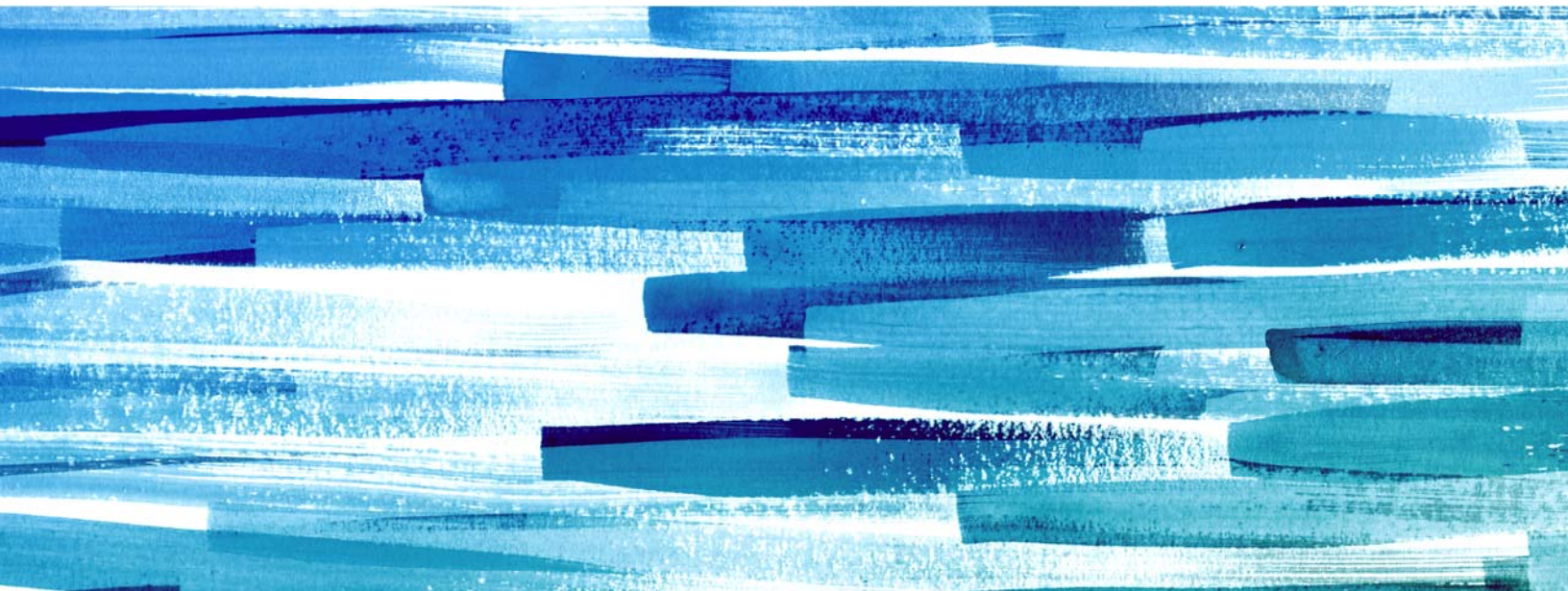


CITY OF MIAMI BEACH, FLORIDA

October 5, 2020

WATER AND SEWER RATE STUDY



GovRates, Inc.

Utility, Financial, Rate, and Management
Consultants for Governments

www.govrates.com

MIAMI BEACH
UTILITIES



October 5, 2020

Honorable Mayor and
Members of the City Commission
City of Miami Beach
1700 Convention Center Drive
Miami Beach, Florida 33139

Subject: Water and Sewer Rate Study

GovRates, Inc. ("GovRates") has completed our review of the water and sewer rates for the City of Miami Beach (the "City") and has prepared this report which summarizes our analyses, findings, and recommendations. This utility rate study included preparing a financial forecast through the Fiscal Year 2030.

Developing a financial and rate plan for the City's water and sewer system (the "System") involved multiple considerations:

- The financial and rate plan should consider utility best management practices and should promote financial sustainability and creditworthiness.
- The proposed monthly user rates should be considered equitable, affordable, and competitive.
- The proposed rate plan should not cause "rate shock" to customers. From a best financial management practices standpoint, smaller incremental increases over time can help avoid future rate shock and large "catch up" rate increases.
- The proposed rates should enable the utility to perform the necessary capital improvements and operational enhancements to remain compliant with the regulatory requirements of the Florida Department of Environmental Protection, the Florida Department of Health, and the Environmental Protection Agency.
- The proposed user rates should provide the System with an adequate level of revenue stability given the seasonality and cyclical nature of water sales and corresponding billable sewer flow.
- The water user rate structure should encourage conservation of water resources.

GovRates, Inc.

1988 Varick Way
Casselberry, FL 32707-2409
Telephone and Fax: (833) GOV-PLAN

GovRates believes that the financial and rate plan presented in this report reflects a reasonable balance of the aforementioned considerations. Following this letter is an executive summary that provides an overview of our analyses and conclusions. The other sections of the report provide additional details regarding the financial forecast and rate development.

As noted in the report, the City has an opportunity to refund the Utility's outstanding Series 2009 Bonds to achieve debt service savings of about \$16.5 million. The financial forecast presented in this report assumes that the City will move forward with the refunding.

We greatly appreciate the opportunity to be of service to the City and would like to thank the City management and staff for their tremendous assistance and cooperation during the course of the water and sewer rate study.

Yours in government service,
GovRates, Inc.

Bryan A. Mantz, CMC, CGFM
President



CONTENTS

Letter of Transmittal

EXECUTIVE SUMMARY AND RECOMMENDATIONS:

ES-1: General	ES-1
ES-2: Financial Targets	ES-1
Exhibit ES-1: Revenue Requirement Elements	ES-2
ES-3: User Rate Recommendations – Retail	ES-2
Exhibit ES-2: Summary of Critical Capital Needs Through the Fiscal Year 2024	ES-3
Exhibit ES-3: Critical Capital Needs Funding Through Fiscal Year 2024	ES-3
Exhibit ES-4: Summary of Proposed Water and Sewer User Rate Revenue Adjustments	ES-5
ES-4: User Rate Recommendations – Wholesale Sewer	ES-6
Exhibit ES-5: Proposed Fiscal Year 2021 Wholesale Sewer Rates	ES-5
ES-5: Financial Overview	ES-6
ES-6: Requested City Commission Action	ES-7

Tables:

Table ES-1: Summary of Existing and Proposed Monthly Water and Sewer User Rates	ES-9
Table ES-2: Water and Sewer System Financial Overview	ES-18
Table ES-3: Multi-Year Financial Projections	ES-25

SECTION 1: FINANCIAL FORECAST

1-1: Introduction	1-1
1-2: Existing Water and Sewer Monthly User Rates	1-1
1-3: Water System Customer Statistics	1-2
Exhibit 1-1: Meter Equivalent Factors	1-3
1-4: Sewer System Customer Statistics	1-3
1-5: Revenues Under Existing Monthly User Rates - Retail	1-3
Exhibit 1-2: Projected Retail Rate Revenues Under Existing Monthly Water and Sewer User Rates	1-4
1-6: Revenue Requirements – Principal Assumptions and Considerations	1-4
Exhibit 1-3: Potential Annual Debt Service Savings If Series 2009 Bonds Are Refunded	1-7
1-7: Summary of Water and Sewer Revenue Requirements	1-9
1-8: Debt Service Coverage and Rate Covenants	1-9
Exhibit 1-4: Projected Net Revenues Debt Service Coverage	1-10
1-9: Projected Sources and Uses of Funds	1-10

Tables:

Table 1-1: Summary of Historical and Projected Water and Sewer System Customer Statistics	1-11
Table 1-2: Projected Water and Wastewater User Rate Revenues Under Existing Rates	1-17
Table 1-3: Development of Net Revenue Requirements from User Rates and Projected Revenue Adjustments – Water System	1-21

CONTENTS (cont.)

SECTION 1: FINANCIAL FORECAST (cont.)

Tables (cont.):

Table 1-4: Development of Net Revenue Requirements from User Rates and Projected Revenue Adjustments – Sewer System	1-22
Table 1-5: Projected Net Revenue Requirements – Combined Water and Sewer System	1-23
Table 1-6: Utility Budget and Allocation of Operating Expenses to Individual Systems	1-24
Table 1-7: Projected Operating Expenses – Water System	1-28
Table 1-8: Projected Operating Expenses – Sewer System	1-30
Table 1-9: Projected Combined Water and Sewer Operating Expenses	1-32
Table 1-10: Escalation References	1-35
Table 1-11: Projection of Wholesale Water and Sewer Charges from Miami-Dade County	1-36
Table 1-12: Debt Service Allocation to Individual Systems	1-37
Table 1-13: Estimated Multi-Year Capital Improvement Program and Funding Sources	1-40
Table 1-14: Projected Cash Balances and Interest Earnings By Fund	1-43
Table 1-15: Projected Other Operating Revenues	1-47
Table 1-16: Projected Operating Results and Debt Service Coverage	1-48
Table 1-17: Summary of Projected Sources and Uses of Funds	1-50

SECTION 2: USER RATE DESIGN

2-1: User Rate Design – General	2-1
2-2: Design of Proposed Monthly Water Rates	2-2
Exhibit 2-1: Water System Pass-Through Rate for Fiscal Year 2021	2-2
2-3: Design of Proposed Monthly Sewer Rates	2-2
Exhibit 2-2: Sewer System Pass-Through Rate for Fiscal Year 2021	2-2
2-4: Bill Comparison – Neighboring Utilities	2-3
2-5: Wholesale Sewer Rates	2-4
Exhibit 2-3: Derivation of Satellite Municipalities Wholesale Sewer Rates for Fiscal Year 2021 ..	2-5

Tables and Figures:

Table 2-1: Comparison of Typical Monthly Residential Bills for Water Service	2-6
Table 2-2: Comparison of Typical Monthly Residential Bills for Sewer Service	2-8
Table 2-3: Comparison of Typical Monthly Residential Bills for Combined Water and Sewer Service	2-10
Figure 2-1: Comparison of Monthly Charges for Combined Water and Sewer Service for Single Family Residential Customers Using 7,000 Gallons	2-12
Table 2-4: Derivation of Satellite Municipalities Wholesale Sewer Rates for Fiscal Year 2021	2-13

APPENDIX

Existing Rate Ordinance

EXECUTIVE SUMMARY AND RECOMMENDATIONS

EXECUTIVE SUMMARY AND RECOMMENDATIONS

ES-1: General

The City of Miami Beach (the "City") owns a water and sanitary sewer system (the "System" or the "Utility") that provides an essential service on a continual basis and that operates in a highly-regulated environment. Regulatory agencies for the Utility include the Florida Department of Environmental Protection (the "FDEP"), the South Florida Water Management District ("SFWMD"), the Florida Department of Health, and the Environmental Protection Agency. The System currently provides service to approximately 13,478 retail water accounts, 9,606 retail sewer accounts, and three (3) wholesale sewer customers (the Village of Bal Harbour, the Town of Bay Harbor Islands, and the Town of Surfside).

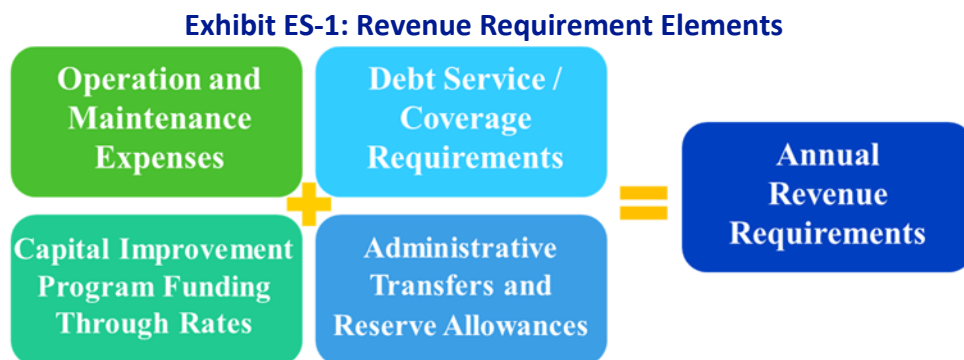
The System is established as a utility enterprise fund and is a large "business" of the City. According to the Governmental Accounting Standards Board, "Enterprise Funds should be used to account for operations that are financed and operated in a manner similar to private business enterprises – where the intent of the governing body is that costs of providing services to the general public on a continuing basis should be financed or recovered primarily through user charges."

The installed cost of System assets under City management was about \$350 million as of September 30, 2019. The System should have revenues equal to the costs of the services provided by the Utility, and the City should establish rates sufficient to cover the cost of operating, maintaining, repairing, and financing the System. There are also rate covenants associated with the System's outstanding debt that require the City to establish the Utility's rates at certain levels to meet the debt obligations. To assist the City in reviewing the sufficiency of its rates, GovRates, Inc. ("GovRates") was retained to perform a utility rate study.

