

Sewerage and Water Board of New Orleans (LA)

Issuer: Sewerage and Water Board of New Orleans

Affirmed	Rating	Outlook
WIFIA Loan for Sewer and Water Line Rehabilitation, Repair and Replacement Program	A+	Stable

Methodology:

[U.S. Municipal Retail Utility Revenue Bond Rating Methodology](#)

[ESG Global Rating Methodology](#)

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Rating Summary: The rating affirmation for the Sewerage and Water Board of New Orleans' ("SWBNO" or the "Board") WIFIA¹ Loan for the Sewer and Water Line Rehabilitation, Repair, and Replacement Program (the "WIFIA Loan"), reflects the SWBNO's experienced management team, independent sewer rate-setting authority, solid financial performance, and strong legal provisions supporting the debt. Offsetting these strengths is the substantial sewer capital investments needed to meet mandated environmental and aged-infrastructure improvements, and the limitations on rate flexibility suggested by the service area's weaker demographic profile.

The Board closed on the WIFIA Loan in November 2021 in an agreement with the U.S. Environmental Protection Agency (EPA) to borrow \$275 million to finance rehabilitation projects in SWBNO's sewer system for the purpose of satisfying a federal Consent Decree (the "Decree") by 2025 to update aging infrastructure. SWBNO pledges the sewer system's net revenues to repay the WIFIA Loan, which is on parity with \$284.4 million in sewerage system revenue bonds.

SWBNO was created by the Louisiana legislature in 1899 as a special board and enterprise fund of the City of New Orleans (the "City"), to operate the water, sewerage, and drainage systems for the City. The utilities collectively serve 364 square miles of the City, with the sewerage system organized around two distinct wastewater treatment plants (WWTPs) located on the east and west banks of the Mississippi River. As an independent entity of the city, SWBNO is governed by an appointed 11-member Board of Directors. Proposed sewer rate changes are not subject to any state or federal oversight, although rate adjustments must be approved by the City Council and the Board of Liquidation (BOL), which is the City's debt manager.

SWBNO maintains an ongoing ten-year capital improvement plan (CIP) for the sewerage system, where a significant portion of the CIP includes projects to fulfill SWBNO's obligation toward the Decree. The primary purpose of the Decree is to address sanitary and combined sewer overflows. SWBNO entered a Third Modified Consent Decree with the EPA and United States Department of Justice (DOJ) in July 2014, building off of the original Decree entered into in 1998 and subsequently modified in 2010 and 2013. Management states that work to address the Third Modified Consent Decree by the October 2025 deadline is on track, though overall capital project spending has been slower than expected due to the size and breadth of SWBNO's sewer improvements and gradual funding.

Due to its low elevation, increasing subsidence rates, and rising sea levels, the City is vulnerable to extreme weather events and climate change hazards. Favorably, the Board effectively responded to and minimized service interruptions during Hurricane Ida in 2021. SWBNO proactively secured turbines given the Sewerage System's outsized reliance on electricity to power operations, which led to fewer service disruptions for customers, and dispatched sewage removal trucks when the East Bank Wastewater Treatment Plant temporarily lost power during the storm, preventing system overload. More recently, the water system is challenged by encroaching saltwater intrusion into the water supply, though there is no evidence thus far of any adverse impact to the sewerage infrastructure.

KBRA views the legal provisions supporting the WIFIA Loan to be strong, highlighted by a rate covenant of 1.25x and a debt service reserve fund (DSRF) of \$22 million funded at maximum annual debt service (MADS). WIFIA debt service is supported by a pledge of the net revenues of the sewer system, on parity with the sewer revenue bonds. The revenue of SWBNO's water and drainage systems are not pledged as security for the payment of the sewer system debt obligations.

New Orleans, being the largest city in Louisiana, is a crossroads for transportation and commerce near the mouth of the Mississippi River. The City's economic base benefits from a concentration of higher education and healthcare institutions, in addition to leisure, trade (shipping), and governmental entities. Educational attainment levels exceed the state and nation, although the poverty rate (22%) continues to be a challenge. The service area, which is coterminous with the

¹ WIFIA – Water Infrastructure Finance and Innovation Act.

City, benefits from a more favorable per capital income level than the State, although behind the national level. Unemployment remains above the State and U.S. levels.

SWBNO pursued an eight-year program of 10% annual rate increases from 2013 through 2020. Current sewer rates for a typical residential customer are mid-range when compared to other selected wastewater providers. In KBRA’s opinion, while the rates currently remain affordable, SWBNO’s flexibility for rate increases in the future is somewhat limited given the high poverty rate and an average bill that accounts for 1.5% of 2021 median household income relative to EPA’s suggested 2% as high.

Financial operations remain sound since FY2018, with operating revenue growth (CAGR 7.1%) exceeding operating expense growth (CAGR 2.4%). Liquidity remains solid at 209 days cash on hand (DCOH), which exceeds the prior year level (178 days) and the 90 DCOH Operating Reserve Requirement stipulated in the Revenue Bond documents.

Debt service coverage (DSC) on the Sewerage System’s senior debt averaged 3.4x over the past five years (FY2018-FY2022). In FY2021, DSC increased to 6.64x due to a temporary decline in debt service. DSC was 2.59x for FY22 and is projected to exceed 2x over the five-year forecast horizon. Long-term debt to net plant (the “Leverage Ratio”) equaled a manageable 27.8% at FYE 2022. KBRA expects the Leverage Ratio to increase moderately due to future borrowing requirements associated with the ten-year CIP, including draws on the vast majority of the \$275 million WIFIA Loan.

The Stable Outlook reflects KBRA’s expectation that the Sewerage System will continue to achieve sound financial performance, with strong DSC while executing its large capital program.

Key Credit Considerations

The rating was affirmed because of the following key credit considerations:

Credit Positives

- Provision of an essential utility service with local rate-setting authority.
- Sewer system’s maintenance of historically solid financial performance.
- Solid management team with experience leading an urban utility system through extreme weather events and implementing a multifaceted capital plan.
- Strong legal provisions for the WIFIA Loan, including a rate covenant of 1.25x and fully funded DSRF.

