GENERAL SUPERINTENDENT RECOMMENDATIONS
FOR THE APRIL 19, 2017 MEETING

A. CONTRACT RENEWAL. Attached is a brief summary for your review.

Item 1 - R-028-2017 - FIRST AND FINAL RENEWAL OF CONTRACT FOR FURNISHING SODIUM HYPOCHLORITE - REQ. NOS. AL150025 & CM150038

Item 2 - R-029-2017 - FIRST AND FINAL RENEWAL OF CONTRACT FOR FURNISHING GASOLINE AND DIESEL FUEL - REQ. NO. YG160070

GENERAL SUPERINTENDENT RECOMMENDATIONS
REPORT OF FINAL ACCEPTANCE TO BE
CONSIDERED BY THE FINANCE AND ADMINISTRATION COMMITTEE
AND THE BOARD'S MEETING OF APRIL 19, 2017

1.

FIRST AND FINAL RENEWAL OF CONTRACT FOR
FURNISHING SODIUM HYPOCHLORITE
REQ NOS. AL150025 & CM150038

PROPOSAL:

The contractor, **DPC Enterprises, L.P.**, has requested that the Board renew their current contract effective March 1, 2017, as allowed under this contract with no increase in cost and with no change in terms and conditions of their original contract, with the total being **$1,333,500.00**.

EVALUATION:

The S&WB awarded the original for Furnishing Sodium Hypochlorite contract to DPC Enterprises, L.P. at its meeting on January 20, 2016, in the total amount of **$1,333,500.00**. If approved, this would be the first and final renewal as allowed under the terms of the contract. There is no DBE participation. The Administration budgeted funds for this project under Account Codes 3224 (Chemicals-New Orleans) and 3244 (Chemicals-Algiers) and Object Code 4745 (Highest Hypochlorite).

RECOMMENDATION:

The General Superintendent recommends that the Board approve this first and final renewal to **DPC Enterprises, L.P.** in the total amount of **$1,333,500.00**.

2.

FIRST AND FINAL RENEWAL OF CONTRACT FOR FURNISHING GASOLINE AND DIESEL FUEL REQ NO. YG160070

PROPOSAL:

The contractor, **Petroleum Traders Corporation**, has requested that the Board renew their current contract effective February 1, 2017, as allowed under this contract with no increase in cost and with no change in terms and conditions of their original contract, with the total being **$1,063,629.52**.

EVALUATION:

The original for Furnishing Gasoline and Diesel Fuel was awarded to **Petroleum Traders Corporation** by the Board at its meeting on November 18, 2015, in the total amount of **$1,063,629.52**. If approved, this would be the first and final renewal as allowed under the terms of the contract. There is no DBE participation. The management budgeted funds for this project under Account Code 0840 (Garage II) and Object Code 3230 (Rep & Maintenance Equipment & Machin).

RECOMMENDATION:

The General Superintendent recommends that the Board approve this first and final renewal to **Petroleum Traders Corporation** in the total amount of **$1,063,629.52**.

JRB/J
RAPR17.GSR

R-028-2017

FIRST AND FINAL RENEWAL OF CONTRACT FOR FURNISHING SODIUM HYPOCHLORITE - REQ. NOS. AL150025 & CM150038

WHEREAS, under the provisions of the contract, the Board, with the contractor's concurrence, reserves the right to renew the contract with no increase in the cost of services and no change in terms and conditions; and

WHEREAS, the contractor, **DPC Enterprises, L.P.** desires to exercise its renewal option as allowed under this contract with the total being **$1,333,500.00** for Furnishing Sodium Hypochlorite.

NOW, THEREFORE, BE IT RESOLVED, that the request of **DPC Enterprises, L.P.** for this first and final renewal, effective March 1, 2017, is hereby approved.

I, Cedric S. Grant, Executive Director, Sewerage and Water Board of New Orleans, do hereby certify that the above and foregoing is a true and correct copy of a resolution adopted at the Regular Meeting of the said Board, duly called and held, according to law, on April 19, 2017.

CEDRIC S. GRANT
EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-029-2017

FIRST AND FINAL RENEWAL OF CONTRACT FOR FURNISHING GASOLINE AND DIESEL FUEL - REQ. NO. YG160070

WHEREAS, under the provisions of the contract, the Board, with the contractor's concurrence, reserves the right to renew the contract with no increase in the cost of services and no change in terms and conditions; and

WHEREAS, the contractor, **Petroleum Traders Corporation** desires to exercise its renewal option as allowed under this contract with the total being **$1,063,629.52** for Furnishing Gasoline and Diesel Fuel.

NOW, THEREFORE, BE IT RESOLVED, that the request of **Petroleum Traders Corporation** for this first and final renewal, effective February 1, 2017, is hereby approved.

I, Cedric S. Grant, Executive Director, Sewerage and Water Board of New Orleans, do hereby certify that the above and foregoing is a true and correct copy of a resolution adopted at the Regular Meeting of the said Board, duly called and held, according to law, on April 19, 2017.

CEDRIC S. GRANT
EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-030-2017

RATIFICATION OF CHANGE ORDER NO. 7 FOR CONTRACT 3669 – 404 HAZARD MITIGATION GRANT PROGRAM – #6 SEWAGE PUMPING STATION

WHEREAS, the Sewerage and Water Board entered into Contract 3669 with Industrial & Mechanical Contractors, Inc. for FEMA-funded Hazard Mitigation Grant Program to #6 Sewage Pumping Station in the bid amount of $2,900,900.00, and

WHEREAS, there were multiple delays due to a 24" sewer line repair; and

WHEREAS, the scope for the permanent and temporary roadway was changed; and,

WHEREAS, after the startup of the pumping station, the pump motor speeds were adjusted; and,

WHEREAS, this Change Order, amounting to $235,355.64, brings the accumulated Contract change order total to $547,569.51, or 18.9% of the original Contract value; and

NOW, THEREFORE BE IT RESOLVED, the Sewerage and Water Board of New Orleans authorizes and ratifies its approval of Change Order No. 7 for Contract 3669.

I, Cedric S. Grant, Executive Director,
Sewerage and Water Board of New Orleans, do hereby
certify that the above and preceding is a true
and correct copy of a Resolution adopted at the Regular
Monthly Meeting of said Board, duly called and held,
according to law, on April 19, 2017.

CEDRIC S. GRANT, EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-031-2017

RATIFICATION OF CHANGE ORDER NO. 4 FOR CONTRACT 3663 – 404 HAZARD MITIGATION GRANT PROGRAM – BULLARD SEWAGE PUMPING STATION

WHEREAS, the Sewerage and Water Board entered into Contract 3663 with Lou-Con, Inc. for FEMA-funded Hazard Mitigation Grant Program to Bullard Sewage Pumping Station in the bid amount of $1,395,000.00, and

WHEREAS, compensation for builders risk insurance, sanitation, utilities and bypass pumping associated with 140 days previously added to the contract duration, and

WHEREAS, this Change Order, amounting to $35,470.60, brings the accumulated Contract change order total to $161,269.64, or 11.6% of the original Contract value, and

NOW THEREFORE BE IT RESOLVED, that the Sewerage and Water Board of New Orleans authorizes and ratifies its approval of Change Order No. 4 for Contract 3663.

I, Cedric S. Grant, Executive Director, Sewerage and Water Board of New Orleans, do hereby certify that the above and preceding is a true and correct copy of a Resolution adopted at the Regular Monthly Meeting of said Board, duly called and held, according to law, on April 19, 2017.

CEDRIC S. GRANT, EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-032-2017

RATIFICATION OF CHANGE ORDER NO.2 FOR CONTRACT 2111 - WATER MAIN POINT REPAIR, WATER SERVICE CONNECTION, WATER VALVE AND FIRE HYDRANT REPLACEMENT AT VARIOUS SITES THROUGHOUT ORLEANS PARISH

WHEREAS, the Sewerage and Water Board of New Orleans entered into Contract 2111 with Wallace C. Drennan Inc. for the amount of $6,394,380.00, and

WHEREAS, the contractor provided additional water point repair services under this Contract due to an increase in projects reported throughout the City, and

WHEREAS, this Change Order, amounting to $1,970,750.00, brings the accumulated change order total to $4,196,180.19 or 65.62% of the original Contract value.

NOW, THEREFORE, BE IT RESOLVED, that the Sewerage & Water Board of New Orleans ratifies its approval of Change Order No. 2 for Contract 2111.

I, Cedric S. Grant, Executive Director, Sewerage and Water Board of New Orleans, do hereby certify that the above and foregoing is a true and correct copy of a resolution adopted at the Regular Meeting of the said Board, duly called and held, according to law, on April 19, 2017.

CEDRIC S. GRANT
EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-033-2017

RATIFICATION OF CHANGE ORDER NO. 4 FOR CONTRACT 3670 – 404 HAZARD MITIGATION GRANT PROGRAM – LAWRENCE SEWAGE PUMPING STATION

WHEREAS, the Sewerage and Water Board entered into Contract 3670 with Lou-Con, Inc. for FEMA-funded Hazard Mitigation Grant Program to Bullard Sewage Pumping Station in the bid amount of $1,396,500.00, and

WHEREAS, compensation for builders risk insurance, sanitation, utilities and bypass pumping associated with 204 days previously added to the contract duration, and

WHEREAS, this Change Order, amounting to $37,608.91, brings the accumulated Contract change order total to $139,750.38, or 10.0% of the original Contract value, and

NOW, THEREFORE, BE IT RESOLVED, that the Sewerage and Water Board of New Orleans authorizes and ratifies its approval of Change Order No. 4 for Contract 3670.

I, Cedric S. Grant, Executive Director,
Sewerage and Water Board of New Orleans, do hereby
certify that the above and foregoing is a true
and correct copy of a Resolution adopted at the Regular
Monthly Meeting of said Board, duly called and held,
according to law, on April 19, 2017.

CEDRIC S. GRANT, EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-034-2017

RATIFICATION OF AMENDMENT 6 WITH BURK-KLEINPETER, INC. FOR PROGRAM AND CONSUTRCTION MANAGEMENT SERVICES IN CONNECTION WITH THE 404 SEWER HAZARD MITIGATION GRANT PROGRAM

WHEREAS, the Sewerage and Water Board of New Orleans entered into an agreement with Burk-Kleinpeter, Inc. amounting to $737,634.00 for the contract mentioned above; and

WHEREAS, the Contract was amended for the Contractor to provide Construction Management and on-site inspection services as needed for the construction of 8 sewage pumping stations; and

WHEREAS, the Contractor was directed to provide Construction Management and on-site inspection services on an additional construction project, Contract 3664 – Replacement of Sewage Pumping Station 8, for the additional amount of $1,104,340.00, and

WHEREAS, the scope items of construction articles for Contract 3664 includes roadway work, directional drilling, and a specialized jet grouting foundation which requires a more thorough Construction Management role,

WHEREAS, the extent of the work requires exercising all renewals and extending the duration of the agreement through the completion of construction of SPS 8, and

NOW, THEREFORE, BE IT RESOLVED, that approval of Contract Amendment No. 6 for Burk-Kleinpeter, Inc. is ratified by the Sewerage and Water Board of New Orleans.

I, Cedric S. Grant, Executive Director,
Sewerage and Water Board of New Orleans, do hereby
certify that the above and preceding is a true
and correct copy of a Resolution adopted at the Regular
Monthly Meeting of said Board, duly called and held,
according to law, on April 19, 2017.

CEDRIC S. GRANT
EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

R-035-2017

AWARD OF PHASE II DESIGN- STANLEY CONSULTANTS, INC. FOR DESIGN AND ENGINEERING SERVICES FOR THE BULK STORAGE AND CHEMICAL FEED FACILITY PROJECT

WHEREAS, the Sewerage and Water Board of New Orleans awarded Stanley Consultants, Inc. the agreement for Phase I design and engineering services for the Bulk Storage and Chemical Feed Facility Project for $60,786.00; and,

WHEREAS, the Phase I has been completed, and the Board requires Phase II of the existing contract with Stanley Consultants, Inc. to begin, and Stanley Consultants is now ready to perform Phase II Design and Engineering Services, including preparation of the design and bidding components of the contract documents, permitting services, bidding phase services, and supplementary services necessary to complete their plan; and,

WHEREAS, Stanley Consultants has provided a proposal for these Phase II services amounting to $638,478.00 and has committed to maintaining their DBE goal.

NOW, THEREFORE, BE IT RESOLVED, that the President and/or President Pro Tem shall be authorized to execute the amendment to this agreement with Stanley Consultants, Inc. for the Bulk Storage and Chemical Feed Facility Project increasing the fee authorized to be paid to Stanley Consultants, Inc. by $638,478.00 to a total fee of $699,264.00.

I, Cedric S. Grant, Executive Director,
Sewerage and Water Board of New Orleans, do hereby
certify that the above and preceding is a true and
a correct copy of a Resolution adopted at the Regular
Monthly Meeting of said Board, duly called and held,
according to law, on April 19, 2017.

CEDRIC S. GRANT, EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

AMENDMENT NO. 2 FOR PROFESSIONAL SERVICES FOR SEWER SYSTEM EVALUATION AND REHABILITATION PROGRAM MANAGEMENT (SSERP II) BETWEEN SEWERAGE AND WATER BOARD OF NEW ORLEANS AND MWH AMERICAS, INC.

WHEREAS, on December 15, 2010, the Sewerage and Water Board of New Orleans (hereinafter "Board") adopted resolution R-197-2010 at its regular meeting that authorized the Board to enter into an agreement with MWH Americas, Inc. to perform SSERP II Program Management project for the sum of $15,970,213.00, and

WHEREAS, the Board desires to consolidate of the Consent Decree scope of services for the Agreements for the Original SSERP into the SSERP II Agreement to include under SSERP Program Management Services, SSERP and FEMA funded sewer repairs (ESSA) Design Services, Sewer System Hydraulic Model, ESSA Construction Management and Inspection Services, Federal City Heerman St. Water Line Design Services, and Sonar/CCTV Inspection of Clara St Sewer Trunk Line for no additional cost, and

WHEREAS, the Board has negotiated a new overhead rate structure for the Agreement, and MWH Americas, Inc. understands any amendment will be in the form of the Board's current contract template, and

WHEREAS, MWH Americas, Inc. has been acquired by Stantec Consulting Services Inc., and request approval of the transfer by the novation of Agreement to Stantec Consulting Services Inc.

NOW, THEREFORE, BE IT RESOLVED, that the President or President Pro Tem is authorized to execute on behalf of the Sewerage and Water Board of New Orleans Contract Amendment No. 2, for Consolidation of scope of work for SSERP Program Management, SSERP and ESSA Design Services, Sewer System Hydraulic Model, ESSA Construction Management and Inspection Services, Heerman St. Water Line Design Services, and Sonar/CCTV Inspection of Clara St. Sewer Trunk Line, negotiated new rate structure; and assignment of Agreement from MWH Americas, Inc. to Stantec Consulting Services, Inc.

I, Cedric S. Grant, Executive Director,
Sewerage and Water Board of New Orleans, do hereby
certify that the above and preceding is a true
and correct copy of a Resolution adopted at the Regular
Monthly Meeting of said Board, duly called and held,
according to law, on April 19, 2017.

CEDRIC S. GRANT, EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW
ORLEANS

SEWERAGE AND WATER BOARD OF NEW ORLEANS

April 17, 2017

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

Dear Directors:

Subject: Contract Amendment with Cogsdale Corporation for Re-Boot of Go-Live Human Resources / Timekeeping / Payroll System

Staff attempted to implement the Human Resources / Timekeeping / Payroll System on February 13, 2017. Timekeeping data was entered into the system and Payroll checks were created, but there were an unacceptable number of errors and the implementation was aborted. The errors were attributable to a combination of data entry errors, system configuration errors, and added complexity for handling emergency pay related to overtime worked as part of the tornado emergency. We were able to resume processing immediately using the legacy software.

The system had been unit tested using sample data prior to implementation but had not been taken through comprehensive parallel testing in an effort to minimize the implementation costs and to significantly reduce the amount of time to go-live. This decision proved to be less than optimal. While we could have proceeded with the go-live, staff determined that it would be prudent to stop and restart rather than to continue at that time.

Staff has worked with the project software and implementation managers to identify "what went wrong" and resolve the errors and to develop a plan to re-boot the go-live of the system. As part of this re-boot, staff will take ownership of confirming that the system has been configured appropriately and will perform extensive additional user acceptance testing as part of a comprehensive parallel testing of the system. The parallel testing will have a component for identifying configuration errors; once that has been successfully completed, there will be a second component for identifying data entry errors. The parallel testing will included processing of full weekly, bi-weekly, pension, and workers compensation payrolls for all employees.

The termination and re-boot of the system will incur additional costs for implementation services. The additional costs were identified and negotiated at a substantial discount. Attached is a draft resolution authorizing an amendment to the existing contract with Cogsdale Corporation for additional costs for implementation services already incurred and to be incurred through July 28, 2017 at a total cost of $122,447.50. This represents a negotiated reduction of $66,435.00. Staff will be prepared to discuss this matter at the upcoming meeting of the Finance and Administration Committee.

Robert K. Miller
Deputy Director / Chief Financial Officer

[redacted]

Change Order

Client	Sewerage and Water Board of New Orleans	**Client Contact**	Robert Miller / Debra Ardoline
Project Manager	Jason O'Brien	**Prepared By**	Jason O'Brien
Reference Number	QUO-05153	**Case Number**	
Effective Date	April 3, 2017	**Client PO**	
Description	SWBNO HRP Re-Boot and Go Live		

Estimate Hours

	Quantity/Hours	Rate		Total
Services				
March	247	215	$	53,105.00
April	200	215	$	43,000.00
May PM	63	215	$	13,545.00
May	247	215	$	53,105.00
June PM	63	165	$	10,395.00
June	162.5	215	$	34,937.50
July PM	63	165	$	10,395.00
July	160	215	$	34,400.00
			$	-
Sub-Total	***1205.5***		***$***	***252,882.50***
Discount				
Discounted March	97	215	$	20,855.00
Discount April	53	215	$	11,395.00
Discount May	53	215	$	11,395.00
Discount June	53	215	$	11,395.00
Discount July	53	215	$	11,395.00
Discount Total	309	215	$	66,435.00
Sub-Total	***896.5***		***$***	***186,447.50***
Annual Maintenance and Support				
Total			**$**	**186,447.50**

Contract Information

The original contract sum was (includes M&S)	$1,034,612.50
Net change by previously authorized Change Orders	$246,655.00
The Contract Sum prior to this Change Order was	$1,281,267.50
The Contract Sum will Increase/Decrease by this Change order in the amount of	$122,447.50
The Contact Sum including this Change Order will be	$1, 403,715.00
The Contract completion date as a result of this Change Order will be	July 2017

Milestones

Milestone Impact:

As a result of this change order the following changes will be made to the project milestones:

New Milestone(s) Change Existing Milestone(s) Remove Milestone(s)

Details of Milestone Changes:

Milestones To Be Removed

Milestone	Description	Acceptance Criteria	Total
82	Post Implementation Support Month 1	REMOVED	$32,000.00
83	Post Implementation Support Month 2	REMOVED	$32,000.00

New Milestones

Milestone	Description	Acceptance Criteria	Total
100	Cogsdale Consultant - March	Consultant Time March	$32,250.00
101	Cogsdale Consultant - April	Consultant Time April	$31,605.00
102	Cogsdale Consultant/PM - May	Combined Consultant and PM Time May	$55,255.00
103	Cogsdale Consultant/PM - June	Combined Consultant and PM Time June	$33,937.50
104	Cogsdale Consultant/PM - July	Combined Consultant and PM Time May	$33,400.00

Unchanged Milestones

Milestone	Description	Acceptance Criteria	Total
34	Setup – EmPerform	EmPerform Setup and ready for testing	$12,000.00
51	Modifications Overtime Calc Development	Overtime Calculation Development Delivered and ready for testing	$3,000.00
62	EmPerform Training	Training Agenda for EmPerform Modules Training delivered for EmPerform Modules	$5,600.00
65	Training Greenshades	Training Agenda Delivery of Greenshades Reporting	$3,125.00
81	Refresher Training	Training Agenda Training delivered	$2,000.00
84	Support Transition	Support Escalation document provided to client Introduction meeting with Support & Client	$3,000.50
85	Project Closeout	All SOW items delivered Project Closeout Document Signed	$10,000.00
93	PM Monthly Payment 2	On-going Project Management for all milestones	$14,350.00
98	PM Monthly Payment 3	On-going Project Management for all milestones	$14,350.00

Maintenance and Support

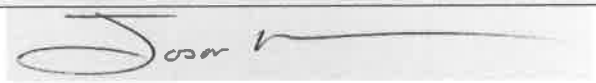
As a result of signing this change order your annual maintenance and support will not change.

Notes

- This change order is valid for 30 days from the quote effective date. Failure to sign this quote within this time period may result in changes to timelines, estimates, and consultant availability.
- This quote is an estimate based on the current information available. If a scope change occurs Cogsdale will work with the client to come to a mutually acceptable adjustment to the original quote.
- Charges may be incurred if scheduled work is cancelled within 10 days of scheduled services.
- Client description and proposed solution are defined in the sections following the authorization.
- **Please note that this is a time and material quote. If the hours in the above are exceeded and the Client has been notified in writing, then an additional change request subject to Client's approval may be required in order to complete the work.

Authorization

Signature indicates the parties have read, understood, and agreed to all the contents of this quote.

Authorized by Cogsdale:		
		
Jason O'Brien	Project Manager	April 7, 2017
Name	Title	Date
Authorized by SWBNO:		
Client Oversight	Title	Date
Client Project Manager	Project Manager Title	Date

Client Description

The Sewerage and Water Board has abandoned the original go live due to issues encountered during the pay roll period.

With this change order it is deemed that all project and onsite post implementation support will be completed on **July 28, 2017**.

The tasks to be completed as part of the change order cannot be sub-divided.

Proposed Solution

The solution proposed will be based on Consultant effort vs. hitting specific milestone criteria. The approach going forward will be that:

1. All items open/identified from Week of February 13th payroll (the "What went wrong" document) will be corrected/completed prior to the start of UAT. In short, resolution of all the items listed on the "What went wrong" document will serve as the entry criteria for the start of UAT.
2. SWBNO will take ownership of confirming that GP has been setup and configured properly and sign off indicating that GP is ready for parallel testing.
3. Utilizing time entry executed by SWBNO Payroll and Time Keeper staff, run parallel testing (iteration 1 & 2) for:
    a. Bi-Weekly Payroll
    b. Workers Compensation Payroll
    c. Pension Payroll.
4. Utilizing time entry executed by SWBNO Time Keepers and regular staff, run parallel testing (iteration 3) for a Bi-Weekly Payroll.
5. Sign off on Parallel Payroll runs.
6. Re-Convert/Load data into Live system and confirm that the conversion balances based on the signed-off Delta Data Conversion Plan.
7. System is Live.

Proposed Schedule

The new proposed work to correct all items identified week of February 13th is underway. The projected go live date is: **May 22, 2017**. Secondary Go live date is June 5, 2017.

The new project plan has outlined specific tasks which need to be completed by specific dates in order to maintain and complete the go live and post production support based on the above quoted milestones.

If the Go Live date goes beyond June 5, 2017 additional services will be required.

Post Go Live Support for SWBNO-HRP project will be completed on **July 28, 2017**.

Consultant on site support will average 2 weeks per month (total of 10 weeks on site from March 2017 through July 2017). Any additional weeks may be requested but may incur additional travel costs for the consultant trip.

There will be no Cogsdale Project Manager on site after the first week of go live. The PM will be on site the week prior to go live and the week of go live to ensure the payroll process was executed successfully. There will be no extended on site time during the post implementation support time for the Cogsdale Project Manager in June or July. This is reflected in the breakdown of PM hours in the quote at the non-travel rate of $165.00.

R-037-2017

AMENDMENT TO EXISTING CONTRACT WITH COGSDALE CORPORATION FOR ADDITIONAL IMPLEMENTATION SERVICES FOR HUMAN RESOURCES / TIMEKEEPING / PAYROLL SYSTEM

WHEREAS, the Human Resources / Timekeeping / Payroll system implementation was initiated on February 13, 2017, but there were an unacceptable number of errors and the go-live was aborted; and

WHEREAS, staff has worked with the project software and implementation managers to identify "what went wrong" and resolve the errors and to develop a plan to re-boot the go-live of the system; and

WHEREAS, as part of this re-boot, staff will take ownership of confirming that the system has been configured appropriately and will perform extensive additional user acceptance testing as part of a comprehensive parallel testing of the system; and

WHEREAS, the termination and re-boot of the system will incur additional costs for implementation services which were identified and negotiated at a substantial discount; and

WHEREAS, in order to provide funding for hours to be worked through July 28, 2017, it is necessary to amend the contract with Cogsdale totaling $122,447.50;

NOW, THEREFORE, BE IT RESOLVED that the Executive Director is hereby authorized to execute on behalf of the Sewerage and Water Board of New Orleans an amendment to the agreement with Cogsdale Corporation for the additional implementation services for a total cost of $122,447.50.

I, Cedric S. Grant, Executive Director,
Sewerage and Water Board of New Orleans, do hereby
certify that the above and foregoing is a true and
correct copy of a Resolution adopted at the Regular
Monthly Meeting of said Board, duly called and held,
according to law, on April 19, 2017.

CEDRIC S. GRANT, EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

SEWERAGE AND WATER BOARD
Inter-Office Memorandum

Date: March 28, 2017

To: Kathleen LaFrance, Board Relations

From: Robert K. Miller, Deputy Director/Chief Financial Officer

Re: 2016 LOUISIANA COMPLIANCE QUESTIONNAIRE AND RESOLUTION

Attached are the Louisiana Compliance Questionnaire and Resolution. Please forward to the Finance and Administration Committee for acceptance and to the SWB Board of Directors for approval.

Please place these items on each meeting's agenda.

Thank you.

RM/rpt

R-027-2017

LOUISIANA SYSTEMS SURVEY AND COMPLIANCE QUESTIONNAIRE

WHEREAS, the Louisiana State Legislative Auditor has oversight authority over Louisiana governmental units and quasi-public corporations; and

WHEREAS, the Louisiana State Legislative Auditor requires a completed systems survey and compliance questionnaire as part of the financial and compliance audits of Louisiana governmental units and quasi-public corporations; and

WHEREAS, upon completion, the Louisiana State Legislative Auditor requires the questionnaire to be presented to and adopted by the governing body of the organization by means of a formal resolution in an open meeting.

NOW, THEREFORE, BE IT RESOLVED that the Sewerage and Water Board of New Orleans does adopt this resolution, attesting to the completion of the Systems Survey and Compliance Questionnaire.

I, Cedric S. Grant, Executive Director, Sewerage and Water Board of New Orleans, do hereby certify that the above and foregoing is a true and correct copy of a resolution adopted at the Regular Monthly Meeting of said Board, duly called and held, according to law on April 19, 2017

CEDRIC S. GRANT
EXECUTIVE DIRECTOR
SEWERAGE AND WATER BOARD OF NEW ORLEANS

Sewerage and Water Board of New Orleans
Summary of Preliminary Financial Results
Through February 28, 2017

Prior Year Variances	Water	Sewer	Drainage
Revenues	1,420,841	2,344,285	160,300
Operating Expenses	(585,469)	(559,960)	(158,799)
Non-Operating Revenues and Expenses	(155,756)	(109,549)	16,223,083
Income before Capital Contributions	1,850,554	2,794,696	16,542,182

Budget Variances	Water	Sewer	Drainage
Revenues	(1,643,670)	(983,522)	610,946
Operating Expenses	(2,970,571)	(7,738,386)	(9,852,986)
Non-Operating Revenues and Expenses	(451,894)	(206,289)	1,551,796
Income before Capital Contributions	875,007	6,548,575	12,015,728

	Water	Sewer	Drainage
Days of Cash	191.3	279.1	333.3

	Water	Sewer	Drainage
Projected Debt Service Coverage Times	2.05	2.04	Not Applicable

SEWERAGE AND WATER BOARD OF NEW ORLEANS

April 17, 2017

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

Re: Financial Results through February 2017

Attached are *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 February 2017. The *Statement of Net Assets* and the *Statement of Cash Flows* will be provided after completion of the 2016 audit.

Operating Revenues:

Water System Fund (pages 7 and 8, line 5) for February of $8,672,928 is $413,086 or 5.0% more than budgeted and $1,305,351 or 17.7% more than February 2016. February YTD operating revenues of $14,876,013 is $1,643,670 or 9.9% less than budgeted and $1,420,841 or 10.6% more than February YTD 2016.

Sewer System Fund (pages 13 and 14, line 5) for February of $9,489,050 is $70,675 or 0.7% less than budgeted and $544,454 or 6.1% more than February 2016. February YTD operating revenues of $18,135,928 is $983,522 or 5.1% less than budgeted and $2,344,285 or 14.8% more than February YTD 2016.

Drainage System Fund (pages 19 and 20, line 5) for February of $165,464 is $165,464 or 100.0% more than budgeted and 163,052 or 6759.8% more than for February 2016. February YTD operating revenues of $167,270 is $167,270 or 100.0% more than budgeted and $160,300 or 2299.7% more than February YTD 2016.

Total System Funds (pages 1 and 2, line 5) for February of $18,327,442 are $507,876 or 2.9% more than budgeted and $2,012,857 or 12.3% more than February 2016. February YTD operating revenues of $33,179,211 are $2,459,922 or 6.9% less than budgeted and $3,925,426 or 13.4% more than February YTD 2016.

Operating Expenses:

Water System Fund (pages 7 and 8, line 18) for February of $5,516,903 is $2,447,072 or 30.7% less than budgeted and $745,749 or 11.9% less than February 2016. February YTD operating expenses of $12,957,379 is $2,970,571 or 18.7% less than budgeted and $585,469 or 4.3% less than February YTD 2016.

Sewer System Fund (pages 13 and 14, line 18) for February of $5,114,981 is $4,400,502 or 44.5% less than budgeted and $265,996 or 4.9% less than February 2016. February YTD operating expenses of $10,692,579 is $7,738,386 or 42.0% less than budgeted and $559,960 or 5.0% less than February YTD 2016.

Drainage System Fund (pages 19 and 20, line 18) for February of $3,376,130 is $2,206,765 or 39.5% less than budgeted and $229,699 or 6.4% less than February 2016. February YTD operating expenses of $7,355,596 is $3,810,195 or 34.1% less than budgeted and $158,799 or 2.1% less than February YTD 2016.

Total System Funds (pages 1 and 2, line 18) for February of $14,008,014 are $8,754,339 or 38.5% less than budgeted and $1,241,444 or 8.1% less than February 2016. February YTD operating expenses of $31,005,554 is $14,519,152 or 31.9% less than budgeted and $1,304,228 or 4.0% less than February YTD 2016.

Net Non-Operating Revenues:

Water System Fund (pages 7 and 8, line 28) for February of $3,299 is $224,298 or 98.6% less than budgeted and $75,998 or 95.8% less than February 2016. February YTD net non-operating revenues of $3,299 are $451,894 or 99.3% less than budgeted and $155,756 or 97.9% less than February YTD 2016.

Sewer System Fund (pages 13 and 14, line 28) for February of $32 is $103,128 or 100.0% less than budgeted and $53,187 or 99.9% less than February 2016. February YTD net non-operating revenues of $32 are 206,289 or 100.0% less than budgeted and $109,549 or 100.0% less than February YTD 2016.

Drainage System Fund (pages 19 and 20, line 28) for February of $17,227,762 is $12,629,342 or 274.6% more than budgeted and $15,345,676 or 815.4% more February 2016. February YTD net non-operating revenues of $18,398,113 are $9,201,273 or 100.0% more than budgeted and $16,223,083 are 745.9% more than February YTD 2016.

Total System Funds (pages 1 and 2, line 28) for February of $17,231,093 is $12,667,760 or 277.6% more than budgeted and $15,216,490 or 755.3% more than February 2016. February YTD net non-operating revenues of $18,401,444 are $8,543,090 or 86.7% more than budgeted and $15,957,778 or 653.0% more than February YTD 2016.