ES-2: Financial Targets

The costs associated with operating and maintaining a utility system, as well as the costs of financing the renewals / replacements of existing facilities and the capital improvements for upgrades and expansions, are generally considered to be the revenue requirements of public utilities such as the City's. With respect to identifying revenue requirements for the forecast

period of Fiscal Year 2020 through the Fiscal Year 2030 (the "Forecast Period"), the following Exhibit ES-1 shows the elements considered:



The financial and rate plan should recognize the need to maintain appropriate debt service coverage ratios and adequate operating margins and reserves to fund ongoing capital needs and maintain the financial condition of the System. **A target all-in net revenues debt service coverage ratio of 200% is recommended, and it is proposed that the Utility target an unrestricted cash reserves balance equal to at least 365 days cash on hand (essentially one year of operating expenses excluding depreciation and amortization expenses).** These debt service coverage and cash targets are consistent with those of strong financial credits. Higher credit ratings can translate to lower interest rates when debt financing and lower user rates over the long term for the benefit of the Utility's customers.

ES-3: User Rate Recommendations – Retail

The City's current water and sewer user rates have been in effect since October 1, 2019. As part of the current utility rate study, financial projections were prepared for the System for the Fiscal Year 2020 through the Fiscal Year 2030 (previously defined as the "Forecast Period").

Based on the assumptions relied upon in the development of the System revenue requirements, GovRates has identified the need for rate adjustments for both the water system and the sewer system. The primary reasons for the identified rate adjustments are to:

- 1. Fund the Utility's multi-year capital improvement program (the "CIP").** The Utility has identified critical capital needs of approximately \$122.2 million through the Fiscal Year 2024, and about \$93 million in similar capital needs for Fiscal Years 2025 to 2030. These capital needs are based on recent utility master plan findings and are primarily replacements or rehabilitations of utility assets reaching the end of their service lives to continue providing reliable water and sewer service. A summary of the critical capital needs through Fiscal Year 2024, which have already been presented to the City Commission, is shown in the following Exhibit ES-2:

**Exhibit ES-2: Summary of Critical
Capital Needs Through the Fiscal Year 2024**

Description	Amount
Water Main Replacements	\$36,388,459
Booster / Pump Station Projects	34,009,526
Sewer Main Replacements (Force and Gravity)	22,099,496
Meter Replacements	11,104,893
Manhole Inspection / Rehabilitation	7,963,704
Fire Flow Projects	5,238,982
Valve Replacements / Additions	2,781,810
Other	2,650,950
Total Major Capital Needs	<u>\$122,237,819</u>

Sample System Renewal and Replacement Needs:

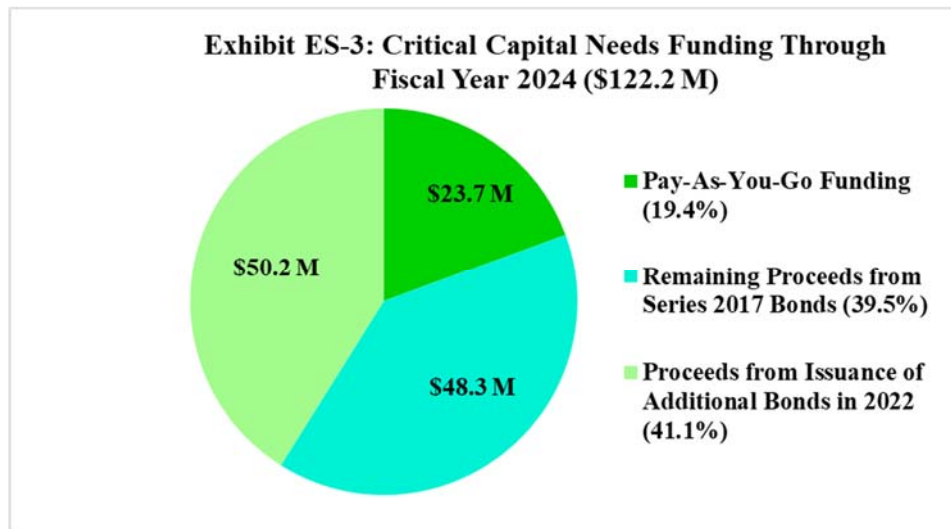
Water Main That Needs to Be Replaced



*Sewer Pump Station Infrastructure That Needs to Be Replaced
(Pictures from Sewer Master Plan)*



As shown in the following Exhibit ES-3, the critical capital needs through the Fiscal Year 2024 are projected to be funded from the remaining proceeds from the Utility's Series 2017 Bonds, additional debt proceeds through an assumed 2022 bond issue, and rate revenues / operating reserves (pay-as-you-go):



- 2. Fund the costs of future operations.** There are many factors that affect the costs of operations over which the Utility has limited or no control. Nearly 60% of the Utility's operating expenses are uncontrollable wholesale charges from Miami-Dade County. The City remits 6% of retail revenues to the Miami-Dade Department of Environmental Resources Management (DERM) to help pay for the costs of regulation of the City's Utility by Miami-Dade County. Factors such as cost increases from electric power providers, changes in fuel and oil prices resulting from global market changes, and competition for scarce resources such as concrete and building materials often result in cost increases that are greater than change in the consumer price index (general inflation). Utility costs also typically increase at a higher rate than general inflation due to regulatory requirements. It is important to recognize that these increased costs are usually permanent increases in the costs of operations and, as such, must ultimately be passed through to customers through rates.

Inflation is expected to continue to affect System operating margins. The Congressional Budget Office has projected the national consumer price index (CPI) to continue increasing by over 2% per year during the Forecast Period despite the COVID-19 pandemic.

- 3. Maintain appropriate debt service coverage ratios and adequate operating margins and reserves to fund ongoing capital needs and maintain the financial condition of the System.** The System's outstanding and anticipated debt consists of senior lien revenue bonds. The bond resolution contains a rate covenant that is a formal agreement between the City and bondholders.

The City has an opportunity to refund the Utility's outstanding Series 2010 Bonds to achieve debt service savings of about \$16.5 million. The financial forecast presented in this report assumes that the City will move forward with the refunding.

The City's existing user rates for water and sewer service are not anticipated to fully recover the City's projected utility revenue requirements during the Forecast Period. If the user rates are not adjusted, user rates may be even higher in the future. The capital needs for the System will not go away, but will most likely be more expensive to address in the future. Inflation and the costs of construction continue to affect System costs.

Based on the financial forecast, the funding plan for the System, and discussions with City staff, the following Exhibit ES-4 shows the proposed revenue adjustments:

Exhibit ES-4:
Summary of Proposed Water and Sewer User Rate Revenue Adjustments

Fiscal Year	Effective Date	Water System Adjustment [1]	Sewer System Adjustment [1]	Combined System Adjustment [1]	Increase in Average SFR Customer Monthly Bill [2]	Total Cost Per Gallon of Water and Sewer Service [2]
2021	ASAP	3.5%	1.6%	2.4%	\$ 4.29	1.6¢
2022	October 1, 2021	3.5% + PTA	1.5% + PTA	2.3% + PTA	2.86	1.7¢
2023	October 1, 2022	3.5% + PTA	1.5% + PTA	2.3% + PTA	3.20	1.7¢
2024	October 1, 2023	3.5% + PTA	1.5% + PTA	2.3% + PTA	3.33	1.7¢
2025	October 1, 2024	3.5% + PTA	1.5% + PTA	2.3% + PTA	3.50	1.8¢

[1] PTA = Pass-Through Adjustment.

[2] Based on proposed rates applied to single family residential ("SFR") customer with 7,000 gallons of monthly usage.

These adjustments assume the continued pass-through of future wholesale rate adjustments from Miami-Dade County as allowed per the City Code of Ordinances. Beyond Fiscal Year 2025, the financial forecast also recognizes automatic rate indexing – also allowed per the City Code of Ordinances – to account for general increases in operating expenses other than the increased costs for wholesale service. The adjustments are considered by the City staff to be representative of the increases in costs to effectively operate and maintain the System given the specific requirements of the System service area. As shown in the preceding exhibit, the first adjustments are recommended to become effective as soon as possible.

As further discussed in Section 2 of this report, it is recommended that the City gradually increase base charge recovery – the percentage of revenue recovered through fixed charges – to promote revenue stability. Most of the Utility's operating expenses and all the debt service are fixed. The effects of COVID-19 and the anticipated debt financing support increasing base charge recovery. Current fixed charge recovery is about 8%, but the utility industry recommended minimum is

30%. A summary of the existing and proposed monthly water and sewer user rates is shown in Table ES-1 at the end of this executive summary.

The proposed rates produce bills that are competitive with those of other "neighboring" utilities. At a usage level of 7,000 gallons, the average monthly usage level of a single family residential customer, the combined water and sewer bill under the proposed Fiscal Year 2021 rates would be lower than those of the City of Lake Worth Beach, the City of Hollywood, the City of Dania Beach, the City of Wilton Manors, the City of North Miami Beach, the City of Oakland Park, and the Town of Davie. It is important to note that a rate or bill comparison is not a "report card" on how well a utility is performing, as there are several factors that affect the rate levels charged.

ES-4: User Rate Recommendations – Wholesale Sewer

Wholesale sewer rates are charged to the Village of Bal Harbour, the Town of Bay Harbor Islands, and the Town of Surfside (the "Satellite Municipalities"). Based on the Miami-Dade County wholesale sewer rates, operations and maintenance expenses for the City's booster stations used in the sewer transmission, 1.5% administrative fees, and a renewal / replacement allowance, the proposed sewer rates for the Satellite Municipalities are shown in the following Exhibit ES-5:

Exhibit ES-5:
Proposed Fiscal Year 2021 Wholesale Sewer Rates

Fiscal Year	Effective Date	Wet Season	Dry Season
Existing Per 1,000 Gallons		\$3.9519	\$3.1006
Proposed Per 1,000 Gallons	ASAP	\$4.0935	\$3.2129
Change - %		3.6%	3.6%

The Utility's consulting engineers are currently updating the transmission booster station costs, after which the City should "right-size" the wholesale sewer rates for the Satellite Municipalities.

ES-5: Financial Overview

Tables ES-2 and ES-3 of this executive summary provides a financial overview of forecasted System operations. These tables indicate the following for all projected fiscal years, assuming that the projected user rate adjustments for all fiscal years are implemented:

1. Overall or all-in net revenues debt service coverage – net revenues divided by the annual debt service requirement – of at least 200% during most years of the Forecast Period. The Utility's rate covenants associated with the System's outstanding debt obligations include a 110% net revenues coverage requirement on the outstanding senior lien obligations. Utility best management practices recognize the need to target coverage ratios greater than the minimum required so that the Utility has sufficient operating margins to fund annual or

recurring renewal and replacement capital needs. Revenues remaining after the payment of operating expenses and debt service should be used for these "pay-as-you-go" reinvestments in the System to help ensure that the System remains operationally sustainable and that service interruptions to customers are avoided.

2. Maintenance of adequate operating reserves.
3. Maintenance of affordable rates. Bills for the average residential customer using 7,000 gallons per month are projected to remain well below 4.5% of the City's median household income throughout the Forecast Period. According to the Environmental Protection Agency, combined monthly water and sewer bills less than 4.5% of median household income are considered affordable.

Based on the financial forecast and assuming the implementation of the proposed rate adjustments, the Utility is projected to remain in a good financial position through the Fiscal Year 2030.

ES-6: Requested City Commission Action

Based on our analyses and findings as summarized in this section of the report and as further detailed in Sections 1 and 2 of this report, GovRates recommends the following items for the City Commission's consideration:

1. **Adopt the proposed monthly water and sewer rates.** Smaller, incremental rate increases over time help to avoid future "rate shock" and "catch up" increases. The proposed rates will produce bills considered competitive and affordable and are anticipated to favorably position the utility for the issuance of additional bonds in a few years to fund replacement / rehabilitation of utility assets. Third-party evaluators such as credit rating agencies want to see that all increases needed to support debt have already been adopted.
2. **Pass-through future wholesale rate increases from Miami-Dade County pursuant to the formula contained in the City's Code of Ordinances.**
3. **Proceed with the refunding of the Utility's outstanding Series 2010 Bonds to achieve debt service savings.**
4. **Right-size the wholesale sewer rates once updated costs of the City's sewer transmission booster stations are available.**
5. **Continue to monitor the financial position of the Utility system and adjust the financial and rate plan as needed.** The long-term effects of COVID-19 as well as changes in economic conditions, customer usage trends, the regulatory environment, capital needs, etc. could potentially affect significantly the projections contained in this report.

The remainder of this report provides additional details regarding the utility financial and rate analysis conducted on behalf of the City, including how the proposed rate adjustments were derived.