Credit Challenges

- Major capital plan to fund mandated and needed infrastructure updates.
- Reduced rate flexibility suggested by the service area’s weaker demographic profile.

Rating Sensitivities

- | | |
|---|---|
| <ul style="list-style-type: none"> Successful implementation of capital projects on-time and on-budget, supported by timely rate increases, resulting in stronger than projected DSC. | + |
| <ul style="list-style-type: none"> Service area affordability challenges that compromise the Board’s ability to raise rates. Material delay and/or inadequate replacement of needed improvements to the City’s aging sewer system under the CIP, increasing future capex and jeopardizing the system’s reliability. | - |

Key Ratios					
(\$ in Thousands)					
FYE December 31	2018	2019	2020	2021	2022
Income Statement					
Total Revenues	\$ 118,030	\$ 155,360	\$ 147,918	\$ 153,227	\$ 159,909
Operating Expenses Net of Noncash Exps	81,271	78,709	87,958	98,753	100,304
Net Revenues Available for Debt Service	36,759	76,651	59,960	54,474	59,604
Key Ratios					
Senior Debt Service Requirements	\$ 23,139	\$ 21,714	\$ 21,805	\$ 8,205	\$ 23,037
Senior Debt Service Coverage	1.59x	3.53x	2.75x	6.64x	2.59x
Cash and Cash Equivalents	\$ 30,936	\$ 32,677	\$ 45,806	\$ 51,146	\$ 60,471
Days Cash On Hand	118	125	177	178	209
Total Debt	\$ 278,626	\$ 267,664	\$ 340,475	\$ 345,098	\$ 331,090
Debt/Total Capitalization	24.4%	23.5%	27.3%	26.9%	25.1%
Debt/Net Plant	25.6%	24.4%	30.3%	30.0%	27.8%

Source: SWBNO



Rating Determinants (RD)	
1. Management, Governance, Regulatory Framework	A+
2. Legal Mechanics and Security Provisions	AA+
3. Service Area and Demand	A+
4. Operations and Capital	A-
5. Financial Profile and Debt	AA-

Below is an update for all rating determinants except RD2, as the Legal Mechanics and Security Provisions remain unchanged. For a detailed review of RD2, please refer to KBRA's SWBNA [report](#) dated October 27, 2021.

RD 1: Management, Governance, Regulatory Framework

Governance Structure

The Sewerage and Water Board of New Orleans (SWBNO or the "Board") was created in 1899 by Act 6 of the Legislature of the State of New Orleans. The SWBNO is a special board that operates independent of the government of the City of New Orleans. Its mandate is to construct, maintain and operate the sewer, water, and drainage systems for the City.

The Board is comprised of eleven appointed members and includes: the City's Mayor; the chair of the City's Public Works, Sanitation and Environmental Committee; two representatives of the Board of Liquidation (see below); and seven citizens, five of which are council district representatives and two are consumer advocates, with consumer protection experience.

Citizen members are appointed by the Mayor, with the advice and consent of the City Council, for staggered four-year terms. Members have experience in one or more disciplines that contribute to the effective operations of the utility systems, including engineering, environmental quality, urban planning, and business administration, among others. KBRA views the professional and demographic diversity of the Board favorably. Daily management of SWBNO is led by an experienced Executive Director and management team with senior level experience managing urban utility system operations.

Board of Liquidation

The BOL was created by the State Legislature in 1880 and made a separate and distinct entity (i.e., body corporate) from the City in 1890. It is vested with the exclusive control and direction of all matters related to the issuance of debt by the City and its agencies, including the SWBNO. The BOL approved the Board's planned borrowing under the WIFIA program. The BOL's nine members include the Mayor, two ex-officio City Council members-at-large, and six appointed syndicate members.

Each month, the SWBNO is required to pay the BOL an amount equal to 1/12th of annual principal and monthly interest on Sewerage Service and Waters System Revenue Bonds secured by Net Revenues of the Sewerage System and Water System, respectively. In addition, if the SWBNO fails to increase water rates to the extent necessary to satisfy the Rate Covenant, the BOL may compel the SWBNO to do so by appropriate judicial proceedings. No such action has ever been required to be taken by the BOL.

Rate Setting Authority

Sewer (and water) rates are independently established by the Board, albeit with the approval of the BOL and the City Council. The rates are designed to recover the operation, maintenance and capital costs from each customer class based upon cost of service. KBRA notes that the SWBNO, with the support of the City Council have demonstrated a willingness to increase rates when needed, as exemplified by the annual 10% increases to the sewer system rates for eight years between January 1, 2013, to January 1, 2020.

Capital Plan Management

The SWBNO maintains an on-going, ten-year CIP for the water, sewer and drainage systems that comprise the SWBNO. Each utility system is separately financed, secured, and accounted for, and capex for each system is funded from various sources, including bond proceeds, grants, net revenues per each utility system, and certain revenues received by the City and paid to the Board. CIP projects for the sewerage system are designed to ensure compliance with the federal Consent Decree (described below), to upgrade aging sewer infrastructure, and make other improvements as prioritized by the SWBNO.

EPA's Consent Decree

Not unlike many urban utility systems, the SWBNO is a party to the Decree with the EPA to reduce sanitary sewer overflows (SSO). The Board's original Decree, which dates back to 1998, was most recently amended in 2014, with an extended timeline for completion to October 2025. The goal of the Decree remains correcting the SSOs by increasing capacity via rehabilitation, reducing cross-connectivity, improving response times to remedy overflows, and other items as required by the Clean Water and Clean Air Acts.



For FY2023, the combined utility CIP budget is \$517.7 million, with the sewer system accounting for more than half of the total. The major funding sources for FY23 capex include proceeds under the WIFIA loan and sewer revenue bonds, state revolving funds and federal sources (i.e., FEMA). A minor portion of the funding is anticipated to be supported by internally generated funds (less than 20%).

The WIFIA loan provides below-market financing (1.85% interest rate) and a long-dated final maturity (2057). Borrowings under the WIFIA loan commenced with the issuance of the series 2021 sewer revenue bonds as the WIFIA lending program requires the local entity to provide matching funding. The WIFIA loan can account for no more than 49% of the total project funding.