Income Before Contributions in Aid of Construction:

Water System Fund (pages 7 and 8, line 29) for February of $3,159,324 is $2,635,861 or 503.5% more than budgeted and $1,975,102 or 166.8% more than February 2016. February YTD income before capital contributions of $1,921,933 is $875,007 or 83.6% more than budgeted and $1,850,554 or 2592.6% more than February YTD 2016.

Sewer System Fund (pages 13 and 14, line 29) for February of $4,374,102 is $3,926,699 or 877.7% more than budgeted and $757,263 or 20.9% more than February 2016. February YTD income before capital contributions of $7,443,381 is $6,548,575 or 731.8% more than budgeted and $2,794,696 or 60.1% more than February YTD 2016.

Drainage System Fund (pages 19 and 20, line 29) for February of $14,017,096 is $15,001,572 or 1523.8% more than budgeted and $15,738,427 or 914.3% more than February 2016. February YTD income before capital contributions of $11,209,787 is $13,178,739 or 669.3% more than budgeted and $16,542,181 or 310.2% more than February YTD 2016.

Total System Funds (pages 1 and 2, line 29) for February of $21,550,521 is $21,564,131 or 158444.3% more than budgeted and $18,470,791 or 599.8% more than February 2016. February YTD income before capital contributions of $20,575,101 is $20,602.321 or 75688.6% more than budgeted and $21,187,432 or 3460.1% more than February 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 February 28, 2017 are:

	Water	Sewer	Total
Original Balance	$1,708,278.72	-	$1,708,278.72
Less Disbursements	0	-	0
Plus Reimbursements	0	-	0
Plus Income	1,258.04	-	1,258.04
Ending Balance	$1,709,536.76	-	$1,709,536.76

The balances of funds from the Series 2015 bond proceeds available for capital construction as of February 28, 2017 are:

	Water	Sewer	Total
Original Balance	$90,841,843.80	48,924,664.25	$139,766,508.05
Less Disbursements	(1,500,000.00)	(1,500,000.00)	(3,000,000.00)
Plus Reimbursements	0	0	0
Plus Income	51,994.09	22,050.26	74,044.35
Ending Balance	$89,393,837.89	$47,446,714.51	$136,840,552.40

The days-of-cash at February 28, 2017 were 191.3 for the water system, 279.1 for the sewer system, and 333.3 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 February 28, 2017, remains at the budgeted levels of 2.05 times for the water system and 2.04 times for the sewer system. These results are ahead of the policy target of 1.50 times and the bond covenant minimum of 1.25.

Certification. In connection with the accompanying monthly financial report of the Sewerage and Water Board of New Orleans for the period ended February 28, 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.

Robert K. Miller
Deputy Director / Chief Financial Officer

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	-	-	-	0.0%	-	-	-	0.0%	1
2	Sewerage service charges and del fees	-	-	-	0.0%	-	-	-	0.0%	2
3	Plumbing inspection and license fees	-	-	-	0.0%	-	-	-	0.0%	3
4	Other revenues	165,464	-	165,464	0.0%	167,270	-	167,270	0.0%	4
5	Total operating revenues	165,464	-	165,464	0.0%	167,270	-	167,270	0.0%	5
	Operating Expenses:									
6	Executive Director	40,641	40,639	2	0.0%	67,288	81,277	(13,989)	-17.2%	6
7	Special Counsel	28,447	94,732	(66,286)	-70.0%	60,284	189,465	(129,180)	-68.2%	7
8	Security	241,081	290,704	(49,623)	-17.1%	520,671	581,408	(60,736)	-10.4%	8
9	Operations	714,513	1,820,766	(1,106,253)	-60.8%	2,028,510	3,641,532	(1,613,022)	-44.3%	9
10	Engineering	128,388	325,404	(197,016)	-60.5%	253,653	650,808	(397,155)	-61.0%	10
11	Logistics	271,689	483,341	(211,652)	-43.8%	566,432	966,682	(400,249)	-41.4%	11
12	Communications	9,106	32,308	(23,202)	-71.8%	15,355	64,617	(49,262)	-76.2%	12
13	Adminstration	320,843	325,406	(4,563)	-1.4%	396,908	650,811	(253,903)	-39.0%	13
14	Chief Financial Officer	121,947	328,326	(206,379)	-62.9%	448,400	656,652	(208,252)	-31.7%	14
15	Continuous Improvement	4,225	13,084	(8,860)	-67.7%	7,590	26,168	(18,578)	-71.0%	15
16	Allocation for Overhead	(241,044)	(702,705)	461,661	-65.7%	(482,089)	(1,405,410)	923,321	-65.7%	16
17	Non-Cash Operating Expenses	1,736,297	2,530,892	(794,595)	-31.4%	3,472,593	5,061,783	(1,589,190)	-31.4%	17
18	Total operating expenses	3,376,130	5,582,896	(2,206,765)	-39.5%	7,355,596	11,165,792	(3,810,195)	-34.1%	18
19	Operating income (loss)	(3,210,666)	(5,582,896)	2,372,230	-42.5%	(7,188,326)	(11,165,792)	3,977,465	-35.6%	19
	Non-operating revenues (expense):									
20	Two-mill tax	21	-	21	0.0%	21	-	21	0.0%	20
21	Three-mill tax	592	1,235,828	(1,235,236)	-100.0%	49,458	2,471,656	(2,422,198)	-98.0%	21
22	Six-mill tax	6,893,694	1,305,101	5,588,593	428.2%	7,342,480	2,610,202	4,732,278	181.3%	22
23	Nine-mill tax	10,333,455	1,956,266	8,377,189	428.2%	11,006,155	3,912,532	7,093,623	181.3%	23
24	Interest income	-	30,500	(30,500)	-100.0%	-	61,000	(61,000)	-100.0%	24
25	Other Income	-	81,583	(81,583)	-100.0%	-	163,167	(163,167)	-100.0%	25
26	Interest expense	-	(10,858)	10,858	-100.0%	-	(21,717)	21,717	-100.0%	26
27	Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%	27
28	Total non-operating revenues	17,227,762	4,598,420	12,629,342	274.6%	18,398,113	9,196,840	9,201,273	100.0%	28
29	Income before capital contributions	14,017,096	(984,476)	15,001,572	-1523.8%	11,209,787	(1,968,952)	13,178,739	-669.3%	29
30	Capital contributions	1,684	-	1,684	0.0%	9,172	-	9,172	0.0%	30
31	Change in net position	14,018,779	(984,476)	15,003,255	-1524.0%	11,218,958	(1,968,952)	13,187,910	-669.8%	31
32	Net position, beginning of year					1,000,776,299	918,396,632	82,379,667	9.0%	32
33	Net position, end of year					1,011,995,257	916,427,680	95,567,577	10.4%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Prior Year	MTD Variance	%	YTD Actual	YTD Prior Year	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	8,606,727	7,085,152	1,521,575	21.5%	14,715,507	12,898,528	1,816,980	14.1%	1
2	Sewerage service charges and del fees	9,386,620	8,835,252	551,368	6.2%	18,029,767	15,637,790	2,391,977	15.3%	2
3	Plumbing inspection and license fees	38,570	52,540	(13,970)	-26.6%	106,590	90,640	15,950	17.6%	3
4	Other revenues	295,525	341,641	(46,116)	-13.5%	327,347	626,828	(299,481)	-47.8%	4
5	Total operating revenues	18,327,442	16,314,585	2,012,857	12.3%	33,179,211	29,253,785	3,925,426	13.4%	5
	Operating Expenses:									
6	Executive Director	130,043	170,319	(40,276)	-23.6%	217,082	361,256	(144,174)	-39.9%	6
7	Special Counsel	88,856	129,052	(40,196)	-31.1%	180,036	227,100	(47,064)	-20.7%	7
8	Security	770,232	251,280	518,952	206.5%	1,675,972	526,187	1,149,785	218.5%	8
9	Operations	4,567,370	7,083,514	(2,516,143)	-35.5%	12,576,193	14,625,464	(2,049,270)	-14.0%	9
10	Engineering	429,211	422,896	6,314	1.5%	869,239	798,503	70,736	8.9%	10
11	Logistics	728,703	1,046,419	(317,717)	-30.4%	1,547,669	2,127,863	(580,194)	-27.3%	11
12	Communications	27,319	-	27,319	0.0%	46,065	-	46,065	0.0%	12
13	Adminstration	1,344,623	65,593	1,279,030	1949.9%	1,651,434	1,788,247	(136,813)	-7.7%	13
14	Chief Financial Officer	1,257,462	1,509,503	(252,042)	-16.7%	2,916,051	2,660,185	255,866	9.6%	14
15	Continuous Improvement	12,674	-	12,674	0.0%	22,770	-	22,770	0.0%	15
16	Allocation for Overhead	(867,485)	(948,052)	80,566	-8.5%	(1,734,971)	(1,840,911)	105,940	-5.8%	16
17	Non-Cash Operating Expenses	5,519,007	5,518,932	75	0.0%	11,038,015	11,035,889	2,126	0.0%	17
18	Total operating expenses	14,008,014	15,249,458	(1,241,444)	-8.1%	31,005,554	32,309,782	(1,304,228)	-4.0%	18
19	Operating income (loss)	4,319,428	1,065,128	3,254,301	305.5%	2,173,657	(3,055,997)	5,229,654	-171.1%	19
	Non-operating revenues (expense):									
20	Two-mill tax	21	647	(626)	-96.8%	21	6,339	(6,319)	-99.7%	20
21	Three-mill tax	592	532,643	(532,051)	-99.9%	49,458	612,844	(563,387)	-91.9%	21
22	Six-mill tax	6,893,694	538,356	6,355,338	1180.5%	7,342,480	619,486	6,722,994	1085.3%	22
23	Nine-mill tax	10,333,455	806,934	9,526,521	1180.6%	11,006,155	928,517	10,077,637	1085.3%	23
24	Interest income	3,331	136,023	(132,692)	-97.6%	3,331	276,479	(273,148)	-98.8%	24
25	Other Income	-	-	-	0.0%	-	-	-	0.0%	25
26	Interest expense	-	-	-	0.0%	-	-	-	0.0%	26
27	Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%	27
28	Total non-operating revenues	17,231,093	2,014,602	15,216,490	755.3%	18,401,444	2,443,666	15,957,778	653.0%	28
29	Income before capital contributions	21,550,521	3,079,730	18,470,791	599.8%	20,575,101	(612,331)	21,187,432	-3460.1%	29
30	Capital contributions	1,725,869	854,623	871,246	101.9%	1,825,571	1,084,245	741,327	68.4%	30
31	Change in net position	23,276,390	3,934,353	19,342,038	491.6%	22,400,672	471,914	21,928,759	4646.8%	31
32	Net position, beginning of year					2,082,688,315	1,968,799,361	113,888,954	5.8%	32
33	Net position, end of year					2,105,088,987	1,969,271,275	135,817,713	6.9%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	8,606,727	7,872,192	734,535	9.3%	14,715,507	15,744,383	(1,028,876)	-6.5%	1
2	Sewerage service charges and del fees	9,386,620	9,482,775	(96,155)	-1.0%	18,029,767	18,965,550	(935,783)	-4.9%	2
3	Plumbing inspection and license fees	38,570	52,150	(13,580)	-26.0%	106,590	104,300	2,290	2.2%	3
4	Other revenues	295,525	412,450	(116,925)	-28.3%	327,347	824,900	(497,553)	-60.3%	4
5	Total operating revenues	18,327,442	17,819,567	507,876	2.9%	33,179,211	35,639,133	(2,459,922)	-6.9%	5
	Operating Expenses:									
6	Executive Director	130,043	136,338	(6,295)	-4.6%	217,082	272,675	(55,594)	-20.4%	6
7	Special Counsel	88,856	227,947	(139,091)	-61.0%	180,036	455,894	(275,858)	-60.5%	7
8	Security	770,232	957,426	(187,194)	-19.6%	1,675,972	1,914,851	(238,880)	-12.5%	8
9	Operations	4,567,370	9,515,764	(4,948,393)	-52.0%	12,576,193	19,031,528	(6,455,334)	-33.9%	9
10	Engineering	429,211	1,095,305	(666,094)	-60.8%	869,239	2,190,610	(1,321,371)	-60.3%	10
11	Logistics	728,703	1,415,020	(686,318)	-48.5%	1,547,669	2,830,041	(1,282,372)	-45.3%	11
12	Communications	27,319	96,925	(69,606)	-71.8%	46,065	193,850	(147,785)	-76.2%	12
13	Adminstration	1,344,623	1,326,914	17,709	1.3%	1,651,434	2,653,829	(1,002,395)	-37.8%	13
14	Chief Financial Officer	1,257,462	2,390,290	(1,132,829)	-47.4%	2,916,051	4,780,580	(1,864,529)	-39.0%	14
15	Continuous Improvement	12,674	39,253	(26,579)	-67.7%	22,770	78,505	(55,735)	-71.0%	15
16	Allocation for Overhead	(867,485)	(1,446,144)	578,658	-40.0%	(1,734,971)	(2,892,287)	1,157,317	-40.0%	16
17	Non-Cash Operating Expenses	5,519,007	7,007,316	(1,488,309)	-21.2%	11,038,015	14,014,632	(2,976,618)	-21.2%	17
18	Total operating expenses	14,008,014	22,762,353	(8,754,339)	-38.5%	31,005,554	45,524,707	(14,519,152)	-31.9%	18
19	Operating income (loss)	4,319,428	(4,942,787)	9,262,215	-187.4%	2,173,657	(9,885,573)	12,059,230	-122.0%	19
	Non-operating revenues (expense):									
20	Two-mill tax	21	-	21	0.0%	21	-	21	0.0%	20
21	Three-mill tax	592	1,235,828	(1,235,236)	-100.0%	49,458	2,471,656	(2,422,198)	-98.0%	21
22	Six-mill tax	6,893,694	1,305,101	5,588,593	428.2%	7,342,480	2,610,202	4,732,278	181.3%	22
23	Nine-mill tax	10,333,455	1,956,266	8,377,189	428.2%	11,006,155	3,912,532	7,093,623	181.3%	23
24	Interest income	3,331	112,517	(109,186)	-97.0%	3,331	225,033	(221,702)	-98.5%	24
25	Other Income	-	153,467	(153,467)	-100.0%	-	306,933	(306,933)	-100.0%	25
26	Interest expense	-	(199,846)	199,846	-100.0%	-	(399,692)	399,692	-100.0%	26
27	Operating and maintenance grants	-	365,845	(365,845)	-100.0%	-	731,689	(731,689)	-100.0%	27
28	Total non-operating revenues	17,231,093	4,929,177	12,301,916	249.6%	18,401,444	9,858,353	8,543,090	86.7%	28
29	Income before capital contributions	21,550,521	(13,610)	21,564,131	-158444.3%	20,575,101	(27,220)	20,602,321	-75688.6%	29
30	Capital contributions	1,725,869	-	1,725,869	0.0%	1,825,571	-	1,825,571	0.0%	30
31	Change in net position	23,276,390	(13,610)	23,290,000	-171125.2%	22,400,672	(27,220)	22,427,892	-82395.4%	31
32	Net position, beginning of year					2,082,688,315	1,968,799,361	113,888,954	5.8%	32
33	Net position, end of year					2,105,088,987	1,966,830,409	138,258,578	7.0%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Prior Year	MTD Variance	%	YTD Actual	YTD Prior Year	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	8,606,727	7,085,152	1,521,575	21.5%	14,715,507	12,898,528	1,816,980	14.1%	1
2	Sewerage service charges and del fees	-	-	-	0.0%	-	-	-	0.0%	2
3	Plumbing inspection and license fees	38,570	26,270	12,300	46.8%	106,590	45,320	61,270	135.2%	3
4	Other revenues	27,631	256,155	(228,524)	-89.2%	53,916	511,324	(457,409)	-89.5%	4
5	Total operating revenues	8,672,928	7,367,577	1,305,351	17.7%	14,876,013	13,455,172	1,420,841	10.6%	5
	Operating Expenses:									
6	Executive Director	46,304	59,156	(12,852)	-21.7%	77,899	124,844	(46,945)	-37.6%	6
7	Special Counsel	30,205	43,881	(13,676)	-31.2%	61,370	77,546	(16,176)	-20.9%	7
8	Security	273,629	108,157	165,471	153.0%	604,560	225,559	379,000	168.0%	8
9	Operations	1,848,116	3,190,200	(1,342,084)	-42.1%	5,923,807	6,738,226	(814,420)	-12.1%	9
10	Engineering	145,737	148,428	(2,691)	-1.8%	304,531	274,501	30,030	10.9%	10
11	Logistics	231,305	343,283	(111,978)	-32.6%	495,113	718,989	(223,876)	-31.1%	11
12	Communications	9,106	-	9,106	0.0%	15,355	-	15,355	0.0%	12
13	Adminstration	622,175	26,590	595,585	2239.9%	760,239	829,365	(69,126)	-8.3%	13
14	Chief Financial Officer	583,038	645,318	(62,281)	-9.7%	1,260,786	1,141,344	119,441	10.5%	14
15	Continuous Improvement	4,225	-	4,225	0.0%	7,590	-	7,590	0.0%	15
16	Allocation for Overhead	(320,087)	(345,488)	25,401	-7.4%	(640,173)	(673,025)	32,852	-4.9%	16
17	Non-Cash Operating Expenses	2,043,152	2,043,127	25	0.0%	4,086,303	4,085,498	805	0.0%	17
18	Total operating expenses	5,516,903	6,262,652	(745,749)	-11.9%	12,957,379	13,542,848	(585,469)	-4.3%	18
19	Operating income (loss)	3,156,025	1,104,925	2,051,100	185.6%	1,918,634	(87,676)	2,006,310	-2288.3%	19
	Non-operating revenues (expense):									
20	Two-mill tax	-	-	-	0.0%	-	-	-	0.0%	20
21	Three-mill tax	-	-	-	0.0%	-	-	-	0.0%	21
22	Six-mill tax	-	-	-	0.0%	-	-	-	0.0%	22
23	Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%	23
24	Interest income	3,299	79,297	(75,998)	-95.8%	3,299	159,055	(155,756)	-97.9%	24
25	Other Income	-	-	-	0.0%	-	-	-	0.0%	25
26	Interest expense	-	-	-	0.0%	-	-	-	0.0%	26
27	Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%	27
28	Total non-operating revenues	3,299	79,297	(75,998)	-95.8%	3,299	159,055	(155,756)	-97.9%	28
29	Income before capital contributions	3,159,324	1,184,222	1,975,102	166.8%	1,921,933	71,379	1,850,554	2592.6%	29
30	Capital contributions	106,757	1,020	105,737	10366.3%	198,971	216,483	(17,513)	-8.1%	30
31	Change in net position	3,266,080	1,185,242	2,080,838	175.6%	2,120,903	287,862	1,833,041	636.8%	31
32	Net position, beginning of year					318,792,375	317,835,814	956,561	0.3%	32
33	Net position, end of year					320,913,278	318,123,676	2,789,602	0.9%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	8,606,727	7,872,192	734,535	9.3%	14,715,507	15,744,383	(1,028,876)	-6.5%	1
2	Sewerage service charges and del fees	-	-	-	0.0%	-	-	-	0.0%	2
3	Plumbing inspection and license fees	38,570	24,975	13,595	54.4%	106,590	49,950	56,640	113.4%	3
4	Other revenues	27,631	362,675	(335,044)	-92.4%	53,916	725,350	(671,434)	-92.6%	4
5	Total operating revenues	8,672,928	8,259,842	413,086	5.0%	14,876,013	16,519,683	(1,643,670)	-9.9%	5
	Operating Expenses:									
6	Executive Director	46,304	50,695	(4,391)	-8.7%	77,899	101,391	(23,491)	-23.2%	6
7	Special Counsel	30,205	72,566	(42,361)	-58.4%	61,370	145,131	(83,761)	-57.7%	7
8	Security	273,629	353,577	(79,948)	-22.6%	604,560	707,153	(102,594)	-14.5%	8
9	Operations	1,848,116	4,584,264	(2,736,148)	-59.7%	5,923,807	9,168,528	(3,244,721)	-35.4%	9
10	Engineering	145,737	349,064	(203,327)	-58.2%	304,531	698,128	(393,597)	-56.4%	10
11	Logistics	231,305	471,952	(240,647)	-51.0%	495,113	943,904	(448,791)	-47.5%	11
12	Communications	9,106	32,308	(23,202)	-71.8%	15,355	64,617	(49,262)	-76.2%	12
13	Adminstration	622,175	601,881	20,294	3.4%	760,239	1,203,762	(443,523)	-36.8%	13
14	Chief Financial Officer	583,038	1,053,023	(469,985)	-44.6%	1,260,786	2,106,046	(845,260)	-40.1%	14
15	Continuous Improvement	4,225	13,084	(8,860)	-67.7%	7,590	26,168	(18,578)	-71.0%	15
16	Allocation for Overhead	(320,087)	(1,379,319)	1,059,233	-76.8%	(640,173)	(2,758,638)	2,118,465	-76.8%	16
17	Non-Cash Operating Expenses	2,043,152	1,760,881	282,271	16.0%	4,086,303	3,521,762	564,541	16.0%	17
18	Total operating expenses	5,516,903	7,963,975	(2,447,072)	-30.7%	12,957,379	15,927,950	(2,970,571)	-18.7%	18
19	Operating income (loss)	3,156,025	295,867	2,860,158	966.7%	1,918,634	591,733	1,326,901	224.2%	19
	Non-operating revenues (expense):									
20	Two-mill tax	-	-	-	0.0%	-	-	-	0.0%	20
21	Three-mill tax	-	-	-	0.0%	-	-	-	0.0%	21
22	Six-mill tax	-	-	-	0.0%	-	-	-	0.0%	22
23	Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%	23
24	Interest income	3,299	28,350	(25,051)	-88.4%	3,299	56,700	(53,401)	-94.2%	24
25	Other Income	-	33,375	(33,375)	-100.0%	-	66,750	(66,750)	-100.0%	25
26	Interest expense	-	(17,051)	17,051	-100.0%	-	(34,102)	34,102	-100.0%	26
27	Operating and maintenance grants	-	182,922	(182,922)	-100.0%	-	365,845	(365,845)	-100.0%	27
28	Total non-operating revenues	3,299	227,596	(224,298)	-98.6%	3,299	455,193	(451,894)	-99.3%	28
29	Income before capital contributions	3,159,324	523,463	2,635,861	503.5%	1,921,933	1,046,926	875,007	83.6%	29
30	Capital contributions	106,757	-	106,757	0.0%	198,971	-	198,971	0.0%	30
31	Change in net position	3,266,080	523,463	2,742,617	523.9%	2,120,903				31
32	Net position, beginning of year					318,792,375	317,835,814	956,561	0.3%	32
33	Net position, end of year					320,913,278	317,835,814	3,077,464	1.0%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Prior Year	MTD Variance	%	YTD Actual	YTD Prior Year	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	-	-	-	0.0%	-	-	-	0.0%	1
2	Sewerage service charges and del fees	9,386,620	8,835,252	551,368	6.2%	18,029,767	15,637,790	2,391,977	15.3%	2
3	Plumbing inspection and license fees	-	26,270	(26,270)	-100.0%	-	45,320	(45,320)	-100.0%	3
4	Other revenues	102,430	83,074	19,356	23.3%	106,162	108,533	(2,372)	-2.2%	4
5	Total operating revenues	9,489,050	8,944,596	544,454	6.1%	18,135,928	15,791,643	2,344,285	14.8%	5
	Operating Expenses:									
6	Executive Director	43,099	56,572	(13,474)	-23.8%	71,894	120,046	(48,152)	-40.1%	6
7	Special Counsel	30,205	43,881	(13,676)	-31.2%	58,382	77,446	(19,064)	-24.6%	7
8	Security	255,523	78,639	176,884	224.9%	550,741	167,609	383,132	228.6%	8
9	Operations	2,004,742	2,669,292	(664,550)	-24.9%	4,623,877	5,439,542	(815,665)	-15.0%	9
10	Engineering	155,086	150,800	4,285	2.8%	311,055	289,664	21,391	7.4%	10
11	Logistics	225,709	339,840	(114,131)	-33.6%	486,124	711,584	(225,461)	-31.7%	11
12	Communications	9,106	-	9,106	0.0%	15,355	-	15,355	0.0%	12
13	Adminstration	401,606	20,599	381,007	1849.7%	494,287	533,567	(39,279)	-7.4%	13
14	Chief Financial Officer	552,477	621,632	(69,155)	-11.1%	1,206,865	1,097,376	109,490	10.0%	14
15	Continuous Improvement	4,225	-	4,225	0.0%	7,590	-	7,590	0.0%	15
16	Allocation for Overhead	(306,355)	(339,813)	33,458	-9.8%	(612,709)	(662,409)	49,700	-7.5%	16
17	Non-Cash Operating Expenses	1,739,559	1,739,534	25	0.0%	3,479,118	3,478,115	1,003	0.0%	17
18	Total operating expenses	5,114,981	5,380,977	(265,996)	-4.9%	10,692,579	11,252,540	(559,960)	-5.0%	18
19	Operating income (loss)	4,374,069	3,563,620	810,450	22.7%	7,443,349	4,539,104	2,904,246	64.0%	19
	Non-operating revenues (expense):									
20	Two-mill tax	-	-	-	0.0%	-	-	-	0.0%	20
21	Three-mill tax	-	-	-	0.0%	-	-	-	0.0%	21
22	Six-mill tax	-	-	-	0.0%	-	-	-	0.0%	22
23	Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%	23
24	Interest income	32	53,220	(53,187)	-99.9%	32	109,582	(109,549)	-100.0%	24
25	Other Income	-	-	-	0.0%	-	-	-	0.0%	25
26	Interest expense	-	-	-	0.0%	-	-	-	0.0%	26
27	Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%	27
28	Total non-operating revenues	32	53,220	(53,187)	-99.9%	32	109,582	(109,549)	-100.0%	28
29	Income before capital contributions	4,374,102	3,616,839	757,263	20.9%	7,443,381	4,648,685	2,794,696	60.1%	29
30	Capital contributions	1,617,429	853,603	763,826	89.5%	1,617,429	853,603	763,826	89.5%	30
31	Change in net position	5,991,531	4,470,442	1,521,089	34.0%	9,060,811	5,502,288	3,558,522	64.7%	31
32	Net position, beginning of year					763,119,641	732,566,915	30,552,726	4.2%	32
33	Net position, end of year					772,180,452	738,069,203	34,111,248	4.6%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Budget	MTD Variance	%	YTD Actual	YTD Budget	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	-	-	-	0.0%	-	-	-	0.0%	1
2	Sewerage service charges and del fees	9,386,620	9,482,775	(96,155)	-1.0%	18,029,767	18,965,550	(935,783)	-4.9%	2
3	Plumbing inspection and license fees	-	27,175	(27,175)	-100.0%	-	54,350	(54,350)	-100.0%	3
4	Other revenues	102,430	49,775	52,655	105.8%	106,162	99,550	6,612	6.6%	4
5	Total operating revenues	9,489,050	9,559,725	(70,675)	-0.7%	18,135,928	19,119,450	(983,522)	-5.1%	5
	Operating Expenses:									
6	Executive Director	43,099	45,004	(1,905)	-4.2%	71,894	90,008	(18,114)	-20.1%	6
7	Special Counsel	30,205	60,649	(30,444)	-50.2%	58,382	121,298	(62,916)	-51.9%	7
8	Security	255,523	313,145	(57,623)	-18.4%	550,741	626,291	(75,550)	-12.1%	8
9	Operations	2,004,742	3,110,734	(1,105,992)	-35.6%	4,623,877	6,221,468	(1,597,591)	-25.7%	9
10	Engineering	155,086	420,837	(265,751)	-63.1%	311,055	841,674	(530,619)	-63.0%	10
11	Logistics	225,709	459,728	(234,019)	-50.9%	486,124	919,455	(433,332)	-47.1%	11
12	Communications	9,106	32,308	(23,202)	-71.8%	15,355	64,617	(49,262)	-76.2%	12
13	Adminstration	401,606	399,628	1,978	0.5%	494,287	799,256	(304,969)	-38.2%	13
14	Chief Financial Officer	552,477	1,008,941	(456,464)	-45.2%	1,206,865	2,017,882	(811,017)	-40.2%	14
15	Continuous Improvement	4,225	13,084	(8,860)	-67.7%	7,590	26,168	(18,578)	-71.0%	15
16	Allocation for Overhead	(306,355)	635,880	(942,235)	-148.2%	(612,709)	1,271,761	(1,884,470)	-148.2%	16
17	Non-Cash Operating Expenses	1,739,559	2,715,544	(975,984)	-35.9%	3,479,118	5,431,087	(1,951,969)	-35.9%	17
18	Total operating expenses	5,114,981	9,215,483	(4,100,502)	-44.5%	10,692,579	18,430,965	(7,738,386)	-42.0%	18
19	Operating income (loss)	4,374,069	344,243	4,029,827	1170.6%	7,443,349	688,485	6,754,864	981.1%	19
	Non-operating revenues (expense):									
20	Two-mill tax	-	-	-	0.0%	-	-	-	0.0%	20
21	Three-mill tax	-	-	-	0.0%	-	-	-	0.0%	21
22	Six-mill tax	-	-	-	0.0%	-	-	-	0.0%	22
23	Nine-mill tax	-	-	-	0.0%	-	-	-	0.0%	23
24	Interest income	32	53,667	(53,634)	-99.9%	32	107,333	(107,301)	-100.0%	24
25	Other Income	-	38,508	(38,508)	-100.0%	-	77,017	(77,017)	-100.0%	25
26	Interest expense	-	(171,937)	171,937	-100.0%	-	(343,874)	343,874	-100.0%	26
27	Operating and maintenance grants	-	182,922	(182,922)	-100.0%	-	365,845	(365,845)	-100.0%	27
28	Total non-operating revenues	32	103,161	(103,128)	-100.0%	32	206,321	(206,289)	-100.0%	28
29	Income before capital contributions	4,374,102	447,403	3,926,699	877.7%	7,443,381	894,806	6,548,575	731.8%	29
30	Capital contributions	1,617,429	-	1,617,429	0.0%	1,617,429	-	1,617,429	0.0%	30
31	Change in net position	5,991,531	447,403	5,544,128	1239.2%	9,060,811				31
32	Net position, beginning of year					763,119,641	732,566,915	30,552,726	4.2%	32
33	Net position, end of year					772,180,452	732,566,915	39,613,537	5.4%	33

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

		A	B	C	D	E	F	G	H	
		MTD Actual	MTD Prior Year	MTD Variance	%	YTD Actual	YTD Prior Year	YTD Variance	%	
	Operating revenues:									
1	Sales of water and delinquent fees	-	-	-	0.0%	-	-	-	0.0%	1
2	Sewerage service charges and del fees	-	-	-	0.0%	-	-	-	0.0%	2
3	Plumbing inspection and license fees	-	-	-	0.0%	-	-	-	0.0%	3
4	Other revenues	165,464	2,412	163,052	6759.8%	167,270	6,970	160,300	2299.7%	4
5	Total operating revenues	165,464	2,412	163,052	6759.8%	167,270	6,970	160,300	2299.7%	5
	Operating Expenses:									
6	Executive Director	40,641	54,591	(13,950)	-25.6%	67,288	116,366	(49,078)	-42.2%	6
7	Special Counsel	28,447	41,290	(12,843)	-31.1%	60,284	72,108	(11,824)	-16.4%	7
8	Security	241,081	64,484	176,597	273.9%	520,671	133,019	387,652	291.4%	8
9	Operations	714,513	1,224,022	(509,509)	-41.6%	2,028,510	2,447,695	(419,186)	-17.1%	9
10	Engineering	128,388	123,668	4,720	3.8%	253,653	234,338	19,315	8.2%	10
11	Logistics	271,689	363,296	(91,607)	-25.2%	566,432	697,289	(130,857)	-18.8%	11
12	Communications	9,106	-	9,106	0.0%	15,355	-	15,355	0.0%	12
13	Adminstration	320,843	18,405	302,438	1643.2%	396,908	425,316	(28,408)	-6.7%	13
14	Chief Financial Officer	121,947	242,553	(120,606)	-49.7%	448,400	421,465	26,935	6.4%	14
15	Continuous Improvement	4,225	-	4,225	0.0%	7,590	-	7,590	0.0%	15
16	Allocation for Overhead	(241,044)	(262,751)	21,707	-8.3%	(482,089)	(505,477)	23,388	-4.6%	16
17	Non-Cash Operating Expenses	1,736,297	1,736,272	25	0.0%	3,472,593	3,472,275	318	0.0%	17
18	Total operating expenses	3,376,130	3,605,829	(229,699)	-6.4%	7,355,596	7,514,395	(158,799)	-2.1%	18
19	Operating income (loss)	(3,210,666)	(3,603,417)	392,751	-10.9%	(7,188,326)	(7,507,425)	319,098	-4.3%	19
	Non-operating revenues (expense):									
20	Two-mill tax	21	647	(626)	-96.8%	21	6,339	(6,319)	-99.7%	20
21	Three-mill tax	592	532,643	(532,051)	-99.9%	49,458	612,844	(563,387)	-91.9%	21
22	Six-mill tax	6,893,694	538,356	6,355,338	1180.5%	7,342,480	619,486	6,722,994	1085.3%	22
23	Nine-mill tax	10,333,455	806,934	9,526,521	1180.6%	11,006,155	928,517	10,077,637	1085.3%	23
24	Interest income	-	3,506	(3,506)	-100.0%		7,843	(7,843)	-100.0%	24
25	Other Income	-	-	-	0.0%		-	-	0.0%	25
26	Interest expense	-	-	-	0.0%		-	-	0.0%	26
27	Operating and maintenance grants	-	-	-	0.0%	-	-	-	0.0%	27
28	Total non-operating revenues	17,227,762	1,882,086	15,345,676	815.4%	18,398,113	2,175,030	16,223,083	745.9%	28
29	Income before capital contributions	14,017,096	(1,721,331)	15,738,427	-914.3%	11,209,787	(5,332,395)	16,542,181	-310.2%	29
30	Capital contributions	1,684	-	1,684	0.0%	9,172	14,158	(4,987)	-35.2%	30
31	Change in net position	14,018,779	(1,721,331)	15,740,110	-914.4%	11,218,958	(5,318,237)	16,537,195	-311.0%	31
32	Net position, beginning of year					1,000,776,299	918,396,632	82,379,667	9.0%	32
33	Net position, end of year					1,011,995,257	913,078,395	98,916,862	10.8%	33

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10-YEAR FINANCIAL PLAN FOR WATER, SEWERAGE AND DRAINAGE SYSTEMS

BLACK & VEATCH PROJECT NO. 192043

PREPARED FOR

Sewerage & Water Board of New Orleans, Louisiana

3 MARCH 2017

BLACK & VEATCH
Building a world of difference.