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.	Fiscal Year Ending September 30,						
	Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025	
WATER SERVICE - DOMESTIC							
<u>Residential</u>							
Base Facility Charge							
	<u>Meter Size</u>						
1	3/4"	\$ 8.50	\$ 9.35	\$ 10.29	\$ 11.32	\$ 12.45	\$ 13.69
2	1"	8.87	9.76	10.74	11.81	12.99	14.29
3	1.5"	9.74	10.71	11.79	12.97	14.27	15.69
4	2"	10.61	11.67	12.84	14.13	15.54	17.09
5	3"	11.14	12.25	13.49	14.84	16.32	17.94
6	4"	12.83	14.11	15.53	17.09	18.79	20.66
Consumption Charge Per 1,000 Gallons							
7	0 to 8,000 Gallons	\$ 0.98	\$ 0.84	\$ 0.88	\$ 0.93	\$ 0.97	\$ 1.02
8	8,001 to 16,000 Gallons	2.70	2.31	2.42	2.56	2.67	2.81
9	16,001 to 24,000 Gallons	4.01	3.44	3.60	3.81	3.97	4.17
10	Over 24,000 Gallons	5.48	4.70	4.92	5.20	5.42	5.70
11	Purchased Water Pass-Through Rate Per 1,000 Gallons	\$ 1.88	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.		Fiscal Year Ending September 30,					
		Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
	<u>Master-Metered Multifamily Residential Service</u>						
	(Includes Apartment, Condominium, and Duplex)						
	Base Facility Charge						
	<u>Meter Size</u>						
12	3/4"	\$ 8.50	\$ 9.35	\$ 10.29	\$ 11.32	\$ 12.45	\$ 13.69
13	1"	18.36	20.20	22.23	24.45	26.89	29.57
14	1.5"	35.01	38.51	42.38	46.63	51.28	56.39
15	2"	54.84	60.32	66.39	73.03	80.32	88.32
16	3"	105.90	116.49	128.20	141.03	155.11	170.56
17	4"	164.46	180.91	199.09	219.02	240.89	264.88
18	6"	329.47	362.42	398.85	438.78	482.58	530.64
19	8"	520.30	572.33	629.87	692.92	762.09	837.99
20	10"	746.88	821.57	904.16	994.67	1,093.96	1,202.92
21	12"	1,380.67	1,518.74	1,671.42	1,838.73	2,022.28	2,223.69
	Consumption Charge Per 1,000 Gallons						
22	Block 1	\$ 1.72	\$ 1.47	\$ 1.54	\$ 1.63	\$ 1.70	\$ 1.79
23	Block 2	2.94	2.52	2.64	2.79	2.91	3.06
24	Block 3	3.91	3.35	3.51	3.71	3.87	4.07
25	Purchased Water Pass-Through Rate Per 1,000 Gallons	\$ 1.88	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.		Fiscal Year Ending September 30,					
		Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
	<u>Nonresidential Service</u>						
	(Includes Commerical, Hotel, and City)						
	Base Facility Charge						
	<u>Meter Size</u>						
26	3/4"	\$ 8.50	\$ 9.35	\$ 10.29	\$ 11.32	\$ 12.45	\$ 13.69
27	1"	18.36	20.20	22.23	24.45	26.89	29.57
28	1.5"	35.01	38.51	42.38	46.63	51.28	56.39
29	2"	54.84	60.32	66.39	73.03	80.32	88.32
30	3"	105.90	116.49	128.20	141.03	155.11	170.56
31	4"	164.46	180.91	199.09	219.02	240.89	264.88
32	6"	329.47	362.42	398.85	438.78	482.58	530.64
33	8"	520.30	572.33	629.87	692.92	762.09	837.99
34	10"	746.88	821.57	904.16	994.67	1,093.96	1,202.92
35	12"	1,380.67	1,518.74	1,671.42	1,838.73	2,022.28	2,223.69
	Consumption Charge Per 1,000 Gallons						
36	Block 1	\$ 1.72	\$ 1.47	\$ 1.54	\$ 1.63	\$ 1.70	\$ 1.79
37	Block 2	2.94	2.52	2.64	2.79	2.91	3.06
38	Block 3	3.91	3.35	3.51	3.71	3.87	4.07
39	Purchased Water Pass-Through Rate Per 1,000 Gallons	\$ 1.88	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.	Fiscal Year Ending September 30,					
	Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
WATER SERVICE - IRRIGATION						
<u>Residential Water</u>						
Base Facility Charge						
	<u>Meter Size</u>					
40	3/4"	\$ 8.50	\$ 9.35	\$ 10.29	\$ 11.32	\$ 12.45
41	1"	8.87	9.76	10.74	11.81	12.99
42	1.5"	9.74	10.71	11.79	12.97	14.27
43	2"	10.61	11.67	12.84	14.13	15.54
44	3"	11.14	12.25	13.49	14.84	16.32
45	4"	12.83	14.11	15.53	17.09	18.79
Consumption Charge Per 1,000 Gallons						
46	0 to 16,000 Gallons	\$ 2.69	\$ 2.31	\$ 2.42	\$ 2.55	\$ 2.66
47	Over 16,000 Gallons	5.48	4.70	4.92	5.20	5.42
48	Purchased Water Pass-Through Rate Per 1,000 Gallons	\$ 1.88	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.		Fiscal Year Ending September 30,					
		Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
<u>Master-Metered Multifamily Residential Service</u>							
(Includes Apartment, Condominium, and Duplex)							
Base Facility Charge							
	<u>Meter Size</u>						
49	3/4"	\$ 8.50	\$ 9.35	\$ 10.29	\$ 11.32	\$ 12.45	\$ 13.69
50	1"	18.36	20.20	22.23	24.45	26.89	29.57
51	1.5"	35.01	38.51	42.38	46.63	51.28	56.39
52	2"	54.84	60.32	66.39	73.03	80.32	88.32
53	3"	105.90	116.49	128.20	141.03	155.11	170.56
54	4"	164.46	180.91	199.09	219.02	240.89	264.88
55	6"	329.47	362.42	398.85	438.78	482.58	530.64
56	8"	520.30	572.33	629.87	692.92	762.09	837.99
57	10"	746.88	821.57	904.16	994.67	1,093.96	1,202.92
58	12"	1,380.67	1,518.74	1,671.42	1,838.73	2,022.28	2,223.69
Consumption Charge Per 1,000 Gallons							
59	Block 1	\$ 2.69	\$ 2.31	\$ 2.42	\$ 2.55	\$ 2.66	\$ 2.80
60	Block 2	5.48	4.70	4.92	5.20	5.42	5.70
61	Purchased Water Pass-Through Rate Per 1,000 Gallons	\$ 1.88	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26
<u>Nonresidential Service</u>							
(Includes Commerical, Hotel, and City)							

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.		Fiscal Year Ending September 30,					
		Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
	Base Facility Charge						
	<u>Meter Size</u>						
62	3/4"	\$ 8.50	\$ 9.35	\$ 10.29	\$ 11.32	\$ 12.45	\$ 13.69
63	1"	18.36	20.20	22.23	24.45	26.89	29.57
64	1.5"	35.01	38.51	42.38	46.63	51.28	56.39
65	2"	54.84	60.32	66.39	73.03	80.32	88.32
66	3"	105.90	116.49	128.20	141.03	155.11	170.56
67	4"	164.46	180.91	199.09	219.02	240.89	264.88
68	6"	329.47	362.42	398.85	438.78	482.58	530.64
69	8"	520.30	572.33	629.87	692.92	762.09	837.99
70	10"	746.88	821.57	904.16	994.67	1,093.96	1,202.92
71	12"	1,380.67	1,518.74	1,671.42	1,838.73	2,022.28	2,223.69
	Consumption Charge Per 1,000 Gallons						
72	Block 1	\$ 2.69	\$ 2.31	\$ 2.42	\$ 2.55	\$ 2.66	\$ 2.80
73	Block 2	5.48	4.70	4.92	5.20	5.42	5.70
74	Purchased Water Pass-Through Rate Per 1,000 Gallons	\$ 1.88	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26	\$ 2.26

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.		Fiscal Year Ending September 30,					
		Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
SEWER SERVICE							
<u>Residential Sewer</u>							
Base Facility Charge							
	<u>Meter Size</u>						
75	3/4"	\$ 9.19	\$ 10.11	\$ 11.12	\$ 12.24	\$ 13.46	\$ 14.81
76	1"	9.19	10.11	11.12	12.24	13.46	14.81
77	1.5"	9.19	10.11	11.12	12.24	13.46	14.81
78	2"	9.19	10.11	11.12	12.24	13.46	14.81
79	3"	9.19	10.11	11.12	12.24	13.46	14.81
80	4"	9.19	10.11	11.12	12.24	13.46	14.81
Consumption Charge Per 1,000 Gallons							
81	All Flow	\$ 4.63	\$ 5.01	\$ 5.10	\$ 5.20	\$ 5.30	\$ 5.38
82	Purchased Sewer Pass-Through Rate Per 1,000 Gallons	\$ 5.51	\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.	Fiscal Year Ending September 30,					
	Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
<u>Master-Metered Multifamily Residential Service</u>						
(Includes Apartment, Condominium, and Duplex)						
Base Facility Charge						
	<u>Meter Size</u>					
83	3/4"	\$ 9.19	\$ 10.11	\$ 11.12	\$ 12.24	\$ 13.46
84	1"	20.52	22.57	24.83	27.33	30.05
85	1.5"	39.42	43.37	47.70	52.50	57.74
86	2"	62.09	68.31	75.13	82.70	90.94
87	3"	122.55	134.82	148.29	163.22	179.49
88	4"	190.57	209.65	230.59	253.82	279.12
89	6"	379.51	417.50	459.21	505.46	555.84
90	8"	606.23	666.92	733.54	807.43	887.91
91	10"	870.74	957.91	1,053.60	1,159.72	1,275.32
92	12"	1,626.49	1,789.32	1,968.07	2,166.29	2,382.21
Consumption Charge Per 1,000 Gallons						
93	All Usage	\$ 4.63	\$ 5.01	\$ 5.10	\$ 5.20	\$ 5.30
94	Purchased Sewer Pass-Through Rate Per 1,000 Gallons	\$ 5.51	\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25

Table ES-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Existing and Proposed Monthly Water and Sewer User Rates

Line No.		Fiscal Year Ending September 30,					
		Existing 2020	Proposed 2021	Proposed 2022	Proposed 2023	Proposed 2024	Proposed 2025
	<u>Nonresidential Service</u>						
	(Includes Commerical, Hotel, and City)						
	Base Facility Charge						
	<u>Meter Size</u>						
95	3/4"	\$ 9.19	\$ 10.11	\$ 11.12	\$ 12.24	\$ 13.46	\$ 14.81
96	1"	20.52	22.57	24.83	27.33	30.05	33.07
97	1.5"	39.42	43.37	47.70	52.50	57.74	63.53
98	2"	62.09	68.31	75.13	82.70	90.94	100.06
99	3"	122.55	134.82	148.29	163.22	179.49	197.49
100	4"	190.57	209.65	230.59	253.82	279.12	307.11
101	6"	379.51	417.50	459.21	505.46	555.84	611.59
102	8"	606.23	666.92	733.54	807.43	887.91	976.96
103	10"	870.74	957.91	1,053.60	1,159.72	1,275.32	1,403.23
104	12"	1,626.49	1,789.32	1,968.07	2,166.29	2,382.21	2,621.14
	Consumption Charge Per 1,000 Gallons						
105	All Usage	\$ 4.63	\$ 5.01	\$ 5.10	\$ 5.20	\$ 5.30	\$ 5.38
106	Purchased Sewer Pass-Through Rate Per 1,000 Gallons	\$ 5.51	\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25

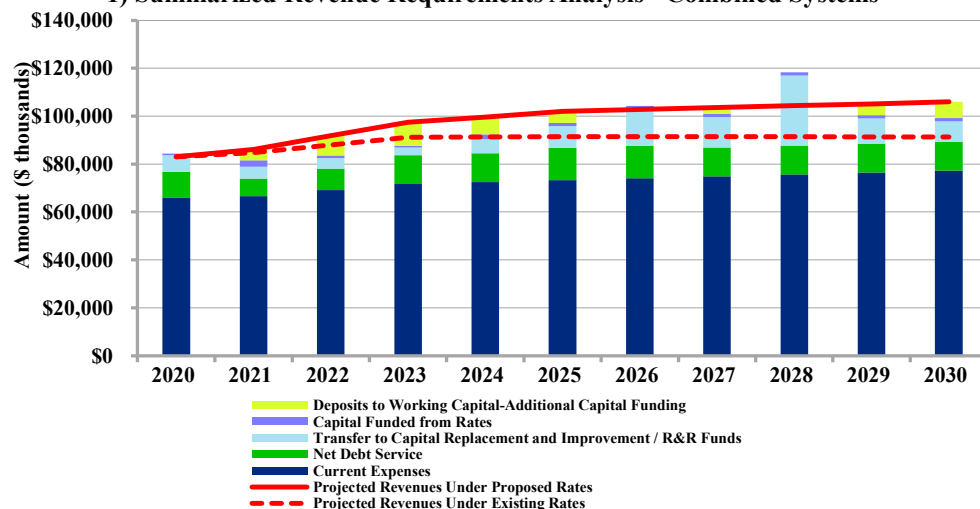
Table ES-2

City of Miami Beach, Florida Water and Sewer Rate Study

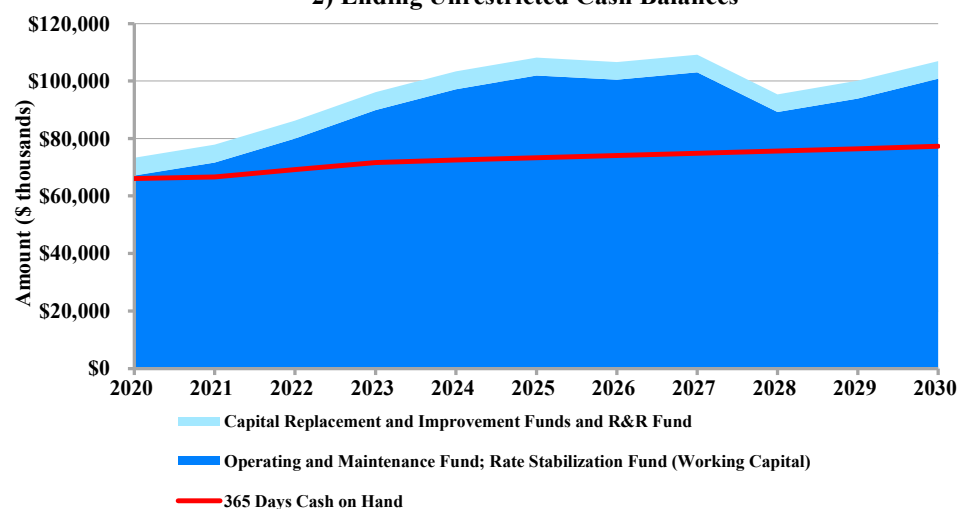
Water and Sewer System Financial Overview