RD 3: Service Area and Demand

New Orleans is the largest city in Louisiana and the second-largest city on the US Gulf Coast (following Houston). It is a crossroads for transportation and commerce near the mouth of the Mississippi River. The City's major economic sectors include energy, healthcare, tourism, international trade and shipping, and education.

Customer Concentration, Profile and Demand

Customer concentration is low with the ten largest customers comprising 5.8% of sewerage system revenues in FY2022. The top ten customers are diversified in terms of business sector and include: higher education, healthcare, housing, leisure, and tourism.

Customer Profile and Demand

In 2022, SWBNO's Sewerage System served approximately 391,000 city residents. Sewer customers, which totaled 130,766 for FY2022, have been trending lower (-2.4% since 2018) as the population has contracted in recent years.

Population Trend

The City's population declined by approximately half in the year following 2005's Hurricane Katrina. The population had recovered to a level 21% below the pre-Katrina level by 2016 but has experienced measured decline in subsequent years, declining another 5.7% between 2016 and 2022. This population decline drives negative growth in the Sewerage System's customer base, with the number of customer accounts declining by 3.0% since 2016. Projections developed for the Board's ongoing consent decree program indicate that the City's population could decrease by 13% between 2019 and 2038.

Figure 1

Sewerage and Water Board of New Orleans			
FY2022 Sewerage System Largest Customers			
Customer	Gallons Used (000s)	Sewerage Revenue	% Total Operating Revenue
Tulane University	193,966	\$ 2,105,520	1.32%
University of New Orleans	103,521	1,034,010	0.65%
Veteran's Hospital	97,578	909,148	0.57%
Tuoro Infirmary	86,692	870,696	0.54%
Hilton Hotel New Orleans	87,865	831,670	0.52%
LSU Health Sciences Center	72,145	826,059	0.52%
Xavier University	62,831	742,337	0.46%
Lakefront Management Authority	71,937	679,473	0.42%
Loyola University	61,799	641,345	0.40%
GMF Parc Fontaine LLC	66,794	590,955	0.37%
Top Ten Customers - Total	905,128	\$ 9,231,214	5.77%
Sewer System Total Operating Revenues - FY2022		\$ 159,908,658	

Source: SWBNO Continuing Disclosure FY2022.

Figure 2

Population	City of New Orleans		New Orleans -Metairie MSA		State of Louisiana		United States	
	#	Δ YoY	#	Δ YoY	#	Δ YoY	#	Δ YoY
2000	484,674	5.2%	1,339,280	0.1%	4,471,885	0.2%	282,162,411	1.1%
2001	487,363	0.6%	1,344,528	0.4%	4,477,875	0.1%	284,968,955	1.0%
2002	489,722	0.5%	1,354,638	0.8%	4,497,267	0.4%	287,625,193	0.9%
2003	492,187	0.5%	1,365,146	0.8%	4,521,042	0.5%	290,107,933	0.9%
2004	493,765	0.3%	1,377,699	0.9%	4,552,238	0.7%	292,805,298	0.9%
2005	494,294	0.1%	1,386,429	0.6%	4,576,628	0.5%	295,516,599	0.9%
2006	230,172	-53.4%	1,040,195	-25.0%	4,302,665	-6.0%	298,379,912	1.0%
2007	268,751	16.8%	1,096,365	5.4%	4,375,581	1.7%	301,231,207	1.0%
2008	301,842	12.3%	1,135,831	3.6%	4,435,586	1.4%	304,093,966	1.0%
2009	327,803	8.6%	1,167,842	2.8%	4,491,648	1.3%	306,771,529	0.9%
2010	343,829	4.9%	1,195,359	2.4%	4,544,800	1.2%	309,378,433	0.8%
2011	360,822	4.9%	1,214,121	1.6%	4,577,075	0.7%	311,841,632	0.8%
2012	369,947	2.5%	1,227,049	1.1%	4,603,574	0.6%	314,344,331	0.8%
2013	378,863	2.4%	1,239,715	1.0%	4,628,228	0.5%	316,735,375	0.8%
2014	384,228	1.4%	1,248,997	0.7%	4,648,811	0.4%	319,270,047	0.8%
2015	390,094	1.5%	1,260,322	0.9%	4,670,563	0.5%	321,829,327	0.8%
2016	392,265	0.6%	1,267,717	0.6%	4,685,605	0.3%	324,367,742	0.8%
2017	391,819	-0.1%	1,270,372	0.2%	4,678,606	-0.1%	326,623,063	0.7%
2018	391,506	-0.1%	1,270,659	0.0%	4,670,052	-0.2%	328,542,157	0.6%
2019	391,172	-0.1%	1,272,533	0.1%	4,664,558	-0.1%	330,233,102	0.5%
2020	383,997	-1.8%	1,270,366	-0.2%	4,651,664	-0.3%	331,511,512	0.4%
2021	377,063	-1.8%	1,261,726	-0.7%	4,627,098	-0.5%	332,031,554	0.2%
2022	369,749	-1.9%	1,246,176	-1.2%	4,590,241	-0.8%	333,287,557	0.4%
10-Yr Δ	-0.1%		1.6%		-0.3%		6.0%	
10-Yr CAGR	-0.01%		0.15%		-0.03%		0.59%	

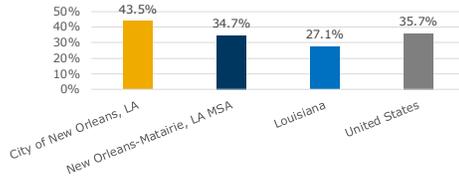
Source: U.S. Census Bureau

Socioeconomic Characteristics

The City is characterized by strong educational attainment, a high incidence of poverty, and per capita income at 117% of the State but only 90% of the nation.