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1.0 Executive Summary

The Sewerage and Water Board of New Orleans ("SWBNO") requested a comprehensive financial plan for its water, sewage and drainage systems to identify the financial resources required during the 2017-2026 study period. The report detailed herein presents the projected revenue and requirements for each system, identifies the shortages between what is needed and what may be funded, and provides options for eliminating the shortages. In addition, the SWBNO requested a detailed analysis of water system demand projections. This report presents a review of historical population and customer accounts, an analysis of water consumption, and development of future water consumption trends. Finally, the results of an analysis of the finished water flow meters are provided as well as review of non-revenue water. Provided herein is the details of the analysis and the findings of this study.

1.1 FINANCIAL PLAN

A ten-year financial plan was developed for the calendar years 2017 through 2026 ("study period"), based on an analysis of the existing rates and future approved rates of SWBNO's water and sewerage systems and the existing ad-valorem millage rates for the drainage system. The financial plan evaluates the adequacy of projected revenues under existing and future approved rates and existing millage rates in meeting the projected annual revenue requirements of the departments and identifies the magnitude of adjustments which may be necessary during the study period. The financial planning process involves the projection of revenues under the existing water and sewer rates and drainage mill rates, the projection of annual revenue requirements including reserves, the determination of annual revenue increases over the forecast period, and the preparation of a financial plan that outlines the SWBNO's ability to appropriately fund operating and capital requirements over the forecast period.

Directional, strategic, and policy guidance related to the development of the proposed financial plan was obtained from SWBNO staff. The following sections provide a summary of the key findings.

1.1.1 Projection of Revenue under Existing Rates

- SWBNO currently provides water treatment and distribution to 129,800 customers and sewer conveyance and treatment services to approximately 127,100 customers as of the end of 2015.
- SWBNO experienced annual growth in the number of water accounts of approximately 2.3 percent per year between 2012 and 2015; however that decreased to an average of 1.5 percent per year for 2014 and 2015. The total number of water customers served by SWBNO is anticipated to grow from 133,321 in 2017 to 142,421 in 2026 with the projected growth rate decreasing from 1.5 percent in 2016 to 0.5 percent by 2026. The number of sewage accounts increased approximately 2.2 percent per year between 2012 and 2015; but similar to water, only 1.4 percent in 2014 and 2015. The total number of sewage customers served by SWBNO is anticipated to grow from 130,431 in 2017 to 139,431 in 2026 with the projected rate decreasing from 1.4 percent in 2016 to 0.4 percent by 2026.
- Revenue is primarily derived from charges for treated water and sewer services, delinquent fees, plumbing inspection and license fees and other miscellaneous revenue. Revenues are projected over the forecast period by applying the existing and approved rate schedule to the projected customer accounts and sales volume. Based on the customer growth assumptions

used over the forecast period, water sales revenue is projected to increase from $94,466,300 in 2017 to $122,868,300 by 2026 and sewage revenue is projected to increase from $113,793,300 in 2017 to $149,323,300 by 2026. It is projected that drainage revenue will increase from $53,966,300 in 2017 to $64,494,700 by 2026. Other miscellaneous revenues for the combined systems are projected to remain constant at approximately $5,700,000 throughout the study period.

1.1.2 Projection of Revenue Requirements

- The revenue requirements for the water, sewerage and drainage systems include operating and maintenance expenses, debt service obligations and cash financing of capital projects.
- Operating and maintenance expenses include the costs of personal services, services and utilities, supplies and materials, equipment and furniture, repairs and facility maintenance, and other special charges associated with the utility's operations. Total operating and maintenance expenses less interest and depreciation for the combined systems are projected to increase from $189,060,500 in 2017 to $246,681,100 in 2026.
- Outstanding debt service on existing debt is anticipated to decrease from $39,499,000 in 2017 to $25,631,100 in 2026 for the combined systems. When debt service on future bond issues necessary to fund the proposed capital improvements is added, total debt service is expected to increase to $67,091,150 by 2026.

Figure 1 presents a summary of the estimated annual revenue requirements, including operating and maintenance expenses, outstanding debt service payments, and cash financing of capital projects, for the forecast period for the combined systems. Debt service payments include annual payments for the Gulf Opportunity Tax Credit Bond Loan Program and anticipated payments for the Southeast Louisiana (SELA) Urban Flood Control Project. Total revenue requirements are projected to increase from $268,058,900 in 2017 to $358,233,500 by 2026.

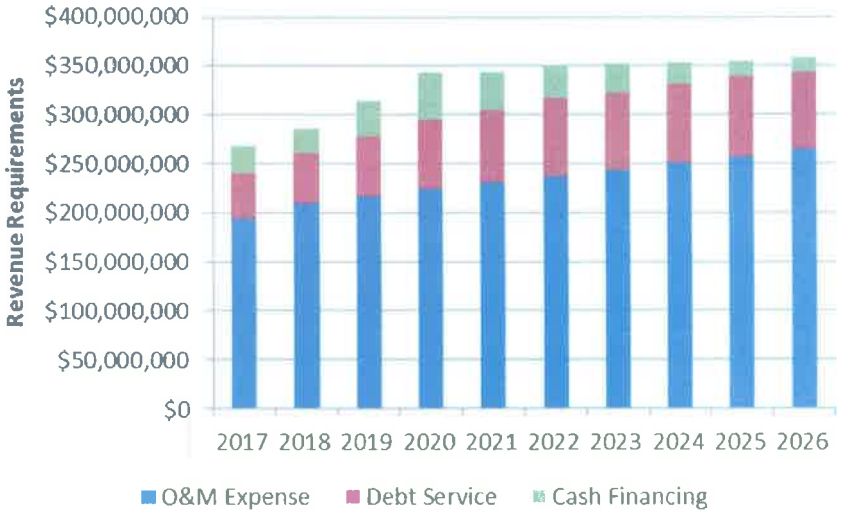


Figure 1 - Revenue Requirements (2017 - 2026)

1.1.3 Projection of Revenue Increases (Combined Utility System)

Analyses of projected revenues and revenue requirements for each system was conducted to determine the adequacy of the existing and approved utility rates, and to determine the magnitude of revenue increases needed for each system. **Table 1** presents a summary of the approved and proposed annual revenue adjustments for the water and sewer systems, respectively. The proposed revenue adjustments would provide the systems with the ability to adequately fund all planned operational and capital obligations, maintain 180 days of operation and maintenance expense and meet the minimum debt service coverage of 150 percent for senior debt.

Table 1 - Water and Sewer Revenue Adjustments

YEAR	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Water										
Approved Revenue Adjustments	10%	10%	10%	10%						
Proposed Revenue Adjustments					4%	4%	4%	4%	4%	4%
Sewer										
Approved Revenue Adjustments	10%	10%	10%	10%						
Proposed Revenue Adjustments					0%	0%	0%	0%	0%	0%

The drainage three-mill ad valorem tax was authorized for renewal in December of 2016. Even with this renewal, approximately $502,600,000 in capital projects will need to be deferred during the 10-year study. In order to completely fund the 10-year capital improvement plan, an alternative funding source would need to be identified for the drainage system. Section 6.2.3 of this report summarizes the amount of additional revenue required, the amount of the future bond issues necessary to fund the capital program and the proposed schedule to defer and payback capital over the 10-year period. Additional revenue of approximately $40,000,000 per year would be required and could be phased in from 2019 through 2022 in increments of $10,000,000 per year.

1.2 WATER DEMAND ANALYSIS

A review of historical customer demand and population was conducted to evaluate the relationship between the two and to establish the historical growth rates and patterns. In addition, the historical number of accounts by customer class, provided by two different sources from the SWBNO, was also evaluated to determine the historical growth rates and patterns. Based on these analyses, demand trends by customer class were examined in order to provide a clearer picture of historical water usage in New Orleans and to allow for more specific and accurate projections of future water demand. Future water demand was then projected using customer data dating back to 2008 in conjunction with consideration of historic and potential future population and accounts trends. In addition to the data analysis, the water production meters at the Carrollton Water Production Plant

(WPP) and the Algiers WPP were analyzed to estimate the accuracy of the inputs and to provide a level of confidence in the water supplied to the system.

1.2.1 Historical Customer Data

New Orleans' population was relatively stable from the 1990s until Hurricane Katrina hit in August 2005, causing a population reduction of 53 percent. The regrowth that has occurred has restored the population in New Orleans to approximately 80% of its pre-Katrina population. The detailed customer account data reviewed for the period 2008 – 2015 shows an increase in the number of residential, multi-residential and commercial customer accounts. In contrast, the number of industrial accounts has decreased over this time period. The direction of these trends is similar to those observed in other metropolitan areas across the U.S.

1.2.2 Water Consumption Analysis

Water consumption in New Orleans is dominated by single-family residential users and commercial users, which each represent greater than 45 percent of demand, or over 6 billion gallons of water, in an average year. Consistent with national trends, New Orleans has seen a decline in total water consumption by customers since 2008, even though the overall number of accounts has grown. A reduction in customer demand was notable in 2014. In 2013, SWBNO enacted the first rate increase since 2004 and this may have influenced customer behavior through a price elasticity of demand impact.

1.2.3 Future Demand Trends

Future demand trends were estimated by evaluating the recent individual trends in the number of accounts and the consumption per account for each customer classification. Black & Veatch then used its knowledge of national trends and local data to estimate future demand extending to the year 2026. In summary, total customer demand is expected to follow a flat to declining path over the next ten years.

- Although the number of residential accounts is expected to increase over the next ten years (in line with population growth rates), the average consumption per account is expected to decline leading to a slight decrease in overall water consumption by residential customers.
- The number of multi-residential accounts and the volume used in this sector showed an inversely proportional relationship during 2008 – 2015, which is very unusual. This suggested that this dataset requires more validation to prove out the reasons for the inverse relationship. In the interim, due to the uncertainty related to consumption data for multi-residential customer accounts, and also considering the small size of this customer class, the projected number of accounts was held constant at the 2015 value.
- Commercial consumption is projected to be flat over the next ten years. The number of commercial accounts is expected to grow, however recent trends have indicated a decline in the consumption per account which is projected to offset the future growth in accounts. Due to the large proportion of total customer demand represented by commercial customers, it is recommended that SWBNO develops a further understanding of the largest commercial customers in order to improve the understanding of the likely future consumption patterns by this customer class.

- Due to the impact of local and broader economic influences, future consumption by industrial customers is hard to predict with confidence. Recent consumption patterns have been highly erratic but have remained broadly flat between the beginning and the end of the 2008 – 2015 timeframe. Extrapolating recently observed trends, indicates that future consumption for the industrial customer class is likely to remain broadly flat, although large annual fluctuations are likely.

1.2.4 Water Production and Non-Revenue Water

There are two production water treatment plant facilities supplying water to New Orleans. These are the Carrollton and Algiers plants. The Carrollton plant is by far the largest water producer and also has the most complex method of volume calculation. It is critical to determine the accuracy of the metering associated with these facilities, therefore the production meters were analyzed to estimate the accuracy of the inputs to the water audit and to provide a level of confidence in the water supplied to the system.

1.2.5 Demand Scenario Summary & Recommendations

Future customer demands have been derived for each customer class. The projected aggregate customer demands show a slight decline in consumption over the 10-year projected period and are shown in **Figure 2;** the values in the figure represent average day (not peak) demand conditions. The uncertainty in the production flow volume calculations which derive the calculations of non-revenue water was also incorporated into the projections. A gross estimate of ± 15% is representative of the level of confidence in the overall numbers and this value of uncertainty was added to the calculations for the non-revenue water values (so for an average of 100 MGD, the non-revenue water would vary between 85 and 115 MGD).

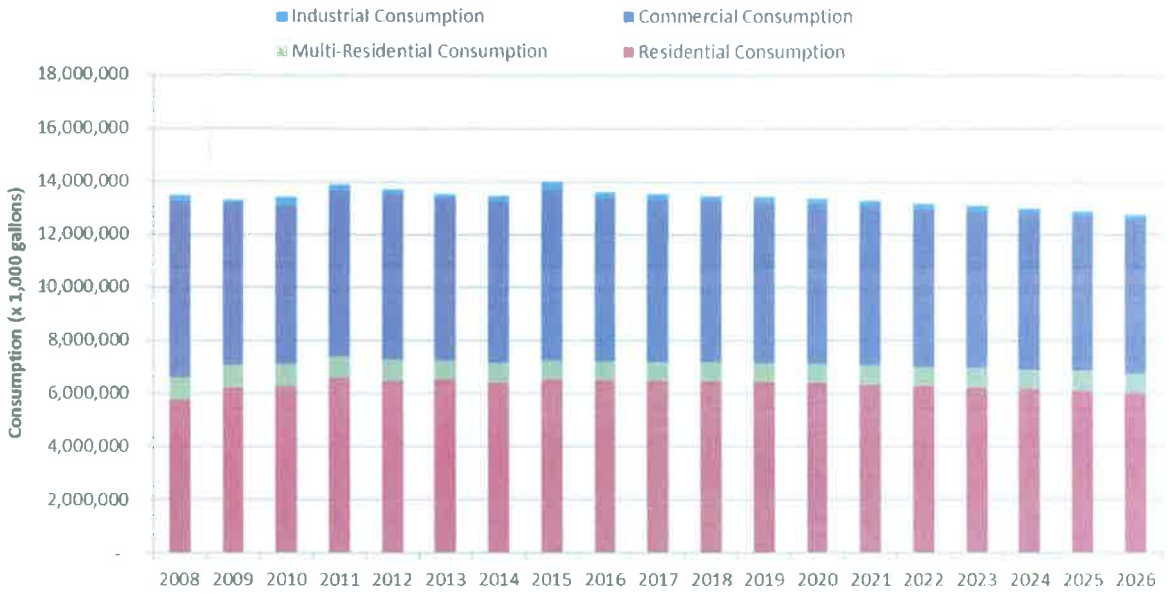


Figure 2 - Demand Forecasts by Customer Class

A trend line for the total system needs (i.e., production) was created based on the combination of the aggregate projected customer demands and the projected non-revenue water contribution factoring in the uncertainty bands described above. This resulted in the projected production needs (for average day conditions) shown in **Figure 3**.

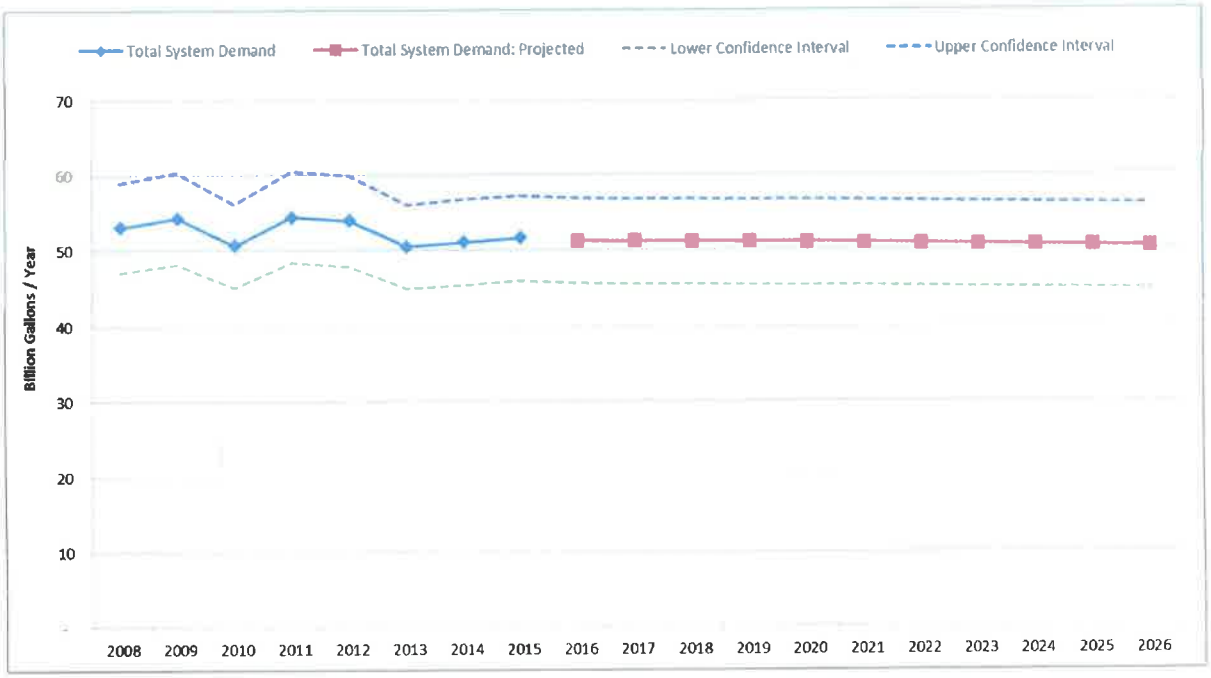


Figure 3 - Total System Demand (Production) with Confidence Intervals

2.0 Introduction

2.1 BACKGROUND

The water, sewerage, and drainage systems that service the City of New Orleans (City) are operated by the Sewerage and Water Board of New Orleans ("SWBNO") as a self-supporting enterprise fund utility. The systems date back to the late 19th century when City leaders moved to create drainage, water, and sewer systems to respond to flooding (drainage system), providing drinking water and fire protection (water system), and alleviate unsanitary conditions related to the disposal of human waste (sanitary sewer system). The Drainage Commission was organized in 1896 to develop a drainage master plan for the City. The Sewerage and Water Board was organized in 1899 to begin planning and construction the water and sanitary sewer systems that would provide service to the residential of New Orleans. The Drainage Commission was merged with the Sewerage and Water Board in 1903 and has continued to provide drainage, water and sanitary sewer service ever since as the Sewerage and Water Board of New Orleans.

The revenues are based upon distinct water and sewerage rate schedules and drainage ad valorem millage rates. To address the particular financial needs of each system and to assess the ability of current rates and charges to meet operating and capital needs, a comprehensive financial plan ("Study") was completed.

2.2 OBJECTIVES

This Study was prepared to examine both the financial situation of the water, sewerage and drainage systems and the water system demand placed on the systems. In detail, the purpose of this Study is to:

- Develop a 10-year financial plan that will
  - project and examine the future operating and capital financing requirements of the systems;
  - determine the adequacy of existing rates to recover the requirements;
  - recommend revenue adjustments for rates and charges of the water and sewerage systems to enable revenue sufficiency and financial viability; and
  - identify future revenue needs for the drainage system; and
- Develop a detailed analysis of water system demand that will
  - review historical customer data and population and develop a water demand forecast for a 10-year period; and
  - review the finished water flow meters at the treatment plants and provide recommendations for improvements.

2.3 GENERAL DESCRIPTION OF THE WATER, SEWERAGE AND DRAINAGE SYSTEMS

The SWBNO's water system serves approximately 129,800 customers, while the sewerage system serves approximately 127,100 customers. The water and sewerage systems serve a population of about 389,700 people.

The SWBNO has been providing drinking water to the City since the early 1900s and services the surrounding area with clean, treated water from the Mississippi River. The major elements of its water system include three river supply intakes, two treatment plants, storage facilities and distribution network. The Carrollton Water Production Plant (WPP) located on the East Bank of the Mississippi has a design capacity of 210 million gallons per day (mgd), while the Algiers WPP on the West Bank has a design capacity of 40 mgd. The SWBNO's distribution network consists of approximately 1,800 miles of pipes, ranging in size from 1 to 54 inches in diameter.

The sewerage system operated by the SWBNO dates back to the late 19th century when City leaders decided to create a sewerage system for collecting sanitary sewage to alleviate various diseases and improve the overall sanitary health of the City. The current system consists of approximately 1,536 miles of sewers ranging in size from 4-inch to 72-inch in diameter. There are four major pump stations and 79 smaller, automatically operated pump and lift stations. There are two treatment plants, the East Bank Plant and the West Bank Plant. The treatment capacity of the East Bank Plant is 122 mgd and the treatment capacity of the West Bank plant is 20 mgd (dry weather).

The drainage system operated by the SWBNO consists of approximately 90 miles of open canals, approximately 90 miles of covered, or below ground canals, 24 major drainage pump stations and 11 smaller (automatic) underpass pump stations.

The 25 cycle power plant operated by the SWBNO provides power to portions of the WPPs and approximately 60 percent of the drainage pumps.

2.4 DISCLAIMER

This Study was prepared for the Sewerage & Water Board of New Orleans (SWBNO) and is based on information that was provided by SWBNO and not within the control of Black & Veatch. Black & Veatch has not been requested to make an independent analysis, to verify the information provided to us, or to render an independent judgment of the validity of the information provided by others. As such, Black & Veatch cannot, and does not, guarantee the accuracy thereof to the extent that such information, data, or opinions were based on information provided by others.

In conducting our analyses and in forming an opinion of the projection of future financial operations summarized herein, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. Such assumptions and methodologies are summarized in this report and are believed to be appropriate for the purpose for which they are used. While Black & Veatch believes that 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.

FINANCIAL PLAN

3.0 System Revenue

3.1 WATER REVENUE

3.1.1 General

The SWBNO's water system derives revenue primarily from sales from water, delinquent fees, plumbing inspection and license fees, charges for disconnections and reconnections and other miscellaneous revenue.

As shown in **Figure 4**, total customer water consumption has declined since 2008 based on available monthly data from 2008 to 2016. At this aggregate level, there appears to be a diverging trend between the number of customer accounts, which is growing and total customer consumption which is flat to declining. In 2013, the SWBNO enacted the first rate increase since 2004 which may have influenced customer behavior through a price elasticity of demand impact. Figure 4 appears to show a step change in demand for 2014 onwards, consistent with the timing of the rate change.

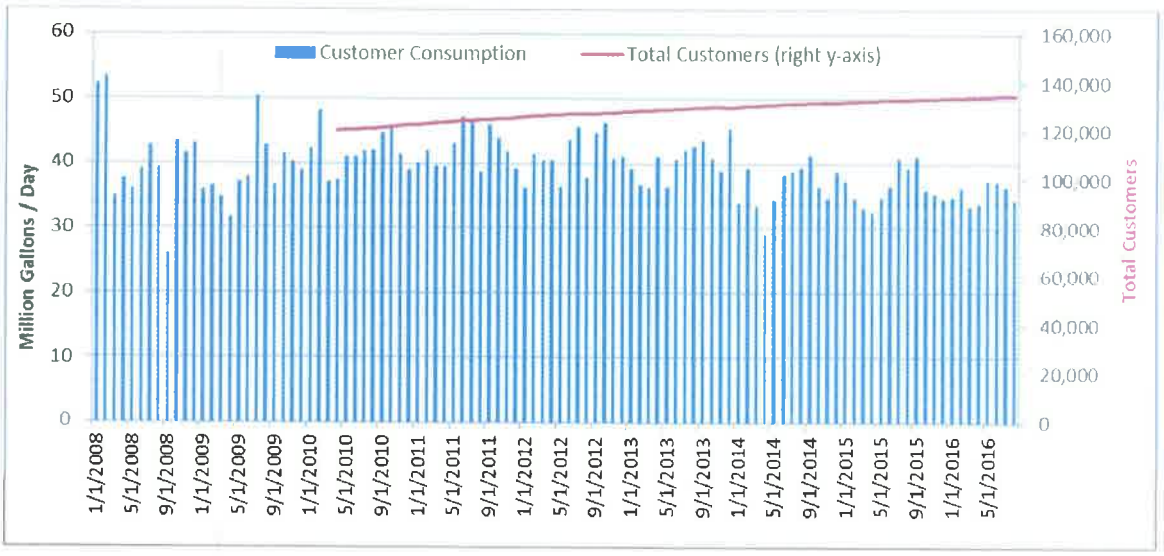


Figure 4 - Historical Water Consumption and Water Customers Trend

Section 9.0 of this report presents our approach to future water demand projections using a linear trend for 2008 through 2015. While this method may be appropriate for estimating future possible water demands and production requirements, this method generally results in liberal estimates for projecting future water sales as it doesn't give higher significance to the most recent 2-3 years of data, recognize the potential slow-down in the growth of the customer base, or consider possible decreased consumption due to rate fatigue by consumers. Therefore, the projections for the growth in the customer base and consumption for this section are primarily based on trends from 2014 and 2015 and reflect a reduction in customer growth rates over time and the impact of customer resistance on consumption due to water conservation efforts, high-efficiency appliances, decreasing number of household members and rate fatigue.

3.1.2 Customers and Growth

An analysis of the customer base indicates minimal immediate growth in new customer connections to the water system, approximatively 1.5% each year over the last two years. As a result, the forecast of residential customer growth is projected to increase approximately 1.4 percent in 2016 and decrease to a growth rate of about 0.5 percent by 2026. The number of non-residential accounts, which represents approximately 9 percent of the total number of customers, is expected to remain constant through 2026. In 2015, the SWBNO provided service to 117,729 residential customers and 12,080 non-residential customers. The total number of water customers served by the SWBNO is anticipated to grow from 133,321 in 2017 to 142,421 in 2026. **Figure 5** summarizes historical and projected water customers served by SWBNO.

Figure 5 - Historical and Projected Water Customers

3.1.3 Water Consumption

Water consumption is projected to decrease slightly over the forecast period. Over the past few years, the SWBNO and other water utilities operating in the United States have experienced minimal to no growth in water usage and in some cases, a decline in water usage. As a result, a resistance factor is applied to the projected annual unit usage to reflect the impact of price elasticity and the trend of decreasing per capita demand due to conservation efforts and more efficient water fixtures. The volume of water sales is projected to decrease from 14,165,800,000 gallons in 2017 to 13,685,300,000 gallons by 2026. **Figure 6** summarizes the historical and projected volume of water sales over the forecast period.

Figure 6 - Historical and Projected Water Usage

3.1.4 Water Revenue

The existing water rate structure includes a meter size based monthly fixed charge and a four-tier declining volumetric rate, with the exception of the first block, which may be considered a life-line related charge. The rate structure also includes a flat rate by meter size for fire service.

Projection of retail water sales revenue under existing rates, for 2017 – 2026, is based on the projection of customer accounts and water sales volume discussed in Sections 3.1.2 and 3.1.3. Anticipated water sales revenue shown for 2016 is based on preliminary year-end estimates provided by the SWBNO. In 2012, the New Orleans City Council approved eight consecutive annual 10 percent water rate increases beginning January 1, 2013. As shown in **Figure 7**, actual revenue increases in 2014 and 2015 were above the 10 percent rate increase. This increase in revenue above the proposed rate increase is primarily related to the growth in the customer base. Water sales revenue derived from customer service and volumetric charges under existing rates are projected to increase approximately 9.9 percent annually from 2017 through 2020, primarily due to the annual 10 percent revenue increases through 2020, and decrease slightly from 2021 through 2026 due to the projected decrease in the growth of the customer base and continued decrease in water consumption per account.

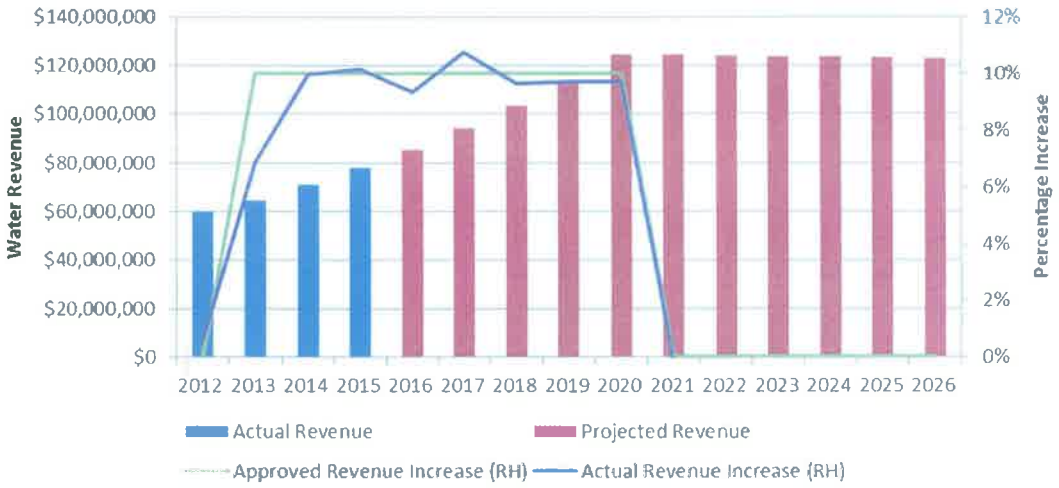


Figure 7 - Historical and Projected Water Revenue

3.2 SEWER REVENUE

3.2.1 General

The SWBNO's sewerage system derives revenue primarily from sewerage service charges, delinquent fees, plumbing inspection and license fees, and other miscellaneous revenue.

