shown on Line 13.

Line 14 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 15 reflects repayment from the Water Department and repayment to the DPW as well as repayment to claimants.

The General Resolution requires an Operating Reserve Fund of 90 days of the previous year's operation and maintenance expense; however the SWBNO's Financial Management Policy requires an Operating Reserve Fund of not less than 180 days. Line 16 indicates the projected annual transfers available to meet this requirement throughout the study period.

Line 17 indicated 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 2017, shown on Line 18, is comprised of current cash assets and reflects a balance of \$18,661,200. The End of Year Balance, which is exclusive of the operating reserve fund, is shown on Line 19 and drops to a deficit of \$5,172,300 by 2021 which indicates that the existing source of revenue for the Drainage Department will not be sufficient to fund operation and maintenance expense and required debt service payments by 2021.

Lines 20 through 24 demonstrate that the Board is maintaining an operating reserve equal to at least 180 days of the previous year's operation and maintenance expense through 2019; however the balance drops to -8 days by 2021.

### **Bond Coverage Requirements**

A requirement of the Drainage Bond Resolution provides that revenues derived from the nine-mill ad valorem tax should provide an amount sufficient to provide for the interest and principle payment on the Series 2014 bonds. As shown on Line 25 of Table 35 the projected revenue from the nine-mill ad valorem tax will provide sufficient revenue to meet coverage requirements on existing debt during the study period.

The Drainage Bond Resolution also provides that additional parity bonds may be issued, but only after certain conditions have been met. One condition is that the revenues derived from the nine-mill ad valorem tax for the most recently completed calendar year prior to the year of issuance are equal to at least one and one-third (1-1/3) times the maximum debt service on all bonds outstanding and the additional bonds.

Due to the constraints to meet operation and maintenance expense and required debt service payments on existing debt during the study period, the Drainage Department does not have the revenue capacity to issue additional debt. In addition, the revenue from the nine-mill ad valorem tax does not provide the debt capacity needed to fund the five-year capital improvement program; therefore a portion of capital improvements must be deferred as previously mentioned. Therefore, in order to completely fund the five-year capital program, an alternative funding source would need to be identified for the Drainage Department.

Black & Veatch suggests that when a new funding source is identified, the Board work with its bond counsel and financial advisor to refund all outstanding debt at that time and issue new debt reflecting a general bond resolution that includes the new funding source and all other revenue in the coverage calculation and reflects covenants more consistent with the 2014 water and sewerage resolutions. It is anticipated that the Board will have the capacity to debt finance more projects under the new resolution.

**Table 26**

**Drainage Department  
Statement of Historical Revenue**

Revenue Source	2012	2013	2014	2015	2016
	\$	\$	\$	\$	\$
Three-mill Ad Valorem Tax	12,497,723	13,175,711	13,481,526	14,139,193	16,043,825
Six-mill Ad Valorem Tax	12,630,977	13,317,505	13,626,539	14,290,667	16,215,799
Nine-mill Ad Valorem Tax	18,933,290	19,962,114	20,425,388	21,421,102	23,762,398
Two-mill Ad Valorem Tax	0	0	0	0	7,526
Interest Earned	109,748	92,615	203,832	202,579	253,938
Other	1,103,330	1,099,908	1,277,250	4,313,845	1,065,829
Total Revenue	45,275,067	47,647,853	49,014,535	54,367,386	57,349,315

**Table 27**

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

	2012	2013	2014	2015	2016
	\$	\$	\$	\$	\$
Personal Services	18,544,593	18,836,845	17,096,914	25,494,930	21,132,530
Services & Utilities	11,165,440	11,258,057	11,460,611	10,324,968	10,240,962
Supplies & Materials	1,909,601	1,937,679	1,523,346	1,511,946	1,682,711
Special Current Charges	800,572	578,960	756,295	372,914	364,893
Furniture & Equipment	66,823	91,674	62,057	109,745	102,528
Repairs & Facility Maintenance	0	0	0	0	0
<b>Total Operation and Maintenance</b>	<b>32,487,029</b>	<b>32,703,215</b>	<b>30,899,222</b>	<b>37,814,502</b>	<b>33,523,624</b>

- (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 included in Table 35.

**Table 28**

**Drainage Department  
Capital Expenditures  
2016**

C.P. #	Project	Actual Expenditures
		\$
	<b>Canals</b>	
418	Normal Extensions & Replacements	44,887
439	Major Drainage Participation in DPW Projects	131,945
466	Louisiana Avenue Canal (SELA)	13,067,979
471	SELA Program Management	2,460,361
476	Hollygrove Canals (SELA-A)	10,972
478	S. Claiborne-Lowerline to Monticello Street	297,717
480	FEMA Review of Change Orders-Drainage	2,606,076
486	Napoleon Canal Improvements (SELA-B)	123,632
497	Florida Ave. Canal - DPS#19 to Peoples Ave. (SELA-B)	921,077
498	Dwyer Intake Canal (St. Charles to Dwyer DPS) (SELA-A)	50,952
499	Jefferson Avenue Canal	557,141
	Total Drainage Canals	20,272,739
	<b>Pumping Stations</b>	
511	Normal Extensions & Rep./Stations	225,489
574	Hurricane Katrina Expenses for Drainage System	0
575	Drainage Hurricane Recovery Bonds	1,044,941
	Total Drainage Pumping Stations	1,270,430
	<b>Power Projects and General Budget</b>	
600	Drainage Share of Power Projects	9,673,519
703	Drainage Reserve for Emergency	1,097,286
800	Drainage Share of General Budget Items	6,953,788
	Total Power Projects and General Budget	17,724,593
	Total Drainage Department	39,267,762