Figure 3

Educational Attainment
Portion of Population
25 and Older
w/Bachelor's Degree+ (2022)

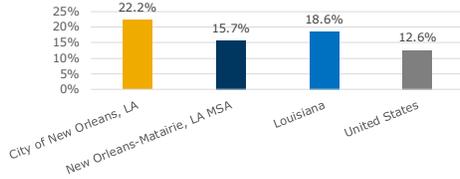


	2010	2022	Δ 2010 to 2022
City of New Orleans, LA	33.1%	43.5%	10.4%
New Orleans-Metairie, LA MSA	26.8%	34.7%	7.9%
Louisiana	21.4%	27.1%	5.7%
United States	28.2%	35.7%	7.5%

Source: U.S. Census

Figure 4

Poverty Level
All People
(2022)



	2010	2022	Δ 2010 to 2022
City of New Orleans, LA	27.2%	22.2%	-5.0%
New Orleans-Metairie, LA MSA	25.8%	15.7%	-10.1%
Louisiana	18.7%	18.6%	-0.1%
United States	15.3%	12.6%	-2.7%

Source: U.S. Census

Figure 5

Income Per Capita
In Dollars
(2022)



	2010	2022	Δ 2010 to 2022
City of New Orleans, LA	\$25,082	\$37,635	50.0%
New Orleans-Metairie, LA MSA	\$25,625	\$37,007	44.4%
Louisiana	\$22,862	\$32,171	40.7%
United States	\$26,059	\$41,804	60.4%

Source: U.S. Census

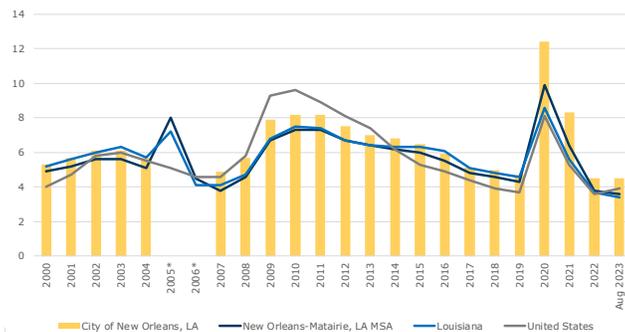
Employment and Unemployment

City employment levels continue to recover toward the 2019 pre-pandemic level. According to U.S. Bureau of Labor Statistics data, the total number of jobs is 1.7% below 2019 average level as of August 2023. Employment growth exceeded that of the State and nation through the last economic cycle, increasing 27.2% between the 2009 Global Financial Crisis low and 2019, compared to growth of 4.2% for the State and 13.3% for the nation, but this primarily reflects several years of very pronounced recovery in the years following Hurricane Katrina.

The City unemployment rate in 2022 was below the 2019 pre-pandemic level. The unemployment rate was 4.5% as of August 2023 compared to 3.4% for the State and 3.9% for the nation.

Figure 6

Unemployment Rate
Not Seasonally Adjusted (%)



	City of New Orleans	New Orleans-Metairie MSA	State of Louisiana	United States
August 2023	4.5	3.6	3.4	3.9
July 2023	4.2	3.4	3.3	3.8
Great Recession Annualized Peak	8.2	7.3	7.5	9.6
Point Δ Since Great Recession Annualized Peak	-3.7	-3.7	-4.1	-5.7

Source: U.S. Bureau of Labor Statistics

*City data not available for 2005 and 2006 due to impact of Hurricane Katrina.

Figure 7

Total Employment
(Not Seasonally Adjusted) (in thousands)

	City of New Orleans	Δ(%)	New Orleans-Metairie MSA	Δ(%)	State of Louisiana	Δ(%)	United States	Δ(%)
2000	199		602		1,922		136,891	
2001	194	-2.3%	594	-1.3%	1,914	-0.4%	136,933	0.0%
2002	189	-2.9%	584	-1.7%	1,893	-1.1%	136,485	-0.3%
2003	186	-1.4%	583	-0.1%	1,898	0.3%	137,736	0.9%
2004	184	-1.1%	587	0.6%	1,915	0.9%	139,252	1.1%
2005	*		548	-6.5%	1,929	0.8%	141,730	1.8%
2006	*		480	-12.5%	1,919	-0.5%	144,427	1.9%
2007	102	-44.5%	501	4.4%	1,944	1.3%	146,047	1.1%
2008	125	22.3%	514	2.6%	1,969	1.3%	145,362	-0.5%
2009	135	7.7%	509	-1.0%	1,927	-2.1%	139,877	-3.8%
2010	149	10.8%	529	3.9%	1,928	0.0%	139,064	-0.6%
2011	153	2.4%	530	0.2%	1,926	-0.1%	139,869	0.6%
2012	157	2.7%	536	1.2%	1,949	1.2%	142,469	1.9%
2013	161	2.9%	545	1.5%	1,967	0.9%	143,929	1.0%
2014	166	3.0%	558	2.4%	2,008	2.1%	146,305	1.7%
2015	170	2.1%	566	1.5%	2,015	0.4%	148,834	1.7%
2016	170	0.0%	566	0.0%	1,995	-1.0%	151,436	1.7%
2017	170	0.1%	567	0.1%	2,000	0.3%	153,337	1.3%
2018	170	0.1%	568	0.2%	2,008	0.4%	155,761	1.6%
2019	171	0.7%	574	0.9%	2,008	0.0%	157,538	1.1%
2020	158	-7.9%	530	-7.6%	1,887	-6.0%	147,795	-6.2%
2021	164	3.7%	550	3.7%	1,958	3.7%	152,581	3.2%
2022	169	3.2%	568	3.2%	2,012	2.7%	158,291	3.7%
August 2023	168	-0.3%	566	-0.3%	2,006	-0.3%	161,427	2.0%
Δ Great Recession Trough to 2019	27.2%		12.8%		4.2%		13.3%	
Δ 2019 Avg to Aug 2023	-1.7%		-1.3%		-0.1%		2.5%	

Source: U.S. Bureau of Labor Statistics

*City data not available for 2005 and 2006 due to impact of Hurricane Katrina.

Bill Structure

Sewer rates consist of a fixed service charge and variable quantity charge. Service charges for standard 5/8 inch connections which comprise about 85% of metered water consumption were \$24.87 each month in 2022. Assuming 5,000 of monthly water use, the fixed versus volumetric bill is about 36%/64%.