3.2.2 Customers and Growth

Similar to the water system, the customer base indicates growth of new customer connection to sewerage system of approximately 1.4% each year over the last two years. As such, the forecast of residential customer growth is projected to increase approximately 1.4 percent in 2016 and decrease to a growth rate of about 0.5 percent by 2026. The number of non-residential customers, which represents approximately 8 percent of the total number is customers, is expected to remain constant throughout the study period. In 2015, the SWBNO provided sewer service to 116,858 residential customers and 10,247 non-residential customers. The total number of sewage customers served by the SWBNO is anticipated to grow from 130,431 in 2017 to 139,431 in 2026. **Figure 8** summarizes historical and projected sewage customers served by SWBNO.

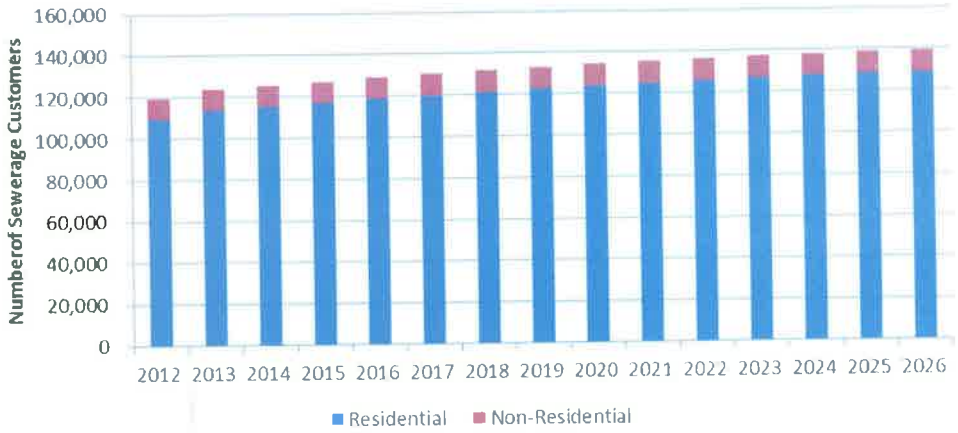


Figure 8 - Historical and Projected Sewerage Customer Accounts

3.2.3 Sewer Sales

As 85 percent of residential water usage and 100 percent of non-residential water 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 volume of sewage sales is projected to decrease from 11,686,600,000 gallons in 2017 to 11,101,900,000, gallons in 2026.

Figure 9 summarizes the historical and projected volume of sewage sales over the forecast period.

Figure 9 - Historical and Projected Sewerage Billed Volumes

3.2.4 Sewerage Revenue

The existing sewerage rate structure includes a meter size based monthly fixed charge and a flat volume charge.

Projection of retail sewerage revenue under existing rates, for 2017 – 2026, is based on the projection of customer accounts and sewerage volume discussed in Sections 3.2.2 and 3.2.3.

Anticipated sewerage revenue shown for 2016 is based on preliminary year-end estimates provided by the SWBNO. In 2012, the New Orleans City Council approved eight consecutive annual 10 percent sewerage rate increases beginning January 1, 2013. As shown in **Figure 10**, actual revenue increases in 2014 and 2015 were above the 10 percent rate increase. This increase in revenue above the proposed rate increase is primarily related to the growth in the customer base. Sewerage revenue derived from customer service and volumetric charges under existing rates are projected to increase approximately 9.6 percent annually from 2017 through 2020, primarily due to the annual 10 percent revenue increases through 2020, and decrease slightly from 2021 through 2026 due to the projected decrease in the growth of the customer base and continued decrease in contributed sewage flow per account.

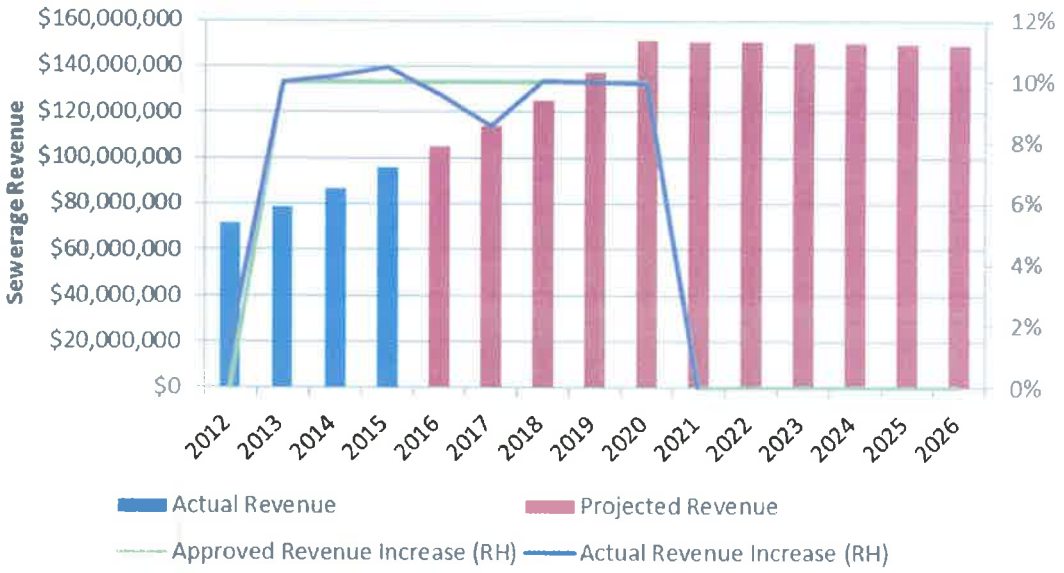


Figure 10 - Historical and Projected Sewerage Revenue

3.3 DRAINAGE REVENUE

3.3.1 General

The SWBNO's drainage system derives revenue primarily from the three-mill, six-mill and nine-mill ad valorem taxes. Other sources of revenue include interest income and other miscellaneous revenue.

3.3.2 Drainage Revenue

The SWBNO currently has three authorized millages in place. The three-mill was originally authorized in 1967 to be used solely for operations and capital costs of the drainage system. It was reauthorized by the voters in December 2016. The six-mill was authorized in 1978 and the nine-mill was authorized in 1982. The existing millage rates and expiration dates are shown in **Table 2**. The total millage for all three is 16.43.

Table 2 - Drainage Ad-Valorem Taxes

	MILLAGE RATE	EXPIRATION DATE
Three-Mill	4.66	2046
Six – Mill	4.71	2026
Nine-Mill	7.06	2031

As shown in **Figure 11**, projected drainage revenue is projected to increase from $53,966,300 in 2017 to $64,494,700 in 2026. Projected drainage revenue for 2016 – 2026 is based on estimates provided by the SWBNO.

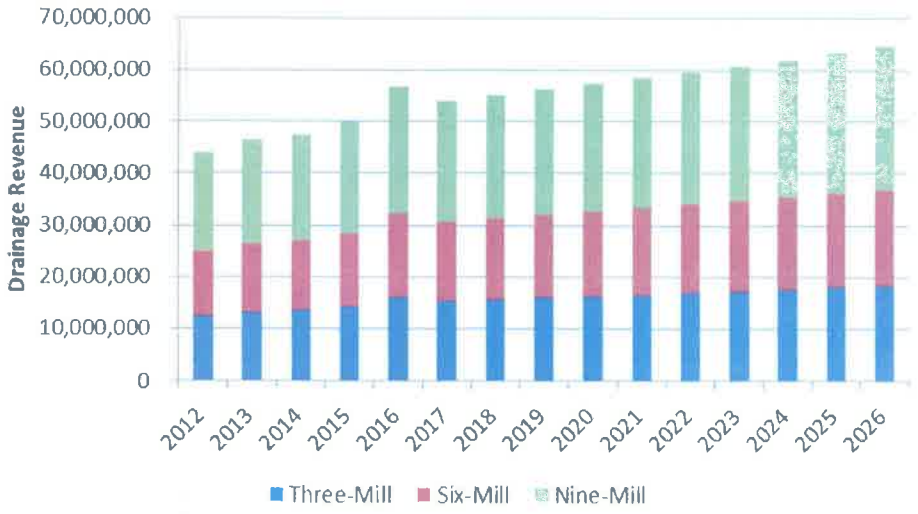


Figure 11 - Historical and Projected Drainage Revenue

3.4 OTHER REVENUE

3.4.1 General

In addition to sales and millage revenue, other revenue sources must be considered in this analysis. Other revenue sources include interest earned on available funds, participation by others, house connection charges, fire connections, fire hydrant relocations, plumbing inspection and license fees, sanitation charge collection fees, and various other income sources.

3.4.2 Other Revenue

It is projected that other revenue for the SWBNO will remain constant at about $5,800,000 from 2017 through 2026. Other revenue projections include additional revenue of $1,000,000 from the City of New Orleans to reimburse SWBNO for billing and collecting sanitation charges. Projected other revenue for 2017 – 2026 is based on the SWBNO's 2016 budget. Anticipated other revenue shown for 2016 is based on preliminary year-end estimates provided by the SWBNO.

Figure 12 presents a summary of utility system other revenues over the forecast period. Historical revenue includes revenue from interest income and excludes revenue from FEMA operation and maintenance grants. Projected revenue excludes interest income which is shown in Table 7, Table 8, and Table 9 in Section 5.2.

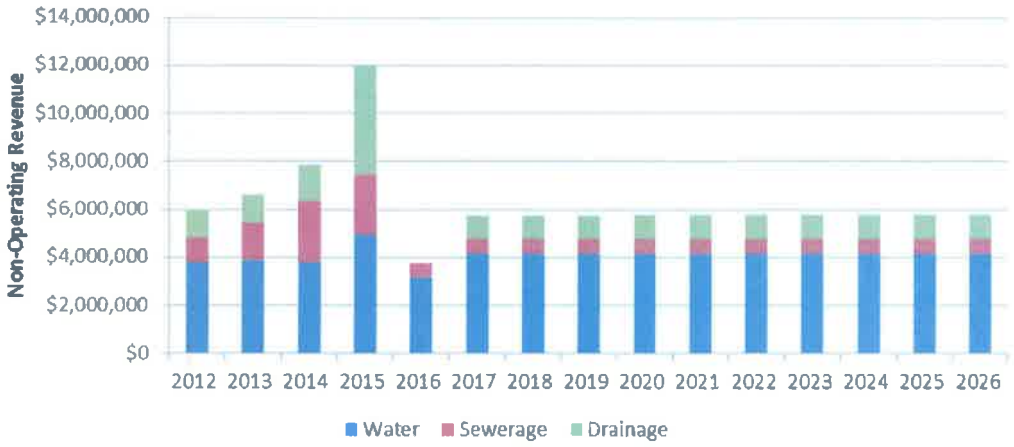


Figure 12 - Historical and Projected Other Revenue

4.0 System Revenue Requirements

The revenue required to provide adequately for the continued operation of the three systems must be sufficient to meet the cash requirements for system operations. Revenue requirements include: (1) system operation and maintenance expense; (2) debt service on existing and proposed loan and bonds; and (3) expenditures for major capital improvements met from annual revenues.

This report presents two alternatives:

1. Revenue under Existing Rates which assumes the following:
   a. No revenue increases for water and sewerage from 2021 through 2026; and
2. Revenue under Proposed Rates which assumes the following:
   a. Additional revenue increases for water and sewerage from 2021 through 2026 as needed; and
   b. Additional revenue source for drainage becoming effective 2019 and phased in over four years.

This section of the report presents projected revenue requirements under existing rates (alternative 1). The revised revenue requirements under proposed rates (alternative 2) are presented in Section 6.2.

4.1 OPERATIONS AND MAINTENANCE

4.1.1 General

The O&M expenses for the SWBNO include the annual expenses associated with water supply; water treatment, storage and distribution including pumping and power; meters and services; billing, collection, and accounting; sewage collection and transmission; sewage and drainage pumping stations; wastewater treatment services; and administrative and general services. These expenses include personnel costs (salaries and benefits), costs for material and supplies, costs of utilities, and contract services.

4.1.2 Operating and Maintenance Expenses under Existing Rates

Projections of future operating and maintenance expenses are based on 2017 budgeted expense levels as provided by the SWBNO and reflect an annual escalation factor of 3% through 2026. Anticipated operating and maintenance expenses shown for 2016 was based on the SWBNO's preliminary estimates for 2016 year end.

Included in the projected operation and maintenance expense for the drainage system is anticipated operating costs for the following:

- $4,000,000 per year beginning in 2018 for additional operating expenses associated with existing facilities;
- $3,200,000 in 2018 and escalating 3% each year after that for operating expenses associated with the lake front permanent pump and storm surge closure stations that will be completed by June 1, 2017;

- $1,000,000 in 2019 and escalating 3% each year after that for operating expenses associated with the SELA canals; and
- $2,000,000 per year beginning in 2018 for operating expenses associated with new green infrastructure.

Total operating and maintenance expenses for the systems are projected to increase from $189,060,500 in 2017 to $246,681,100 in 2026. **Figure 13** summarizes the O&M expenses over the study period for each system.

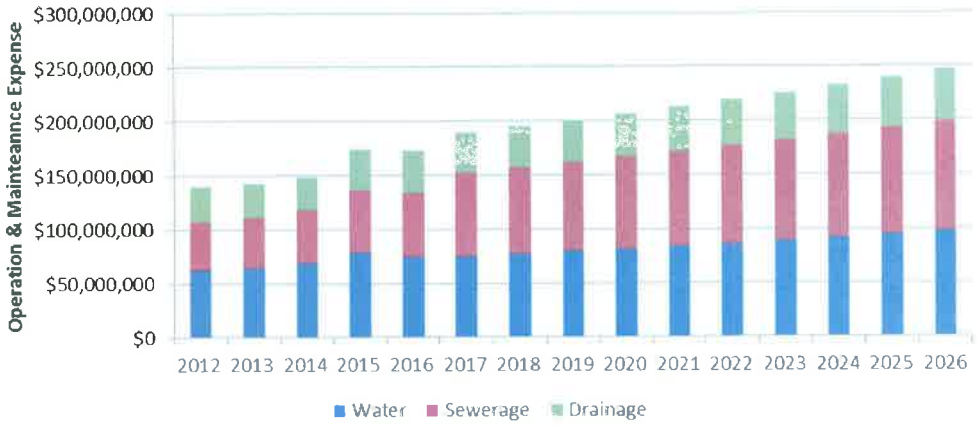


Figure 13 - Historical and Projected Operation and Maintenance Expense

Based on a review of historical operation and maintenance expense from 2011 through 2015, the water utility's share has been about 46 percent of the total operating budget, with the sewerage utility allocated approximately 32 percent and the remaining 22 percent allocated to the drainage utility. Projected operating expenses for 2017 reflect a shift in administrative and general expenses from water and drainage to sewerage. Typically the allocation of operating expenses between the three systems should be reviewed and evaluated on a regular basis as to reflect changes in costs between the three systems as accurately as possible. Since it has been over five years since the allocation of operating costs was reviewed, it is recommended that the SWBNO consider conducting an evaluation of the existing allocations and update as necessary.

4.1.3 Additional Operation and Maintenance Spending

SWBNO staff has indicated that spending on operation and maintenance is not sufficient to ensure the long-term viability of the water, sewerage and drainage systems. As a result, the availability of revenue from rates to fund additional operating expenses was examined.

To be explained in Section 4.3.2, the existing revenue sources for the water and drainage systems are not sufficient to fund the 10-year capital improvement program and therefore, projects will need to be deferred until additional funding sources are identified. Until those funding sources are available, revenue is not available to fund additional operating expenses.

The sewerage utility does have the capacity to finance the 10-year capital program completely with debt which would allow all revenue in excess of 180 days of annual operating expenses to be used for additional operating expenses. The additional spending available for the sewerage utility for operating costs under this option is shown in **Table 3**. Two alternatives are also included in Table 3; reducing the amount of debt financing to 90% of the sewerage capital costs with the remaining 10% funded from revenue from rates, and reducing the amount of debt financing to 80% with cash financing of the remaining 20%. The additional amount of operation and maintenance spending for the sewerage utility ranges from $71,000,000 if the capital program is funded entirely with debt to $5,000,000 if 20 percent of the capital program is cash financing and the remaining 80 percent funded with debt. This analysis assumed that there are no revenue increases after 2020. If additional revenue increases are implemented beginning in 2021, then additional spending on operation and maintenance expenses could be larger than the amounts shown in Table 3.

Table 3 - Additional Sewerage Operation and Maintenance Spending

	100% DEBT FINANCING	90% DEBT FINANCING	80% DEBT FINANCING
2017	$0	$0	$0
2018	$7,000,000	$3,000,000	$0
2019	$12,000,000	$7,000,000	$3,000,000
2020	$18,000,000	$14,000,000	$2,000,000
2021	$16,000,000	$14,000,000	$0
2022	$12,000,000	$0	$0
2023	$6,000,000	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
Total Additional Spending Available	**$71,000,000**	**$38,000,000**	**$5,000,000**

4.2 DEBT SERVICE

4.2.1 General

The existing debt service costs for the water system consists of principal and interest payments on the $103,525,000 Water Revenue and Refunding Bonds, Series 2014 and $100,000,000 Water Revenue Bonds, Series 2015. Debt service costs for the sewerage system consist of principal and interest payments related to the $9,000,000 Sewerage Service Revenue Bonds, Series 2011; $158,990,000 Sewerage Service Revenue and Refunding Bonds, Series 2014; and $100,000,000 Sewerage Service Revenue Bonds, Series 2015. The existing debt service costs for the drainage system consists of the $14,900,000 Drainage System Refunding Bonds, Series 2014.

4.2.2 Existing Debt Service Requirements

Debt service costs have two components: existing debt service and proposed debt service. Existing debt service costs are comprised of principal and interest payment related to the bond issues

mentioned in Section 4.2.1. The proposed debt service is based on the principal and interest payments for anticipated future bond issuances. **Figure 14** summarizes the debt service obligations on outstanding debt over the forecast period.

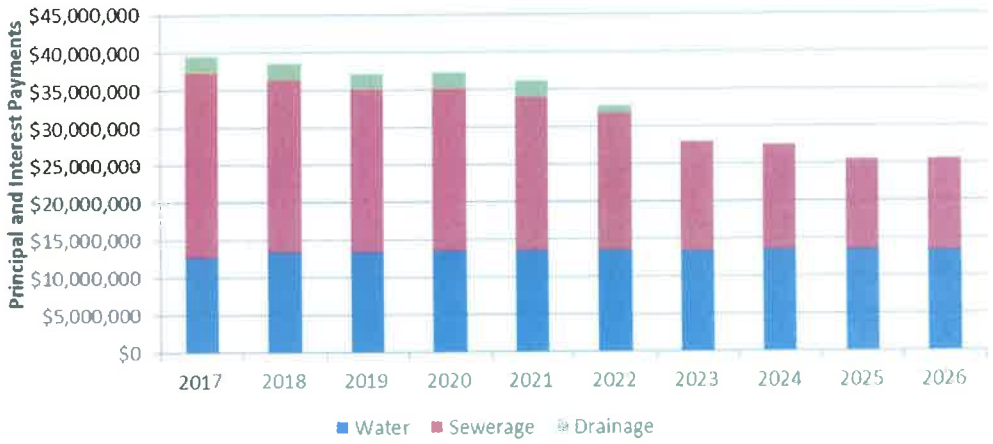


Figure 14 - Existing Debt Service Obligations

4.2.3 Proposed Debt Service Requirements Under Existing Rates

To adequately fund the proposed capital improvements, additional revenue bond issues will be necessary. The proposed bond issue amounts are shown in **Table 4.** Projected water and sewerage bonds are assumed to be sold at an average annual interest rate of 5.5 percent for a term of 30 years, while proposed drainage bonds assume an average interest rate of 4 percent and a term of 20 years. It is assumed that the water revenue bonds will include 1 year of capitalized interest.

Table 4 - Proposed Revenue Bond Issue Amounts

YEAR	WATER [(a)]	SEWERAGE	DRAINGE [(a)]
2017	$0	$0	$0
2018	$116,000,000	$139,000,000	$27,000,000
2019	$0	$0	$0
2020	$30,000,000	$100,000,000	$0
2021	$0	$0	$0
2022	$0	$79,000,000	$0
2023	$0	$0	$0
2024	$0	$85,000,000	$0
2025	$0	$0	$0
2026	$0	$40,000,000	$0
Total Issue Amount	**$146,000,000**	**$443,000,000**	**$27,000,000**

[(a)] Amount of Revenue Bond Issue limited by debt capacity.

4.3 CAPITAL IMPROVEMENT PLAN

4.3.1 General

The SWBNO's 2017 -2026 Capital Program presents anticipated projects and costs for recurring annual capital improvements and major improvements. The 10-year program is summarized in **Table 5** and is based on the program that was adopted in December 2016.

Table 5 - 2017-2026 Capital Program

	WATER	SEWERAGE	DRAINAGE
Reinvestment in Assets	$605,138,300	$512,066,800	$391,750,400
Major Capital Additions	$393,720,000	$153,050,000	$516,365,200
Total Improvements	$998,858,300	$665,116,800	$908,115,600

4.3.2 Capital Improvement Plan Under Existing Rates

A summary of proposed capital improvements expenditures and funding sources over the forecast period under the existing rates is presented in **Table 6** for each system. The amount of Funds Available at Beginning of Year, shown on Line 1, is based on audited data provided by the SWBNO.

Projected revenue bond proceeds are shown on Line 2. The amounts 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. It is anticipated that the SWBNO will not have the capacity to issue additional bonds for Drainage system improvements during the study period.

Financing of the major capital improvement program anticipates the transfer of operating revenue as shown on Line 3. Other sources 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 U.S. Army Corps of Engineers (COE) and the Federal Emergency Management Agency (FEMA). Interest earnings recognize an assumed 1.0 percent average annual interest rate. Line 6 shows the projected major capital improvement funds available for the 10-year study period.

Line 7 shows the combined total of the projected Reinvestment in Assets and Major Capital Additions to be funded. These figures represent the SWBNO's 2017-2026 Capital Program. Due to constraints on revenue, it is anticipated that the water and drainage capital projects during the 10-year period will exceed the amount of funding available and some projects will need to be deferred. This deferral is shown on Line 8. Estimated issuance costs and capitalized interest related to the proposed bond issue amounts are shown on Lines 9 and 10.

Table 6 - Capital Improvement Program Financing

LINE NO.	DESCRIPTION	WATER	SEWERAGE	DRAINAGE
1	Funds Available at the Beginning of Year (2017)	$106,959,700	$90,802,900	$5,010,900
2	Revenue Bond Proceeds	146,000,000	443,000,000	27,000,000
3	Operation Fund Transfers	152,000,000	128,000,000	16,000,000
4	Participation by Others	250,464,000	56,509,000	357,958,000
5	Interest Income	2,471,400	4,433,200	51,600
6	**Total Funds Available**	**$657,895,100**	**$722,745,100**	**$406,020,500**
7	Capital Improvements	998,858,300	665,116,800	908,115,600
8	Deferred Capital Improvements	-361,800,000	0	-502,600,000
9	Bond Issuance Expense	2,190,000	6,645,000	405,000
10	Capitalized Interest Requirement	8,030,000	0	0
11	Revenue Bond Reserve Fund	10,598,100	30,480,700	0
12	**Total Application of Funds**	**$657,876,400**	**$702,242,500**	**$405,920,600**
13	End of Year Balance (2026)	$18,700	$20,502,600	$99,900

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 and the net End of Year Balance is shown on Line 13.

5.0 Operating Results under Existing Rates

5.1 GENERAL

A financial statement for each system was generated based on the revenues under existing rates and the revenue requirements detailed in the section above. The financial statement of revenues under existing rates and revenue requirements helps determine the level of revenue increases necessary to meet all of the SWBNO's financial obligations.

5.2 OPERATING RESULTS UNDER EXISTING RATES

Table 7 is a statement of financial operations for the water system under existing rates. The Total Additional Revenue on Line 2 reflects the future annual revenue from the water increases approved by City Council to go into effect January 1 of 2017 through 2020. The 2014 General Water Revenue Bond Resolution ("General Resolution") requires an Operating Reserve Fund of 90 days of annual operating expenses (90 days cash on hand); however the SWBNO's Financial Management Policy requires an Operating Reserve Fund of not less than 180 days. As shown on Line 27 of Table 7, the ending cash balances will provide for 180 days of operation and maintenance expense in all years.

Table 7 also illustrates the Water Department's ability to provide 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. 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.

In addition, the General Resolution further prescribes that additional parity revenue bonds may be issued if net revenue from a previous year test is equal to at least 125 percent of the maximum annual principal and interest payments for senior debt and 110 percent for senior and subordinate debt.

As shown in Lines 28 – 31 of Table 7, the indicated projected revenue will provide sufficient net revenue to meet coverage requirements during the study period.

Table 7 - Water Financial Statement under Existing Rates

Line No.	Description	Fiscal Year Ending December 31, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
		$	$	$	$	$	$	$	$	$	$
1	Revenue from Charges	86,002,900	85,826,700	85,648,700	85,465,200	85,277,800	85,082,800	84,880,900	84,670,000	84,448,600	84,252,000
2	Total Additional Revenue (a)	8,463,400	17,741,900	27,973,900	39,180,200	39,093,100	39,002,500	38,908,700	38,810,700	38,707,700	38,616,300
3	Total Service Charge Revenue	94,466,300	103,568,600	113,622,600	124,645,400	124,370,900	124,085,300	123,789,600	123,480,700	123,156,300	122,868,300
4	Other Operating Revenue	7,168,500	7,230,700	7,306,600	7,350,500	7,381,100	7,404,600	7,413,300	7,407,600	7,391,400	7,360,600
5	Total Operating Revenue	101,634,800	110,799,300	120,929,200	131,995,900	131,752,000	131,489,900	131,202,900	130,888,300	130,547,700	130,228,900
6	Operation & Maintenance	(74,437,100)	(76,670,200)	(78,970,300)	(81,339,400)	(83,779,600)	(86,293,000)	(88,881,800)	(91,548,300)	(94,294,700)	(97,123,500)
7	Non-Cash Expense Accruals	(1,889,300)	(2,071,400)	(2,272,500)	(2,492,900)	(2,487,400)	(2,481,700)	(2,475,800)	(2,469,600)	(2,463,100)	(2,457,400)
8	Net Operating Revenue	25,308,400	32,057,700	39,686,400	48,163,600	45,485,000	42,715,200	39,845,300	36,870,400	33,789,900	30,648,000
	Debt Service										
	Senior Lien Revenue Bonds										
9	Existing	(12,640,600)	(13,333,600)	(13,394,600)	(13,473,600)	(13,471,300)	(13,470,400)	(13,470,100)	(13,470,800)	(13,470,500)	(13,468,800)
10	Projected	0	0	(3,508,500)	(8,420,400)	(9,327,800)	(10,598,100)	(10,598,100)	(10,598,100)	(10,598,100)	(10,598,100)
11	Total Senior Lien Revenue Bonds	(12,640,600)	(13,333,600)	(16,903,100)	(21,894,000)	(22,799,100)	(24,068,500)	(24,068,200)	(24,068,900)	(24,068,600)	(24,066,900)
	Subordinate Revenue Bonds										
12	Gulf Opportunity Zone Act Loan	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)	(639,900)	(320,000)
13	Total Debt Service	(13,280,500)	(13,973,500)	(17,543,000)	(22,533,900)	(23,439,000)	(24,708,400)	(24,708,100)	(24,708,800)	(24,708,500)	(24,386,900)
14	Other Non-Operating Revenue	400,500	400,500	400,500	400,500	400,500	400,500	400,500	400,500	400,500	400,500
15	Transfer to Construction	(11,000,000)	(15,000,000)	(19,000,000)	(23,000,000)	(19,000,000)	(16,000,000)	(15,000,000)	(13,000,000)	(11,000,000)	(10,000,000)
16	Due from/(to) Other Departments	(436,000)	(436,000)	0	0	0	0	0	0	0	0
17	Transfer to Operating Reserve Fund	0	0	0	(174,000)	(584,200)	(601,700)	(619,700)	(638,300)	(657,500)	(677,200)
18	Transfer from/(to) Rate Stabilization Fund	0	0	0	0	0	0	0	0	0	0
19	Net Annual Balance	992,400	3,048,700	3,543,900	2,856,200	2,862,300	1,805,600	(82,000)	(1,076,200)	(2,175,600)	(4,015,600)
20	Beginning of Year Cash Balance (b)	6,830,300	7,822,700	10,871,400	14,415,300	17,271,500	20,133,800	21,939,400	21,857,400	20,781,200	18,605,600
21	End of Year Balance	7,822,700	10,871,400	14,415,300	17,271,500	20,133,800	21,939,400	21,857,400	20,781,200	18,605,600	14,590,000
22	Beginning of Year Cash Balance (b)	37,307,145	38,299,545	41,348,245	44,892,145	47,922,345	51,368,845	53,776,145	54,313,845	53,875,945	52,357,845
23	Customer Deposits	0	0	0	0	0	0	0	0	0	0
24	Operating Reserve Fund	0	0	0	174,000	584,200	601,700	619,700	638,300	657,500	677,200
25	Net annual Balance	992,400	3,048,700	3,543,900	2,856,200	2,862,300	1,805,600	(82,000)	(1,076,200)	(2,175,600)	(4,015,600)
26	End of Year Balance	38,299,545	41,348,245	44,892,145	47,922,345	51,368,845	53,776,145	54,313,845	53,875,945	52,357,845	49,019,445
27	Days of O&M Cash on Hand	183	192	202	209	217	221	217	209	198	180
	Coverage Requirements										
	Rate Covenant Coverage										
28	Senior Debt (c)	204.6%	244.1%	238.1%	222.3%	210.4%	187.8%	175.8%	163.4%	150.6%	151.9%
29	All Debt (d)	194.7%	232.9%	229.4%	216.0%	204.7%	182.9%	171.3%	159.2%	146.7%	149.9%
	Additional Bond Coverage										
30	Senior Debt (c)	410.2%	248.1%	231.0%	202.8%	202.2%	199.3%	187.8%	175.8%	163.4%	150.6%
31	All Debt (d)	392.1%	241.1%	224.4%	197.5%	197.0%	194.2%	182.9%	171.3%	159.2%	146.7%

(a) Reflects revenue from an eight-year series of annual 10% rate increases effective January 1, 2013, adopted by the City Council in 2012

(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

(c) The General Bond Resolution requires net revenue to equal or exceed 125% of debt service

(d) The General Bond Resolution requires net revenue to equal or exceed 110% of debt service

Table 8 is a statement of financial operations for the sewerage system under existing rates. As shown on Line 26 of Table 8, the ending cash balances will provide for 180 days of operation and maintenance expense in all years except 2017. Table 8 also illustrates the sewerage system's ability to provide sufficient debt service coverage to meet the bond covenant requirements for the issuance of parity revenue bonds. As shown in Lines 27 – 30 of Table 8, the indicated projected revenue will provide sufficient net revenue to meet coverage requirements during the study period.