High-Level Summary	Fiscal Year Ending September 30,										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Identified Revenue Adjustments											
Water System	0.00%	3.50%	3.50%	3.50%	3.50%	3.50%	0.82%	0.83%	0.81%	0.83%	0.85%
Sewer System	0.00%	1.61%	1.50%	1.50%	1.50%	1.50%	0.82%	0.83%	0.81%	0.83%	0.85%
Combined System	0.00%	2.37%	2.32%	2.33%	2.34%	2.35%	0.82%	0.83%	0.81%	0.83%	0.85%
Pass-Through Adjustments (PTA)			+PTA	+PTA	+PTA	+PTA	+PTA	+PTA	+PTA	+PTA	+PTA
Effective Months	12	9	12	12	12	12	12	12	12	12	12
Unrestricted Cash Balance (\$ 000's)											
365 Days Cash on Hand	\$ 73,288	\$ 77,839	\$ 86,177	\$ 96,060	\$ 103,315	\$ 108,116	\$ 106,594	\$ 109,215	\$ 95,365	\$ 100,105	\$ 106,924
All-In Net Revenues Debt Coverage											
Senior Lien Debt Coverage (No Admin)	144%	266%	255%	214%	226%	212%	212%	239%	239%	238%	238%
Revenue Surplus / (Deficiency) (\$ 000's):											
Combined System - Amount	(1,299)	4,551	8,338	9,883	7,255	4,802	(1,523)	2,621	(13,850)	4,740	6,819
Combined System - Percent	-1.6%	6.0%	10.6%	12.0%	8.3%	5.2%	-1.5%	2.7%	-12.3%	5.0%	7.3%
Monthly Bill @ 7,000 Gallons											
Increase	\$ 108.69	\$ 112.98	\$ 115.84	\$ 119.04	\$ 122.37	\$ 125.87	\$ 126.45	\$ 127.11	\$ 127.69	\$ 128.36	\$ 129.03
Cost Per Gallon of Total Bill	\$ 0.016	\$ 0.016	\$ 0.017	\$ 0.017	\$ 0.017	\$ 0.018	\$ 0.018	\$ 0.018	\$ 0.018	\$ 0.018	\$ 0.018
Percent of MHI (Target < 4.5%)	2.44%	2.52%	2.55%	2.60%	2.65%	2.69%	2.68%	2.67%	2.65%	2.64%	2.63%

1) Summarized Revenue Requirements Analysis - Combined Systems



2) Ending Unrestricted Cash Balances



City of Miami Beach, Florida
Water and Sewer Rate Study

Water and Sewer System Financial Overview

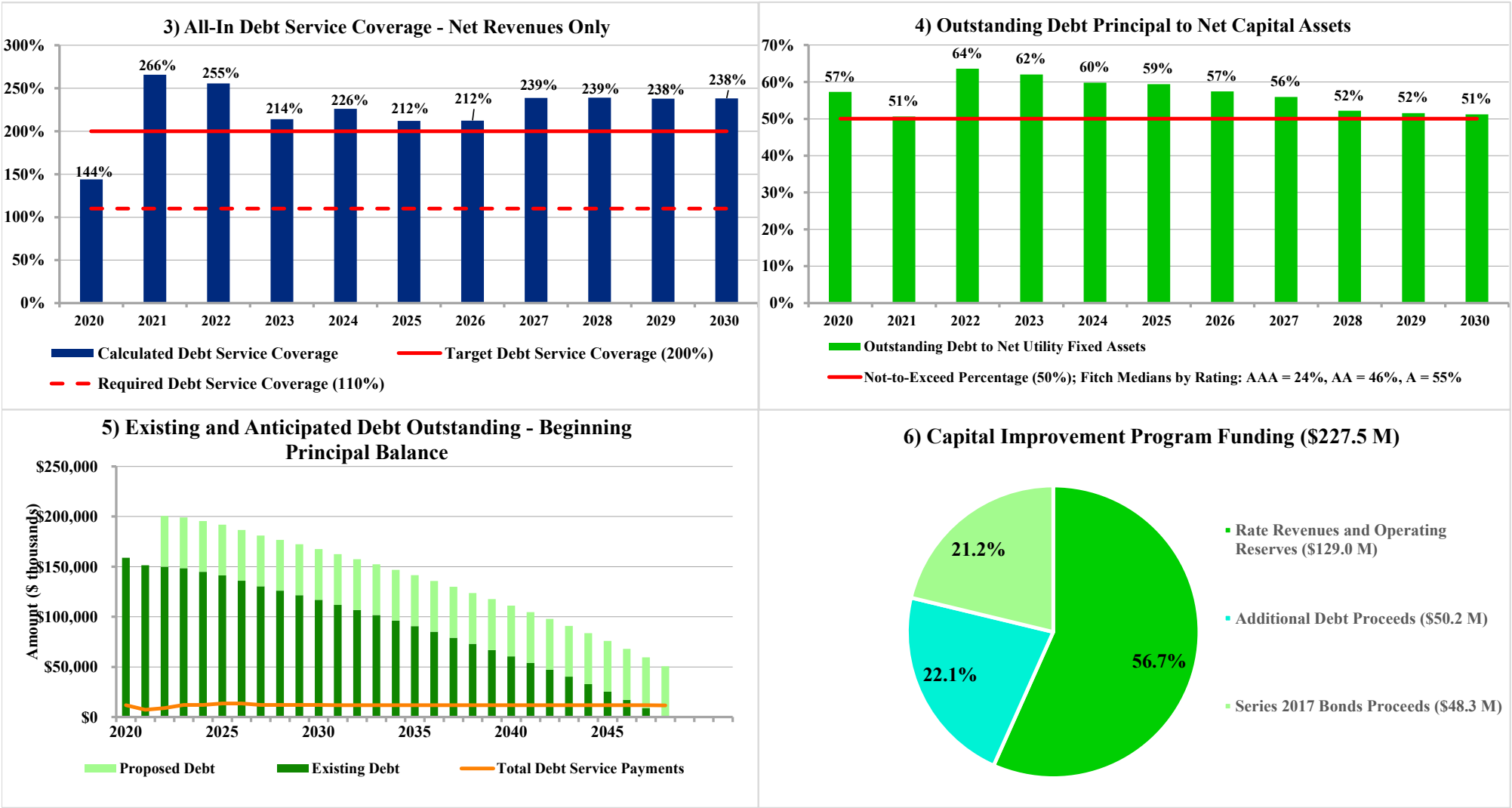


Table ES-2

City of Miami Beach, Florida
Water and Sewer Rate Study

Water and Sewer System Financial Overview

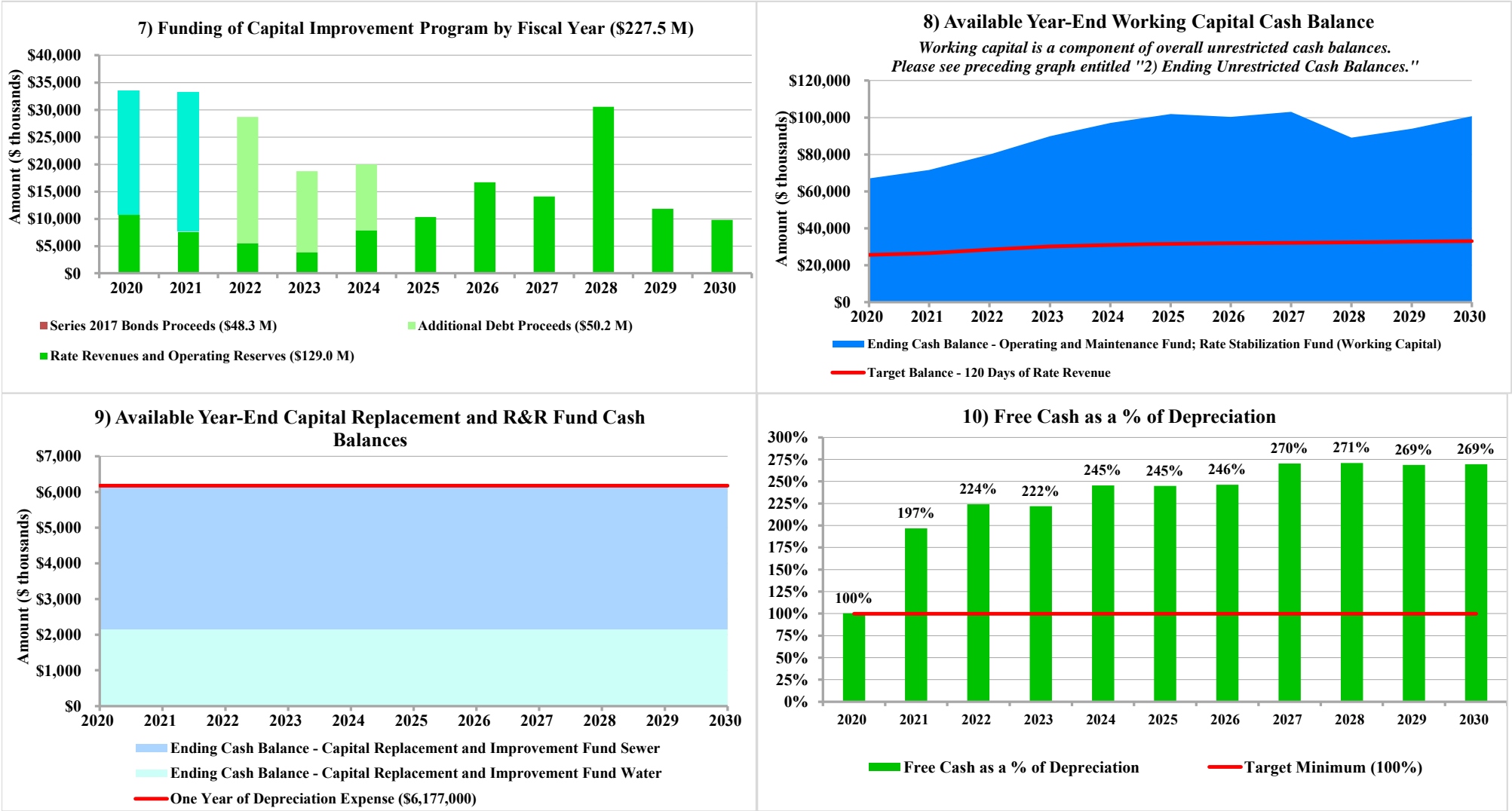
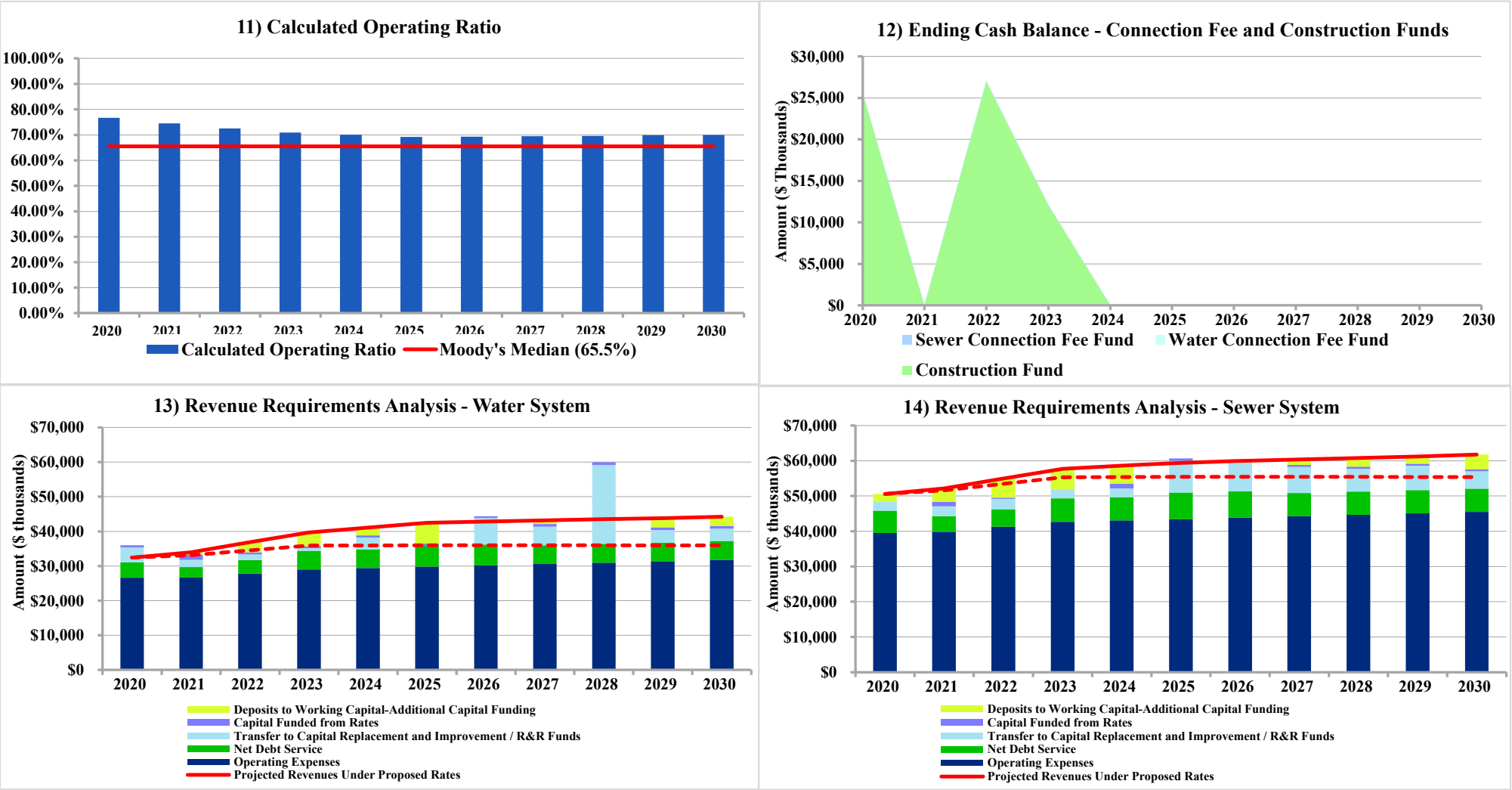