**Table 29**  
**Drainage Department**  
**Projected Capital Improvements (a)**

C.P.#	Project	2017	2018	2019	2020	2021	Total
		\$	\$	\$	\$	\$	\$
<b>Reinvestment in Assets</b>							
418	Normal Ext. & Replacements	730,000	730,000	730,000	730,000	730,000	3,650,000
511	Normal Ext. & Replacement - Stations	15,700,000	13,310,000	17,686,000	20,103,400	14,640,000	81,439,400
600	Drainage Share of Power Projects	37,027,700	16,066,000	14,418,000	14,237,600	12,430,000	94,179,300
703	Drainage Reserve for Emergencies	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
800	Drainage Share of General Budget Items	16,481,000	8,357,000	7,784,000	6,506,000	6,965,000	46,093,000
	Total Routine Capital Improvements	71,938,700	40,463,000	42,618,000	43,577,000	36,765,000	235,361,700
<b>Major Capital Improvements</b>							
439	Mains, Over 36" in Street Dept. Contracts	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
453	Improvements to Metairie Relief Canal	5,500,000	0	0	0	0	5,500,000
466	Louisiana Ave. Canal	250,000	500,000	500,000	0	0	1,250,000
471	SELA Program Management	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	7,500,000
478	S. Claib - Lowerline to Monticello St.	575,000	500,000	0	0	0	1,075,000
483	Airline & Monticello Canal Improvements	0	0	50,000	228,000	22,800,000	23,078,000
486	Napoleon Avenue Canal Improvements	300,000	250,000	0	0	0	550,000
492	Donner Canal Improvements	250,000	2,500,000	2,500,000	0	75,000,000	80,250,000
496	General De Gaulle Canal	0	35,000,000	3,375,000	0	0	38,375,000
497	Florida Avenue Canal - DPS #19 to Peoples	910,000	300,000	0	0	0	1,210,000
498	Dwyer Intake Canal	25,000	0	0	0	0	25,000
499	Jefferson Avenue Canal	530,000	515,000	0	0	0	1,045,000
512	Expansion of DPS #15	0	0	1,200,000	14,500,000	0	15,700,000
535	DPS #6	5,151,400	264,000	264,000	1,504,000	0	7,183,400
573	DPS #13 Improvements	0	0	0	440,000	7,000,000	7,440,000
575	Drainage Hurricane Recovery Bonds	1,600,000	0	0	0	0	1,600,000
576	COE Storm Proofing Projects						0
578	Permanent Pump Stations at the Laek Elaine DPS Repairs	0	0	200,000	0	0	200,000
	Total Major Capital Improvements	18,591,400	43,329,000	11,589,000	20,172,000	108,300,000	201,981,400
	Total Drainage Department Improvements	90,530,100	83,792,000	54,207,000	63,749,000	145,065,000	437,343,100

(a) The improvements for 2017-2021 are based on the amended 2017 capital budget and 2017-2026 capital improvement program.

**Table 30**  
**Drainage Department**  
**Projected Participation by Others (a)**

C.P.#	Project	2017	2018	2019	2020	2021	Total
		\$	\$	\$	\$	\$	\$
418	Normal Extensions & Replacements	230,000	230,000	230,000	230,000	230,000	1,150,000
483	Airline & Monticello Canal Improvements	948,000	30,000,000	500,000			31,448,000
492	Donner Canal Improvements			112,788,000			112,788,000
496	General De Gaulle Canal	70,000,000	70,000,000				140,000,000
511	Normal Ext. & Replacement -DPS	13,457,000					13,457,000
535	DPS #6		160,000	320,000	320,000		800,000
676	Modifications to Power Generating System HMGP	29,478,000					29,478,000
	Total	114,113,000	100,390,000	113,838,000	550,000	230,000	329,121,000

(a) The improvements for 2017-2021 are based on the amended 2017 capital budget and 2017-2026 capital improvement program.

**Table 31**

**Drainage Department  
Projected Operating Revenue**

Year	Ad Valorem Tax Revenue			Other	Total
	Three-Mill	Six-Mill	Nine-Mill		
	\$	\$	\$	\$	\$
2017	15,331,200	15,496,200	23,125,700	1,600,000	55,553,100
2018	15,331,200	15,496,200	23,125,700	1,616,000	55,569,100
2019	15,331,200	15,496,200	23,125,700	1,632,000	55,585,100
2020	15,331,200	15,496,200	23,125,700	1,648,000	55,601,100
2021	15,331,200	15,496,200	23,125,700	1,664,000	55,617,100

**Table 32**

**Drainage Department  
Projected Operation and Maintenance Expenses**

	2017 (a)	2018	2019	2020	2021
	\$	\$	\$	\$	\$
Personal Services	27,615,700	28,444,200	29,297,500	30,176,400	31,081,700
Services & Utilities	13,382,700	13,784,200	14,197,700	14,623,600	15,062,300
Supplies & Materials	2,198,900	2,264,900	2,332,800	2,402,800	2,474,900
Special Current Charges	476,800	491,100	505,800	521,000	536,600
Furniture & Equipment	134,000	138,000	142,200	146,400	150,800
Repairs & Facility Maintenance	0	0	0	0	0
Total Operation and Maintenance	43,808,100	45,122,400	46,476,000	47,870,200	49,306,300

(a) Represents the amended operating budget approved on September 20, 2017.

**Table 33**

**Drainage Department  
Debt Service Requirements**

Debt Issue	2017	2018	2019	2020	2021
	\$	\$	\$	\$	\$
<b>Nine-Mill Tax Bonds</b>					
Series 2014	2,024,100	2,063,400	2,069,200	2,066,200	2,062,100
Total Nine-Mill Debt Service	2,024,100	2,063,400	2,069,200	2,066,200	2,062,100
<b>Projected Bonds</b>					
	Amount of Issue				
	\$				
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0		0	0	0
2020	0			0	0
2021	0				0
Total Projected Debt Service	0	0	0	0	0
Total Debt Service	2,024,100	2,063,400	2,069,200	2,066,200	2,062,100

**Table 34**  
**Drainage Department**  
**Capital Improvement Program Financing**

Line No	Description	Fiscal Year Ending December 31,					Total
		2017	2018	2019	2020	2021	
		\$	\$	\$	\$	\$	\$
1	Funds Available at Beginning of Year	42,299,000	51,141,800	68,840,300	131,264,800	67,167,200	42,299,000
2	Revenue Bond Proceeds	0	0	0	0	0	0
3	Operation Fund Transfers	0	0	0	0	0	0
4	Participation by Others	114,113,000	103,401,700	117,253,100	566,500	236,900	335,571,200
5	Interest Income	469,200	602,600	1,004,600	997,400	339,000	3,412,800
6	Total Funds Available	156,881,200	155,146,100	187,098,000	132,828,700	67,743,100	381,283,000
7	Obligated Contracts & Capital Jobs	(15,209,300)	0	0	0	0	(15,209,300)
8	Major Capital Additions	(90,530,100)	(86,305,800)	(55,833,200)	(65,661,500)	(149,417,000)	(447,747,600)
9	Deferred Capital Improvements	0	0	0	0	81,900,000	81,900,000
10	Bond Issuance Expense	0	0	0	0	0	0
11	Revenue Bond Reserve Fund	0	0	0	0	0	0
12	Total Application of Funds	(105,739,400)	(86,305,800)	(55,833,200)	(65,661,500)	(67,517,000)	(381,056,900)
13	End of Year Balance	51,141,800	68,840,300	131,264,800	67,167,200	226,100	226,100