Table 8 - Sewerage Financial Statement Under Existing Rates

Line No.	Description	Fiscal Year Ending December 31, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
		$	$	$	$	$	$	$	$	$	$
1	Revenue from Charges	103,675,100	103,811,900	103,947,600	104,064,000	103,943,100	103,776,800	103,563,900	103,306,800	103,006,400	102,661,700
2	Total Additional Revenue (a)	10,118,200	21,382,600	33,743,200	47,310,100	47,254,400	47,177,000	47,079,200	46,980,200	46,821,100	46,661,600
3	Total Service Charge Revenue	113,793,300	125,194,500	137,690,800	151,374,100	151,197,500	150,954,400	150,643,100	150,287,000	149,827,500	149,323,300
4	Other Operating Revenue	4,076,900	4,146,000	4,187,000	4,229,800	4,275,800	4,325,300	4,378,600	4,436,000	4,497,900	4,564,700
5	Total Operating Revenue	117,870,200	129,340,500	141,877,800	155,603,900	155,473,300	155,279,700	155,021,700	154,703,000	154,325,400	153,888,000
6	Operation & Maintenance	(77,999,300)	(80,339,300)	(82,749,500)	(85,232,000)	(87,789,000)	(90,422,700)	(93,135,400)	(95,929,500)	(98,807,400)	(101,771,600)
7	Non-Cash Expense Accruals	(2,275,900)	(2,503,900)	(2,753,800)	(3,027,500)	(3,024,000)	(3,019,100)	(3,012,900)	(3,005,300)	(2,996,600)	(2,986,500)
8	Net Operating Revenue	37,595,000	46,497,300	56,374,500	67,344,400	64,660,300	61,837,900	58,873,400	55,768,200	52,521,400	49,129,900
	Debt Service										
	Senior Lien Revenue Bonds										
9	Existing	(24,806,500)	(23,139,100)	(21,714,000)	(21,730,500)	(20,552,500)	(18,435,000)	(14,525,600)	(14,074,300)	(12,162,600)	(12,162,300)
10	Projected	0	(3,985,000)	(9,563,900)	(12,430,800)	(16,444,400)	(18,709,200)	(21,880,000)	(24,316,900)	(27,728,500)	(28,875,300)
11	Subtotal	(24,806,500)	(27,124,100)	(31,277,900)	(34,161,300)	(36,996,900)	(37,144,200)	(36,405,600)	(38,391,200)	(39,891,100)	(41,037,600)
	Subordinate Revenue Bonds										
12	Gulf Opportunity Zone Act Loan	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(6,235,200)	(3,117,600)
13	Total Debt Service	(31,041,700)	(33,359,300)	(37,513,100)	(40,396,500)	(43,232,100)	(43,379,400)	(42,640,800)	(44,626,400)	(46,126,300)	(44,155,200)
14	Other Non-Operating Revenue	462,100	462,100	462,100	462,100	462,100	462,100	462,100	462,100	462,100	462,100
15	Transfer to Construction	0	(11,000,000)	(18,000,000)	(26,000,000)	(20,000,000)	(18,000,000)	(16,000,000)	(10,000,000)	(5,000,000)	(4,000,000)
16	Due from/(to) Other Departments	(486,000)	0	0	0	0	0	0	0	0	0
17	Transfer to Operating Reserve Fund	(182,300)	(4,742,000)	(577,000)	(594,300)	(612,100)	(630,500)	(649,400)	(668,900)	(689,000)	(709,600)
18	Transfer from/(to) Rate Stabilization Fund	0	0	0	0	0	0	0	0	0	0
19	Net Annual Balance	6,347,100	(2,141,900)	746,500	815,700	1,278,200	290,100	45,300	935,000	1,168,200	727,200
20	Beginning of Year Cash Balance (b)	32,402,500	38,749,600	36,607,700	37,354,200	38,169,900	39,448,100	39,738,200	39,783,500	40,718,500	41,886,700
21	End of Year Balance	38,749,600	36,607,700	37,354,200	38,169,900	39,448,100	39,738,200	39,783,500	40,718,500	41,886,700	42,613,900
22	Beginning of Year Cash Balance (b)	32,402,500	38,931,900	41,532,000	42,855,500	44,265,500	46,155,800	47,076,400	47,771,100	49,375,000	51,232,200
23	Operating Reserve Fund	182,300	4,742,000	577,000	594,300	612,100	630,500	649,400	668,900	689,000	709,600
24	Net annual Balance	6,347,100	(2,141,900)	746,500	815,700	1,278,200	290,100	45,300	935,000	1,168,200	727,200
25	End of Year Balance	38,931,900	41,532,000	42,855,500	44,265,500	46,155,800	47,076,400	47,771,100	49,375,000	51,232,200	52,669,000
26	Days of O&M Cash on Hand	177	183	183	183	186	184	181	182	184	184
	Coverage Requirements										
	Rate Covenant Coverage										
27	Senior Debt (c)	204.1%	261.5%	298.8%	345.7%	312.4%	301.6%	299.3%	275.4%	257.0%	241.2%
28	All Debt (d)	163.1%	212.6%	249.2%	292.4%	267.4%	258.3%	255.5%	236.9%	222.3%	224.2%
	Additional Bond Coverage										
29	Senior Debt (c)	390.0%	271.4%	296.3%	280.7%	312.4%	311.2%	307.7%	273.1%	265.0%	257.0%
30	All Debt (d)	341.7%	226.3%	247.1%	240.2%	267.4%	266.4%	262.7%	236.2%	229.2%	222.3%

(a) Reflects revenue from an eight-year series of annual 10% rate increases effective January 1, 2013; adopted by the City Council in 2012.
(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.
(c) The General Bond Resolution requires net revenue to equal or exceed 125% of debt service.
(d) The General Bond Resolution requires net revenue to equal or exceed 110% of debt service.

Table 9 is a statement of financial operations for the drainage system under existing rates. As shown on Line 24 of Table 9, the ending cash balances will provide for 180 days of operation and maintenance expense in all years. As shown in Line 25 of Table 9, the indicated projected revenue will provide sufficient revenue to meet the debt service requirements during the study period.

Table 9 - Drainage Financial Statement Under Existing Rates

Line No	Description	Fiscal Year Ending December 31, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
		$	$	$	$	$	$	$	$	$	$
1	Tax Revenue	53,966,300	55,045,600	56,146,500	57,269,400	58,414,800	59,583,100	60,774,800	61,990,300	63,230,100	64,494,700
2	Other Revenue	1,343,600	1,381,000	1,430,500	1,444,900	1,439,600	1,413,600	1,370,300	1,328,400	1,283,300	1,235,700
3	Total Operating Revenue	55,309,900	56,426,600	57,577,000	58,714,300	59,854,400	60,996,700	62,145,100	63,318,700	64,513,400	65,730,400
4	Operation & Maintenance	(36,624,100)	(46,922,800)	(49,150,500)	(50,445,000)	(51,778,300)	(53,151,600)	(54,566,100)	(56,023,100)	(57,523,800)	(59,069,500)
5	Non-Cash Expense Accruals	(1,079,300)	(1,100,900)	(1,122,900)	(1,145,400)	(1,168,300)	(1,191,700)	(1,215,500)	(1,239,800)	(1,264,600)	(1,289,900)
6	Net Operating Revenue	17,606,500	8,402,900	7,303,600	7,123,900	6,907,800	6,653,400	6,363,500	6,055,800	5,725,000	5,371,000
	Debt Service										
	Senior Lien Revenue Bonds										
7	Existing	(2,024,100)	(2,028,400)	(2,028,600)	(2,036,000)	(2,062,100)	(874,600)	0	0	0	0
8	Projected	0	(827,800)	(1,986,700)	(1,986,700)	(1,986,700)	(1,986,700)	(1,986,700)	(1,986,700)	(1,986,700)	(1,986,700)
9	Subtotal	(2,024,100)	(2,856,200)	(4,015,300)	(4,022,700)	(4,048,800)	(2,861,300)	(1,986,700)	(1,986,700)	(1,986,700)	(1,986,700)
10	Gulf Opportunity Zone Act Loan	(407,600)	(407,600)	(407,600)	(407,600)	(407,600)	(407,600)	(407,600)	(407,600)	(407,600)	(203,300)
11	SELA Capital Repayment	0	0	(1,251,900)	(3,850,800)	(3,850,800)	(8,803,000)	(8,803,000)	(8,803,000)	(8,803,000)	(8,803,000)
12	Total Debt Service	(2,431,700)	(3,263,800)	(5,674,800)	(8,281,100)	(8,307,200)	(12,071,900)	(11,197,300)	(11,197,300)	(11,197,300)	(10,993,000)
13	Other Non-Operating Revenue	969,200	969,200	969,200	969,200	969,200	969,200	969,200	969,200	969,200	969,200
14	Transfer to Construction	(16,000,000)	0	0	0	0	0	0	0	0	0
15	Due from (to) Other Departments	(921,000)	0	0	0	0	0	0	0	0	0
16	Transfer to Operating Reserve Fund	(316,800)	(463,600)	(1,269,700)	(274,600)	(159,600)	(164,400)	(169,300)	(174,400)	(179,600)	(185,000)
17	Net Annual Balance	(1,093,800)	6,571,900	1,328,300	(462,600)	(589,800)	(4,613,700)	(4,033,900)	(4,346,700)	(4,682,700)	(4,837,800)
18	Beginning of Year Cash Balance (a)	36,274,200	35,180,400	41,752,300	43,080,600	42,618,000	42,028,200	37,414,500	33,380,600	29,033,900	24,351,200
19	End of Year Balance	35,180,400	41,752,300	43,080,600	42,618,000	42,028,200	37,414,500	33,380,600	29,033,900	24,351,200	19,513,400
20	Beginning of Year Cash Balance	40,936,300	39,842,500	46,414,400	47,742,700	47,280,100	46,690,300	42,076,600	38,042,700	33,696,000	29,013,300
21	Operating Reserve Fund	0	0	0	0	0	0	0	0	0	0
22	Net annual Balance	(1,093,800)	6,571,900	1,328,300	(462,600)	(589,800)	(4,613,700)	(4,033,900)	(4,346,700)	(4,682,700)	(4,837,800)
23	End of Year Balance	39,842,500	46,414,400	47,742,700	47,280,100	46,690,300	42,076,600	38,042,700	33,696,000	29,013,300	24,175,500
24	Days of O&M Cash on Hand	397	449	448	431	413	362	318	273	228	185
	Debt Service Coverage										
	Reflecting Nine-Mill Ad Valorem Tax Revenue Only										
25	Annual Test (b)	1144.8%	827.5%	600.4%	611.3%	619.5%	894.1%	1313.4%	1339.7%	1366.5%	1393.8%

(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

(b) The General Bond Resolution requires Nine-Mill Ad Valorem Tax Revenue to equal or exceed 100% of annual debt service

6.0 Utility System Summary

6.1 GENERAL

The analyses of revenue under existing rates and revenue requirements determined in the preceding sections of this report provide a basis for revenue adjustments made to update the schedule of water and sewage rates which recovers the costs of running the systems. The considerations related to the establishment and implementation of the rate adjustments were made based on the objectives outlined for the study and the understood conditions and findings of the analyses. As previously identified in Section 2.2, the objectives of the analysis performed herein entail: (1) to project and examine the future operating and capital financing requirements of the utilities; (2) determine the adequacy of existing rates to recover the requirements; (3) recommend revenue adjustments for rates and charges of the water and sewerage systems to enable revenue sufficiency and financial viability; and (4) identify future revenue needs for the drainage system. To meet these project objectives, the previously shown financial statements for each system were revised to show the indicated revenue adjustments necessary to completely fund the revenue requirements for each system.

The adequacy of the proposed increases in revenues from rates and fees is demonstrated in the figures and tables in this section.

6.2 OPERATING RESULTS UNDER PROPOSED RATES

6.2.1 Water System

As described in Section 4.3.2, with no revenue adjustments after 2020, the water system will not have the debt capacity fund all of the capital requirements through 2026. A total of $361,800,000 would need to be deferred during the 2022 – 2026 period. The amounts per year are shown in **Table 10.**

Table 10 - Deferred Water System Capital Improvements

YEAR	DEFERRED CAPITAL
2017	$0
2018	$0
2019	$0
2020	$0
2021	$0
2022	$8,800,000
2023	$21,200,000
2024	$77,900,000
2025	$125,700,000
2026	$128,200,000
Total	$361,800,000

In order to fully fund the 10-year capital improvement program, the proposed revenue increases in **Table 11** would need to be implemented January 1 of each year shown. These proposed adjustments would allow the water system to maintain 180 days of operation and maintenance expense and meet the minimum debt service coverage of 150 percent for senior debt without deferring any capital improvement during the study period.

Table 11 - Proposed Water System Revenue Adjustment

YEAR	APPROVED REVENUE ADJUSTMENTS	PROPOSED REVENUE ADJUSTMENTS
2017	10%	
2018	10%	
2019	10%	
2020	10%	
2021		4%
2022		4%
2023		4%
2024		4%
2025		4%
2026		4%

6.2.2 Sewerage System

As described in Sections 4.3.2 and 5.2, the sewerage system is able to fully fund the 10-year capital program, maintain 180 days of operation and maintenance expense and meet the minimum debt service coverage of 150 percent for senior debt without any additional revenue increases after 2020.

6.2.3 Drainage System

As described in Section 4.3.2, it is projected that the drainage system will not have the debt capacity to fund all of the capital requirements through 2026 and a total of $502,600,000 of capital costs would need to be deferred during the 10-year study period. The amounts per year are shown in **Table 12.**

Table 12 - Deferred Drainage System Capital Improvements

YEAR	DEFERRED CAPITAL
2017	$6,700,000
2018	$17,900,000
2019	$48,100,000
2020	$53,200,000
2021	$61,300,000
2022	$88,100,000
2023	$76,600,000
2024	$44,600,000
2025	$53,900,000
2026	$52,200,000
Total	$502,600,000

In order to completely fund the projects in the SWBNO's 2017 -2026 Capital Program and maintain 180 days of operation and maintenance expense, an alternative funding source would need to be identified for the drainage system.

As indicated in Table 13, it is projected that a new funding source of $40,000,000 per year, phased in from 2019 through 2022, would be necessary in order to issue the level of debt needed to fully fund the 10-year capital program by 2026.

Table 13 - Drainage New Funding Source Alternative

YEAR	REQUIRED NEW REVENUE	REVENUE BOND ISSUE	DEFERRED CAPITAL
2017	N/A		$6,700,000
2018	N/A	$60,000,000	
2019	$10,000,000		
2020	$20,000,000	$81,000,000	
2021	$30,000,000		
2022	$40,000,000	$80,000,000	$20,073,500
2023	$40,000,000		$20,073,500
2024	$40,000,000	$123,000,000	
2025	$40,000,000		-$51,718,100
2026	$40,000,000	$43,000,000	
Total	$260,000,000	$387,000,000	-$4,871,100 [a]

[a] Total includes inflation in the cost of the deferred projects.

WATER DEMAND ANALYSIS

7.0 Historical Customer Data

7.1 POPULATION

During the early 20th century, New Orleans' population grew rapidly, culminating in a peak population of 627,525 in 1960. Following World War II, United States cities observed declining urban populations as increasing numbers of people moved to suburbs, a trend which New Orleans observed several decades postwar. New Orleans' population stabilized early in the 21st century. Hurricane Katrina, which hit New Orleans in August 2005, caused a population reduction of 53 percent as shown below in **Table 14.** Despite initial regrowth after the hurricane, New Orleans has not yet reached its pre-Katrina population.

Table 14 - Historic Population Growth in New Orleans, LA

YEAR	CITY OF NEW ORLEANS POPULATION	% CHANGE IN POPULATION [a]	YEAR	CITY OF NEW ORLEANS POPULATION	% CHANGE IN POPULATION [a]
1900	287,104	-	2005	494,294	2.0%
1910	339,075	18.1%	2006	230,172	-53.4%
1920	387,219	14.2%	2007	268,751	16.8%
1930	458,762	18.5%	2008	301,842	12.3%
1940	494,537	7.8%	2009	327,803	8.6%
1950	570,445	15.3%	2010	343,829	4.9%
1960	627,525	10.0%	2011	360,779	4.9%
1970	593,471	-5.4%	2012	370,011	2.6%
1980	557,515	-6.1%	2013	378,921	2.4%
1990	496,938	-10.9%	2014	384,360	1.4%
2000	484,674	-2.5%	2015	389,617	1.4%

[a] Census data and population averages provided by Louisiana State Census Data Center, http://louisiana.gov/Explore/Demographics_and_Geography/

7.2 POPULATION AND WATER DEMAND

The relationship between increasing population and increasing water demand appears logical; however the relationship is complex. In projecting water demand it can be instructive to examine historic trends to identify key factors that have influenced demand and examine the likely trends of these influences in order to create accurate projections of future water demand.

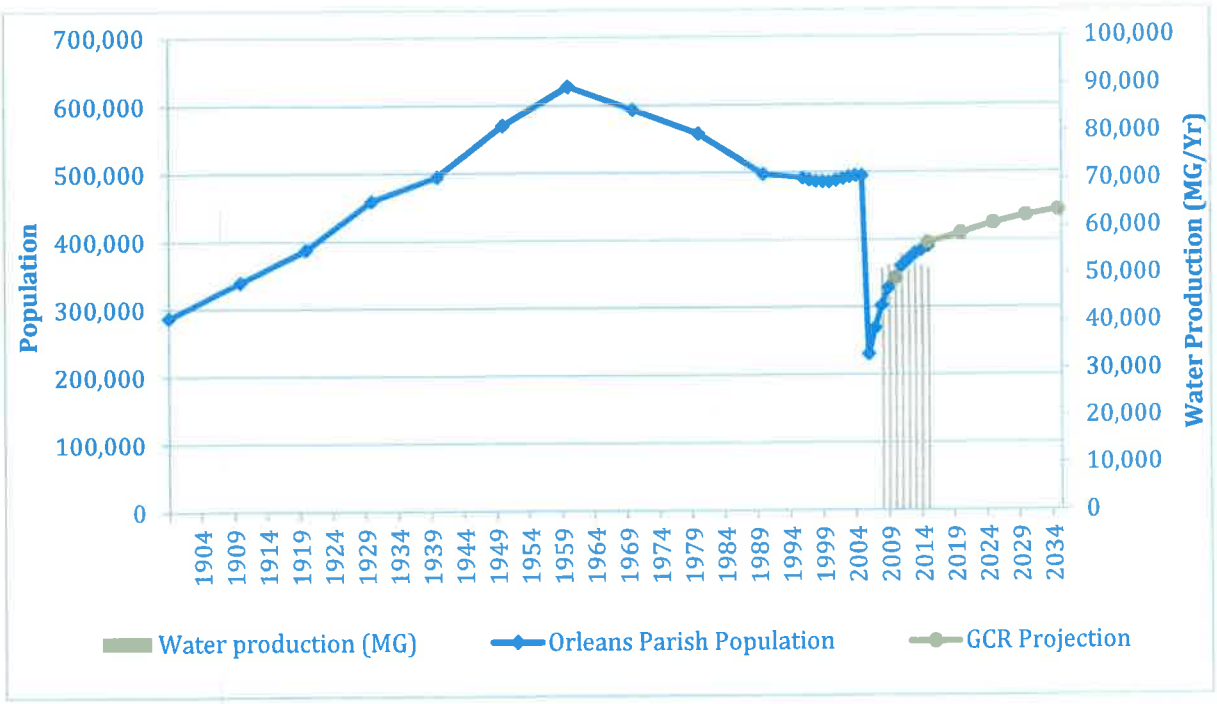


Figure 15 - Population Growth and Water Demand for the City of New Orleans

Figure 15 shows the long term population trends for New Orleans and also extends through 2035 to include projected population levels. GCR Consulting created a population projection for SWBNO using population data since 1990 for each of the ten basins to project the city's total population through 2035. When projected out to 2040, the GCR population projections forecast that the population of New Orleans Parish will still be below pre-Katrina levels as shown in **Table 15.**

Table 15 - City of New Orleans Historic and Projected Population

YEAR	GCR CONSULTING PROJECTION
2010	343,829
2015	396,048
2020	410,107
2025	424,959
2030	436,463
2035	444,468
Equivalent Annual Growth Rate	
2040[(a)]	452,620

[(a)] Extrapolated by Black & Veatch using annual growth rates 2015-2030.

7.3 NUMBER OF ACCOUNTS BY CUSTOMER CLASS

Table 16 and **Table 17** present the SWBNO customers as a total, and separated into different customer classes. Separating the customer information into their respective customer class can be used to increase accuracy in water demand projections. For a comparison of city population growth and customer account growth, see Appendix A.

Table 16 - SWBNO Customers from Bill Tab Data

YEAR	TOTAL CUSTOMERS	RESIDENTIAL CUSTOMERS	MULTI-RES CUSTOMERS	COMMERCIAL CUSTOMERS	INDUSTRIAL CUSTOMERS
2008	102,576	87,691	4,194	9,475	22
2009	109,640	94,547	4,267	9,558	21
2010	116,427	100,798	4,416	9,872	20
2011	118,745	102,979	4,439	9,918	17
2012	121,435	105,537	4,467	9,969	19

Table 16 depicts the number of customer accounts from 2008 to 2012 based on year-end billing summaries provided by the SWBNO.

Table 17 - SWBNO Customers from Utility Revenue Analysis

YEAR	TOTAL CUSTOMERS	RESIDENTIAL CUSTOMERS	MULTI-RES CUSTOMERS	COMMERCIAL CUSTOMERS	INDUSTRIAL CUSTOMERS
2008	110,203	93,818	4,361	11,983	41
2009	117,913	101,095	4,484	12,294	40
2010	121,244	104,162	4,572	12,474	36
2011	124,286	107,069	4,598	12,584	35
2012	127,106	109,765	4,627	12,677	37
2013	129,324	111,847	4,647	12,793	37
2014	132,662	113,758	4,631	12,935	37

Table 17 displays the number of customer accounts from 2008 to 2014 according to the SWBNO's annual revenue analysis.

Both the SWBNO's year-end billing summaries and revenue analysis contain water demand data from the utility's customers. Demand data from the year-end billing summaries were recorded on an annual basis by customer class. Demand data from the utility's revenue analysis were recorded on a monthly basis and not by customer class. To perform analysis based on demand data, the appropriate dataset was chosen according to whether monthly records or customer class information was required. However, the demand data from these sources were inconsistent with each other.

8.0 Water Consumption Analysis

In order to understand and identify water demand trends, seasonal influences, and other factors that significantly impact demand, customer consumption (sales) data was examined and trended. The review included the consumption volume and number of accounts on a monthly basis for the period inclusive of January 2008 – December 2015.

8.1 WATER CONSUMPTION BY CUSTOMER CLASS

Based on a review of the data and the relative proportion of use by the different customer classifications, demand was aggregated into four key customer classes that are typical for most water systems as shown in **Figure 16**.

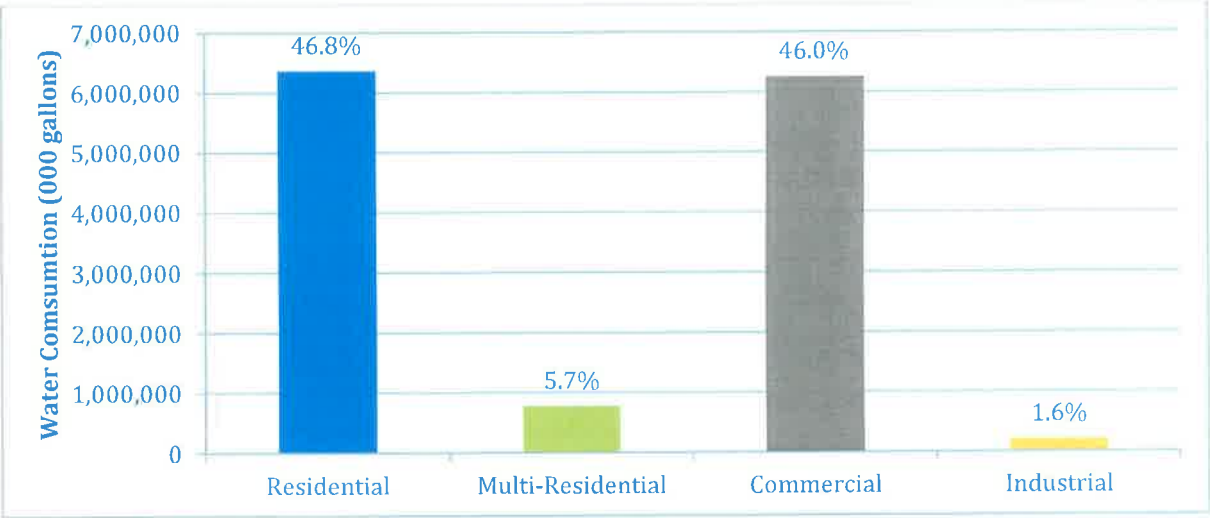


Figure 16 - Average Annual Water Consumption (Sales) by Customer Class, 2008-2015

Water consumption in New Orleans is dominated by single-family residential users and commercial users, which each represent greater than 45 percent of demand, or over 6 billion gallons of water, in an average year.

It is uncommon for a city's commercial sector to account for nearly half of its annual water demand. The size of New Orleans' commercial water demand may be explained by the strength of the city's tourism industry or its relatively low residential demand in the post-Katrina era.

8.2 WATER DEMAND RESPONSE TO PRECIPITATION AND EFFICIENCY

Monthly customer consumption data was reviewed for the period 2008 to 2016. The data represented total customer consumption but was not available disaggregated by customer class. Data was also available for the total number of customer accounts over a similar (but slightly shorter) time period.

Based on New Orleans' climate, one would not expect water usage to vary by season. Contrary to expectation, New Orleans' customer consumption has a primary peak during the summer which may be explained by discretionary water usage such as lawn watering. Furthermore, water demand

tends to decrease during months with high precipitation, and vice versa. See Appendix B for more information about seasonal variation in water demand.

The seasonal fluctuation of New Orleans water demand since 2008 may be observed in **Figure 17**, which shows annual summer peaks in water consumption each year.

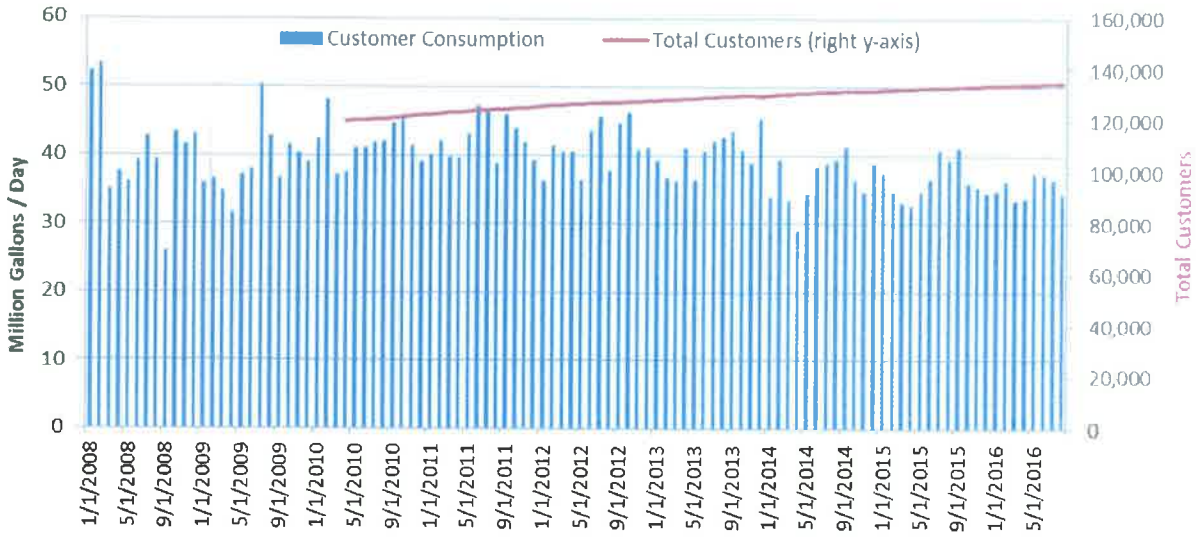


Figure 17 - Trends in Customer Consumption and Number of Customer Accounts

Figure 17 depicts a decline in total customer water consumption since 2008 based on monthly consumption data from 2008 to 2016. At this aggregate level, there appears to be a diverging trend between the number of customer accounts, which is growing and total customer consumption which is flat to declining. In 2013, SWBNO enacted the first rate increase since 2004 and this may have influenced customer behavior through a price elasticity of demand impact. Figure 17 appears to show a step change in demand for 2014 onwards, consistent with the timing of the rate change. For further analysis of trends in water use per account, see Appendix C.

The following sections examine demand trends by customer class, as analysis of different types of water demand provides a clearer picture of historical water usage in New Orleans; this also allows for more specific and accurate projections of future water demand.

8.2.1 Residential Customer Consumption Trends

As shown in **Figure 18**, both residential consumption and the number of residential accounts have trended upwards in recent years. However the rate of increase in account growth is more rapid and this means the average consumption per account has declined. This trend is similar to the residential customer trends observed in almost all public water supply systems across the country and is largely attributable to water conservation and efficiency measures. These measures can be in the form of educational messages that influence water use behavior and also in the form of more efficient fixtures and appliances.

There are several studies that can provide valuable information to aid in the understanding of this trend. For example, the Water Research Foundation (WRF) commissioned studies designed to provide insight into how water is used with residential settings. The two studies of Residential End Uses of Water (REU1999 and REU2016), published by the Water Research Foundation, provide information that help explain the observed trends for SWBNO. The updated study in 2016 provides a means of understanding the changes that have occurred in residential water uses over the past two decades. The following summary is taken from the REU2016 Executive Report:

> Residential indoor water use in single-family homes has decreased. The average per household daily water use has decreased 22 percent, from 177 gphd (REU1999) to 138 gphd (REU2016). Per capita average water use has decreased 15 percent, from 69.3 gpcd to 58.6 gpcd. The improved water efficiency of clothes washers and toilets accounts for most of the decreases in indoor use.

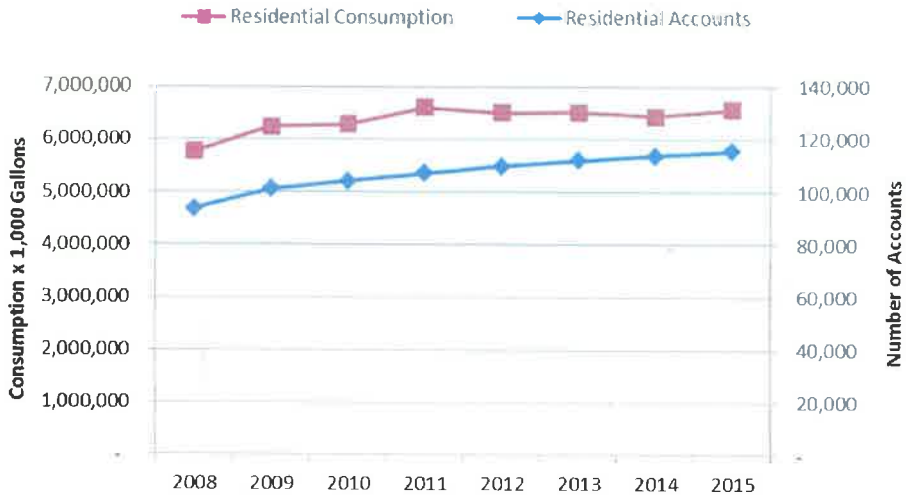


Figure 18 - Residential Customer Trends

8.2.2 Multi-Residential Customer Consumption Trends

For multi-residential customers (e.g., apartments and other multi-family units, trailer parks and rental units) consumption per account has also trended downwards. **Figure 19** shows that multi-residential customer consumption has shown a fairly steep and steady decrease of approximately 16% between 2008 and 2015. This is unusual, especially as the number of multi-residential customers has increased by around 7% over the same period. Although some of the same influences described for residential customers in Section 3.2.1 are likely to influence the consumption per account in the downwards direction, the level of reduction as reported seems out of proportion to what would typically be expected and therefore should be investigated further. For example, the meters associated with these accounts should be examined to ensure they are operating within acceptable accuracy, as recommended by AWWA guidelines (AWWA Manual M6).

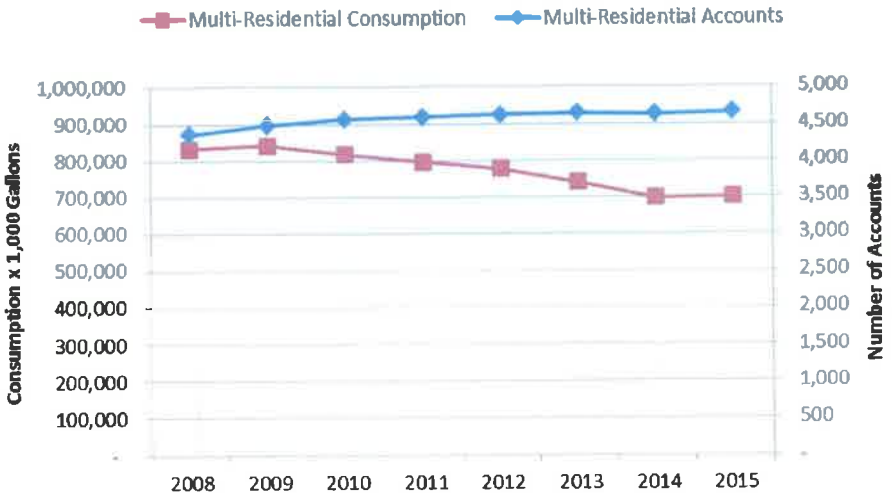


Figure 19 - Multi-Residential Customer Trends

8.2.3 Commercial Customer Consumption Trends

The number of commercial customers has trended steadily upwards over the eight year review period as shown in **Figure 20**. Consumption has been variable between years and broadly flat over this time period. Commercial consumption can be influenced by local and national economic trends to a greater extent than residential uses and can therefore be more complex to predict. Demand for water by commercial customers fell significantly in 2009 and has been slow to recover, with both total consumption and consumption per account below their 2008 levels.