Table ES-2

City of Miami Beach, Florida
Water and Sewer Rate Study

Water and Sewer System Financial Overview



City of Miami Beach, Florida
Water and Sewer Rate Study

Water and Sewer System Financial Overview

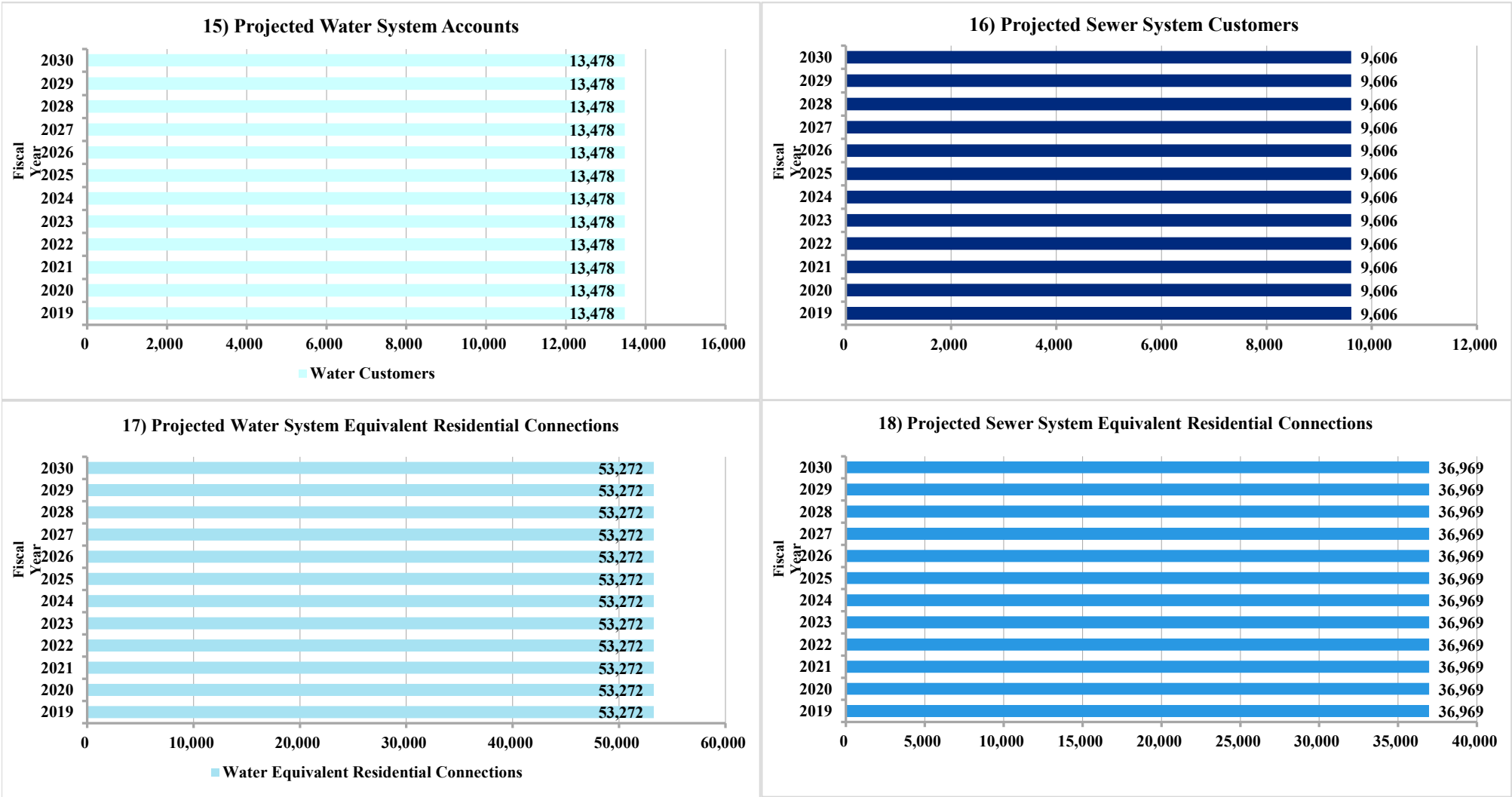
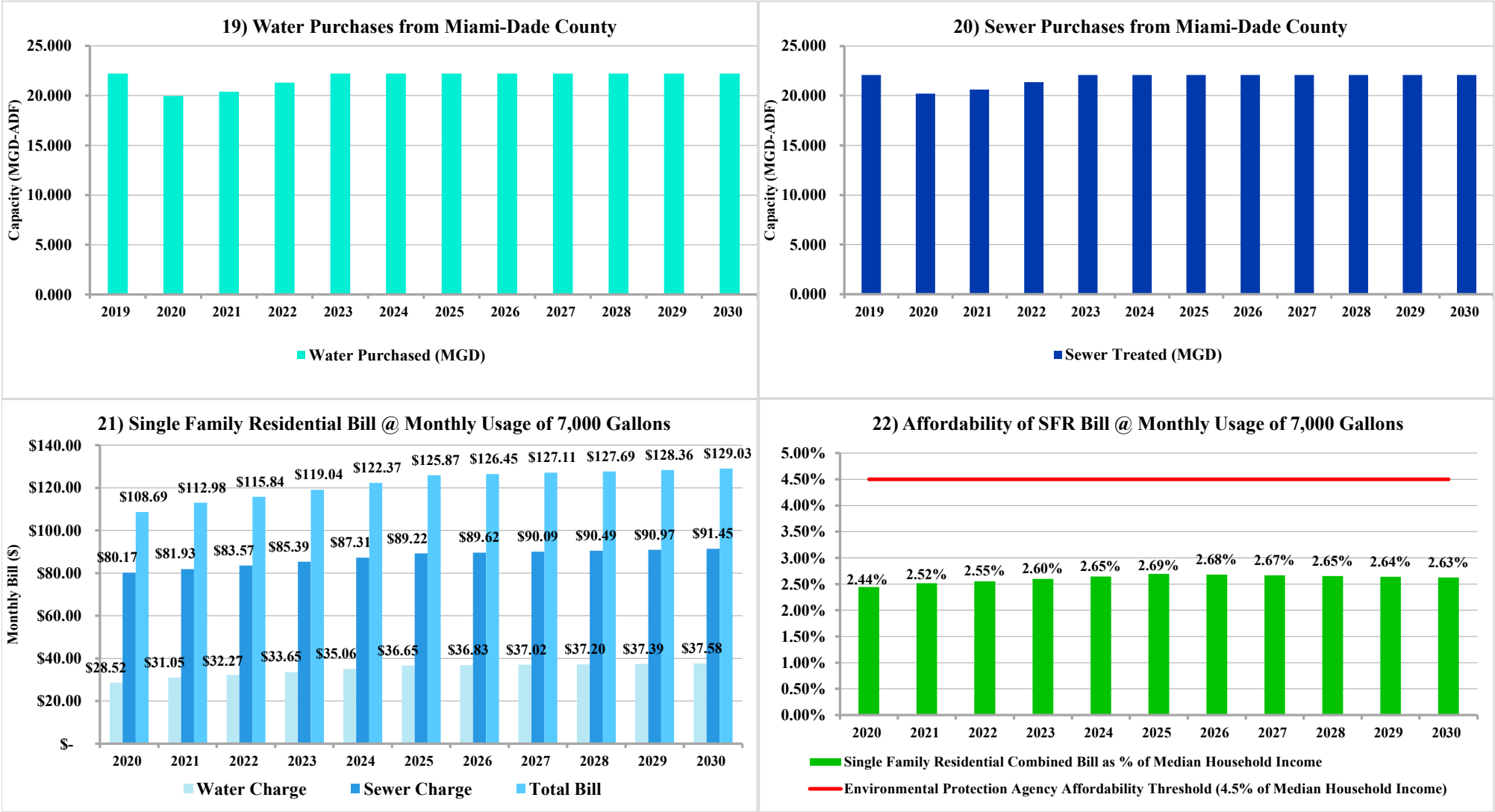