Figure 8

Adopted Monthly Sewer Rates FYE December 31	2018	2019	2020	2021	2022
Service Charge (Fixed) ¹					
5/8 inches meter	\$20.55	\$22.61	\$24.87	\$24.87	\$24.87
Quantity Charge					
Per 1,000 gallon increment	\$7.15	\$7.87	\$8.66	\$8.66	\$8.66

Source: SWBNO

(1) There are additional levels of service charges for later meter sizes, going up to 16 inches.

Collection/Enforcement History

The Board initiates enforcement action when an account is delinquent for 60 or more days with a 10-day notice of termination. Actions include late fees and payment plans. The Board experienced frequent billing inaccuracies between 2016 and 2018 per the implementation of a new billing system. These issues were substantially addressed by 2019 leading to a decline in accounts receivable.

The board suspended service shut-offs between March 2020 and July 2021 in response to the COVID-19 pandemic which resulted in increased receivables in 2020 and 2021. Receivables declined substantially in 2022 to 6.9% of sewerage service charges, but the decline was accompanied by a substantial increase in allowance for doubtful accounts.

Figure 9

Sewerage System Customer Receivables FYE December 31 (dollars in thousands)						
	Customer Receivables	Allowance for Doubtful Accounts	Net Customer Receivables	Sewerage Service Charges	Net Customer Receivables as % of Sewer Service Charges	
2018	\$ 40,848	\$ 20,384	\$ 20,464	\$ 114,614	17.9%	
2019	53,183	35,769	17,413	143,686	12.1%	
2020	68,463	45,971	22,492	146,262	15.4%	
2021	81,487	56,203	25,285	150,364	16.8%	
2022	69,968	59,495	10,473	150,932	6.9%	

Source: SWBNO

Affordability

The Board implemented an eight-year program of 10% annual rate increase between 2013 and 2020 which has pressured affordability but has subsequently held rates steady. A monthly sewer bill based on 5,000 gallons of water usages amounts to \$68.17 which equates to 1.5% of the City's 2021 median household income (U.S. Census data, \$45,594) which is elevated but below the EPA's 2.0% of median household affordability guideline benchmark. Prospective rate increases are being reviewed by City Council for the fiscal 2024-2028 timeframe based upon a recently completed comprehensive rate study.

RD 4: Operations and Capital

The sewerage system is coterminous with the City's limits and extends over nearly 86 square miles. The collection system is comprised of 1,334 miles of gravity lines and 122 miles of force mains to convey the wastewater through the system. Once treated, the effluent is chlorinated and discharged into the Mississippi River pursuant to an EPA permit.

The sewerage system entails unique challenges given the topography of New Orleans. First, the sewerage system consists of two distinct infrastructure systems, with two wastewater treatment plants, one each on the east and west banks of the Mississippi River. Additionally, the City is located below-sea level, and as such the sewer system is more reliant on electric power to move the wastewater than other U.S. sewer systems.

Wastewater System Condition and Treatment Capacity

The water system infrastructure, similar to many other cities, is aged and in need of repair. The City estimates roughly half of the water distribution system infrastructure is more than 75 years old. Additionally, SWBNO is unique as it produces its own power to run the water and drainage pumps throughout the city. However, SWBNO's power resources utilize an older technology, mostly steam-driven turbines, that produce electricity at 25 Hz power, which is atypical and outdated relative to today's standard of 60Hz power. Positively, wastewater treatment capacity (272 MGD) is adequate relative to an average sewer usage of 147 MGD during dry weather.

Capital Plan

The Board's current 10-year consolidated system CIP (2023 – 2032) has an estimated total cost of \$2.48 billion, and it includes asset and infrastructure investments across all three utility systems. Of this amount, the sewer system's share of the CIP is roughly 40% (\$1 billion) through 2032. The CIP is designed to modernize and harden the sewer, water and drainage utilities given the potential for more frequent and/or severe weather events in the future due to climate change.

The sewerage system is currently in its final phase of compliance with the federally mandated Consent Decree, designed to improve efficiency and safety in the collection and treatment of wastewater, especially the SSOs during wet weather. The completion of the projects under the Consent Decree will be funded primarily via the proceeds of the sewer revenue bonds and WIFIA Loan proceeds, along with some SRF loans and federal grants. Proceeds from the WIFIA loan are anticipated to fund over 160 projects to upgrade the aged and storm-damaged sewer pipelines throughout the City. To date, the Board expects to meet the 2025 substantial completion timeline for the sewer projects in compliance with the Consent Decree.

Additionally, in 2022, SWBNO and Entergy New Orleans broke ground on a new power complex for SWBNO, with a dedicated substation. The new substation and associated new turbine generators will replace existing and antiquated power generation with modernized equipment to move water and wastewater more reliably and cost-effectively through the system.

Positively, SWBNO's focus on infrastructure improvements and experience through Hurricane Katrina (2005) did improve the City's response to Hurricane Ida in August 2021, the 2nd worst storm to make landfall in Louisiana since Hurricane Katrina. Prior to the storm, SWBNO added backup generators to support drainage pumps all around the City, which allowed continuous drainage of the stormwater during and after the hurricane. The backup generators further supported continuous delivery of potable drinking water to its residents when most surrounding communities were not able to do so.

While the remaining projects under the sewer Decree are anticipated to be fully funded, SWBNO's funding of capital expenditures through the 10-year CIP will be challenging, as current sewer rates are generating limited surplus funds for capex. SWBNO continues to pursue alternative funding sources, including federal grants, commitments from the City, State revolving funds, and borrowings from the capital markets. In addition, SWBNO's Board is reviewing a recently completed rate study to determine potential sewer rate adjustments going forward. KBRA will be monitoring SWBNO's ability to complete the sewer Decree projects on-time as well as adequately fund and maintain the sewer system through the ten-year CIP.

RD 5: Financial Profile and Debt

Operating Performance and Debt Service Coverage

The sewerage and water systems' ongoing operations are funded through their respective service rates, while the drainage system is funded through dedicated ad valorem taxes. Each of the systems is financed and accounted for separately.