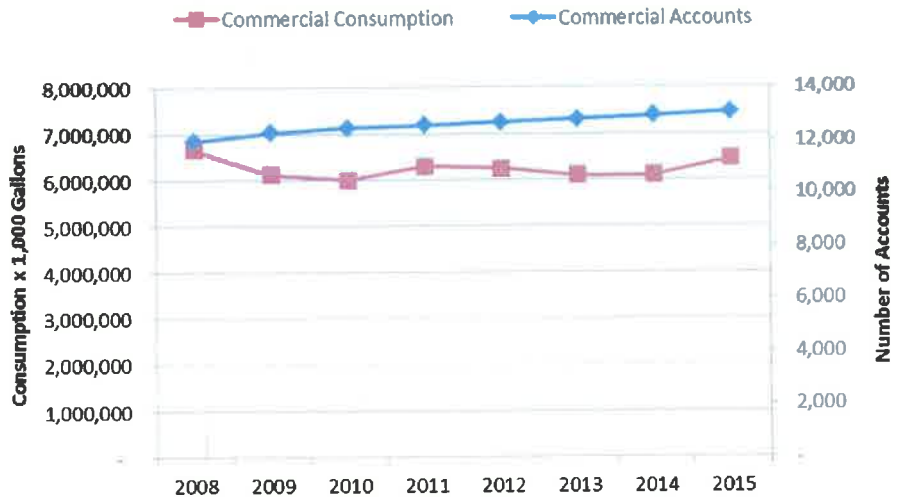


Figure 20 - Commercial Customer Trends

8.2.4 Industrial Customer Consumption Trends

As with commercial customers, industrial customer trends can be heavily influenced by local and national economic factors, making consumption by this class erratic and complex to predict. As illustrated in **Figure 21**, This can been seen in the data; consumption has remained relatively flat between the beginning and end points of the eight year review period, but within that time frame it has varied significantly, for example doubling between 2009 and 2010. Overall consumption by this customer class is less than 2% of total customer consumption.

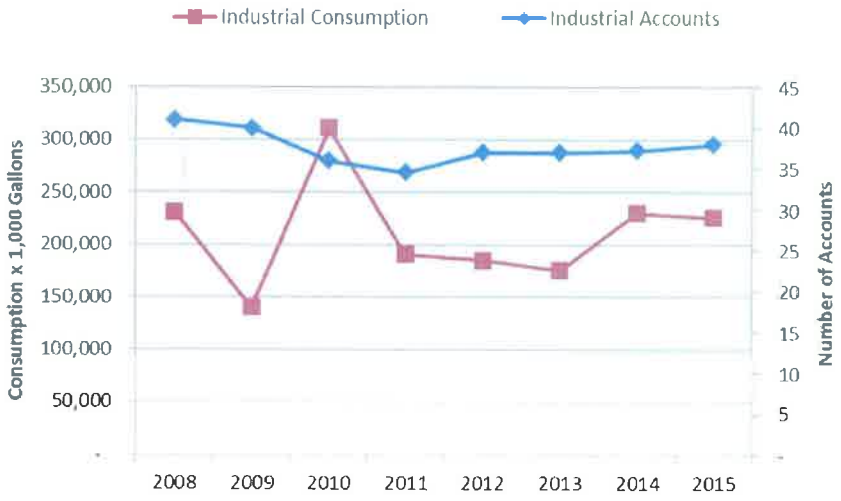


Figure 21 - Industrial Customer Trends

8.2.5 Non-Revenue Water Trends

Non-revenue water is water produced by the utility which is not ultimately sold to consumers. This category includes both real losses (water lost to the system through leaks) and apparent losses due to such occurrences as theft, billing inconsistencies or metering inaccuracies.

A significant portion of the city's water production each month is non-revenue water. From January 2008 and December 2015, average daily volumes of non-revenue water in New Orleans have ranged from 94.3 and 123.5 million gallons per day.

Although total water loss has trended downward since a peak in 2012, water loss and non-revenue water continue to dominate New Orleans' water production on a monthly basis. For further discussion of non-revenue water in New Orleans, see Appendix D.

8.2.5.1 Unbilled, Authorized Use Trends

Unbilled, authorized water use is a subset of non-revenue water that includes water used by the utility or the city for fire protection, main flushing, and treatment plant maintenance. Unlike other categories of non-revenue water, these water uses are not harmful to the utility, and a baseline level of unbilled, authorized water use is necessary for the system to function properly. Thus, the SWBNO should not expect to reduce water use from this category in future years. From 2008 through 2015,

unbilled, authorized water use ranged from 8.1 billion gallons to 8.6 billion gallons per fiscal year according to the SWBNO's Water Audit FY 2008 – FY 2014.

9.0 Future Demand Trends

The following sections present the approach to future water demand projections using customer data dating back to 2008 in conjunction with consideration of historic and potential future population and account trends.

9.1 SUMMARY OF FORECAST DRIVERS

Table 18 shows the assumptions used to project the number of accounts and the trends in consumption per account, by customer class. These assumptions combine to drive the projections of customer demand over the next 10 years (2017 – 2026). The color of the text indicates if the direction of the trends (green = upwards; black = flat; red = downwards). In the MS Excel workbook that accompanies this report it is possible to test different growth scenarios and examine the impact (sensitivity) of the assumptions on individual customer class forecasts and the aggregate customer demand forecast.

Table 18 - Summary of Assumptions Driving Account Growth and Consumption per Account

	RESIDENTIAL	RESIDENTIAL MULTI-FAMILY	COMMERCIAL	INDUSTRIAL
Number of Accounts	Pop. Growth	Static	Linear Trend	Linear Trend
Consumption Per Account	Linear Trend	Static	Linear Trend	Linear Trend

9.2 CUSTOMER ACCOUNT GROWTH PROJECTIONS

The following sections describe the choice of assumptions used to forecast the number of accounts for each customer classification for the ten year forecast period (2016 – 2026).

9.2.1 Residential Customer Account Projections

Residential account growth rates were compared to population growth rates for the review period (2008-2015). The comparison revealed that residential account growth rates tracked population growth relatively closely; a simple linear regression produced an r^2 value of 0.876 (see **Appendix A** for more details). Thus, it was assumed that population forecasts (as developed by GCR) can be used to project the future growth rate in residential accounts. The projected population growth rate over the next 10 years is less than the observed rate of account growth between 2008 and 2015. In other words, the rate of residential customer account growth is projected to slow over the next 10 years.

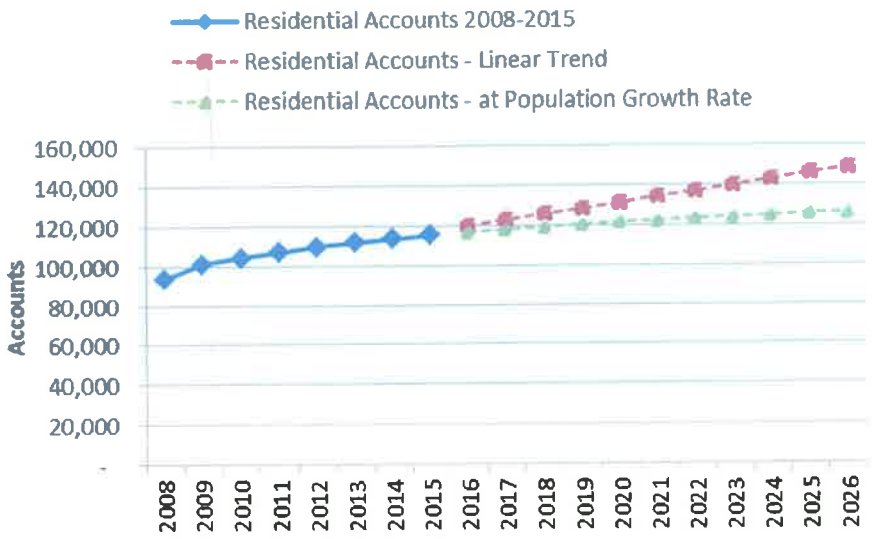


Figure 22 - Projected Number of Residential Accounts

9.2.2 Multi-Residential Account Projections

The number of accounts and the volume used in this sector showed an inversely proportional relationship which is very unusual. This suggested that this dataset requires more validation to prove out the reasons for the inverse relationship. In the interim, due to the uncertainty related to consumption data for multi-residential customer accounts, and also considering the small size of this customer class, the projected number of accounts was held constant at the 2015 value.

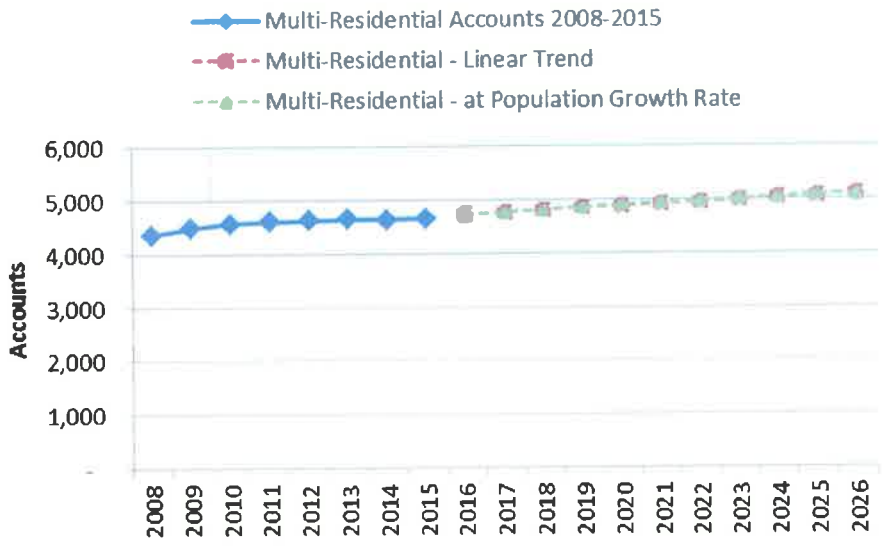


Figure 23 - Projected Number of Multi-Residential Accounts

9.2.3 Commercial Account Projections

Commercial growth trends are not typically well correlated with population growth, due to the significant influence of economic factors. As a detailed employment or economic forecast is not a

component of this study, the historic (2008-2015) growth rate in commercial accounts was extrapolated, based on a linear trend, to estimate the future number of accounts in the commercial customer class.

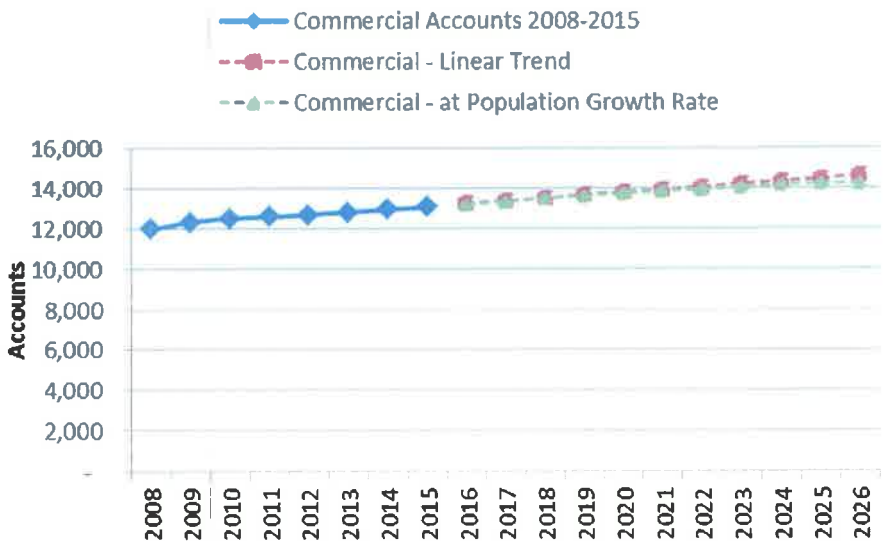


Figure 24 - Projected Number of Commercial Accounts

9.2.4 Industrial Account Projections

Similar to the commercial customer class, industrial customer growth trends are not typically well correlated with population growth, due to the significant influence of economic factors. As a detailed employment or economic forecast is not a component of this study, the historic (2008-2015) growth rate in industrial accounts was extrapolated, based on a linear trend, to estimate the future number of accounts in the industrial customer class.

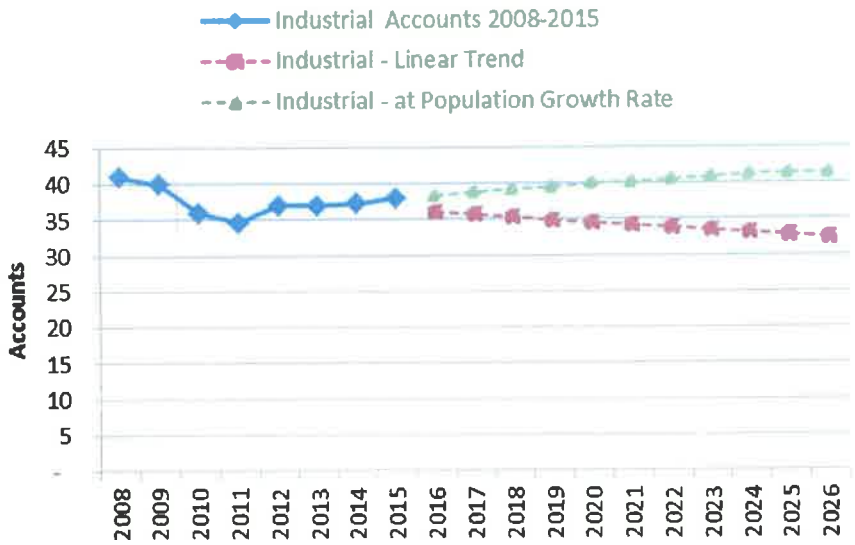


Figure 25 - Projected Number of Industrial Accounts

9.3 CUSTOMER CLASS CONSUMPTION PER ACCOUNT PROJECTIONS

The following sections describe the choice of assumptions used to forecast the average consumption levels per account for each customer classification over the ten year forecast period (2017 – 2026). See Appendix C for more information regarding historical water usage per account.

9.3.1 Residential Consumption per Account Projections

Residential customer consumption per account has trended downwards as explained in Section 8.2.1. This appears to be a durable trend as the efficiency of plumbing fixtures and appliances has tended to increase in recent years, supported by programs such as WaterSense. Therefore the trend in declining residential consumption per account was projected to continue.

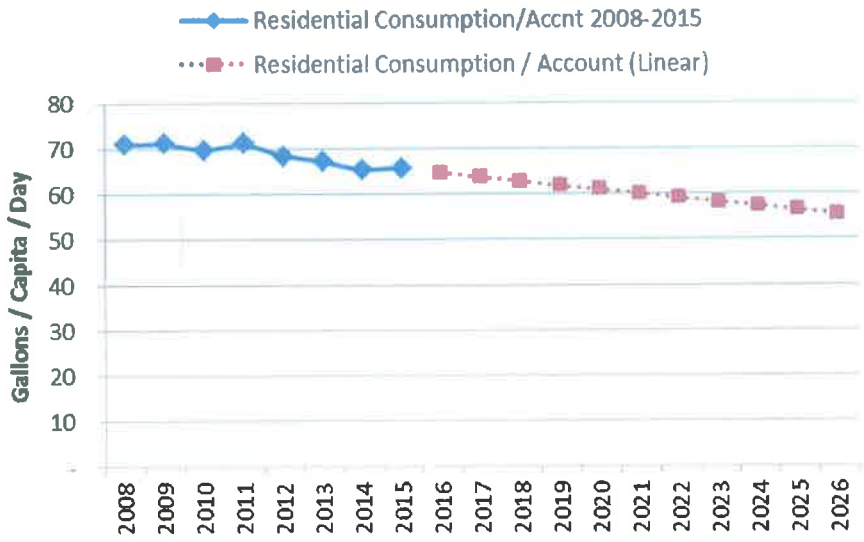


Figure 26 - Projected Customer Consumption

9.3.2 Multi-Residential Consumption per Account Projections

Multi-residential customer consumption per account has declined significantly between 2008 and 2015. This trend may not be valid and should be investigated further. Therefore, a static level of consumption per multi-residential customer was projected for the forecast period.

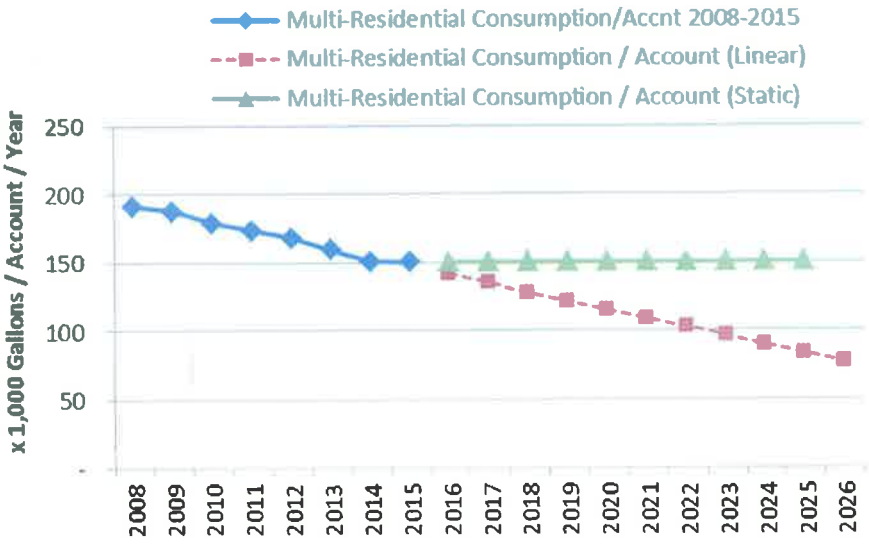


Figure 27 - Projected Multi-Residential Consumption

9.3.3 Commercial Consumption per Account Projections

Based on a simple linear trend, commercial consumption per account has trended downwards fairly steadily in recent years. However an increase in consumption per account was noted in 2015, therefore the overall trend could be considered either declining or flat, depending on the weighting

given to more recent data points. For the purposes of the forecast over the next ten years, the linear trend as established over the period 2008 – 2015 (i.e., declining consumption) was used. Due to the significant level of consumption for this customer class, it should be noted that the overall future demand projections are sensitive to the choice of projecting the decreasing (longer term) trend, or projecting a static level of consumption per account.

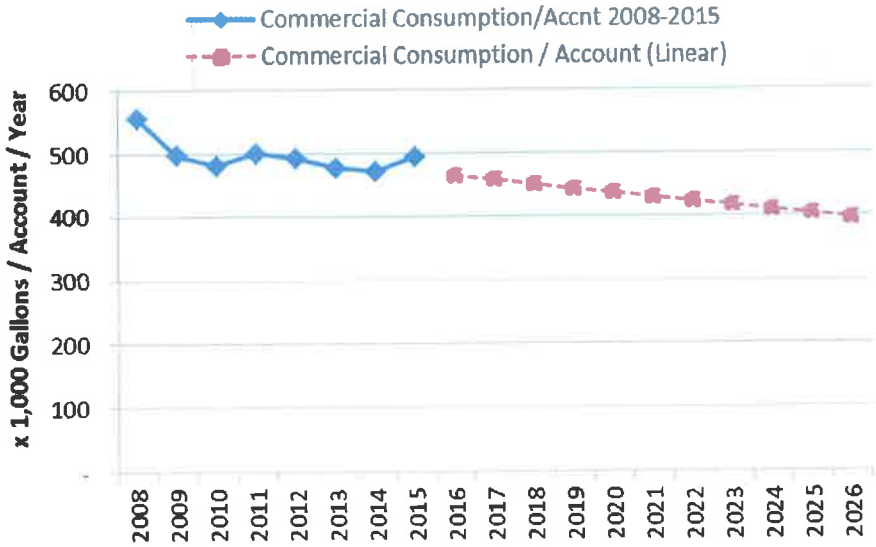


Figure 28 - Projected Commercial Consumption

9.3.4 Industrial Consumption per Account Projections

Customer consumption per account for industrial customers is highly erratic over the 2008 – 2015 time period, with the linear trend showing a minimal upward slope. This trend was chosen to project consumption per account for the industrial customer class.

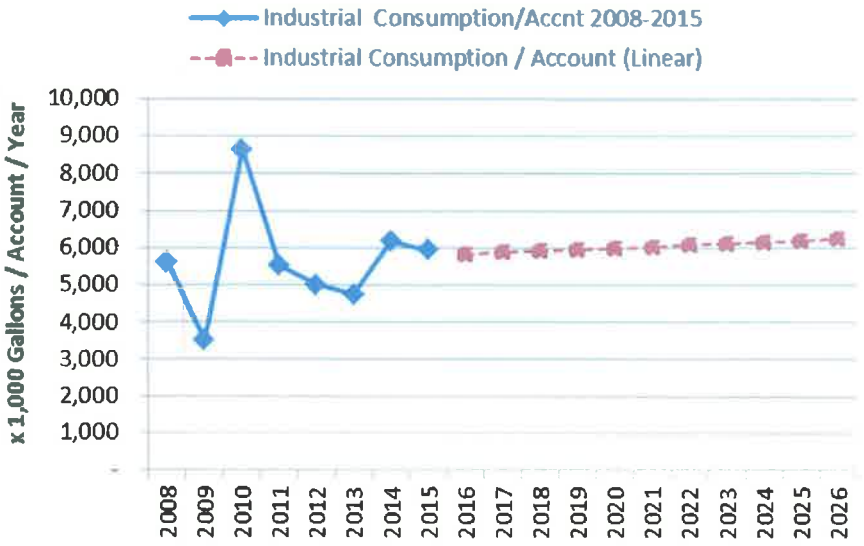


Figure 29 - Projected Industrial Consumption

10.0 Water Production and Non-Revenue Water

There are two additional factors which are major components of the demand balance. These are the recording of the production from the two water treatment plants which provide the inputs into the water system and the non-revenue water (leakage and apparent losses) which are currently the greatest demand on the system.

The production meters were analyzed to estimate the accuracy of the inputs and to provide a level of confidence in the water supplied to the system.

10.1 PRODUCTION METERING

There are two production water treatment plant facilities supplying water to New Orleans. These are the Carrollton and Algiers plants. The Carrollton plant is by far the largest water producer and also has the most complex method of volume calculation

10.1.1 Carrollton Plant

The finished water metering systems includes six venture flow meters which are not currently working so another method of calculation is required to provide the production volumes from this plant. There are flow meters and estimations derived from a total of forty six different flow meters monitoring water through the filter systems. The Old Filter Plant has 28 filters which are reviewed every hour and values for the volume of throughput are recorded on a paper ledger. This is totalized each day. Some of the dials are not working so these are estimated to flow the same amount of water all the time at a similar rate to the surrounding meters. The differential pressure systems have new pipework, but it is complex and due to the large number of connections error is certainly possible. These systems are reportedly calibrated, but calibration will likely be difficult and prone to error.

The New Filter Plant has 16 meters (dual venturi meters, so 16 actual meters). These have analogue readouts within the control room and use a paper recording system to mark out the flow volumes. The totalizers in the control room are not all operational so these are instantaneous reads similar to those from the Old Plant (where working). Figure 30 shows a schematic of the basic metering systems at the Carrollton Plant.

The calculation of flow is derived using the following:

New Filter **[NF]** (16 Venturi meters) – Measured on a control board
Old Filter **[OF]** (28 Differential pressure meters) – Measured using gages manually recorded
New Filter Wash Water **[NFWW]** (1 Venturi) – Measured on a control board
Old Filter Wash Water **[OFWW]** (1 pitot meter) - Measured using gages manually recorded

The totalizers are read manually each day. The old filter is measured with a differential pressure cell across a control valve. The volume calculation is derived using the equation:

Volume supplied by Carrollton facility = (NF+OF)-(NFWW+OFWW)

The current methodology is an estimation which likely has an error in volume calculations of up to ±15%. There are other possibilities for flow measurement such as the six existing venturi meters noted on the schematic (**Figure 30**), but these would meters would need to be refurbished and

tested before this could be proven. In previous years there were significant errors utilizing these meters due to air entrainment from pump cavitation and other issues. These would need to be addressed also.

The medium- to long-term plan is to replace all the meters with new electromagnetic meters. This will need to occur after the replacement or refurbishment of the pumping stations and is likely to be three to five years before they would be operational.

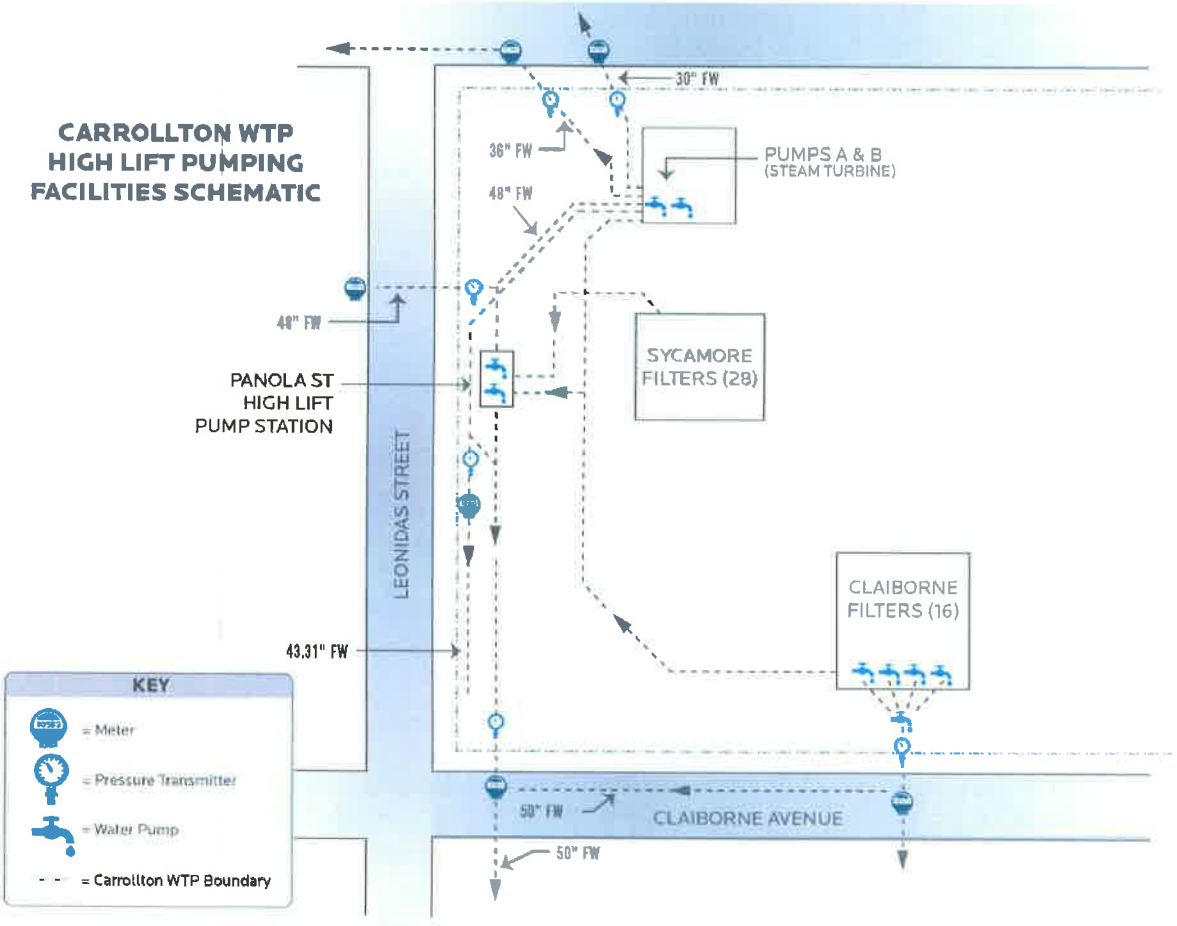


Figure 30 - Carrollton Plant Metering Schematic

10.1.2 Algiers Plant

There are three finished water meters at the Algiers plant. There are two differential pressure flow meters with Rosemount 1151 differential pressure (DP) units and one electromagnetic meter manufactured by ABB. All the equipment appears to be in reasonable to good condition.

The Algiers plant monitors its flow through these three meters via a monitor within the control center (at the treatment plant). This monitor shows instantaneous readings. The operations staff record hourly information from the computer monitor (**Figure 31**) and totalize this information at

midnight each night. This data is then passed on to management for the total volume produced from this site.

Figure 31 - Algiers Flow Monitor

While there is some uncertainty as to the absolute accuracy of the instantaneous readings, this is expected to have greater accuracy than the Carrollton volume results. However, since the volume through the Algiers plant is less than 10% of the total flow volume supplied the estimates of accuracy are not expected to be changed markedly by the improved accuracy of the metering system at this facility.

10.2 PRODUCTION FLOW TRENDS

The evaluation of the production metering systems suggests that there is likely a ± 15% error in the production metering numbers. This does cause a significant layer of uncertainty in the overall demand numbers, although these do not directly affect the calculations of the demand values derived for the customer demands – they would affect the non-revenue water volumes.

10.3 NON-REVENUE WATER

Figure 32 shows monthly water production data from New Orleans' water treatment plants from 2008-2015. Water production in New Orleans during this period remained constant and was not responsive to seasonal changes.

As illustrated in Figure 32, non-revenue water (green area below the yellow line) is the largest component of water demand in the New Orleans system. SWBNO understands this and is conducting annual water audits and contracting with leakage detection contractors in order to reduce the volume of real and apparent losses. Even with this effort, the non-revenue water volumes appear to only have stabilized or reduced slightly over the last eight years (the period of record for this analysis).

The expectation is that funds will need to be expended to reduce the losses and that these will then be offset (financially) by the savings from the reduced amount of water pumped, or the increased billings. Therefore even though the volume of loss may be reduced in this ten year period it is currently assumed that there will be no specific financial gain (but no financial loss either).