**Table 35**

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

Line No	Description	Fiscal Year Ending December 31,				
		2017	2018	2019	2020	2021
		\$	\$	\$	\$	\$
1	Tax Revenue	53,953,100	53,953,100	53,953,100	53,953,100	53,953,100
2	Other Revenue	1,831,900	1,887,000	1,883,400	1,829,400	1,708,100
3	Total Operating Revenue	55,785,000	55,840,100	55,836,500	55,782,500	55,661,200
4	Operation & Maintenance	(43,808,100)	(50,722,400)	(55,572,000)	(57,495,100)	(59,331,200)
5	Non-Cash Expense Accruals	(2,047,200)	(2,100,500)	(2,155,400)	(2,212,000)	(2,270,300)
6	Net Operating Revenue	9,929,700	3,017,200	(1,890,900)	(3,924,600)	(5,940,300)
	Debt Service					
	Senior Lien Revenue Bonds					
7	Existing	(2,024,100)	(2,028,400)	(2,028,600)	(2,036,000)	(2,039,100)
8	Projected	0	0	0	0	0
9	Subtotal	(2,024,100)	(2,028,400)	(2,028,600)	(2,036,000)	(2,039,100)
10	Gulf Opportunity Zone Act Loan	(407,600)	(407,600)	(407,600)	(407,600)	(407,600)
11	SELA Capital Repayment	0	0	0	(3,800,000)	(10,000,000)
12	Total Debt Service	(2,431,700)	(2,436,000)	(2,436,200)	(6,243,600)	(12,446,700)
13	Other Non-Operating Revenue	969,200	969,200	969,200	969,200	969,200
14	Transfer to Construction	0	0	0	0	0
15	Due from (to) Other Departments	(921,000)	0	0	0	0
16	Transfer to Operating Reserve Fund	0	(1,268,000)	(852,400)	(597,900)	(237,100)
17	Net Annual Balance	7,546,200	282,400	(4,210,300)	(9,796,900)	(17,654,900)
18	Beginning of Year Cash Balance (a)	18,661,200	26,207,400	26,489,800	22,279,500	12,482,600
19	End of Year Balance	26,207,400	26,489,800	22,279,500	12,482,600	(5,172,300)
20	Beginning of Year Cash Balance	18,661,200	30,340,400	30,622,800	26,412,500	16,615,600
21	Operating Reserve Fund	4,133,000	0	0	0	0
22	Net annual Balance	7,546,200	282,400	(4,210,300)	(9,796,900)	(17,654,900)
23	End of Year Balance	30,340,400	30,622,800	26,412,500	16,615,600	(1,039,300)
24	Days of O&M Cash on Hand	253	248	207	127	(8)
	Debt Service Coverage					
	Reflecting All Ad Valorem Tax Revenue					
25	Annual Test	1142.5%	1140.1%	1140.0%	1135.8%	1134.1%

(a) Reflects beginning of year balance in unrestricted and undesignated cash and cash equivalents and cash and cash equivalents designated for capital projects, less operating reserve requirement.

## Appendix

### Assessment of East Bank Sewage Stations

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
1	06/06/16	Chickasaw	A	Chickasaw at Metropolitan	2 pumps total; 1 operational.
2	06/06/16	K-Mart	A	Desire at Gentilly	2 pumps total; both operational.
3	06/06/16	Station 23	A	4500 Mithra	3 pumps total, 1 portable pump outside; 2 operational, Pump 1 out of service.
4	06/06/16	Station 17	A	4975 Spain at Selma	2 pumps total; both operational.
5	06/06/16	Station 22	A	5705 Perlita	2 pumps total; both operational.
6	06/06/16	Station 19	A	3730 Jumonville at Milton	2 pumps total; both operational.
7	06/06/16	Station 21	A	6670 Memphis At Filmore	2 pumps total; both operational.
8	06/06/16	Station 18	A	Vicksburg at Florida	2 pumps total; both operational.
9	06/06/16	City Park	A	5701 Marconi Drive	2 pumps total; both operational.
10	06/07/16	Station 20	A	328 37th Street	2 pumps total; both operational.
11	06/07/16	Station 4	A	5899 Fleur de Leis	2 pumps total; both operational.
12	06/07/16	Lakewood South	A	Country Club Drive near Marconi	2 pumps total; both operational.
13	06/07/16	Station 6	A	242 S Solomon at Palmyra	Station being rebuilt. 1 pump total; portable pump outside operational.
14	06/07/16	Station 3	A	8720 Olive near Eagle	2 pumps total; both operational.
15	06/07/16	Station 1	A	7336 Cohn	2 pumps total; both operational.
16	06/07/16	Station 14	A	4000 Clara	2 primary pumps total; both operational, temp pump on site not in service.
17	06/07/16	Station 5	A	3912 Erato St	2 pumps total; both operational.
18	06/07/16	Station 15	A	2431 Palmyra near Rocheblave	3 pumps; all operational.
19	06/07/16	Station 8	A	Corner of N Broad and Toulouse	2 pumps total; both operational.
20	06/25/15	Station 9	A	2540 Annette at Law	2 pumps total; both operational.
21	06/06/16	Station 16	B	3751 N Miro at	2 pumps total; both operational.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
				Pauline	
22	06/06/16	Station 24	B	5027 N Tonti at Forstall	2 pumps total; 1 operational.
23	06/06/16	Station 25	B	2245 Charbonnet	2 pumps total; 1 operational.
24	06/06/16	Station 26	B	2244 St Maurice at Tonti	2 pumps total; 1 operational.
25	06/06/16	Station B	B	4725 St Claude Avenue	2 pumps total; both operational.
26	06/06/16	Southern Scrap	B	Southern Scrap Rd	2 pumps total; both operational.
27	06/06/16	France & Florida	B	Harbor Rd	2 pumps total; both operational.
28	06/06/16	MECO	B	2701 France Road	2 pumps total; both operational.
29	06/06/16	American Marine	B	3855 France Road	2 pumps total; both operational.
30	06/06/16	Victoria at Gentilly	B	3620 Victoria	2 pumps total; both operational.
31	06/06/16	Dotd	B	8118 Chef Menteur Highway	Station being re-built. One (1) pump total; portable pump outside operational
32	06/06/16	PlumOrchid	B	7300 Chef Menteur Highway	Station being rebuilt. 1 pump total; portable pump outside operational
33	06/06/16	Wilson	B	7709 Wilson Avenue	2 pumps total; both operational.
34	06/06/16	Crowder	B	5500 Crowder Road	2 pumps total; both operational.
35	06/06/16	Castle Manor	B	4950 Gawain at Dwyer	2 pumps total; both operational.
36	06/06/16	Cerise	B	5001 Cerise	2 pumps total; 1 operational.
37	06/06/16	Lakewood Terrace	B	5057 Warren Drive	2 pumps total; 1 operational.
38	06/06/16	McCoy	B	McCoy at Gentilly	2 pumps total; both operational.
39	06/06/16	Amid	B	6800 Almonaster Road	2 pumps total; both operational.
40	06/06/16	Lake Forest	B	10451 Lake Forest Blvd	Station newly rebuilt, but not yet turned over to S&WB. 2 pumps total; both operational.
41	06/06/16	Wright Road	B	Wright Road at Lake Forest	2 pumps total; both operational.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
42	06/06/16	Bullard	B	5501 Bullard Road	Station newly rebuilt, but not yet turned over to S&WB. 2 pumps total; both operational.
43	06/06/16	Pines Village	B	6155 Dwyer Road at Foch	2 pumps total; both operational.
44	06/06/16	America	B	6789 Dwyer Road at Westlake	2 pumps total; 1 operational.
45	06/06/16	Station A	B	1321 Orleans Avenue	6 pumps total; 5 operational.
46	06/07/16	Shorewood	C	14441 Morrison Road	2 pumps total; both operational.
47	06/07/16	Briarwood	C	13701 Morrison Road	2 pumps total; both operational.
48	06/07/16	Liggett	C	12501 Morrison Road	2 pumps total; both operational.
49	06/07/16	Berg	C	11501 Morrison Road	2 pumps total; both operational.
50	06/07/16	Weber	C	10141 Morrison Road	2 pumps total; both operational.
51	06/07/16	Burke	C	9001 Morrison Road	2 pumps total; both operational.
52	06/07/16	Lawrence	C	7900 Morrison Road	Station newly rebuilt, but not yet turned over to S&WB. 2 pumps total; both operational.
53	06/07/16	Lamb	C	6450 Morrison Road	2 pumps total; both operational.
54	06/07/16	Gentilly Oaks	C	5000 Papania Road at Vienna	2 pumps total; 1 operational. Pump 2 not working.
55	06/07/16	Eastover	C	6051 Eastover Drive	2 pumps total; both operational.
56	06/07/16	Paris Road	C	Dwyer West of Paris Road	2 pumps total; both operational.
57	06/07/16	Venetian Isles 2	C	20711 Old Spanish Trail	2 pumps total; both operational.
58	06/07/16	Industrial Parkway	C	4200 Industrial Parkway	2 pumps total; 1 operational. Pump 2 not working.
59	06/07/16	Blvd X	C	4433 Chef Menteur Highway	2 primary pumps not operational and being rebuilt, 2 temporary pumps operational.