For the past five years, the sewerage system has maintained solid operating performance with annual rate increases of 10% through FY2020. The rate increases have contributed to stronger net revenues available for debt service, in support of rising sewer debt and debt service requirements through 2026, as SWBNO implements the Consent Decree system improvements. As shown in the chart below, debt service coverage of senior lien debt, which includes sewer system revenue bonds and the parity lien WIFIA loan, is strong at 1.59x – 6.64x for the prior five years, and it is projected to remain above 2.0x through the five-year forecast period (FY22-FY27).

Figure 10

Sewerage and Water Board of New Orleans, LA					
Sewerage System - Historical Revenues, Expenses and Debt Service Coverage					
FYE December 31 (in thousands)	2018	2019	2020	2021	2022
Sewerage service charges	114,614	143,686	146,262	150,364	150,932
Plumbing inspection and license fees	329	288	227	231	243
Other revenue	834	1,052	880	1,270	1,116
Operating Revenues	115,778	145,026	147,369	151,865	152,292
Interest Income	1,922	654	192	1,191	2,236
Contributions from other governments	-	9,301	-	-	5,052
Other Non-Operating Revenue	330	379	358	171	329
Total Revenues	118,030	155,360	147,918	153,227	159,909
Total Operating Expenses	122,282	121,739	115,055	133,316	134,646
Operating Expenses Less Depreciation	95,538	95,220	94,649	104,688	105,634
Less: Other Noncash Expenses	14,267	16,511	6,691	5,935	5,329
Adjusted Operating Expenses	81,271	78,709	87,958	98,753	100,304
NET REVENUES AVAILABLE FOR DEBT SERVICE¹	36,759	76,651	59,960	54,474	59,604
Debt Service Requirement - Senior Lien	23,139	21,714	21,805	8,205	23,037
Debt Service Requirement - Other	7,283	7,283	3,994	3,641	3,641
Senior Debt Service Coverage²	1.59x	3.53x	2.75x	6.64x	2.59x
Total Debt Service Coverage³	1.21x	2.64x	2.32x	4.60x	2.23x

¹ Reflects Total Revenues less Adjusted Operating Expenses.

² Reflects senior lien sewer system resolution-based debt service coverage; includes parity senior lien sewer revenue bond and WIFIA loan debt service.

³ Includes debt service for senior and other sewer debt (i.e., the State's Gulf Opportunity Zone loans).

Source: SWBNO ACFRS.

Since fiscal 2018, the growth in operating revenues (CAGR 7.1%) has exceeded operating expense growth (CAGR 2.4%). However, the operating revenue growth rate has slowed in the most recent YoY (0.3%), given the contraction in the number of customers and usage (conservation), and the flat base rate in FY2021 and FY2022. With the declining trend in customer sewer usage (-16% since FY2019), the ability of future operating revenues to keep pace with operating expense growth will be impacted by the SWBNO's future rate plan, which is currently under review.

Debt Profile and Liquidity

SWBNO's outstanding debt for FY2022 totaled \$331.1 million, a decline of -4.1% YoY. It is conservatively all fixed rate debt, with a final maturity of 2057, and currently largely outstanding senior lien revenue bonds (\$284.4 million). In FY22, the Board added an \$11.1 million loan from the Louisiana Department of Environmental Quality (LDEQ) to fund

certain sewer main replacements, connections, and rehabilitation. The 20-year loan will be advanced incrementally as project costs are incurred, with principal payments beginning in 2023.

Figure 11

Sewerage and Water Board of New Orleans, LA Sewerage System - Historical Liquidity					
FYE December 31 (in thousands)	2018	2019	2020	2021	2022
Cash and investments	30,936	32,677	45,806	51,146	60,471
Operating Exp (net of D&A)	95,538	95,220	94,649	104,688	105,634
DCOH	118	125	177	178	209
Debt Ratios					
Total Debt	278,626	267,664	340,475	345,098	331,090
Net Plant	1,088,136	1,097,820	1,122,515	1,151,507	1,192,613
Total Assets	1,223,530	1,215,634	1,349,008	1,382,282	1,400,418
Total Capitalization	1,139,606	1,141,388	1,247,349	1,284,920	1,319,921
Debt/Total Assets	22.8%	22.0%	25.2%	25.0%	23.6%
Debt/Total Capitalization	24.4%	23.5%	27.3%	26.9%	25.1%
Debt/Plant	25.6%	24.4%	30.3%	30.0%	27.8%

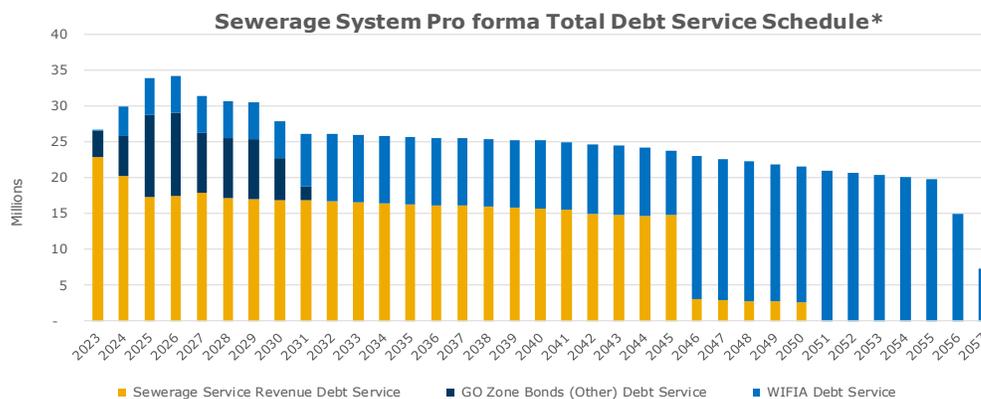
Source: SWBNO ACFRs; KBRA calculations.

Leverage, as measured by Debt-to-Net Plant only modestly increased over the past five years, from 25.6% (FY18) to 27.8% (FY22), as the coronavirus pandemic slowed capital activity due to supply and worker shortages, and business operating restrictions. SBWNO's FY23 operating budget includes more than \$289 million in sewer capital expenditures. This represents an aggressive capital target given historical capex has not exceeded \$100 million annually in the past ten years. KBRA expects leverage to increase moderately due to borrowing requirements associated with the CIP. Through FY27, management projects approximately 65% of sewer capex will be debt funded, which includes existing sewer revenue bonds and the WIFIA loan.