Table ES-2

City of Miami Beach, Florida
Water and Sewer Rate Study

Water and Sewer System Financial Overview



City of Miami Beach, Florida
Water and Sewer Rate Study

Water and Sewer System Financial Overview

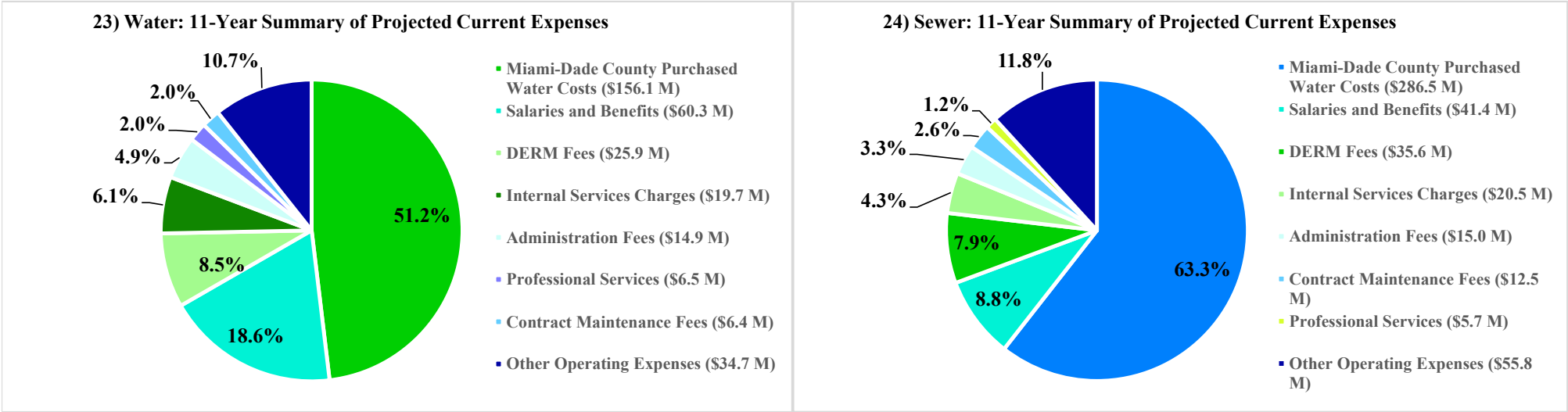


Table ES-3

**City of Miami Beach, Florida
Water and Sewer System**

Multi-Year Financial Projections

High-Level Summary	Actual FY	Fiscal Year Ending September 30,										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operating Revenue												
User Rate Revenue - Retail												
Water User Rate Revenue Before Current Year Adjustment		\$ 31,337,902	\$ 32,015,679	\$ 34,548,767	\$ 37,219,955	\$ 38,522,655	\$ 39,870,955	\$ 41,266,455	\$ 41,603,155	\$ 41,949,955	\$ 42,291,755	\$ 42,644,055
Additional User Rate Increase - Water		0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	0.8%	0.8%	0.8%	0.8%	0.9%
Total Water User Rate Revenue	\$ 35,641,654	\$ 31,337,902	\$ 32,856,079	\$ 35,757,967	\$ 38,522,655	\$ 39,870,955	\$ 41,266,455	\$ 41,603,155	\$ 41,949,955	\$ 42,291,855	\$ 42,644,055	\$ 43,007,255
Sewer User Rate Revenue Before Current Year Adjustment												
Sewer User Rate Revenue Before Current Year Adjustment		\$ 46,507,450	\$ 47,537,926	\$ 50,162,741	\$ 52,802,557	\$ 53,594,657	\$ 54,398,557	\$ 55,214,557	\$ 55,664,957	\$ 56,128,957	\$ 56,586,357	\$ 57,057,757
Additional User Rate Increase - Sewer		0.0%	1.6%	1.5%	1.5%	1.5%	1.5%	0.8%	0.8%	0.8%	0.8%	0.9%
Total Sewer User Rate Revenue	\$ 49,753,057	\$ 46,507,450	\$ 48,111,926	\$ 50,915,141	\$ 53,594,557	\$ 54,398,557	\$ 55,214,557	\$ 55,664,957	\$ 56,128,957	\$ 56,586,357	\$ 57,057,757	\$ 57,543,657
Total User Rate Revenue - Retail	\$ 85,394,711	\$ 77,845,352	\$ 80,968,005	\$ 86,673,109	\$ 92,117,213	\$ 94,269,513	\$ 96,481,013	\$ 97,268,113	\$ 98,078,913	\$ 98,878,213	\$ 99,701,813	\$ 100,550,913
Other Operating Revenue	\$ 4,268,847	\$ 4,368,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500
TOTAL OPERATING REVENUE	\$ 89,663,558	\$ 82,213,852	\$ 85,354,505	\$ 91,059,609	\$ 96,503,713	\$ 98,656,013	\$ 100,867,513	\$ 101,654,613	\$ 102,465,413	\$ 103,264,713	\$ 104,088,313	\$ 104,937,413
Current Expenses												
Water Operating Expenses		\$ 26,602,120	\$ 26,719,579	\$ 27,845,551	\$ 28,972,514	\$ 29,396,145	\$ 29,832,667	\$ 30,207,890	\$ 30,595,091	\$ 30,992,741	\$ 31,403,244	\$ 31,823,947
Sewer Operating Expenses		39,507,077	39,888,871	41,280,476	42,678,101	43,063,440	43,458,324	43,838,884	44,231,455	44,633,347	45,048,143	45,471,701
TOTAL CURRENT EXPENSES [1]	\$ 61,407,739	\$ 66,109,197	\$ 66,608,450	\$ 69,126,028	\$ 71,650,615	\$ 72,459,585	\$ 73,290,991	\$ 74,046,774	\$ 74,826,547	\$ 75,626,087	\$ 76,451,388	\$ 77,295,648
Percent Change		7.7%	0.8%	3.8%	3.7%	1.1%	1.1%	1.0%	1.1%	1.1%	1.1%	1.1%
Operating Revenues Less Current Expenses	\$ 28,255,819	\$ 16,104,655	\$ 18,746,055	\$ 21,933,581	\$ 24,853,097	\$ 26,196,427	\$ 27,576,521	\$ 27,607,838	\$ 27,638,866	\$ 27,638,625	\$ 27,636,925	\$ 27,641,765
Non-Operating Revenue												
Unrestricted Interest Income	\$ 791,356	\$ 791,356	\$ 751,231	\$ 800,634	\$ 891,858	\$ 990,677	\$ 1,066,936	\$ 1,114,963	\$ 1,096,011	\$ 1,122,216	\$ 983,728	\$ 1,031,136
Net Revenue Available for Debt Service	\$ 29,047,175	\$ 16,896,011	\$ 19,497,286	\$ 22,734,215	\$ 25,744,956	\$ 27,187,104	\$ 28,643,458	\$ 28,722,801	\$ 28,734,877	\$ 28,760,841	\$ 28,620,653	\$ 28,672,901
City Debt Service												
Existing Debt Service - Principal and Interest		\$ 11,727,338	\$ 7,339,800	\$ 7,435,000	\$ 9,503,850	\$ 9,497,950	\$ 10,983,700	\$ 10,987,200	\$ 9,496,650	\$ 9,495,000	\$ 9,498,000	\$ 9,499,900
New Debt Service - Principal and Interest		-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
Less Impact Fees Used for City Growth-Related Debt Service		1,036,345	-	-	-	-	-	-	-	-	-	-
NET DEBT SERVICE	\$ 10,690,993	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650	\$ 12,032,650
Grant Reimbursements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Less Equipment Loan Payments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Revenue Available for Capital Rehabilitations / Improvements	\$ 6,205,018	\$ 12,157,486	\$ 13,835,849	\$ 13,708,356	\$ 15,156,404	\$ 15,127,008	\$ 15,202,851	\$ 16,705,477	\$ 16,733,091	\$ 16,589,903	\$ 16,640,251	\$ 16,640,251
Capital Expenditures												
Capital Program as Scheduled												
Capital Projects - Water		\$ 20,828,206	\$ 11,410,275	\$ 13,959,480	\$ 10,896,439	\$ 10,579,357	\$ -	\$ 7,682,000	\$ 5,400,000	\$ 22,820,000	\$ 3,618,000	\$ 3,618,000
Capital Projects - Sewer		11,975,538	19,110,780	13,720,563	7,184,523	7,377,559	8,999,500	8,272,000	7,377,000	6,455,000	6,924,000	4,895,600
Departmental Capital - Water		645,000	1,472,000	685,804	614,000	627,870	659,338	479,867	739,126	739,126	739,126	739,126
Departmental Capital - Sewer		25,000	1,218,000	332,444	58,313	1,388,573	666,366	291,578	568,468	568,468	568,468	568,468
Total Capital Program as Scheduled	\$ 33,473,743	\$ 33,211,055	\$ 28,698,292	\$ 18,753,275	\$ 19,973,359	\$ 10,325,204	\$ 16,725,445	\$ 14,084,593	\$ 30,582,593	\$ 11,849,593	\$ 9,821,193	\$ 9,821,193

Table ES-3

**City of Miami Beach, Florida
Water and Sewer System**

Multi-Year Financial Projections

High-Level Summary	Actual FY	Fiscal Year Ending September 30,										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Adjustments												
Capital Projects - Water	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Projects - Sewer	-	-	-	-	-	-	-	-	-	-	-	-
Departmental Capital - Water	-	-	-	-	-	-	-	-	-	-	-	-
Departmental Capital - Sewer	-	-	-	-	-	-	-	-	-	-	-	-
Total Adjustments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Projects as Adjusted												
Capital Projects - Water	\$ 20,828,206	\$ 11,410,275	\$ 13,959,480	\$ 10,896,439	\$ 10,579,357	\$ -	\$ 7,682,000	\$ 5,400,000	\$ 22,820,000	\$ 3,618,000	\$ 3,618,000	\$ 3,618,000
Capital Projects - Sewer	11,975,538	19,110,780	13,720,563	7,184,523	7,377,559	8,999,500	8,272,000	7,377,000	6,455,000	6,924,000	4,895,600	4,895,600
Departmental Capital - Water	645,000	1,472,000	685,804	614,000	627,870	659,338	479,867	739,126	739,126	739,126	739,126	739,126
Departmental Capital - Sewer	25,000	1,218,000	332,444	58,313	1,388,573	666,366	291,578	568,468	568,468	568,468	568,468	568,468
ADJUSTED CAPITAL EXPENDITURES	\$ 33,473,743	\$ 33,211,055	\$ 28,698,292	\$ 18,753,275	\$ 19,973,359	\$ 10,325,204	\$ 16,725,445	\$ 14,084,593	\$ 30,582,593	\$ 11,849,593	\$ 9,821,193	
Cash Surplus / (Deficiency)												
Base Surplus / (Deficiency)	\$ (27,268,726)	\$ (21,053,569)	\$ (14,862,443)	\$ (5,044,920)	\$ (4,816,954)	\$ 4,801,804	\$ (1,522,594)	\$ 2,620,883	\$ (13,849,502)	\$ 4,740,309	\$ 6,819,057	
Less Projects to Be Funded Through Surtax	-	-	-	-	-	-	-	-	-	-	-	-
Less Projects to Be Funded by Developers	-	-	-	-	-	-	-	-	-	-	-	-
Less Projects to Be Funded Through Connection / Impact Fees	-	-	-	-	-	-	-	-	-	-	-	-
Less Projects to Be Funded Through Proceeds from Existing and Proposed Debt	22,736,867	25,604,255	23,200,292	14,928,290	12,071,418	-	-	-	-	-	-	-
INCREASE / DECREASE IN UNRESTRICTED FUND BALANCES	\$ (4,531,859)	\$ 4,550,686	\$ 8,337,849	\$ 9,883,370	\$ 7,254,464	\$ 4,801,804	\$ (1,522,594)	\$ 2,620,883	\$ (13,849,502)	\$ 4,740,309	\$ 6,819,057	
Debt Service Coverage												
Net Revenue Available for Debt Service	\$ 16,896,011	\$ 19,497,286	\$ 22,734,215	\$ 25,744,956	\$ 27,187,104	\$ 28,643,458	\$ 28,722,801	\$ 28,734,877	\$ 28,760,841	\$ 28,620,653	\$ 28,672,901	
Add Back Admin Fees	2,400,000	2,400,000	2,472,000	2,546,160	2,622,545	2,701,221	2,782,258	2,865,726	2,951,697	3,040,248	3,131,456	
Net Revenue Available for Debt Service without Payment of Admin Fees	\$ 19,296,011	\$ 21,897,286	\$ 25,206,215	\$ 28,291,116	\$ 29,809,649	\$ 31,344,679	\$ 31,505,059	\$ 31,600,602	\$ 31,712,538	\$ 31,660,901	\$ 31,804,356	
Total Debt Service	11,727,338	7,339,800	8,898,367	12,036,600	12,030,700	13,516,450	13,519,950	12,029,400	12,027,750	12,030,750	12,032,650	
SENIOR LIEN DEBT SERVICE COVERAGE (DOES NOT INCLUDE ADMIN FEES)	1.65	2.98	2.83	2.35	2.48	2.32	2.33	2.63	2.64	2.63	2.64	
ALL-IN DEBT SERVICE COVERAGE	1.44	2.66	2.55	2.14	2.26	2.12	2.12	2.39	2.39	2.38	2.38	
Cash Balances												
Beginning of Year Cash Balances	\$ 134,035,830											
Less Construction / Loan Fund Balance	(48,341,122)											
Less Customer Deposits	(6,838,350)											
Less Debt Service Reserve Account	-											
Less Connection / Impact Fees	(1,036,345)											
Less Carryforward Projects	-											
Beginning of Year Fund Balance - Net Cash	\$ 77,820,014	\$ 73,288,155	\$ 77,838,841	\$ 86,176,690	\$ 96,060,060	\$ 103,314,524	\$ 108,116,328	\$ 106,593,734	\$ 109,214,618	\$ 95,365,115	\$ 100,105,424	
Operating/Capital Reserve (Increase/Decrease)	(4,531,859)	4,550,686	8,337,849	9,883,370	7,254,464	4,801,804	(1,522,594)	2,620,883	(13,849,502)	4,740,309	6,819,057	
ENDING CASH RESERVES - \$	\$ 73,288,155	\$ 77,838,841	\$ 86,176,690	\$ 96,060,060	\$ 103,314,524	\$ 108,116,328	\$ 106,593,734	\$ 109,214,618	\$ 95,365,115	\$ 100,105,424	\$ 106,924,482	
Target Minimum Cash Reserves - One Year of Operating Expenses - \$ [2]	\$ 66,109,197	\$ 66,608,450	\$ 69,126,028	\$ 71,650,615	\$ 72,459,585	\$ 73,290,991	\$ 74,046,774	\$ 74,826,547	\$ 75,626,087	\$ 76,451,388	\$ 77,295,648	
Cash Reserves Balance - % of Operating Expenses [2]	111%	117%	125%	134%	143%	148%	144%	146%	126%	131%	138%	
Cash Reserves Balance - Days Cash on Hand [2]	405	427	455	489	520	538	525	533	460	478	505	

Table ES-3

**City of Miami Beach, Florida
Water and Sewer System**

Multi-Year Financial Projections

High-Level Summary	Actual FY	Fiscal Year Ending September 30,										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Monthly Bill and Rate Affordability												
Average Monthly Residential Water Bill (7,000 Gallons)	\$ 28.52	\$ 31.05	\$ 32.27	\$ 33.65	\$ 35.06	\$ 36.65	\$ 36.83	\$ 37.02	\$ 37.20	\$ 37.39	\$ 37.58	
Average Monthly Residential Sewer Bill (7,000 Gallons)	80.17	81.93	83.57	85.39	87.31	89.22	89.62	90.09	90.49	90.97	91.45	
Total Monthly Residential Bill (7,000 Gallons)	\$ 108.69	\$ 112.98	\$ 115.84	\$ 119.04	\$ 122.37	\$ 125.87	\$ 126.45	\$ 127.11	\$ 127.69	\$ 128.36	\$ 129.03	
Amount Increase		\$ 4.29	\$ 2.86	\$ 3.20	\$ 3.33	\$ 3.50	\$ 0.58	\$ 0.66	\$ 0.58	\$ 0.67	\$ 0.67	
Percent Increase		3.9%	2.5%	2.8%	2.8%	2.9%	0.5%	0.5%	0.5%	0.5%	0.5%	
Cumulative Increase - %			3.9%	6.6%	9.5%	12.6%	15.8%	16.3%	16.9%	17.5%	18.1%	18.7%
Median Household Income in City of Miami Beach (Monthly) [3]	\$ 4,446	\$ 4,490	\$ 4,535	\$ 4,580	\$ 4,626	\$ 4,672	\$ 4,719	\$ 4,766	\$ 4,814	\$ 4,862	\$ 4,911	
Percent of Median Household Income (Target < 4.5%)	2.44%	2.52%	2.55%	2.60%	2.65%	2.69%	2.68%	2.67%	2.65%	2.64%	2.63%	

Footnotes:

[1] Historical Operating Expenses excluding depreciation are shown as follows:

Expenses Summary	Fiscal Year Ended September 30,					Compound Annual Growth Rate
	2015	2016	2017	2018	2019	
Total Operating Expenses	\$ 56,906,238	\$ 60,864,881	\$ 66,850,251	\$ 61,690,288	\$ 61,407,739	
Percent Change		7.0%	9.8%	-7.7%	-0.5%	1.9%

[2] Fitch Ratings considers that utilities with the strongest financial profiles would have cash reserve balances equal to at least 100% of annual Operating Expenses.