	DATE	FACILITY NAME	ROUTE	LOCATION	STATUS
60	06/07/16	Alcee Fortier	C	Alcee Fortier Blvd at the Levee	2 pumps total; both operational.
61	06/07/16	Willow Brook	C	Willowbrook off of Michoud	2 pumps total; 1 operational. Pump 2 not working.
62	06/07/16	Oak Island	C	14201 Michoud Blvd	2 pumps total; both operational.
63	06/07/16	Village de Lest	C	11324 Dwyer	2 pumps total; 1 operational. Pump 2 not working.
64	06/07/16	Michoud	C	4400 Michoud Blvd	2 pumps total; both operational.
65	06/07/16	Folgers	C	14601 Gentilly Blvd	2 pumps total; both operational.

## Assessment of West Bank Sewage Stations

	DATE	FACILITY NAME	LOCATION	STATUS
1	06/08/16	Memorial	2501 Memorial Park Dr	2 pumps total; both operational.
2	06/08/16	Garden Oaks	3201 Memorial Park Dr	2 pumps total; 1 pump operational.
3	06/08/16	Park Timbers	4100 Lennox Blvd	2 pumps total; both operational.
4	06/08/16	Tall Timbers	3800 Tall Pines Dr	2 pumps total; both operational.
5	06/08/16	Forest Isle	5631 West Forest Park Dr	2 pumps total; both operational.
6	06/08/16	Blair	3800 Blair St	2 pumps total; both operational.
7	06/08/16	Aurora	6000 Carlisle Ct	2 pumps total; both operational.
8	06/08/16	English Turn I	2201 Stanton Rd	2 pumps total; both operational.
9	06/08/16	English Turn II	123 ½ Oak Alley	2 pumps total; both operational.
10	06/08/16	English Turn III		2 pumps total; both operational.
11	06/08/16	Lower Coast	3700 Old Woodland	2 pumps total; both operational.
12	06/08/16	Woodland	4150 Woodland Dr	2 pumps total; both operational.
13	06/08/16	Eton	3440 Eton St	2 pumps total; both operational.
14	06/08/16	Huntlee	3201 Huntlee Dr	2 pumps total; 1 pump operational.
15	06/08/16	Holiday	2799 Holiday Dr	2 pumps total; both operational.
16	06/08/16	Bridge Plaza	2914 Vespasian St	2 pumps total; both operational.
17	06/08/16	Horace	3301 Lawrence St	2 pumps total; both operational.

**Assessment of East Bank Drainage Stations**

	DATE	FACILITY NAME	LOCATION	STATUS	NOTES
1	06/06/16	Station 1	2501 S .Broad St	11 pumps total; 10 operational, No. 1 constant duty pump not in service.	
2	06/06/16	Station 6	345 Orpheum	Fourteen (14) pumps total; eleven (11) pumps operational, 2 constant duty pumps and pump I out of service	
3	06/08/16	I-10 Station	I-10 Service Road	Four (4) pumps total; four (4) pumps operational	Four (4) vertical pumps one (1) of which is a constant duty pump
4	06/06/16	Station 7	5741 Orleans Ave at Marconi Dr	5 pumps total; 4 pumps operational.	Pump C is out of service due to electrical issues.
5	06/08/16	Canal Blvd	5500 Canal Blvd	3 pumps total; all operational.	
6	06/06/16	Station 2	444 N. Broad St	6 pumps total; all operational.	No change from previous year.
7	06/06/16	Station 3	2251 N Broad St	9 pumps total; 4 pumps out of service.	Constant duty pumps 1, 2, 3 & 4 are out of service.
8	06/08/16	Pritchard	2901 Monticello	3 pumps total; all in service.	No change from previous year.
9	06/08/16	Oleander	9400 Oleander	3 pumps total; 3 in service.	No change from previous year.
10	06/06/16	Station 4	5700 Warrington Dr	6 pumps total; all operational.	
11	06/08/16	Station 12	Robert E Lee and Ponchartrain Blvd	1 pump total, 1 in service.	No change from previous year.
12	06/07/16	Station 16	Danube Rd at Wales	4 pumps total; all in service.	No change from previous year.
13	06/07/16	Station 10		4 pumps total; all in service.	No change from previous year.
14	06/07/16	Station 14	Oneida at Haynes	4 pumps total; all operational.	

	DATE	FACILITY NAME	LOCATION	STATUS	NOTES
15	06/07/16	Grant	Grant St at Gentilly Blvd	6 pumps total; 5 in service.	2 pumps inside, both operational; 4 pumps outside, 3 operational. No change from previous year.
16	06/07/16	Elaine		2 pumps total; both operational.	No change from previous year.
17	06/06/16	Station 17	2801 Florida Ave	2 pumps total; all in service.	2 drainage pumps operating on one motor. 3 sewage pumps also at this facility; all operational. No change from previous year.
19	06/07/16	Station 5	Florida Ave	8 pumps total; all operational.	6 pumps at old station, 2 pumps at new station. No change from previous year.
20	06/07/16	Station 19	4500 Florida Ave	5 pumps total; all in service.	No change from previous year.
21	06/07/16	Station 20	6300 Intercostal Waterway at Terminal Rd	2 pumps total; 1 operational, 1 out of service.	Pump 1 out of service. No change from previous year.
22	06/07/16	Station 15	Industrial Parkway	3 pumps total; all in service.	No change from previous year.
23	06/07/16	Dwyer	5801 Dwyer Rd	3 pumps total; all in service.	No change from previous year.
24	06/07/16	Maxent	Alcee Fortier	2 pumps total; both operational.	No change from previous year.