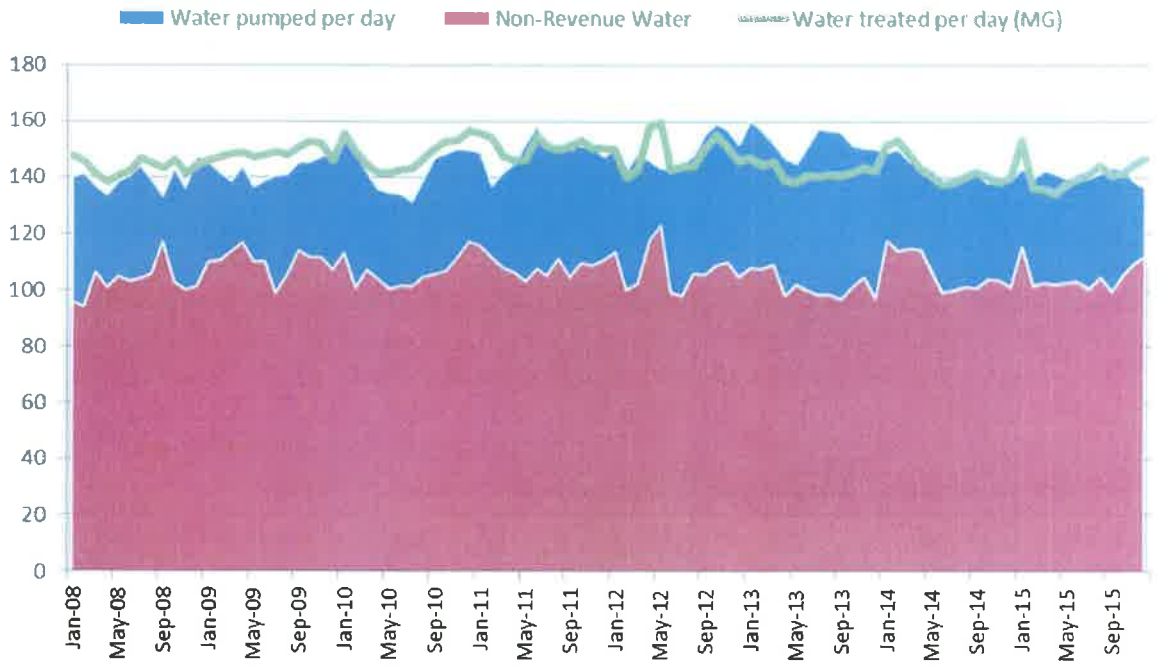


Figure 32 - Estimated Contribution of Non-Revenue Water to Monthly Water Production

Appendix D further explains the calculations for non-revenue water. The average values as described in that analysis is 107 MGD.

10.4 NON-REVENUE WATER PROJECTIONS

Depending on the level of investment it is anticipated that non-revenue water volume could be reduced over the 10-year analysis period. A linear trend is projected in **Figure 33**; however, no major gains have yet been seen so in the final projection for SWBNO this is conservatively estimated to stay consistent for the next ten years. Note that if left unchecked non-revenue water will continue to rise, so keeping the status-quo in respect to demand still requires funding and effort to combat the non-revenue water.

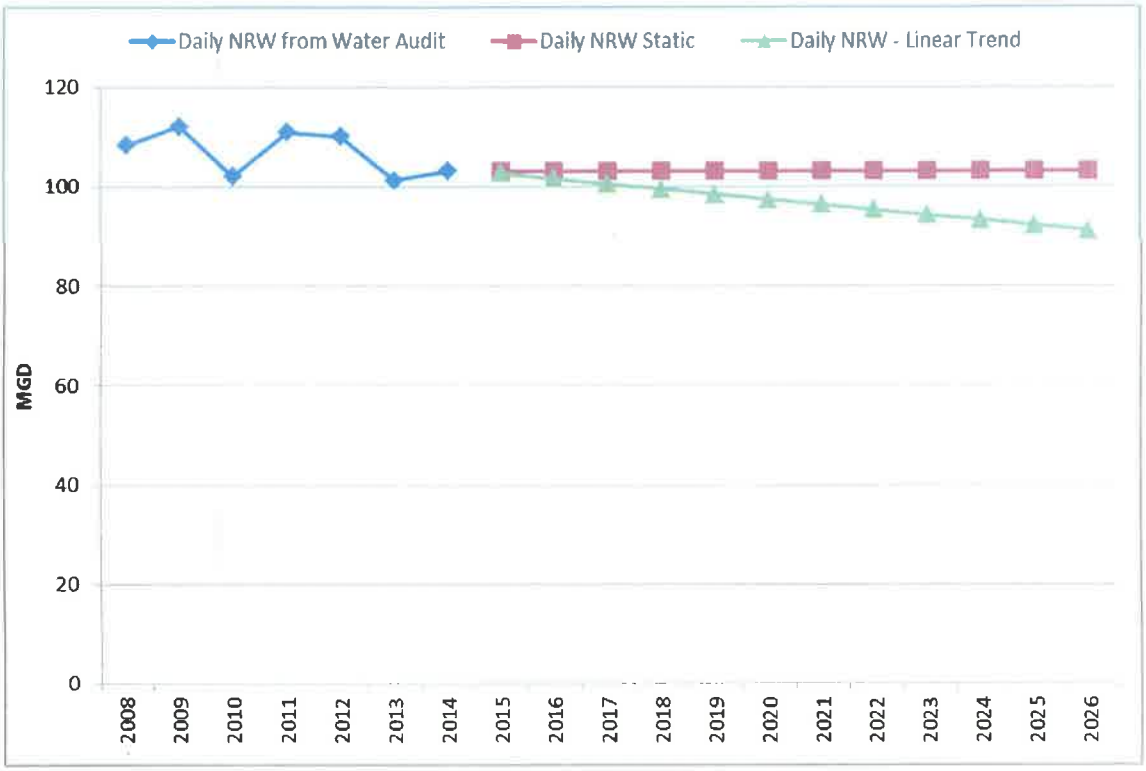


Figure 33 - Non-Revenue Water Projections

11.0 Demand Scenario Summary & Recommendations

The customer demands have been derived by customer class as described in Sections 7 & 8 and the cumulative customer projection is outlined in **Figure 34**. The overall customer demands show a decline in consumption over the 10-year projected period. This is an average day projection.

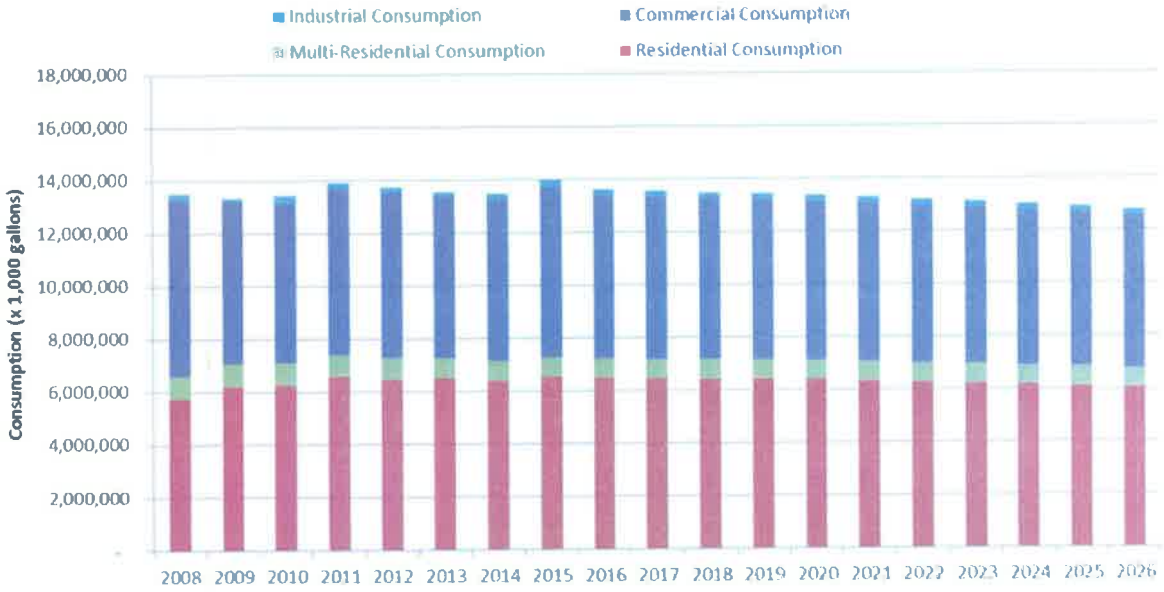


Figure 34 - Demand Forecasts

Figure 35 shows Total System Demand including non-revenue water which is estimated to stay constant, although this may well be revised in future years as programs are put into place which may yield steady reductions. The uncertainty in the production flow volume calculations which derive the calculations of non-revenue water also need to be accounted for. The gross estimate of ± 15% is basically a level of confidence in the overall numbers and this value of uncertainty is added to the demand calculations for the non-revenue water values (so for an average of 100 MGD, the non-revenue water would vary between 85 and 115 MGD).

With the addition of the non-revenue water to this customer consumption the overall demand estimates are outlined on Figure 35.

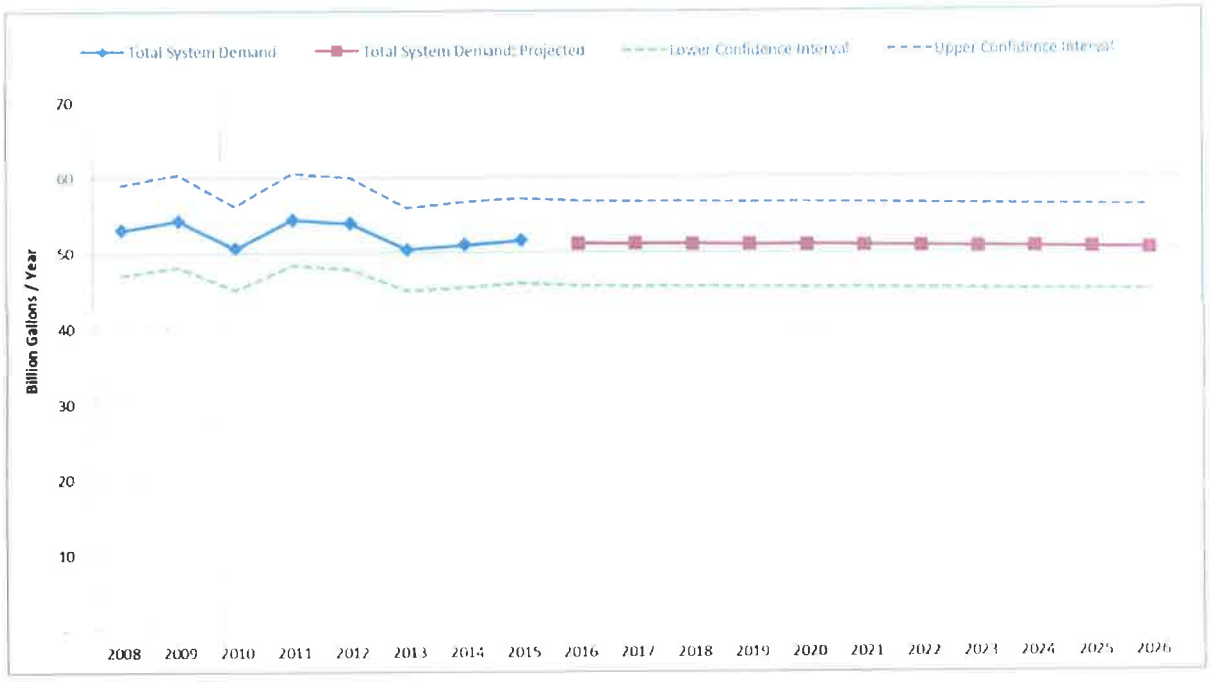


Figure 35 - Total System Demand and Projected Demands with Confidence Intervals

12.0 Conclusion & Recommendations

Based on a review of the available data Black & Veatch provides the following conclusions and recommendations:

12.1 FINANCIAL PLAN

The major recommendations are:

1. The approved revenue adjustments through 2020 will not provide sufficient revenue and debt capacity to fund the 10-year capital program for the water system. It is recommended that the SWBNO implement annual revenue adjustments from 2021 through 2026 to fully fund all needed capital projects.

2. In order to fund the 2017-2026 capital improvement program for the drainage system, an additional revenue source needs to be identified. Until an additional source of revenue is identified and the SWBNO has the debt capacity to finance the capital program, the SWBNO will need to defer capital projects.

Based on a review of the available data Black & Veatch provides the following conclusions and recommendations:

12.2 WATER DEMAND ANALYSIS

The major recommendations are:

1. Reduce non-revenue water through analysis of the costs of the water lost and develop efforts to save water and enhance revenue through cost neutral programs (saving the same amount of money as is expended on the program) to reduce impact to customers and keep the financial needs of the utility stable.
2. Improve the metering facilities and recording mechanisms for the Carrollton water treatment plant. Initially evaluate refurbishing the venturi flow measurement equipment and work toward replacing these meters with electromagnetic flow meters.
3. Review the multi-family residential sector metering systems and demand volumes. The current data suggests discrepancies which need to be evaluated.

Additional recommendations include:

1. Data issues:
    a) Consumption data reported by different sources are inconsistently measured.
        i) Bill tab consumption data is measured annually by customer class, so this data gives a detailed picture of water use by sector. However, it is not reported monthly. SWBNO's revenue analysis provides monthly consumption data that is not reported by consumer class, so it is missing a valuable level of detail.
        ii) The 2008-2015 consumption volumes provided by these two sources were not consistent with one another. It seems that the consumption volumes reported in the revenue analysis include unbilled authorized uses such as fire protection, whereas bill

tab consumption data includes only retail water, leading to higher consumption values from the revenue analysis. Because the revenue analysis data did not provide consumer class data, it was not possible to ascertain the cause of the discrepancy between sources.

b) Production data indicated several possible measurement errors:

   i) Volumes of high lift pumpage and water treated at the Carrollton water treatment plant for December 2008 and December 2009 were reported as identical. This seems unlikely, so there appears to be a reporting error.

   ii) In many cases, the monthly volume of pumped water exceeded the monthly volume of treated water. Based on the data from January 2008 through December 2015, pumped water volumes seem to be inflated, which may be one cause of any errors in pumped and treated water volume measurements. This apparent data abnormality occurred sporadically from 2008 through 2011, monthly from June 2012 through December 2013, and for the majority of 2014 and 2015.

   iii) It seems as though daily volumes of water treated at the Algiers treatment plant have often been approximated rather than recorded exactly. In particular, the values for maximum daily volume of water treatment were often rounded to the nearest million gallons, and values often recurred. Water production data should be recorded with the greatest possible specificity for the sake of accurate reporting and forecasting.

2. Based on the discrepancy between data sources described above, it is possible that the absolute values shown in the demand projection graphics are within +/- 15% of their actual value. This discrepancy is not likely to change the overall shape of projected trends, although adjustments could be warranted.

3. Overall water demand for the next ten years is likely to follow a flat to declining path; a pattern that is forecast for many public water supply systems.

4. It is recommended that SWBNO investigate the rapid decline in consumption for multi-residential customers during the period 2008 – 2015. This may include testing of meters to ensure they are operating within acceptable bounds, as recommended by AWWA specifications (AWWA Manual M6).

5. It is recommended that SWBNO examine the largest users within the commercial customer classification. It is likely that a relatively few large users will contribute a significant proportion of the overall consumption for this customer class. Future projections could be refined by developing a better understand of large commercial customers as this classification contributes a large proportion of overall customer demand.

Appendix A: Population and Account Growth

Between 2008 and 2016, New Orleans' population increased as the city rebuilt following Hurricane Katrina in 2005. **Figure 36** shows the growth rates of the city's total population and SWBNO's residential and multi-residential accounts.

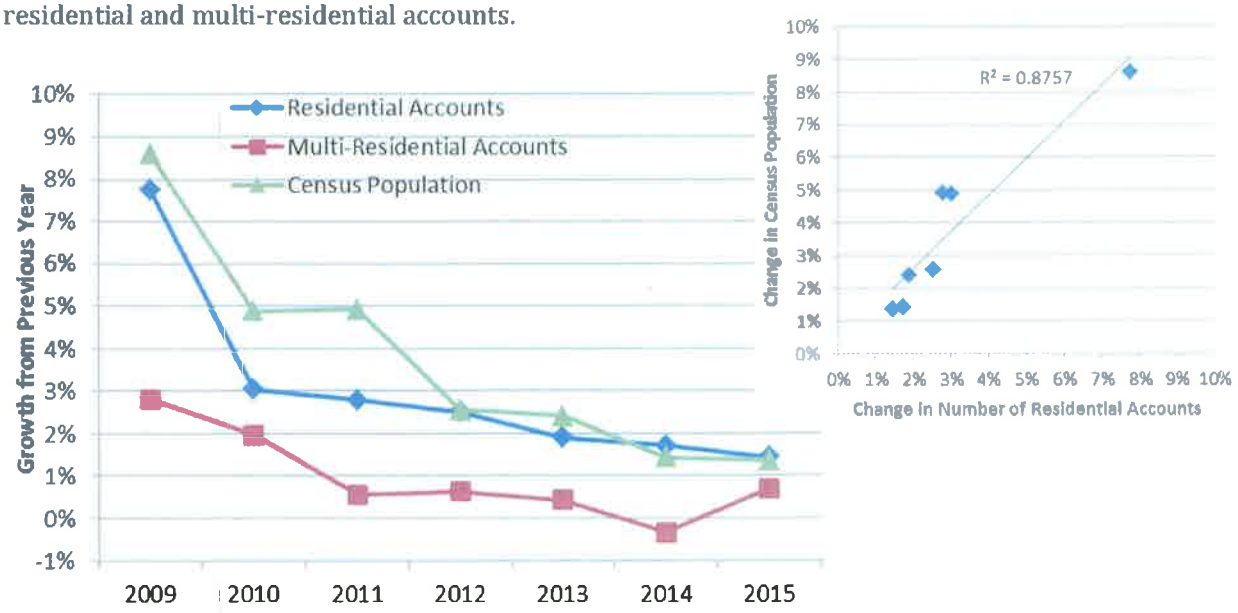


Figure 36 - Relationship between Population Growth and Residential Account Growth

During this period, New Orleans' total population first grew at a rate of almost 9 percent, and the city's population growth slowed each year. The growth of residential water utility accounts followed a similar pattern, while multi-residential utility accounts grew more slowly. In 2015, the growth of New Orleans' total population, residential accounts, and multi-residential accounts converged at around 1 percent.

Appendix B: Seasonal Variation in Water Demand

Water demand in New Orleans is responsive to seasonal changes in precipitation. Focused analysis of demand response to precipitation level was conducted for 2014 and 2015 only, as these years showed the clearest relationship between precipitation and water demand. **Figure 37** shows monthly precipitation at New Orleans International Airport compared to total monthly water usage.

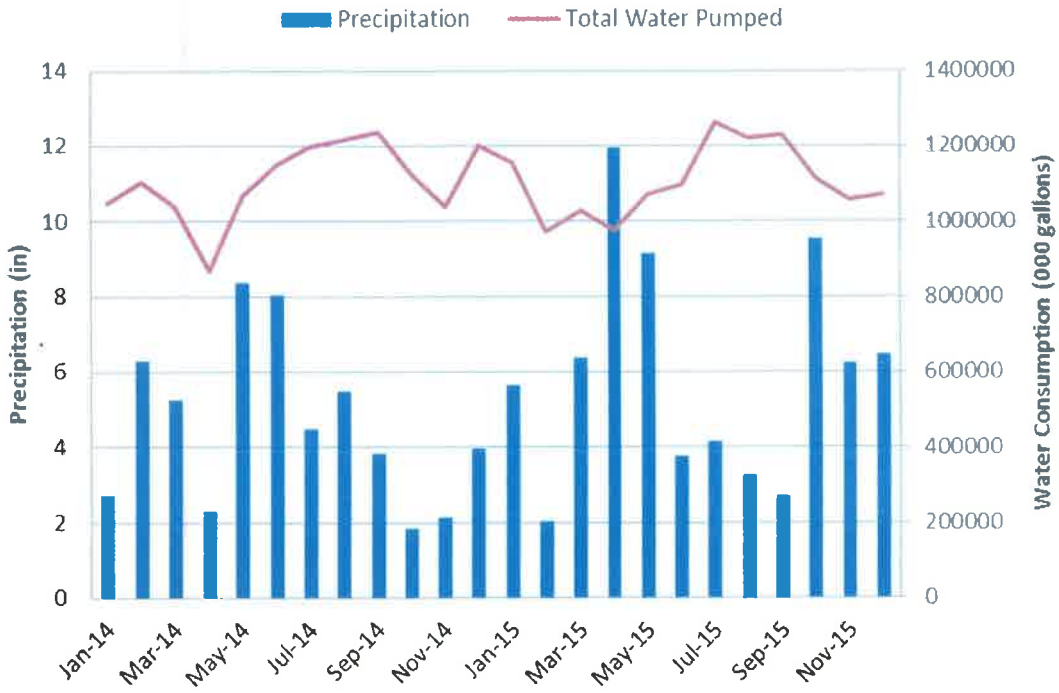


Figure 37 - Monthly Precipitation Relative to Total Water Consumption (2014-2015)

Water usage increased in response to periods of low rainfall, notably the summer months of 2014 and 2015. Conversely, water use generally declined as New Orleans received more precipitation from March-May 2015 and October-December 2015.

During this period, there were exceptions to the negative correlation between water usage and precipitation. In early 2014, water usage increased during months with more precipitation (February, March, May, and June) and decreased during drier months (April, October, and November).

Appendix C: Water Use per Account

To further investigate the trend of declining water use alongside increasing numbers of accounts in New Orleans, information was reviewed to provide greater insight into the specific trends within each of the four major customer classifications. It is important to understand these trends in order to make informed projections regarding the consumption by individual customer classes into the future. For this portion of the analysis, it should be noted that annual data for the number of customers and consumption by class of customer was reviewed as monthly data was not available.

An overview of the volume of water consumed per account per day is shown in **Figure 38.**

	Total Cons. / Accnt. (gal.)	Res. Cons. / Accnt. (gal.)	Multi-Res. Cons. / Accnt. (gal.)	Comm. Cons. / Accnt. (gal.)	Ind. Cons. / Accnt. (gal.)
2008	336	169	524	1,525	15,445
2009	310	169	515	1,364	9,589
2010	303	165	490	1,318	23,699
2011	306	169	475	1,371	15,109
2012	296	162	461	1,351	13,712
2013	287	160	437	1,307	13,010
2014	278	155	413	1,292	16,953
2015	287	156	412	1,356	16,316

Low Consumption — High Consumption

Figure 38 - Declining Water Consumption per Account (2008-2015)

Nearly every customer class follows a pattern of declining use per account.

Industrial consumption appears to be more erratic the other customer classes: the industrial sector experienced peak demand in 2010 following a large reduction in water usage in 2009. Since 2010, industrial demand has declined. Industrial water consumption is highly dependent upon economic trends such as the recession in 2008, which may explain the reduction in industrial water use in 2009. Furthermore, the industrial sector is comprised of a small number of accounts, so any change in one customer's water use can influence the overall sector trend.

Since 2013, each customer class has observed decreasing water usage per account. This pattern coincides with a utility-wide water rate increase in 2013. This was SWBNO's first rate increase since 2004. The universal downward trend in water usage was likely in part a response to the increased price of water.

Appendix D: Non-Revenue Water

Non-revenue water is SWBNO's largest water "customer," with about 75 percent of daily water production contributing to real or apparent losses. In order to understand the magnitude of water lost to New Orleans' water system, three different methods were used to estimate average daily non-revenue water volumes since 2008. The results of these estimates can be seen in **Figure 39**.

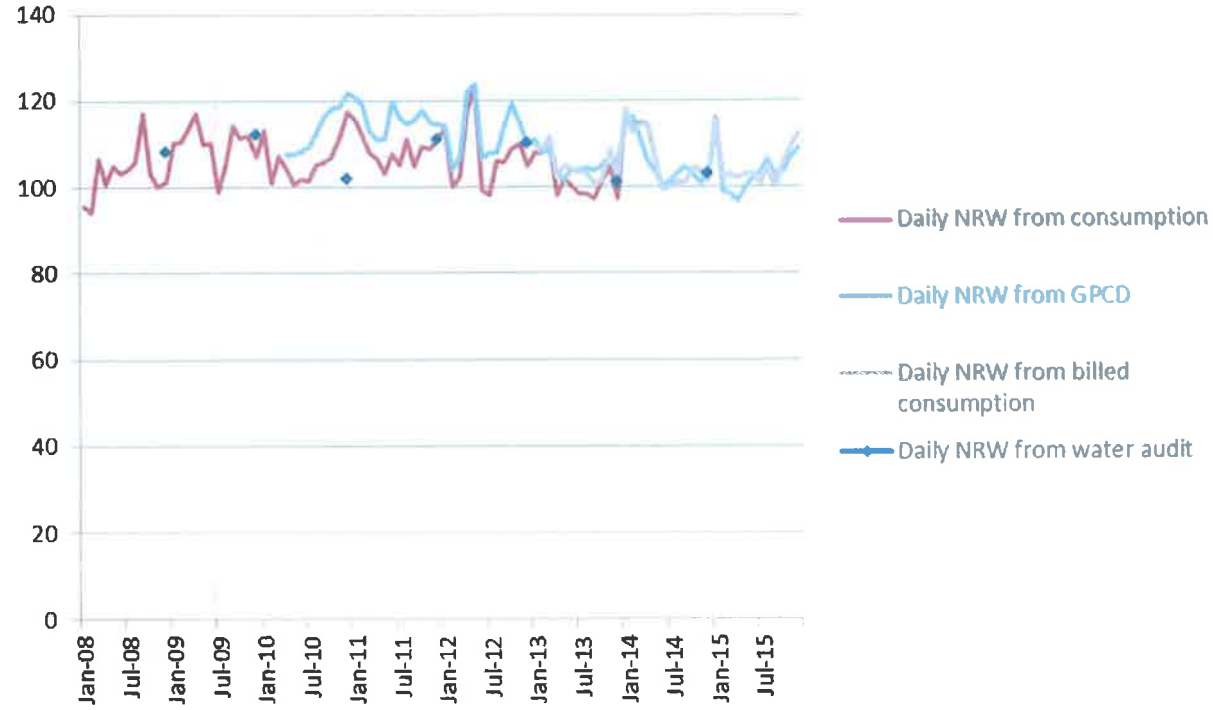


Figure 39 - Average Daily Non-Revenue Water by Month (MGD)

Three different estimates of water consumption (based on water consumption data; per capita water use; and billed consumption respectively) were compared to water production data from SWBNO's two water treatment plants. Monthly water production less estimated water consumption yielded an average daily volume of non-revenue water from each month from January 2008 through December 2015. Due to data availability restrictions, some estimates were obtained for shorter periods.

In addition, annual volumes of non-revenue water were provided by SWBNO's 2008-2014 Water Audit Report. These volumes were available on an annual basis only. These annual figures were converted to average daily non-revenue water volumes for each year and were plotted on the figure as a point for December of each month.

Figure 39 shows that daily non-revenue water in New Orleans has not significantly decreased since 2008. Although non-revenue water peaked during 2012 and has decreased since then, daily non-revenue water volumes consistently measure at or above 100 million gallons per day. The average daily water loss during this period was 107 million gallons per day.

SEWERAGE AND WATER BOARD
Inter-Office Memorandum

Date: April 1, 2017

From: Willie Mingo, Director of Procurement
Purchasing Department

Thru: Vicki Rivers, Deputy Director
Sewerage and Water Board New Orleans - Logistics

To: Sharon Judkins, Deputy Director
Sewerage and Water Board New Orleans- Administration

Re: **Executive Director's Approval of Contracts of $1,000,000.00 or less**

1. Tanner Industries.
   735 Davisville Rd; Southampton, PA 18966

   - Purchase of Anhydrous Ammonia
   - 1st and final renewal Start date:5/1/17
   - $358,050.00 annually

2. Sterling Water Technologies LLC.
   P O Box 536258: Pittsburgh, PA 15253

   - Purchase of Liquid Polyphosphate
   - 1st and final renewal Start date :5/1/17
   - $287,600.00 annually

3. Hamp's Enterprises
   1319 Newton Street, New Orleans, LA. 70114

   - Purchase of Reclaim Asphaltic Pavement (RAP)
   - 1ST and Final Renewal Start Date 5/1//17
   - $225,000.00 annually

4. Crescent Ford Trucks
   6121 Jefferson Hwy, Jefferson, LA. 70123

   - Installation of Automotive Remanufactured Engines and Related Parts
   - 1st and Final Renewal Start Date 5/1/17
   - $362,425.00 annually

5. Bollinger Armature Services LLC
   615 Destrehan Ave, Harvey, LA 70058

   - Contract 6260-Rewind of Constant Duty Motors 1 & 2 at DPS #6 & DPS #7
   - 90-Day completion upon the notice to proceed
   - $595,000.00

6. Houma Armature Works & Supply LLC
   2534 Cummins Rd, Houma, LA 70363

   - Contract 6261-2017 Rewind of Sewage Pump Motor at Sewage Pumping Station #21
   - 90 Day Completion upon the notice to proceed
   - $93,160.00

7. BLD Services, LLC
   2424 Tyler Street, Kenner, LA 70062

   - Contract 2127- Algiers Lock Forebay Waterline Replacement
   - 90 Day Completion upon the notice to proceed
   - $271,375.00

8. Cimsco Inc
   221 Canal Street, Metairie, LA 70005

   - Purchase of R.D. Wood Gate Valve Parts
   - One time purchase
   - $93,900.00

9. Oliver H. Van Horn
   4100 Euphrosine Street, New Orleans, LA 70125

   - Purchase of Eighteen Inch Variable Speed Lathe
   - One time purchase
   - $81,040.00

10. Houma Armature Works and Supply LLC
    2534 Cummins Rd., Houma, LA 70363

    - Purchase of (2) 275K Diesel Generators
    - One time purchase
    - $134,000.00 each

11. Hammerman & Gainer, Inc
    1010 Common Street Suite 2600, New Orleans, LA. 70122

    - Professional Claim Services
    - 1-year with 3 (1) year renewals
    - $37,000 annually

12. GCR Inc
    2921 Lakeshore Drive suite 500, New Orleans, LA 70122

    - Development of policies & procedures to guide procurement activities using federal funding
    - Start date: 12/12/16
    - Not to exceed $27,707.00

13. Eutis Engineering
    3011 28th Street, Metairie, LA. 70002

    - Construction materials testing & inspection services for New Orleans East Basin-West Lake Forest/Read Blvd. West Sewer Rehabilitation Construction Contract -30206
    - Start date November 16, 2016
    - Not to exceed $66,625.23

- Upon request, complete contract available for review in Procurement office.

Cc: Lawrence Williams

SEWERAGE AND WATER BOARD
Inter-Office Memorandum

Date: April 4, 2017

To: Valerie Rivers, Deputy Director - Logistics
Sharon Judkins, Deputy Director - Human Resources

From: Veronica Johnson-Christmas, EDBP

Re: EDBP Contract/Certification Summary - March 2017

Analyses conducted by EDBP

For the month of March 2017, EDBP Department reviewed four (4) Construction contracts. There were no Goods and Services or Professional Services contracts to review.

Construction Contracts:

1) **Contract #2126 - 2017 Water Main Point Repair, Water Service Connection, Water Valve, and Fire Hydrant Point Replacement at Various Sites throughout Orleans Parish**

The EDBP compliance team received two (2) bids on Friday, March 17, 2017 for subject contract. Thirty-six (36%) percent DBE participation was requested on subject contract.

Bid totals are as follows:

Wallace C. Drennan, Inc.	$2,944,440.00
Fleming Construction Co., LLC	$3,630,116.00

The apparent lowest bidder, **Wallace C. Drennan, Inc.** submitted **Prince Dump Truck Service** (eligible certified SLDBE) to provide general hauling of various types of material to and from job sites for $226,000.00 - 7.68%; and **C & M Construction Group, Inc.** (eligible certified SLDBE) to provide asphalt and concrete for $840,000.00 - 28.53%.

Total SLDBE participation: $1,066,000.00 - 36.20%.

The apparent second lowest bidder, **Fleming Construction Co., LLC** submitted **Cooper Contracting Group, LLC** (eligible certified SLDBE) to install water mains, perform water point repairs, to perform asphalt & concrete restoration for $1,100,000.00 - 30.30%; and **Herbert's Trucking & Equipment Service** (eligible certified SLDBE) to provide trucking, perform asphalt & concrete restoration, supply sand and stone materials for $210,000.00 - 5.78%.

Total SLDBE participation: $1,310,000.00 - 36.09%

Based upon the analysis of SLDBE participation, the Economically Disadvantaged Business Program recommends that the SLDBE participation submitted by Wallace C. Drennan, Inc.; and Fleming Construction Co., LLC, be considered as responsive.

2) **Contract #2127 - Algiers Lock Forebay Waterline Replacement**

The EDBP compliance team received three (3) bids on Friday, February 24, 2017 for subject contract. Twelve (12%) percent DBE participation was requested on subject contract.