Liquidity improved for FY22, to \$60.5 million in unrestricted cash and investments, which is equivalent to 209 days cash on hand (DCOH), up from 178 days in the prior year. The unrestricted cash balance continues to exceed the Operating Reserve Requirement of 90 DCOH as per the sewer revenue bond resolution. Projections provided by management through fiscal 2027 reflect continued maintenance of DCOH in excess of 200 days.

As shown below, annual debt service (senior and subordinate debt) is scheduled to peak in FY26 at approximately \$34 million, up from \$22 million for FY22; then decline thereafter. While SBWNO has a history of maintaining sewer rates sufficient to cover operating costs and annual debt service, remaining cash flow for capex has been limited. As such, funding ongoing system improvements through the 10-year CIP will remain a challenge and may pressure debt requirements prospectively, depending upon the level of future rate adjustments.

Figure 12



*Reflects estimated SWBNO total debt service, including: sewer revenue bonds, WIFIA loan, GO Zone bonds and other debt service. Full drawdown of the WIFIA loan assumed by 2025 (1.85% interest); MADS of approximately \$34 million in FY26.

ESG Management

KBRA typically analyzes Environmental, Social, and Governance (ESG) factors through the lens of how issuers plan for and manage relevant ESG risks and opportunities. More information on KBRA's approach to ESG risk management in public finance ratings can be found [here](#). Over the medium-term, public finance issuers will likely need to prioritize ESG risk management and disclosure with the likelihood of expansions in ESG-related regulation and rising investor focus on ESG issues.



KBRA analyzes many sector- and issuer-specific ESG issues but our analysis is often anchored around three core topics: climate change, with particular focus on greenhouse gas emissions; stakeholder preferences; and cybersecurity. Under environmental, as the effects of climate change evolve and become more severe, issuers are increasingly facing an emerging array of challenges and potential opportunities that can influence financial assets, operations, and capital planning. Under social, the effects of stakeholder preferences on ESG issues can impact the demand for an issuer's product and services, the strength of its global reputation and branding, its relationship with employees, consumers, regulators, and lawmakers, and, importantly, its cost of and access to capital. Under governance, as issuers continue to become more reliant on technology, cybersecurity planning and information management are necessary for most issuers, regardless of size and industry.

Environmental Factors

The Board's strategic and master planning processes consider the impacts of climate change on the operation of its three systems. Its 2022-2027 Strategic Plan establishes business processes and goals which acknowledge and reflect the increased frequency of severe weather events. The six major focus areas of the Strategic Plan include Financial Stability; Technology Modernization; Workforce Development and Enrichment; Customer Service Excellence and Stakeholder Engagement; Infrastructure Resilience and Reliability; and Organizational and Operational Improvement.

Physical Climate Risk: SWBNO's service area has experienced more intense rainfall over the past several years associated with both tropical and extratropical storm systems and weather fronts. To better manage these events, the Board has partnered with stakeholders at the City, State and Federal level on various infrastructure initiatives. Such initiatives include supporting the State's 50-year coastal master plan; advocating for the nonprofit community's urban water plan; and closely working with the Army Corp of Engineers on drainage improvements throughout the City.

Leadership of SWBNO discussed with KBRA its efforts to prepare for Hurricane Ida. Recognizing the Sewerage System's outsized reliance on electricity to power operations, it proactively secured its own turbines in advance of the storm. These turbines were activated during the peak of Ida's heavy rain and storm surge, leading to fewer service disruptions for customers. When the East Bank WWTP temporarily lost power during the storm due to a broken cooling system fan blade, the Board responded by dispatching sewage (i.e., septic tank) removal trucks to affected neighborhoods, thereby preventing a sewerage system overload.

Saltwater Intrusion: SWBNO sources water from the Mississippi River which is subject to a phenomenon known as saltwater intrusion, wherein a "wedge" of dense salt water works its way many miles upriver along the river floor, which can increase salinity at SWBNO's fresh water intake to a level outside of EPA compliance. The phenomenon has recently been exacerbated by factors including low river flow and a presently ongoing U.S. Army Corps of Engineers project to increase the Mississippi River channel depth along 256 miles between the Gulf of Mexico and Baton Rouge from 45 to 50 feet to accommodate New Panamax ship depths. The intrusion issue is longstanding and has been addressed with the construction of an elevated "sill" along the river bottom to block this intrusion in 1988, 1999, and 2012.

On September 22, 2023, the Mayor of the City declared a state of emergency to address projections that this phenomenon could push water at the City's water intake out of compliance with EPA requirements for drinking water in the near future based on conservative estimates. The U.S. Army Corps of Engineers is currently in the process of constructing a new sill to address the issue. The disaster proclamation positions the City to respond promptly should water quality fall out of compliance. The City is exploring options for such an event including: mixing fresh water from a barge or tanker ship with intake water to reduce salinity (an approach already being undertaken at nearby Plaquemines Parish); implementation of desalination/reverse osmosis; drawing fresh water from neighboring systems with upstream connections; or implementing a new intake further up river. Planning for these potential solutions remains at an early stage and the City has not released cost estimates for these potential solutions. It is also not clear whether any of the proposed solutions will be required following completion of the new elevated river bottom sill. Positively, the saltwater intrusion has not impacted the sewer system infrastructure.

Social Factors

SWBNO's customers, along with the City, continue to support Board capital investments that upgrade and expand the capacity of the Systems and improve service. Historical rate increases needed to fund these investments were widely accepted. More recently, however, SWBNO's leadership has acknowledged that rate affordability on a go-forward basis needs to be considered as part of its strategic planning efforts.

SWBNO has invested in outreach efforts as part of its planning process for rate adjustments. Toward this end, the Board has noted that the City's business community has been engaged in the planning for future rate increases, including analyzing the impact of a potential stormwater fee in future years. SWBNO's Customer Advisory Committee has been a similar ally in sourcing community perspective and feedback on rates.



Governance Factors

KBRA views the governance structure as favorable given the sewerage and water systems' rate setting autonomy (no state or federal level oversight) and implementation of rate increases as needed.