**Assessment of West Bank Drainage Stations**

	DATE	FACILITY NAME	LOCATION	STATUS	NOTES
1	06/03/16	Station 11	5301East Sixth St	5 pumps total; 4 pumps operational.	Stations has 4 major pumps and 1 constant duty pump, 1 major pump out of service being rebuilt with no date for completion of repair. No change from previous year.
2	06/03/16	Station 13	4201 Tall Spruce Dr	7 pumps total; all in service	No change from previous year.



## **Section C.**

# **Statistics and Reports**

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## ***Report on Assessment and Status of Operational Reforms***



**Sewerage and Water Board of New Orleans  
Tracking Tool for Commitments to City Council  
September 2017**

**Status Key**      ■ On Target      □ Not Started      ■ Delayed      ■ Needs Attention

Topic	Commitment	Target Date	Status	Next Steps	Strategic Plan Reference
<b>I. Governance Practices</b>	A. Reduce the length of Board member terms and limiting the number of terms.	October 2013	Completed June 17, 2013. Senate Bill No. 47 reduced the term lengths from 9 to 4 years and limiting members to serving two consecutive terms.	None.	Strategy IV Tactics I.1 and I.2
	B. Establish requisite qualifications for Board members.	October 2013	Completed June 17, 2013. Senate Bill No. 47 requires experience in architecture, environmental quality, finance, accounting, business administration, engineering, law, public health, urban planning, facilities management, public administration, science, construction, business management, consumer or community advocacy, or other pertinent disciplines, with two of the appointments as consumer advocates with community advocacy or consumer protection experience or experience in a related field.	None.	Strategy IV Tactic I.3
	C. Reduce the number of Board members.	October 2013	Completed June 17, 2013. Senate Bill No. 47 reduced the size of the Board from 13 to 11 members.	None.	Strategy IV Tactic I.4
	D. Review function and responsibilities of Board committees.	Not determined.	Completed August 19, 2015. Board of Directors revised Bylaws based upon recommended best practices contained in New Orleans Office of Inspector General Guide for Boards, Commissions, and Public Benefit Corporations.	None	Strategy IV Tactic I.5
	E. Appoint Board members from recommendations submitted by university presidents.	October 2013 original <i>May 2014 revised</i>	Completed May 22, 2014. New board members appointed.	None.	Strategy IV Tactic I.6
	F. Establish dedicated independent oversight of Sewerage and Water Board determined by the City Council.	Not determined.	Completed May 30, 2013. Staff presents to Public Works Committee of City Council as scheduled on identified questions and concerns.	None.	Strategy IV Tactic M

**Sewerage and Water Board of New Orleans  
Tracking Tool for Commitments to City Council  
September 2017**

**Status Key**     On Target     Not Started     Delayed     Needs Attention

Topic	Commitment	Target Date	Status	Next Steps	Strategic Plan Reference	
II. Customer Service Improvements	A. Acquire and implement Advanced Metering Infrastructure. Replace existing mechanical meters with new electronic meters and an automated meter reading system that will provide more accurate readings, enhanced leak detection on customer lines, and improved account monitoring. The new meters will be installed for the residential and small commercial customer base.	December 2016 <i>December 2018 revised</i>		On target. Pilot demonstration of leak detection and automated shutoff capabilities underway. Readiness Assessment underway to determine next steps. Project will be fully initiated following completion of readiness assessment.	Continue replacement of existing manual-read meters with electronic-read meters. Develop a preliminary implementation plan and issue a request for proposals for change-out of residential and small commercial meters and installation of automated meter reading capabilities. Confirm targeted completion date following readiness assessment.	Strategy III Tactic B
	B. Open Additional Customer Service Center to provide convenient access to full service capabilities for customers without travelling to the downtown location.	December 2013 original <i>On hold</i>		On hold, pending review of the overall strategy for office space by the permanent Executive Management Team	Present a plan to Executive Management after new team members are in place.	Strategy III Tactic H
	C. Replace existing billing application with new software that includes online customer account management capabilities.	January 2015 original <i>October 2016 revised</i>		On target. Customer Service Management System from Cogsdale Corporation implementation went live on October 24, 2016.	None.	Strategy III Tactic C
	D. Replace existing work order application with new software that includes online work order tracking and appointment scheduling capabilities.	December 2017 - <i>Still pending for infrastructure work orders</i>		Completed March 6, 2017 for service orders related to customer accounts. Delayed for work orders related to buried infrastructure.	Next steps to be determined as part of the development of an Information Technology Strategic Plan. Confirm targeted completion date following ITSP development.	Strategy III Tactic D and E Strategy IV Tactic D
	E. Improve efficiency and reliability of Customer Service processes. Reduce the volume of calls by increasing perceived accuracy of bills. Ensure meter reading and billing edits are worked diligently. Improve the customer experience when questioning a bill and resolve more issues during the first call. Provide more effective appeals process.	Ongoing		Previous Customer Service Improvement Plan completed October 31, 2014. New Customer Service Improvement Plan adopted June 17, 2015. Customer service metrics reported monthly to Finance / Administration Committee and Quality of Life Stat meetings.	None.	Strategy III Tactics A, F, and G
III. Service Assurance Program	A. Provide additional funding for bill payment assistance through the Water Help program.	January 2013		Completed January 31, 2013. Funding for bill payment assistance through the Water Help program increased from \$60,000 to \$240,000. Process with Total Community Action was streamlined.	None.	Strategy III Tactic I.1