Bid totals are as follows:

BLD Services, LLC	$271,375.00
Fleming Construction Co., LLC	$245,940.00
Grady Crawford Construction Co., Inc.	$395,937.00

The apparent lowest bidder, **BLD Services, LLC** submitted **Choice Supply Solution, LLC** (eligible certified SLDBE) to supply water pipes, water fittings and associated water materials for $33,250.00 - 12.25%.

Total SLDBE participation: $33,250.00 - 12.25%

The apparent second lowest bidder, **Fleming Construction Co., LLC** submitted **Choice Supply Solution, LLC** (eligible certified SLDBE) to supply pipes, fittings and associated materials for $38,357.74 - 15.60%.

Total SLDBE participation: $38,357.74 - 15.60%

The apparent third lowest bidder, **Grady Crawford Construction Co., Inc.**, did not submit a DBE Participation Summary Sheet for review.

Based upon the analysis of SLDBE participation, the Economically Disadvantaged Business Program recommends that the SLDBE participation submitted by **BLD Services, LLC**; and **Fleming Construction Co., LLC**; be considered as responsive.

3) **Contract #6260 - Rewind of Constant Duty Motors #1 and #2 at DPS #6 AND Amortisseur Winding Replacement and Cleaning of Motor "C" at DPS #6 and DPS #7**

The EDBP compliance team received three (3) bids on Friday, March 3, 2017 for subject contract. Five (5%) percent DBE participation was requested on subject contract.

Bid totals are as follows:

Bollinger Armature Services, LLC	$595,000.00
Gootee Construction, Inc.	$810,550.00
Frischhertz Electric Co., Inc.	$938,360.00

The apparent lowest bidder, **Bollinger Armature Services, LLC** submitted **Next Generation Logistics, LLC** (eligible certified SLDBE) to provide logistics, painting and labor for $30,166.00 for 5.07%.

Total SLDBE participation: $30,166.00 - 5.07%

The second lowest bidder, **Gootee Construction, Inc.**, did not submit a DBE Participation Summary Sheet for review.

The apparent third lowest bidder, **Frischhertz Electric Co., Inc.**, did not submit a DBE Participation Summary Sheet for review.

Based upon the analysis of SLDBE participation, the Economically Disadvantaged Business Program recommends that the SLDBE participation submitted by **Bollinger Armature Services, LLC** be considered as responsive.

4) **Contract #6261 - Rewind of the Sewage Pump Motor at Sewage Pumping Station #21**

The EDBP compliance team received two (2) bids on Friday, February 24, 2017 for subject contract. Five (5%) percent DBE participation was requested on subject contract.

Bid totals are as follows:

Houma Armature Works and Supply, LLC	$93,610.00
Gootee Construction, Inc.	$185,774.00

The apparent lowest bidder, **Houma Armature Works and Supply, LLC** submitted **JEI Solution, Inc.,** (eligible certified SLDBE) to perform electrical work and assistance on the repair and rewind of electric motor for $4,700.00 for 5.02%.

Total SLDBE participation: $4,700.00 - 5.02%

The apparent second lowest bidder, **Gootee Construction, Inc.**, did not submit a DBE Participation Summary Sheet for review.

Based upon the analysis of SLDBE participation, the Economically Disadvantaged Business Program recommends that the SLDBE participation submitted by **Houma Armature Works and Supply, LLC**, be considered as responsive.

Construction Review Committee Recommendations

The Construction Review Committee met on March 8, 2017 and made the following recommendations:

OPEN MARKET CONTRACTS

1. **Contract #30102 - Structural Rehabilitation to DPS #17**
   Twenty-six percent (26%) SLDBE participation, one (1) year with no renewal option

Estimated Cost:	$6,636,195.00
Areas of Participation:	Concrete, metals, miscellaneous structural and architectural improvements, plumbing, HVAC and electrical

2. **Contract #30109 - SPS "A" Structural Rehabilitation**
   Thirty-six percent (36%) SLDBE participation, one (1) year with no renewal option

Estimated Cost:	$825,962.00
Areas of Participation:	Site preparation, concrete, masonry, metals, and finishes

3. **Contract #2128 - Water Main Point Repair, Water Service Connection, Water Valve, and Fire Hydrant Point Replacement at Various Sites throughout Orleans Parish**
   Thirty-six percent (36%) SLDBE participation, one year contract, with one (1) one-year renewal option

   Estimate Cost: $851,750.00
   Areas of Participation: Remove and replace meter boxes, service connections and fire hydrants, install brick manholes, valve boxes, and valve covers, and restore water mains.

4. **Contract #30212 - Restoration of Gravity Flow Sanitary Sewer Mains by Point Repair at Various Sites throughout Orleans Parish**
   Thirty-six percent (36%) SLDBE participation, one year contract, with one (1) one-year renewal option

   Estimated Cost: $950,850.00
   Areas of Participation: All areas related to repair, removal, restoration and replacement of the sewer main system.

Staff Contract Review Committee Recommendations

The Staff Contract Review Committee met on March 8, 2017 and made the following recommendations:

OPEN MARKET CONTRACTS

1. **Furnishing Aerosol, Janitorial and Industrial Chemicals to Sewerage & Water Board of New Orleans**
   Thirty percent (30%) SLDBE Participation, one (1) year with a one (1) one-year renewal option

   Budget Amount: $300,000.00
   Areas of Participation: Supply and delivery of products

2. **Furnishing Hand Tools, Hardware Supplies, Paint and Paint Supplies to the Sewerage & Water Board of New Orleans**
   Thirty percent (30%) SLDBE Participation, one (1) year with a one (1) one-year renewal option

   Budget Amount: $200,000.00
   Area of Participation: Supply and delivery of products

3. **Furnishing Paper Products and Janitorial Supplies to the Sewerage & Water Board of New Orleans**
   Thirty percent (30%) SLDBE Participation, one (1) year with a one (1) one-year renewal option

   Budget Amount: $50,000.00
   Area of Participation: Supply and delivery of products

RENEWAL CONTRACTS

4. **Preparing the 2016 Report on Operations for Sewerage & Water Board of New Orleans**
   First Renewal, of four (4) one (1) year renewal options, 35% SLDBE Participation

Renewal Cost:	$116,000.00
Prime Contractor:	Black and Veatch Management Consulting, LLC
DBE Subcontractors:	Julien Engineering & Consulting, Inc; and Bruno & Tervalon, LLP
DBE participation goal:	35%
DBE participation achieved:	34.60%

Sewerage & Water Board of New Orleans Contracts with DBE Participation January through March 2017

Sewerage & Water Board of New Orleans Contracts with DBE Participation January 2017 - March 2017

Goods & Services Contracts

Contract Description	Contract Dollar Amount	Prime Contractor	DBE Subcontractor	DBE %	DBE Dollar Value	Award Date
YW 17-0005; Furnishing Rubber PVC Hip Boots and Knee Boots	$199,996.00	Southeast Safety and Supply	Assorted Products	31.00%	$62,000.00	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%	$88,662.00	3/15/2017
Total Goods & Services Contracts	**$495,536.00**				**$150,662.00**	

Sewerage & Water Board Contracts with DBE Participation January 2017 - March 2017

Construction Contracts

Contract Description	Contract Dollar Amount	Prime Contractor	DBE Sub-Contractor	Awarded DBE %		Awarded DBE Dollar Value	Award Date
			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		
#1368 - HMGP Oak Street Pump Station Upgrade and Rehabilitation Project	$23,492,500.00	M.R. Pitmann Group, LLC	C.Watson Group	1.43%	$336,000.00		
			Total	**11.98%**		$2,815,000.00	1/18/17
Total Construction Contracts	**$23,492,500.00**					**$2,815,000.00**	

Sewerage and Water Board of New Orleans
Customer Service Report
Indicators of Metric Results
March 2017

	Goal	Goal Met	Within Control Limits	Trend
Billing Accuracy / Reasonable				
	Meters Read			
	Estimated Bills			
	High Bill Complaints			
	Adjusted Bills			
Call Center	Customer Contacts			
	Call Wait Time Answered			
	Call Wait Time Abandoned			
	Abandoned Calls			
	Emergency Abandoned Calls			
Problem Resolution				
	Low Water Pressure			
	Water System Leaks			
	Sewer System Leaks			
Collections Effectiveness	Accounts Off for Non-Payment			
	Receivables 30 to 120 Days Old			
	Receivables 120 Days and Older			

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

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: Close

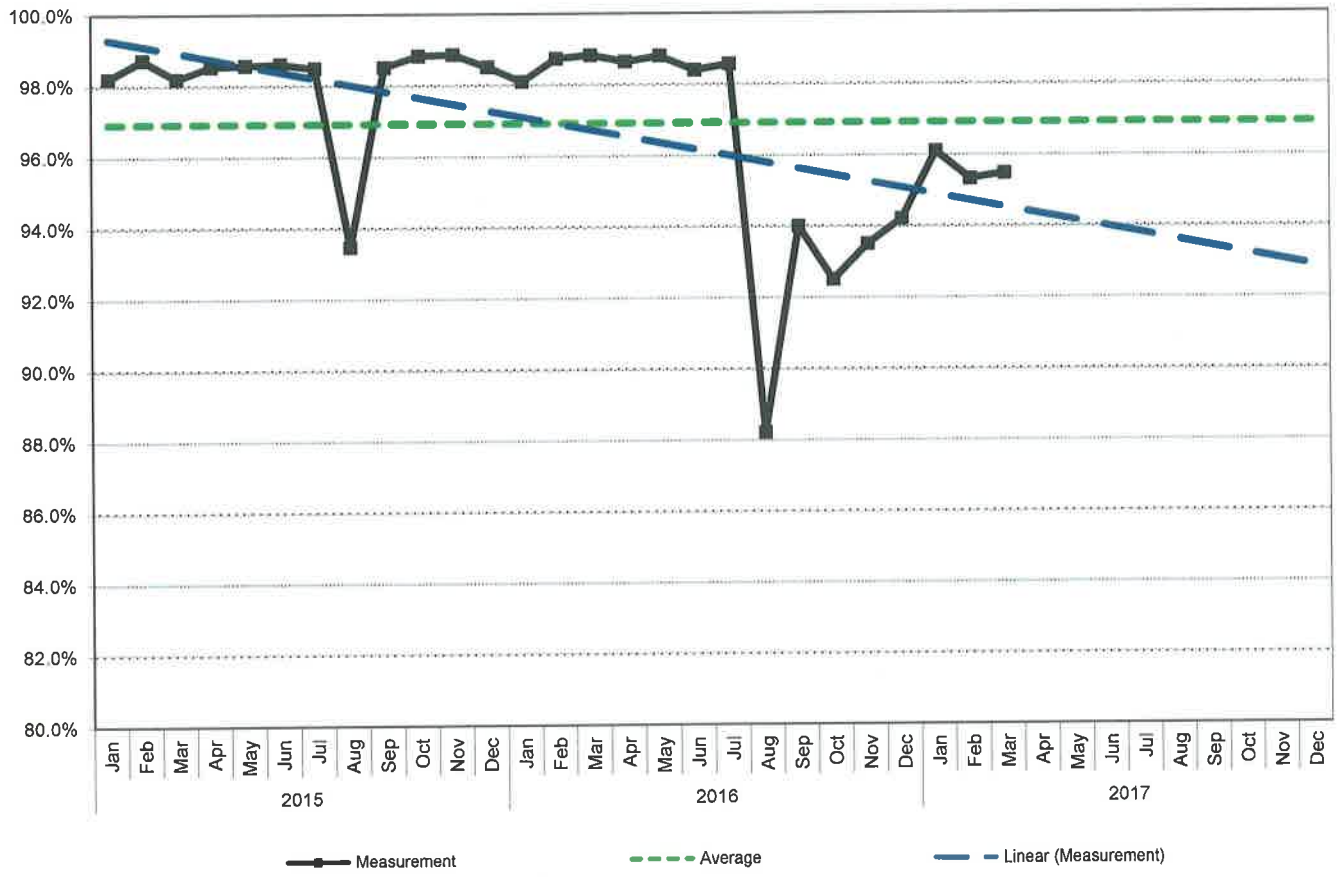
Trend: Unfavorable

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
2015	98.2%	98.7%	98.2%	98.5%	98.6%	98.6%	98.5%	93.5%	98.5%	98.8%	98.9%	98.5%
2016	98.1%	98.7%	98.8%	98.6%	98.8%	98.4%	98.6%	88.2%	94.0%	92.5%	93.5%	94.2%
2017	96.1%	95.3%	95.5%									

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: Close

Process Operating Within Control Limits:
Yes

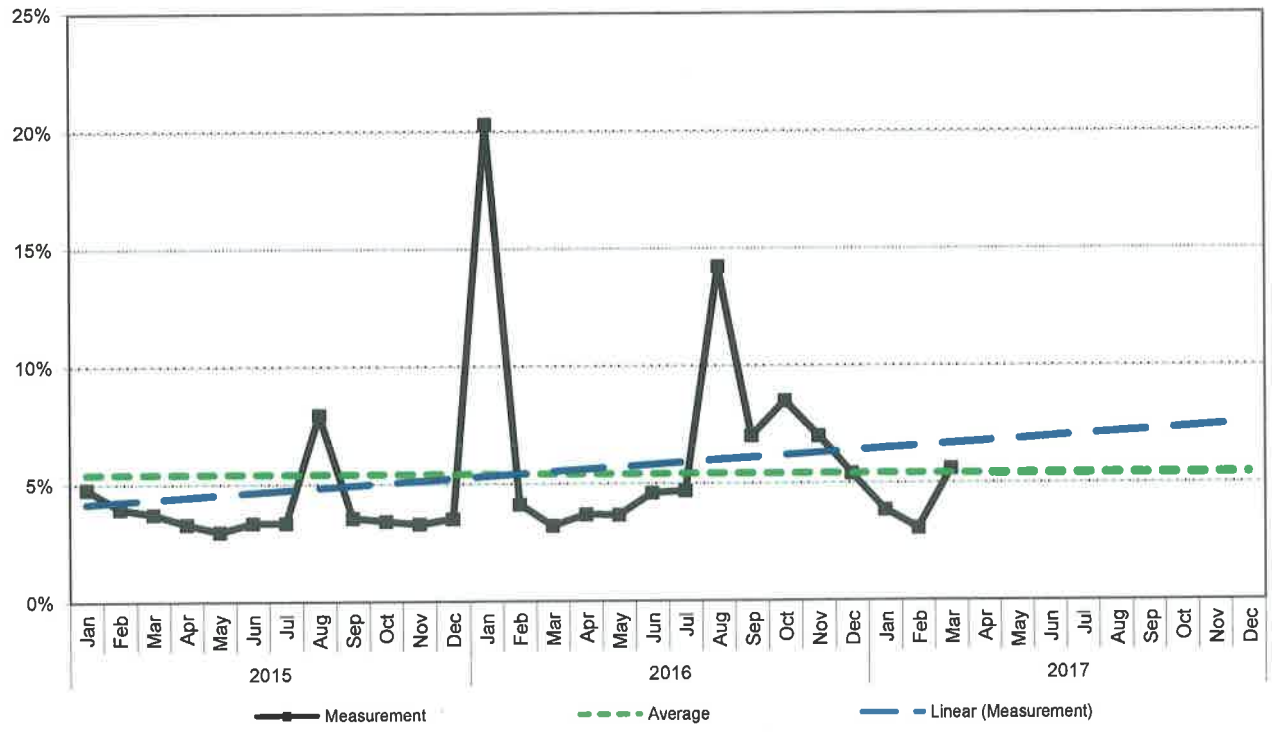
Trend: Unfavorable

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
2015	4.8%	4.0%	3.7%	3.3%	3.0%	3.4%	3.4%	7.9%	3.6%	3.4%	3.3%	3.5%
2016	20.3%	4.1%	3.2%	3.7%	3.7%	4.6%	4.7%	14.2%	7.0%	8.5%	7.0%	5.4%
2017	3.9%	3.1%	5.6%									

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: No

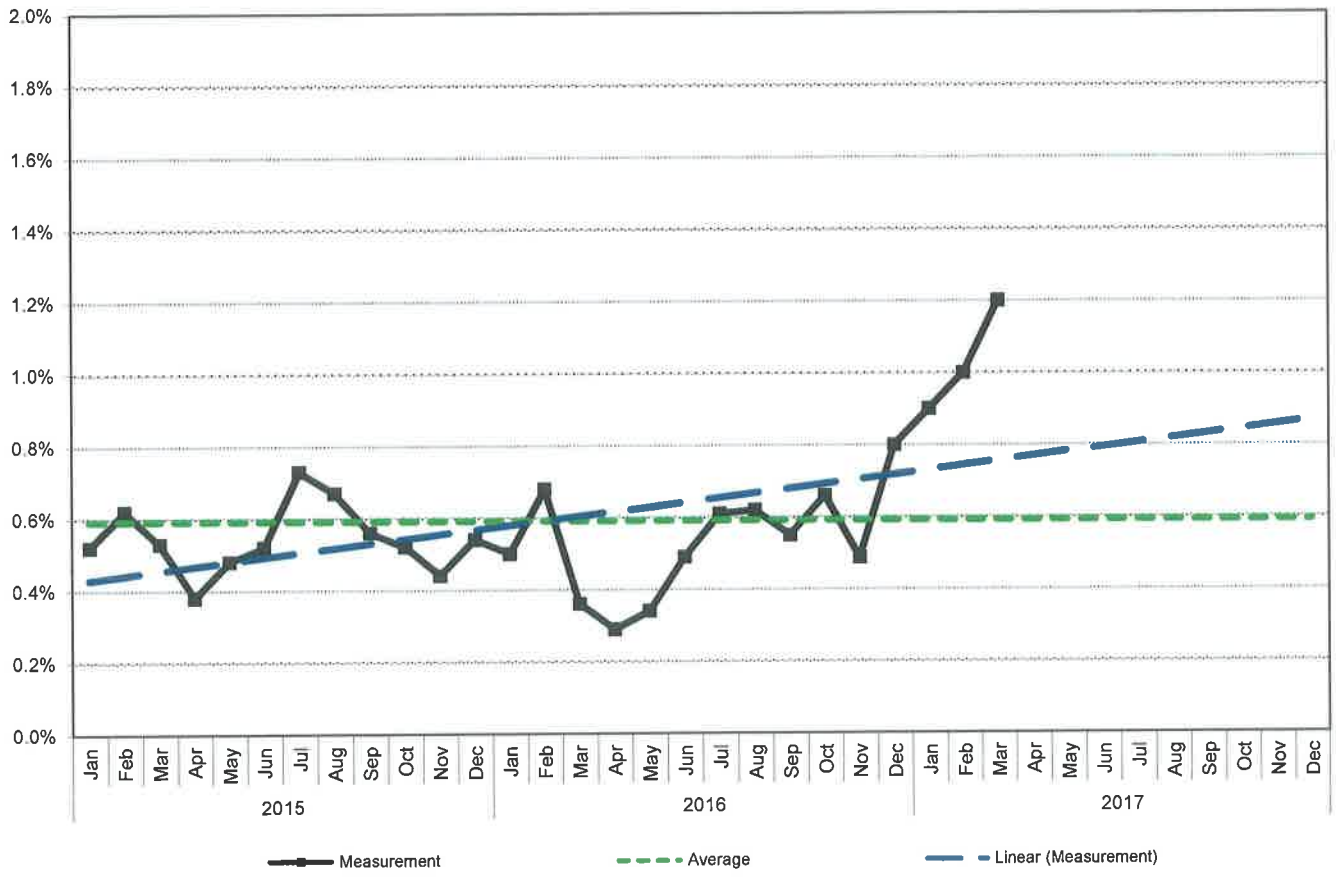
Trend: Unfavorable

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
2015	0.5%	0.6%	0.5%	0.4%	0.5%	0.5%	0.7%	0.7%	0.6%	0.5%	0.4%	0.5%
2016	0.5%	0.7%	0.4%	0.3%	0.3%	0.5%	0.6%	0.6%	0.6%	0.7%	0.5%	0.8%
2017	0.9%	1.0%	1.2%									

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

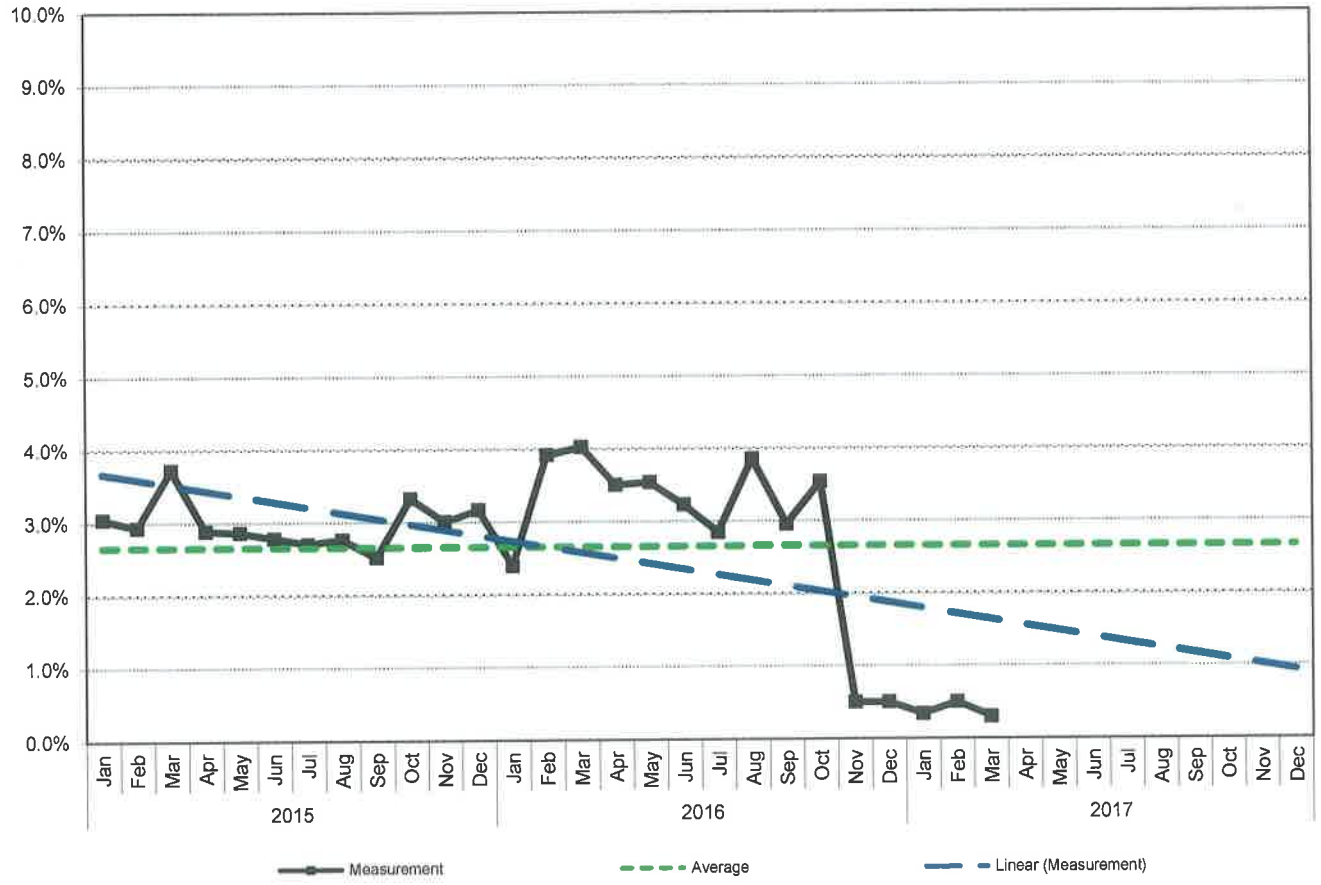
Trend: Favorable

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

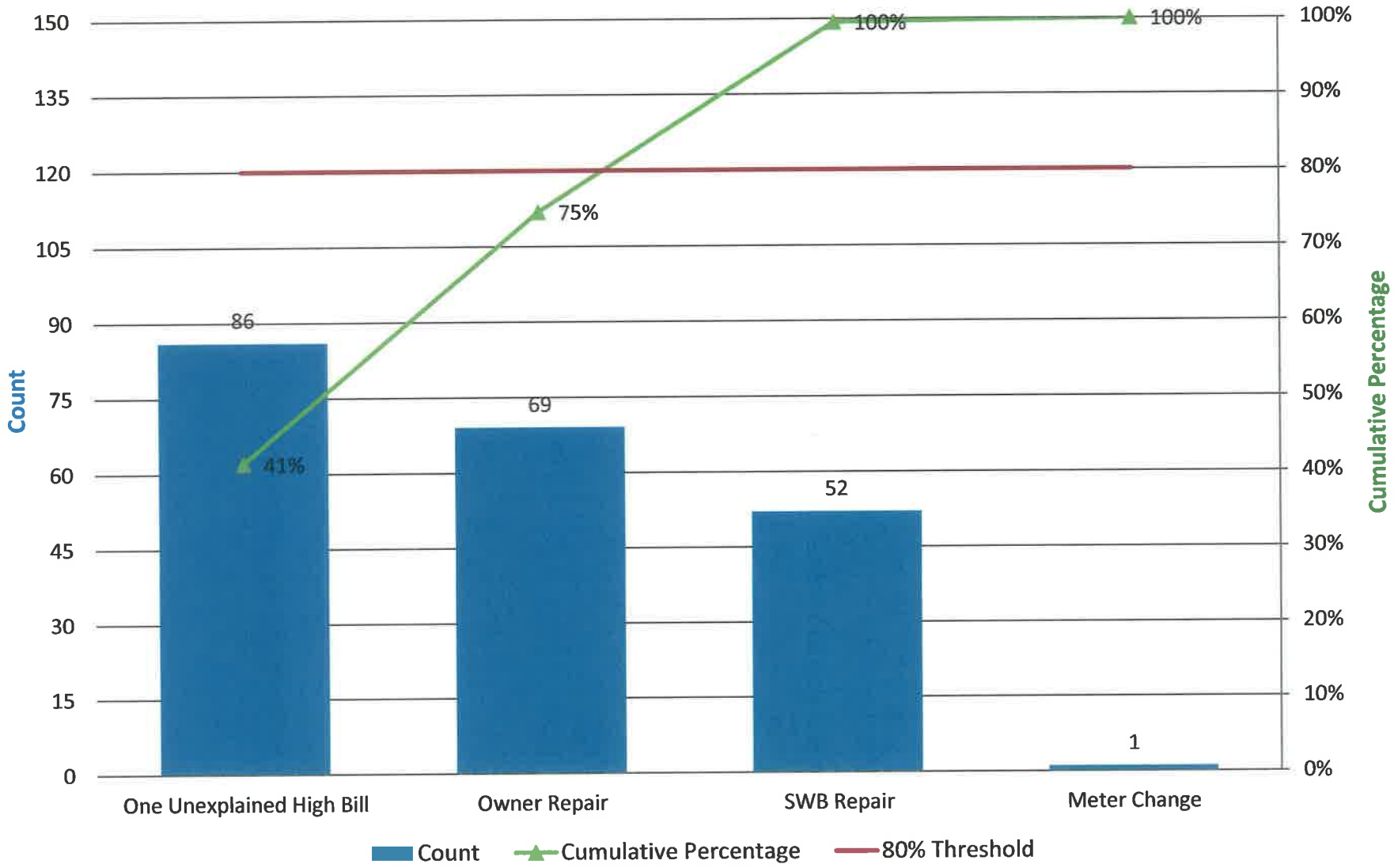
Adjustments have reduced sharply following implementation of the new billing sysem as a result of the ability to correct a bill by cancelling and rebilling rather than by adjustment.



Data Table

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	3.1%	2.9%	3.7%	2.9%	2.9%	2.8%	2.7%	2.8%	2.5%	3.3%	3.0%	3.2%
2016	2.4%	3.9%	4.0%	3.5%	3.5%	3.2%	2.9%	3.9%	3.0%	3.5%	0.5%	0.5%
2017	0.3%	0.5%	0.3%									

Sewerage and Water Board of New Orleans
Reasons for Adjustments
March 2017



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: Close

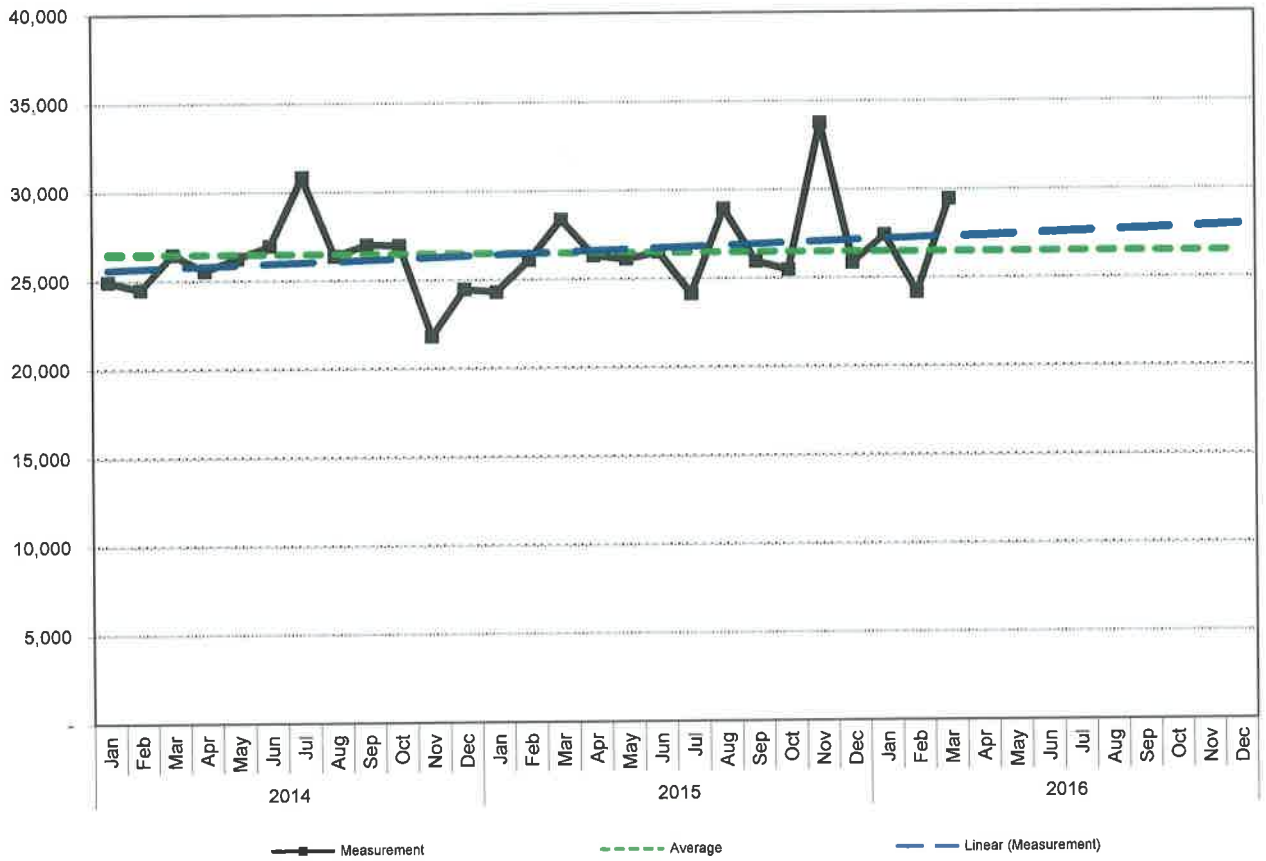
Trend: Level

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 continously, 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
2014	24,967	24,496	26,486	25,565	26,261	26,963	30,836	26,368	27,019	26,973	21,816	24,469
2015	24,311	26,089	28,365	26,333	26,121	26,515	24,149	28,942	25,958	25,483	33,746	25,866
2016	27,425	24,169	29,436									