[3] \$53,348 median household income per United States Census Bureau (www.census.gov) divided by 12 months. Assumed to increase by 1.0% per year after Fiscal Year 2020.

Additional Personnel	Fiscal Year Ending September 30,										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Additional Full Time Employees (FTE) per Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Additional FTE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SECTION 1: FINANCIAL FORECAST

SECTION 1:

FINANCIAL FORECAST

1-1: Introduction

The City of Miami Beach (the "City") is located in southeast Florida in Miami-Dade County (the "County") and occupies about 17.5 square miles. Based on information developed by the Bureau of Economic and Business Research of the University of Florida ("BEBR") and published on the website of the State of Florida Office of Economic and Demographic Research ("EDR"), the City's total population as of April 1, 2019 was 93,988. As reported by the EDR, the City was the fourth largest municipality located in the County out of 34 municipalities. (The City of Miami, the City of Hialeah, and the City of Miami Gardens are the municipalities in the County with larger populations.)

1-2: Existing Water and Sewer Monthly User Rates

The City's current water and sewer user rates have been in effect since October 1, 2019. On September 27, 2016, the City Commission enacted Ordinance No. 2016-4039 that established the water and sewer monthly user rates for the System (the "Rate Ordinance"). The adopted monthly rates as referenced in the Rate Ordinance include: i) a flat or constant base facility charge for each service that is predicated on the size of the meter for both the water and sewer systems; ii) for the water system, a consumption charge consisting of inclining blocked rates to promote water conservation; iii) for the water system, a purchased water pass-through rate to recover the costs of wholesale water service purchased from the County, including any increase in DERM Fees; iv) for the sewer system, a constant volumetric flow charge based on one hundred percent (100%) of the metered water consumption to such account (domestic use; would not include separately metered water-only use); and v) for the sewer system, a purchased sanitary sewer pass-through rate to recover the costs of wholesale sewer service from the County, including any increase in DERM Fees. The revenues derived from the application of the rates for monthly retail water service and retail and wholesale sewer service account for approximately 99% of the reported System Gross Revenues.

The Rate Ordinance includes certain provisions to automatically adjust rates either annually to recover an allowance for the cost of inflation on operations or immediately upon certain events that would result in a change in costs such as an increase in wholesale water and sanitary sewer rates billed by the County or an increase in the DERM Fee. Such fees can be implemented without

formal City Commission approval (through a separate ordinance adoption) but generally are presented through the budget process or if conditions are warranted by the City. The following is a summary discussion of the automatic rate adjustment provisions contained in the Rate Ordinance:

Pass-Through of Wholesale Rate Adjustments

The Rate Ordinance contains a provision whereby the purchased water pass-through rate and purchased sanitary sewer pass-through rate will be adjusted without a public hearing whenever the County implements changes to its wholesale service rates charged to the City. The pass-through adjustment formulas identified in the Rate Ordinance consider the change in the wholesale service rates adjusted for the fee paid to the DERM that is based on a percent (currently 6%) of retail rate revenues billed by the City.

Automatic Rate Indexing

The Rate Ordinance allows for automatic rate indexing of the monthly user rates to account for general increases in operating expenses other than increased costs for wholesale service (which are passed-through separately) due to inflationary impacts on the ongoing cost of providing service. The index applied by the City is the Consumer Price Index – All Urban Consumers, Miami-Fort Lauderdale as published by the United States Bureau of Labor Statistics. The rate indexing formula contained in the Rate Ordinance adjusts for the fee paid to the DERM that is based on a percent of rate revenues (currently 8% as discussed previously in this Report) billed by the City.

Table ES-1 in the executive summary of this report shows the existing retail monthly water and sewer user rates. A copy of the Rate Ordinance is included as the Appendix to this report.

1-3: Water System Customer Statistics

During the Fiscal Year 2019, it is estimated that the City's utility service requirements included providing water service to an average of 13,478 domestic and irrigation water accounts and 53,272 water equivalent residential connections ("ERCs") based on meter equivalency factors as shown in Table 1-1 at the end of this section. An ERC represents the annual average use of an individually metered residential (single-family) customer. For the determination of the estimated number of ERCs served, such estimates were based on the use of meter equivalent factors applied to the meters in service. The meter equivalent factors were based on information published by the American Water Works Association (AWWA), which documents the capacities of the various meter sizes typically used by Florida utilities in the establishment of monthly base facility charges, including the Florida Public Service Commission (FPSC) and the City. The meter equivalent factors are based on the equivalent hydraulic throughput capacity of the meters and are shown in the following Exhibit 1-1 by meter size:

Exhibit 1-1: Meter Equivalent Factors

Meter Size (Inches)	Meter Equivalent (ERC Factor)
5/8" and 3/4"	1
1"	2.5
1-1/2"	5
2"	8
3"	16
4"	25
6"	50
8"	80
10"	115
12"	215

Based on discussions with the City staff, since the Utility service area is essentially built out, no customer growth was assumed during the Forecast Period. Due to the COVID-19 pandemic and as noted in Table 1-1, the Utility has experienced a decrease in commercial usage. A three-year recovery period was assumed such that, by Fiscal Year 2023, customer usage would return to pre-COVID-19 levels.

1-4: Sewer System Customer Statistics

During the Fiscal Year 2019, it is estimated that the City's utility service requirements included providing sewer service to an average of 9,606 retail sewer accounts and 36,969 retail sewer ERCs based on meter equivalency factors as shown in Table 1-1 at the end of this section. Similar to the water system, no sewer system customer growth was assumed during the Forecast Period. A three-year recovery period was assumed such that, by Fiscal Year 2023, customer usage would return to pre-COVID-19 levels.

1-5: Revenues Under Existing Monthly User Rates - Retail

The forecast of retail revenues from existing water and sewer rates was based on: i) the projection of System accounts and corresponding water and sewer consumption as shown in Table 1-1; and ii) the existing rates for monthly water and sewer service as currently adopted by the City. A summary of the estimated water and sewer user rate revenues derived under existing rates is included in Table 1-2 at the end of this section. The projected water and sewer user rate revenues by fiscal year based on the previously discussed forecast of customer statistics is summarized in the following Exhibit 1-2:

**Exhibit 1-2: Projected Retail Rate Revenues Under
Existing Monthly Water and Sewer User Rates [1]**

Fiscal Year Ending September 30, (Projected)	Water System	Wastewater System	Combined System
2020 (est.)	\$ 31,337,902	\$ 46,507,450	\$ 77,845,352
2021	32,015,679	47,537,926	79,553,605
2022	33,380,467	49,367,941	82,748,409
2023 to 2030	34,745,255	51,197,957	85,943,213

[1] Amounts shown derived from Table 1-2.

The preceding Exhibit 1-2 reflects the assumed three (3) year economic recovery period.

1-6: Revenue Requirements – Principal Assumptions and Considerations

The costs associated with operating and maintaining a utility system, as well as the costs of financing the renewals and replacements of existing facilities and the capital improvements for upgrades and expansions, are generally considered as the revenue requirements of a public utility such as the City's System. The sum of these costs, after adjusting for other operating and non-operating (e.g., interest income, impact fees available to pay expansion-related debt service) revenues available to the utility, represents the net revenue requirements of a utility system that must be funded from the monthly user charges or rates. The following is a summary of the net revenue requirement derivation:

- + Cost of Operation and Maintenance
- + Debt Service Payments (Senior and Subordinate)
- + Transfers and Administration Payments
- + Capital Project Financing
- + Working Capital Reserves / Financial Compliance
- Other Operating Revenue and Other Funding Sources
- Interest Income
- = Net Revenue Requirements (Funded from User Rates)

Net revenue requirements signify the expenditure levels required to be recovered from monthly user fees or rates. The development of the net revenue requirements of the System is a critical component of the analysis since utility rates should be designed to fully recover the cost of providing service.

The financial evaluation contained in this utility rate analysis covered projections for the 11 fiscal year period of October 1, 2019 through September 30, 2030 (previously defined as the "Forecast Period"). A forecast of System operations was prepared in order to: i) assess the adequacy of utility rates in the near future; ii) recognize potential cost recovery strategies based on the phase-in of any required rate adjustments to meet the projected revenue requirements and finance identified capital expenditure requirements; and iii) examine the financial implications of alternatives to funding the System's multi-year capital improvement program.

The projected revenue requirements are shown in Tables 1-3 and 1-4 at the end of this section for the water system and sewer system, respectively, while the combined System revenue requirements are shown in Table 1-5. In the preparation of the financial projections contained in this report and the conclusions that follow, GovRates has made certain assumptions with respect to conditions that may occur in the future. While we believe the assumptions are reasonable and based on the best available information for the purpose of this report, they are dependent upon future events, and actual conditions may differ from those assumed. We recommend that the City continue to compare actual results with the projections contained in this report to ensure that the Utility's rates continue to be sufficient.

For the purposes of the financial projections, the principal considerations and assumptions were either made by us or provided to us by others. These primary considerations and assumptions include the following:

1. Projected revenues from current rates and charges for the City's water system and sewer system have been based on the schedule of rates and charges currently in effect. Such rates were applied to the customer and sales usage forecast discussed previously.
2. The Fiscal Years 2020 and 2021 Operating and Capital Budgets as provided by the City served as the baseline for the expenditure projections for the remainder of the Forecast Period and the underlying assumptions contained in these budgets were considered reasonable and to reflect anticipated operations. The budgeted operating expenses were compared with actual historical results and trends in operating expenses.
3. Table 1-6 at the end of this section summarizes: i) the budgeted Fiscal Year 2020 and Fiscal Year 2021 operations and maintenance expenses for the System; ii) the adjustments made to the forecast for known operational and ratemaking considerations; and iii) the allocation of such expenses between the water and sewer systems.
4. The operation and maintenance expenses for the water and sewer systems identified for the Fiscal Year 2021 were projected for the remaining nine (9) years of the Forecast Period (through Fiscal Year 2030). These projections are displayed on Tables 1-7 and 1-8 at the end

of this section for the water and sewer systems, respectively, while Table 1-9 shows the projected operation and maintenance expenses on a combined basis. Table 1-10 indicates the escalation factors utilized in the analysis that were based on the nature of the expense and information provided by the City staff. The forecast of inflation was based upon the consumer price index (CPI) forecast prepared by the Congressional Budget Office as contained in "The Budget and Economic Outlook: 2020 to 2030" published in January 2020. Despite the COVID-19 pandemic, the Congressional Budget Office is still projecting inflation to continue in the future. This inflation forecast was compared to other pricing indices used by many utilities for financial forecasting and rate review purposes. Major cost escalation factors assumed were based on discussions with City staff and include:

- Salaries and Wages: 3.0% per year
 - Health Insurance: 5.0% per year
 - Repair and Maintenance Expenses: 4.0% per year
 - Property / General Insurance: 4.0% per year
 - Electricity Commodity Cost: 4.0% per year
 - Chemicals Commodity Cost: 4.0% per year
 - Gas / Fuel Commodity Cost: 5.0% per year
 - Administrative Charge to General Fund: 3.0% per year
5. The wholesale water and sewer charges from Miami-Dade County were held constant after Fiscal Year 2021 under the assumption that the City would pass-through all future wholesale increases via the pass-through formula currently in the City's Code of Ordinances. Table 1-11 at the end of this section contains the projected wholesale water and sewer charges.
 6. Based on discussions with City staff, no additional personnel above Fiscal Year 2021 budget levels have been recognized for purposes of developing the financial forecast.
 7. In the projection of the estimated expenditure requirements, a contingency allowance has been included for Fiscal Years 2020 through 2030. This annual allowance of about \$3 million has been included as an operating expense in order to have additional funds to meet unknown or unplanned expenses throughout the fiscal year and to recognize potential changes in revenues that may result due to weather, conservation, and other factors. To the extent the contingency allowance is not required to meet annual operating expenses or provide funds for ongoing System operations, such monies would accrue to the benefit of the System and could be used for other purposes such as funding renewals, replacements, and upgrades to the System over time. The Utility has historically had to utilize contingency allowances for unplanned for expenditures during each fiscal year.
 8. An allowance for bad debt expenses has been made to recognize that a certain amount of revenues will be considered as uncollectible and written off throughout the year. This

expenditure item reflects an incremental adjustment to each year's operating expenses and was estimated at 0.50% of user rate revenue.