**Sewerage and Water Board of New Orleans  
Tracking Tool for Commitments to City Council  
September 2017**

**Status Key**      ■ On Target      □ Not Started      ■ Delayed      ■ Needs Attention

Topic	Commitment	Target Date	Status	Next Steps	Strategic Plan Reference
	B. Expand Water Help program to provide assistance with plumbing repairs.	June 2013 original <i>On hold</i>	Original initiative completed March 31, 2014. Program provides up to \$250 for plumbing repairs on the customer's portion of the service line. However, this program was not successful in providing effective support to low-income elderly and handicapped customers for their plumbing repairs.	Evaluate program to focus support onto replacement of lead service lines.	Strategy III Tactic I.2
	C. Pursue legislative change to allow adjustments for water lost through customer leaks.	March 2013 original <i>March 2016 revised</i>	Completed March 16, 2016. R.S. 33:4071(F) authorized Sewerage and Water Board to adopt rules and procedures to adjust water bills. Adjustment policy developed and adopted.	None.	Strategy III Tactic I.3
	D. Evaluate waiver of service charges based on means testing for qualifying low-income elderly and disabled customers.	June 2013	Completed July 17, 2013. Staff recommended that the Board not adopt a waiver of these service charges based on means testing. Recommendations accepted by Board of Directors.	None.	Strategy III Tactic I.4
	E. Evaluate reduction in late payment fee, disconnect fee, returned check fee, and deposits.	March 2013 original <i>June 2013 revised</i>	Completed July 17, 2013. Because of the significant revenue loss associated with a reduction in late payment fees and disconnect fees, staff recommended that consideration of changes to these fees be deferred until after the first full year of revenues have been received from the new rates in order to ensure that revenues from the new rates are sufficient to allow for this offsetting reduction in fees while still accomplishing other financial objectives. Revenues from the new rates have not been sufficient to allow reduction in fees.	None.	Strategy III Tactic I.4
<b>IV. Operational Reforms</b>	A. Improve operations through performance measures, improved framework, and follow-up reviews to reduce future rate increases.	December 2017	On target. Training program developed and underway for frontline employees. Performance measures reviewed and developed. Significant savings from improved procurement of goods and services.	Process documentation, analysis, and improvement objectives combined with cost reduction are included in several senior management goals. Document and report improvement results.	Strategy II Tactic D Strategy IV Tactics B and H Strategy IV Tactic M

**Sewerage and Water Board of New Orleans  
Tracking Tool for Commitments to City Council  
September 2017**

**Status Key**      ■ On Target      □ Not Started      ■ Delayed      ■ Needs Attention

Topic	Commitment	Target Date	Status	Next Steps	Strategic Plan Reference	
	B. Reduce free water and sewer service provided to municipal accounts by fifty percent from a baseline of 2010 usage.	December 2017	On Target	On target. Quantity of free service reduced from 2010 to 2015 by 22.0%. School system billing piloted for consumption beginning July 2013. No changes to related laws were initiated for 2015 Louisiana legislative session.	Continue work with property administrators at municipal facilities to identify opportunities for reduced consumption. Coordinate with revenue-producing agencies to pursue legislative relief from burdensome requirements for free service.	Strategy II Tactic F
	C. Improve coordination between Sewerage and Water Board and Department of Public Works.	Not determined.	On Target	On target. A joint team of Sewerage and Water Board engineers and Department of Public Works engineers work together in coordination of planning and construction for the FEMA Recovery Roads program.	Determine feasibility of performing street drainage maintenance work on a fee-for-service basis, subject to identification of funding requirements, establishment of a funding stream, and gaining necessary legislative authorizations.	Strategy I Tactics A.1, B.1, and C.4
	D. Improve ratepayer collections.	Not determined.	On Target	Completed December 31, 2013. Plans to improve collections have recently focused on ensuring close compliance with schedules for non-payment turn-offs. The amount written off as uncollectable has reduced from 10.23% in 2010 to 1.47% in 2015.	None.	Strategy IV Tactic G
	E. Develop a long-term staff succession and training program.	Not determined.	On Target	On target. A partnership between Delgado Community College, the Sewerage and Water Board of New Orleans and the JOB1 Business and Career Solutions Center has launched a worker training program aimed at increasing the pool of certified water and wastewater treatment personnel to meet the anticipated demand for workers to operate the systems. Delgado has applied to become a certification testing site.	In conjunction with the City's JOB1 program and Sewerage and Water Board, Delgado Community College will develop training to increase the pool of certified personnel to meet the needs of the capital improvement program. Knowledge management and succession planning objectives have been added to several senior management goals.	Strategy V Tactic G
	F. Perform annual water audit to measure progress and critical needs.	Ongoing.	On Target	Completed September 8, 2015. Water Audits have been performed for 2008 through 2014.	None.	Strategy IV Tactic K
	G. Enhance long range planning by developing a Facilities Plan for 2015-2035.	December 2014	On Target	Completed August 4, 2015. Recommendations incorporated into Capital Improvement Plan.	None.	Strategy I Tactic F.1

**Sewerage and Water Board of New Orleans  
Tracking Tool for Commitments to City Council  
September 2017**

**Status Key**     On Target     Not Started     Delayed     Needs Attention

Topic	Commitment	Target Date	Status	Next Steps	Strategic Plan Reference
	H. Develop new sources of funding other than water and sewer rate increases.	Ongoing.	 On target. New revenue stream established for handling wastewater from mobile containers, such as portable toilets and shipping containers.	Analyze opportunities for providing wholesale water service over long distances.	Strategy II Tactic I
	Repay funds owed to Department of Public Works.	December 2016	 Completed December 31, 2016.	None.	Strategy II Tactic E
<b>V. Economic Opportunities</b>	A. Create economic opportunities consistent with City of New Orleans programs for participation by economically disadvantaged and local business enterprises.	Not determined.	 On target. For contracts with DBE participation 2016: Goods and Services \$138,840 or 28%, Construction \$13,116,847 or 19%, and Professional Services \$1,225,000 or 35%.	Sewerage and Water Board will continue to create economic opportunities for participation by economically disadvantaged and local business enterprises through Construction Review Committee and Staff Contract Review Committee recommendations and DBE vendor support and training.	Strategy IV Tactics F and L
<b>VI. Capital Improvement Program</b>	A. Water System Improvements Replacement and rehabilitation of water purification plant facilities. Replacement and rehabilitation of water pumping facilities. Replacement of water system transmission and distribution mains. \$277,000,000	December 2020	 On target. 2017 Capital Budget fully funded. Progress on capital projects reported to Board of Directors.	Continue execution of capital improvement program.	Strategy I Tactic A.1 through A.5
	B. Replacement and rehabilitation of sewer system collection pipes required by Federal Consent Decree. \$314,000,000	December 2020	 On target. 2017 Capital Budget fully funded. Progress on capital projects reported to Board of Directors.	Continue execution of capital improvement program.	Strategy I Tactic B.1 through B.3
<b>VII. WaterStat Reporting and City Council Oversight</b>	A. Establish performance measures and targets as well as reporting methodology.	March 2013	 Completed March 31, 2013. Measurements framework adopted, initial measurements identified, and measurements training delivered to senior management. Collection of performance data in progress. Additional graphs created.	None.	Strategy IV Tactics A and B