Bankruptcy Assessment

KBRA has consulted outside counsel and the following represents our understanding of the material bankruptcy issues relevant to the WIFIA Loan.

To be a debtor under the municipal bankruptcy provisions of the U.S. Bankruptcy Code (Chapter 9), a local governmental entity must, among other things, (i) qualify under the definition of "municipality" in the Bankruptcy Code, and (ii) be specifically authorized to file a bankruptcy petition by the State of its formation.

The Board is an autonomous political corporation created by act of the Louisiana Legislature as a special board, independent of the City's government, to maintain and operate the Water System, Sewerage System and Drainage System for the City (collectively, the "System"). Here, the Board is a public board and public corporation created under Louisiana state law. As such, the Board is legally independent of the City of New Orleans. As such an entity, it meets the definition of a "municipality" under Chapter 9.

As to authorization, current Louisiana law provides that no political subdivision of the State, including the Board, may file for protection under Chapter 9 of the Bankruptcy Code unless such filing is approved by the Louisiana State Bond Commission, the Governor, and Attorney General of the State. Further, no political subdivision of the State, after filing for bankruptcy protection, may carry out a plan of adjustment of debts approved by the bankruptcy court until such plan is approved by the Louisiana State Bond Commission, the Governor, and Attorney General of the State. However, it should be noted that recent non-binding case law in another jurisdiction held that it may be possible for a municipality to file for Chapter 9 without proper authorization if such permission cannot be reasonably obtained.

Statutory Liens in Chapter 9

Chapter 9 provides for post-petition recognition of (i) a security interest represented by a pledge of specific special tax revenues or of enterprise revenues (referred to as a lien on "special revenues") and also (ii) a statutory lien (one imposed by statute) on revenues pledged for government obligations. Such special revenues and statutory liens should both continue to apply to pledged revenues acquired by a local government entity during a Chapter 9 case and survive the conclusion of the Chapter 9 proceeding. However, other consensual pledges and liens arising by indenture, resolution, or similar document, except to the extent they cover proceeds of collateral pledged prior to bankruptcy, are generally all cut off by Section 552 of the Bankruptcy Code as of the bankruptcy filing date.

KBRA has consulted outside counsel and is advised that Louisiana statute provides a lien on property pledged by a public entity in connection with the issuance of securities, which arises automatically and is not subject to discretion by the public entity, or public filing. Should the Board become a debtor in a bankruptcy proceeding, if such lien were determined by the bankruptcy court to be a "statutory lien" under applicable U.S. Bankruptcy law, the WIFIA Lender should be treated as a secured creditor as to the Net Revenues in the bankruptcy proceeding of the Board, independently of whether there is a special revenues lien on Net Revenues (discussed below). However, the relevant Louisiana lien statute has not been interpreted by any reported bankruptcy court decision, and thus the potential result for the WIFIA Lender as holder of the Bond remains uncertain.

Pledged Revenues as Special Revenues under the Bankruptcy Code

Because the Pledged Revenues are generated by the System, and the Loan will be issued to finance the WIFIA Projects that are a part of the System (and such funds are not to be used for general purposes of the Board), KBRA understands that the Pledged Revenues should qualify as "special revenues" as that term is defined in Chapter 9 of the Bankruptcy Code.

There are separate bankruptcy protections for revenue-supported debt that falls within the definition of "special revenues" under Chapter 9. Assuming that the Loan is in fact secured by a pledge of special revenues as so defined, it is KBRA's understanding that, if the Board were permitted to file for protection under Chapter 9, such filing should have little to no effect on the payment of the Loan during the bankruptcy case – assuming there is no shortfall of funds to make debt service, and depending on the individual priority of Loan payments among the total System obligations payable from System Revenues.

That stated, there are several additional issues that arise. If the Board were to become a debtor in a proceeding under Chapter 9 of the Bankruptcy Code, the bankruptcy court could possibly decide that (i) post-bankruptcy revenue debt obligation payments by the Board are merely optional and not mandatory under the special revenues provisions of the Bankruptcy Code and/or (ii) the automatic stay exception for special revenues in those provisions does not apply (including to possible enforcement action by the WIFIA Lender or a bond Trustee) or is limited to amounts then on hand with the bond Paying Agent or the Board. If the Board were to refuse to make Loan payments voluntarily and the



bankruptcy court were to interpret the Bankruptcy Code in that (or a similar) fashion, the parties to the proceedings may be prohibited for an unpredictable amount of time from taking any action to collect any amount from the Board, or from enforcing any obligation of the Board, without the bankruptcy court's permission. However, it is KBRA's understanding that such a ruling would be contrary to historical experience in Chapter 9, and the clear intent of Congress regarding the continued payment of government revenue debt obligations post-bankruptcy, as expressed in the legislative history for the special revenues amendments to Chapter 9 and as interpreted in properly-reasoned existing (albeit limited) case precedent under Chapter 9.

It is also KBRA's understanding that, assuming the pledged Revenues are in fact determined to be "special revenues," the Bankruptcy Code provides that, to keep revenue-generating government assets operating, special revenues can be applied to necessary operating expenses of the relevant project or system ahead of all other obligations – including payments to holders of revenue debt obligations. This rule applies regardless of contrary provisions of the transaction documents, if such governing documents do not adequately provide for payment of necessary operating expenses. In determining necessary operating expenses for the System, in a Chapter 9 case the bankruptcy court may not be limited by the provisions governing the flow of funds or that define Operating Expenses, in the WIFIA Loan Agreement or other Loan issuance documents.

One other issue bears mention. While there is no case law from which to make a definitive judgment, it is possible that, in the context of confirming a Plan of adjustment in a Chapter 9 case of the Board where the plan has not received the requisite consent of the WIFIA Lender, a bankruptcy court may confirm a plan that adjusts the timing of payments on the Loan or the interest rate or other terms of the Loan, provided that (if either or both liens are determined to exist) (i) the WIFIA Lender retain its statutory lien and/or special revenues lien and (ii) the payment stream has a present value equal to the value of the revenues subject to the statutory lien and/or special revenues lien.

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