**Sewerage and Water Board of New Orleans  
Tracking Tool for Commitments to City Council  
September 2017**

**Status Key**    ■ On Target    □ Not Started    ■ Delayed    ■ Needs Attention

Topic	Commitment	Target Date	Status	Next Steps	Strategic Plan Reference
	B. Implement a systematic approach to process documentation, analysis, and improvement.	June 2013	Completed	Completed April 1, 2014. Training program developed and contract for training delivery awarded. Departmental training plans developed in March 2014 and business skills training began in April 2014. Improvement initiatives identified by training participants.	None.  Strategy II Tactic D Strategy IV Tactic H
	C. Perform follow-up reviews to document results and efficiencies achieved.	January 2014 original <i>December 2014 revised</i>	Completed	Completed September 18, 2015. Louisiana R.S. 33:4091 Reports of Board issued to City Council.	None.  Strategy IV Tactic B
	D. Provide maps showing maintenance work completed, capital projects completed, and planned capital improvements.	January 2013 and Ongoing	Completed	Completed January 1, 2013 for printed maps. Online Tool to Track Road Construction Across New Orleans released on March 10, 2015.	None.  Strategy IV Tactic M
	E. Document FEMA receipts and uses of funds.	January 2013 and Ongoing	Completed	Completed January 1, 2013. Summary of FEMA receipts and uses of funds is provided to Board committees each month.	None.  Strategy IV Tactic M
	F. Initiate annual meetings with citizens of each council district to regularly report on organizational performance results.	May 2014 original <i>December 2014 revised</i>	Completed	Completed December 2014. Sewerage and Water Board staff regularly attend meetings in each council district upon request.	None.  Strategy IV Tactic M
	G. Provided written updates to the Clerk of the City Council.	Quarterly and As Requested.	Completed	Completed May 30, 2013.	None.  Strategy IV Tactic M

<b>Statistics</b>	
Completed	22
On Target	10
Not Started	0
Delayed	3
Needs Attention	0
<b>Total</b>	<b>35</b>

# **Sewerage & Water Board of New Orleans**



**Status Update of Reform Initiatives  
Public Works Committee Meeting  
December 15, 2017**

# Governance Practices

Action Item	Status
Reduce the length of Board member terms and limit the number of terms	Completed June 17, 2013
Establish requisite qualifications for Board members	Completed June 17, 2013
Reduce the number of Board members	Completed June 17, 2013
Appoint Board members from recommendations submitted by university presidents	Completed May 22, 2014
Review function and responsibilities of Board committees	Completed August 19, 2015
Establish dedicated independent oversight of Sewerage and Water Board determined by the City Council	Quarterly Reporting / Ongoing



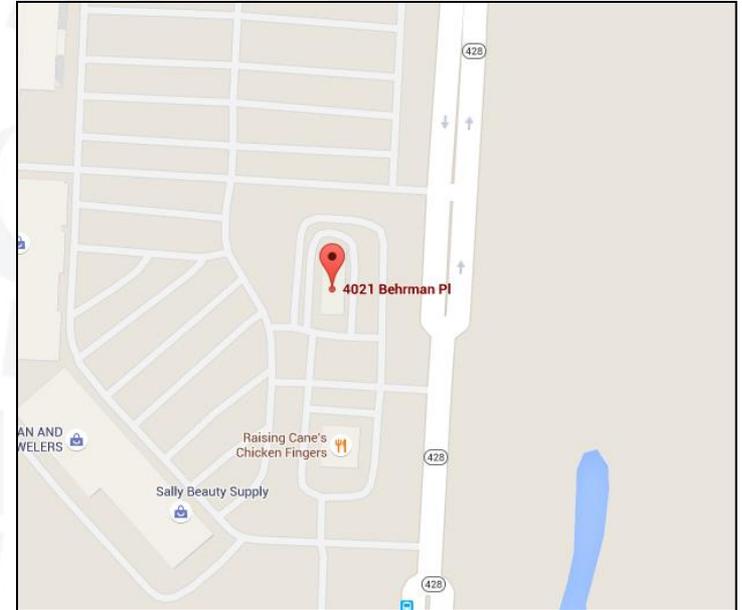
# Customer Service Improvements

- Acquire and implement Advanced Meter Reading Infrastructure
  - New electronic-read meters are being purchased and installed.
  - Additional smart technologies are being evaluated for possible concurrent implementation: remote shutoff and leak detection.
  - Performing “readiness assessment” to develop policies and plans.
  - Target to begin implementation in December 2018.



# Customer Service Improvements

- Open additional Customer Service Center to provide convenient access to full service capabilities for customers without traveling to the downtown location
  - Delayed pending establishment of Billing Review Contact Center staff that will rotate during the month throughout the community
  - Funding for Billing Review Contact Center staff included in 2017 Budget



# Customer Service Improvements

- Replace existing billing application with new software that includes online customer account management capabilities.

- October 24, 2016 go-live
- New bill format
- More usage comparisons
- Easier account access
- Electronic billing available
- Improved collections capabilities

Working to improve call wait times and call answer rates

**SEWERAGE & WATER BOARD OF NEW ORLEANS**  
625 SAINT JOSEPH ST  
NEW ORLEANS, LA 70165-5501  
52-WATER or (504) 383-2222  
Hearing Impaired TRS 1-800-368-7726  
Visit us on the web at [www.swbnr.org](http://www.swbnr.org)

**Account Information:**  
Account Number: 131000-566839  
Service Address: 2158 E ASONIATA ST  
Total Due: \$83.83  
Date Due: 09/28/2016  
Total Due After 09/28/2016: \$93.36

Meter	Service Class	Bill	Read Date	Reading	Read Type	Usage*	Days Of Use	Avg Usage/Day*
A312971	RESIDENTIAL	This Bill	09/02/2016	840.0	Estimate	3.8	31	0.12
		Last Bill	08/02/2016	838.2	Actual	3.1	32	0.10

**Water Usage Graph\* (in thousands of gallons)**  
Monitor your usage amount (left side of the graph) month over month (bottom row of the graph)

**Important Information**  
If you are 62 years or older or disabled, and you are having trouble paying your bill, contact TCA at 504-324-8609 to see if you qualify for Water Help.

**Previous Activity**  
Last Bill: \$74.27  
Payment Received - Thank You: -\$74.27  
Late Fees: \$0.00  
Adjustments: \$0.00  
Balance Forward: \$0.00

**Current Activity**  
Meter A312971  
Ready To Serve - Water for 5/8" Meter: \$5.94  
Water Usage: \$17.24  
Ready To Serve - Sewer: \$16.98  
Sewer Volume Charge: \$19.09  
Residential Sanitation Charges (1 unit): \$24.00  
City Sales Tax: \$0.58  
Current Charges: \$83.83

**Total Due (Balance Forward + Current Charges): \$83.83**

PLEASE DETACH AND RETURN BOTTOM PORTION WITH PAYMENT IF PAYING BY MAIL.

**SEWERAGE & WATER BOARD**  
625 SAINT JOSEPH ST  
NEW ORLEANS, LA 70165-5501  
Return Service Requested

CHECK HERE FOR CHANGE OF MAILING ADDRESS. PLEASE COMPLETE FORM ON REVERSE SIDE.

**SAMPLE BILL**  
c/o TESSA BIL  
1324 IONA ST  
NEW ORLEANS, LA 711

**Pay by Internet**  
To pay securely using credit card, debit card, or electronic check please visit us at [www.swbnr.org](http://www.swbnr.org)

**Pay by Phone**  
To say by using our automated phone system dial 1-504-529-2837 (available 24 hours, 7 days)

**Pay by Mail**  
To pay by mail please return the bottom portion with payment. Make check payable to: Sewerage and Water Board 625 Saint Joseph St. Rm. 154, New Orleans, LA 70165-5501

**NEW!!! Payment Options and Services to make paying your bill easier**

0 1001310005668390000698309281600007726



# Customer Service Improvements

- Replace existing work order application with new software that includes online work order tracking and appointment scheduling capabilities
  - Completed for service orders related to customer accounts
  - Delayed for work orders related to buried infrastructure pending next steps to be determined in Information Technology Strategic Plan



# Customer Service Improvements

- Improve efficiency and reliability of Customer Service processes
  - Customer Service improvement plan adopted in June 2015
  - Continuing to improve call wait times and call answer rates following implementation of new system. Reporting at Quality of Life Stat meetings.



# Service Assurance Program

Action Item	Status
Provide additional funding for bill payment assistance through the Water Help program	Completed January 31, 2013
Expand Water Help program to provide assistance with plumbing repairs	Originally completed March 31, 2014 but reevaluating program to focus support on replacement of lead service lines
Pursue legislative change to allow adjustments for water lost through customer leaks	Completed March 16, 2016
Evaluate waiver of service charges based on means testing for qualifying low-income elderly and disabled customers	Completed July 17, 2013
Evaluate reduction in late payment fee, disconnect fee, returned check fee, and deposits	Completed July 17, 2013



# Operational Reforms

- Improve operations through performance measures, improved framework and follow-up reviews to reduce future rate increases
  - Training for process documentation, analysis and improvement combined with cost reduction completed.
  - Performance measures developed and implemented with specific focus on reduction in overtime usage and management of work backlog.



# Operational Reforms

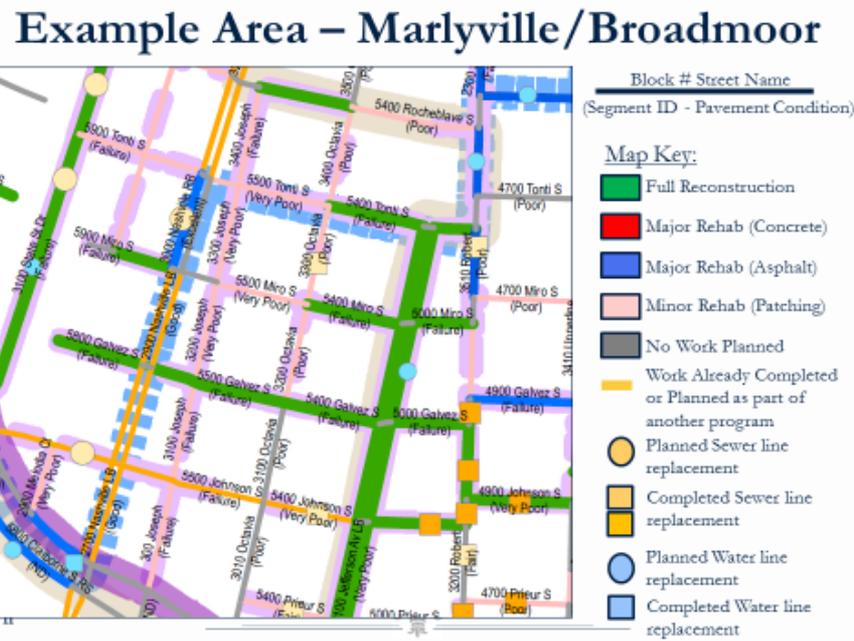
- Reduce free water and sewer service provided to municipal accounts by fifty percent from a baseline of 2010 usage
  - Quantity of free service reduced from 2010 to 2015 by 22.0%.
  - Continue to work with property administrators at municipal facilities to identify opportunities for reduced consumption.



# Operational Reforms

- Improve coordination between Sewerage and Water Board and Department of Public Works

- A joint team of SWB and DPW engineers launched the \$2.4 billion capital program that will include sewer, water and road repairs across the City



# Operational Reforms

- Improve ratepayer collections
  - Plans to improve collections have focused on ensuring close compliance with schedules for non-payment turn-offs
  - The amount written off as uncollectable has reduced from 10.23% in 2010 to 1.70% in 2016



# Operational Reforms

- Develop a long-term staff succession and training program
  - Delgado Community College, SWB and JOB1 Business and Career Solutions Center partnered to launch a worker training program
  - Aimed at increasing the pool of certified water and wastewater treatment personnel



# Operational Reforms

- Perform annual water audit to measure progress and critical needs
  - Water audits have been performed for 2008 through 2015
  - Water audit for 2016 will commence shortly



# Operational Reforms

- Enhance long range planning by developing a Facilities Plan for 2015-2035
  - Water Purification Facilities Plan for 2015-2025 developed in August 2015 to identify the capital investments beyond the immediate needs identified in the current capital improvement program
  - Recommendations incorporated into 2017-2026 Capital Improvement Plan



# Operational Reforms

- Develop new sources of funding other than water and sewer rate increases
  - New revenue stream established for handling wastewater from mobile containers, such as portable toilets and shipping containers
  - Analyzing opportunities for providing wholesale water service



# Operational Reforms

- Repay funds owed to DPW
  - Completed on schedule December 31, 2016



# Economic Opportunities

- Create economic opportunities consistent with City of New Orleans programs for participation by economically disadvantaged and local business enterprises.

## 2016 Results

Goods and Services	\$ 138,840	28%
Construction	\$13,116,847	19%
Professional Services	\$ 1,225,000	35%

- Cooperative Endeavor Agreement for joint certification of DBE firms



# Capital Improvement Program

- Water System Improvements Replacement and rehabilitation of water purification plant facilities. Replacement and rehabilitation of water pumping facilities. Replacement of water system transmission and distribution mains \$277,000,000

Water System Capital Spending 2016 \$42,706,224

Water and Sewer Capital Budgets fully funded



# Capital Improvement Program

- Replacement and rehabilitation of sewer system collection pipes required by Federal Consent Decree \$314,000,000

Sewer System Capital Spending 2016 \$41,486,750



# City Council Oversight

Action Item	Status
Establish performance measures and targets as well as reporting methodology.	Completed March 31, 2013
Implement a systematic approach to process documentation, analysis, and improvement.	Completed April 1, 2014 / Continuous Improvement Officer hired
Perform follow-up reviews to document results and efficiencies achieved.	Completed September 18, 2015 / Louisiana R.S. 33:4091 Reports of Board issued to City Council
Provide maps showing maintenance work completed, capital projects completed, and planned capital improvements.	Completed January 1, 2013 for printed maps / Online Tool to Track Road Construction Across New Orleans released on March 10, 2015
Document FEMA receipts and uses of funds.	Completed January 1, 2013 / Ongoing



# City Council Oversight

Action Item	Status
Initiate annual meetings with citizens of each council district to regularly report on organizational performance results.	Completed December 2014 / Ongoing
Provided written updates to the Clerk of the City Council.	Completed May 30, 2015 / Ongoing



# Statistics

Completed	22	63%
On target	10	29%
Not started	0	0%
Delayed	3	8%
Needs attention	0	0%





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