9. For the purposes of this analysis, amounts associated with depreciation and amortization expenses have not been recognized in this analysis. These expenditures are non-cash in nature and are also not considered as operating expenses for ratemaking purposes under the flow of funds provision of the Utility's bond resolution. Therefore, such amounts have not been recognized as a revenue requirement to be recovered from rates for the Forecast Period. It should be noted that an allowance for the funding of capital projects, renewals / replacements, and/or reserves has been recognized which essentially provides for the cash funding of these expenses.
10. The System's outstanding and anticipated debt consists of senior lien revenue bond issues. The City currently has the opportunity to refund the Utility's outstanding Series 2010 Bonds to save approximately \$16.5 million in debt service payments during the Forecast Period. These projected savings are based on debt runs provided by the City's Financial Advisor and summarized in the following Exhibit 1-3. The financial forecast reflected in this report assumes that the City will proceed with the refunding.

**Exhibit 1-3: Potential Annual Debt Service
Savings If Series 2010 Bonds Are Refunded**

Fiscal Year	Series 2009 Current Payments	Projected Refunding Issue Payments	Difference
2021 [*]	4,209,465	530,400	(3,679,065)
2022	5,084,563	795,600	(4,288,963)
2023	5,082,063	2,864,700	(2,217,363)
2024	5,084,406	2,857,550	(2,226,856)
2025	1,500,000	760,800	(739,200)
2026	1,500,000	759,800	(740,200)
2027	1,500,000	838,000	(662,000)
2028	1,500,000	840,350	(659,650)
2029	1,500,000	842,600	(657,400)
2030	1,500,000	844,750	(655,250)
Debt Service Difference During Forecast Period			<u>(\$16,525,947)</u>

[*] For Fiscal Year 2021, reflects \$4,918,394 total debt service payment less \$708,929.17 interest payment for Series 2010 Bonds that would be paid prior to closing on refunding issue.

To fund a portion of the multi-year capital improvement program, it was assumed that approximately \$50.2 million in capital needs would be financed through a 2022 bond issue.

Assumptions for this additional bond issue that were provided by the City's Financial Advisor include: i) a principal amount of \$50,655,000; ii) a term of 30 years; iii) an average coupon rate of 5.0%; iv) issuance costs of \$452,620; and v) a delivery date of February 3, 2022. Debt service payments for this issue were assumed to be wrapped around existing debt service payments to achieve overall level debt service. The assumed debt service payments are \$1.463 million in Fiscal Year 2022; \$2.533 million per year from Fiscal Years 2023 to 2047; and \$11.7 million per year for Fiscal Years 2048 to 2052.

Table 1-12 at the end of this section contains a summary of projected debt service payments during the Forecast Period.

11. The projected capital expenditures over the next 11 years (i.e., through the Fiscal Year ending September 30, 2030) for the water and sewer system were based on discussions with the City staff. Table 1-13 at the end of this section provides a detailed listing of the capital projects for the water and sewer system as well as projected funding sources for such projects within the analysis period.
12. Interest income has been recognized as an available revenue source to fund the expenditure needs of the System. For the Forecast Period, interest income was based on estimated balances in unrestricted funds as defined in the Bond Resolution. Thus, for the determination of the revenue requirements from rates, no earnings have been reflected on balances in the impact fee funds or in the Construction Fund established from proceeds derived from the issuance of senior lien obligations to fund capital projects. Although the restricted earnings are available for capital project funding, the earnings are not being considered as being available to fund utility operating expenses since such earnings are restricted to the account pursuant to the Bond Resolution. As such, the earnings on the restricted funds are not included in the development of the revenue requirements of the Utility system.

In the development of the estimated interest earnings, an average interest rate of 1.00% was assumed to be earned on the estimated average fund balances during the Forecast Period. This interest rate is based on recent earning performance results of the utility, discussions with the City, and a review of earnings performance of available investment vehicles to the City (e.g., State Board of Administration).

Table 1-14 at the end of this section contains the projection of fund balances and interest income.

13. The City receives other operating revenues from miscellaneous charges for specific customer service requests or needs which serve to reduce rate revenue requirements. Examples of such revenues include turn-on and turn-off charges, initiation of service charges, meter

installation and tap-in charges, late payment fees, and fire protection charges. Such amounts were generally held constant during the Forecast Period.

Table 1-15 at the end of this section contains the projection of these other revenues.

1-7: Summary of Water and Sewer Revenue Requirements

As shown on Tables 1-3 and 1-4 at the end of this section and as shown in the financial overview and graphical presentation in the executive summary of this report, 3.50% annual water revenue increases and 1.5% annual sewer revenue increases have been recognized through the Fiscal Year 2025. From Fiscal Year 2022 through 2025, it is assumed that the City will pass-through future wholesale rate increases from the County. Beyond Fiscal Year 2025, it is assumed that the City will implement both pass-through and CPI indexing adjustments as allowed per the City's Code of Ordinances. These adjustments are based on the assumptions discussed throughout this report.

1-8: Debt Service Coverage and Rate Covenants

A significant financial parameter of the System is the ability to be in compliance with the rate covenants as defined in the Bond Resolution. Among other things, the Bond Resolution contains certain covenants with must be satisfied, the purpose of which is to provide a surety to the bondholders that the debt payments will be made during the term of such bonds. Generally, these covenants are in the form of: i) certain debt service coverage ratios which are applicable to the level of rates charged and the revenue margins achieved; ii) application of funds; and iii) certain requirements associated with the provision of service.

The Utility's Bond Resolution contains a covenant under which the City will establish rates such that:

"Net Revenues...will be sufficient to provide an amount in each Fiscal Year at least equal to one hundred ten per centum (110%) of the Principal and Interest Requirements for such Fiscal Year on account of the Bonds then Outstanding..."

Net Revenues do not include administration fees. Table 1-16 at the end of this section summarizes the ability of the System Net Revenues to meet the rate covenant provisions of the Bond Resolution. Assuming the adoption of the proposed rate adjustments, the Net Revenues of the water and sewer system are expected to meet the rate covenant requirements as defined in the Bond Resolution. The projected coverage is summarized in the following Exhibit 1-4:

Exhibit 1-4: Projected Net Revenues Debt Service Coverage

Fiscal Year	Senior Lien Net Revenues Debt Service Coverage Without Administration Fees (Required =110%)	Senior Lien Net Revenues Debt Service Coverage With Administration Fees
2021	298%	266%
2022	283%	255%
2023	235%	214%
2024	248%	226%
2025	232%	212%
2026	233%	212%
2027	263%	239%
2028	264%	239%
2029	263%	238%
2030	264%	238%

[*] Derived from Table 1-16.

1-9: Projected Sources and Uses of Funds

To provide additional information to the City, a summary of the projected sources and uses of funds for each of the Utility's major fund types is shown in Table 1-17 at the end of this section. The projected sources equal the projected uses.

Table 1-1

City of Miami Beach, Florida
Water and Sewer Rate Study

Summary of Historical and Projected Water and Sewer Customer Statistics

Line No.	Description	Historical	Fiscal Year Ending September 30,										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
WATER													
Residential - Domestic													
1	Average Monthly Customers	5,692	5,692	5,692	5,692	5,692	5,692	5,692	5,692	5,692	5,692	5,692	5,692
2	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
3	Average Monthly ERCs	15,421	15,421	15,421	15,421	15,421	15,421	15,421	15,421	15,421	15,421	15,421	15,421
4	Average Monthly ERCs Per Customer	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71
5	Annual Water Sales (kgal)	741,747	752,456	740,525	741,136	741,747	741,747	741,747	741,747	741,747	741,747	741,747	741,747
6	Average Monthly Water Sales Per Customer (kgal)	10.86	11.02	10.84	10.85	10.86	10.86	10.86	10.86	10.86	10.86	10.86	10.86
7	Average Monthly Water Sales Per ERC (kgal)	4.01	4.07	4.00	4.00	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01
Residential - Irrigation													
8	Average Monthly Customers	1,919	1,919	1,919	1,919	1,919	1,919	1,919	1,919	1,919	1,919	1,919	1,919
9	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
10	Average Monthly ERCs	6,356	6,356	6,356	6,356	6,356	6,356	6,356	6,356	6,356	6,356	6,356	6,356
11	Average Monthly ERCs Per Customer	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31
12	Annual Water Sales (kgal)	530,939	488,681	501,391	516,165	530,939	530,939	530,939	530,939	530,939	530,939	530,939	530,939
13	Average Monthly Water Sales Per Customer (kgal)	23.06	21.22	21.77	22.42	23.06	23.06	23.06	23.06	23.06	23.06	23.06	23.06
14	Average Monthly Water Sales Per ERC (kgal)	6.96	6.41	6.57	6.77	6.96	6.96	6.96	6.96	6.96	6.96	6.96	6.96
Apartment - Domestic													
15	Average Monthly Customers	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234
16	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
17	Average Monthly ERCs	4,157	4,157	4,157	4,157	4,157	4,157	4,157	4,157	4,157	4,157	4,157	4,157
18	Average Monthly ERCs Per Customer	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
19	Annual Water Sales (kgal)	604,839	568,223	579,236	592,038	604,839	604,839	604,839	604,839	604,839	604,839	604,839	604,839
20	Average Monthly Water Sales Per Customer (kgal)	40.84	38.36	39.11	39.97	40.84	40.84	40.84	40.84	40.84	40.84	40.84	40.84
21	Average Monthly Water Sales Per ERC (kgal)	12.13	11.39	11.61	11.87	12.13	12.13	12.13	12.13	12.13	12.13	12.13	12.13
Apartment - Irrigation													
22	Average Monthly Customers	56	56	56	56	56	56	56	56	56	56	56	56
23	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
24	Average Monthly ERCs	216	216	216	216	216	216	216	216	216	216	216	216
25	Average Monthly ERCs Per Customer	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88
26	Annual Water Sales (kgal)	36,291	28,637	31,188	33,739	36,291	36,291	36,291	36,291	36,291	36,291	36,291	36,291
27	Average Monthly Water Sales Per Customer (kgal)	54.25	42.80	46.62	50.43	54.25	54.25	54.25	54.25	54.25	54.25	54.25	54.25
28	Average Monthly Water Sales Per ERC (kgal)	13.99	11.04	12.03	13.01	13.99	13.99	13.99	13.99	13.99	13.99	13.99	13.99
Condominium - Domestic													
29	Average Monthly Customers	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235
30	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
31	Average Monthly ERCs	8,832	8,832	8,832	8,832	8,832	8,832	8,832	8,832	8,832	8,832	8,832	8,832
32	Average Monthly ERCs Per Customer	7.15	7.15	7.15	7.15	7.15	7.15	7.15	7.15	7.15	7.15	7.15	7.15
33	Annual Water Sales (kgal)	1,865,058	1,837,024	1,801,947	1,833,503	1,865,058	1,865,058	1,865,058	1,865,058	1,865,058	1,865,058	1,865,058	1,865,058
34	Average Monthly Water Sales Per Customer (kgal)	125.88	123.99	121.62	123.75	125.88	125.88	125.88	125.88	125.88	125.88	125.88	125.88
35	Average Monthly Water Sales Per ERC (kgal)	17.60	17.33	17.00	17.30	17.60	17.60	17.60	17.60	17.60	17.60	17.60	17.60

Table 1-1

City of Miami Beach, Florida
Water and Sewer Rate Study

Summary of Historical and Projected Water and Sewer Customer Statistics

Line No.	Description	Historical	Fiscal Year Ending September 30,										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Condominium - Irrigation													
36	Average Monthly Customers	222	222	222	222	222	222	222	222	222	222	222	222
37	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
38	Average Monthly ERCs	1,353	1,353	1,353	1,353	1,353	1,353	1,353	1,353	1,353	1,353	1,353	1,353
39	Average Monthly ERCs Per Customer	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08
40	Annual Water Sales (kgal)	278,013	264,409	255,087	266,550	278,013	278,013	278,013	278,013	278,013	278,013	278,013	278,013
41	Average Monthly Water Sales Per Customer (kgal)	104.16	99.07	95.57	99.87	104.16	104.16	104.16	104.16	104.16	104.16	104.16	104.16
42	Average Monthly Water Sales Per ERC (kgal)	17.13	16.29	15.72	16.42	17.13	17.13	17.13	17.13	17.13	17.13	17.13	17.13
Duplex - Domestic													
43	Average Monthly Customers	25	25	25	25	25	25	25	25	25	25	25	25
44	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
45	Average Monthly ERCs	62	62	62	62	62	62	62	62	62	62	62	62
46	Average Monthly ERCs Per Customer	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
47	Annual Water Sales (kgal)	3,422	3,271	3,190	3,306	3,422	3,422	3,422	3,422	3,422	3,422	3,422	3,422
48	Average Monthly Water Sales Per Customer (kgal)	11.37	10.87	10.60	10.98	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37
49	Average Monthly Water Sales Per ERC (kgal)	4.61	4.40	4.29	4.45	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
Duplex - Irrigation													
50	Average Monthly Customers	1	1	1	1	1	1	1	1	1	1	1	1
51	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
52	Average Monthly ERCs	5	5	5	5	5	5	5	5	5	5	5	5
53	Average Monthly ERCs Per Customer	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
54	Annual Water Sales (kgal)	133	229	133	133	133	133	133	133	133	133	133	133
55	Average Monthly Water Sales Per Customer (kgal)	11.06	19.06	11.06	11.06	11.06	11.06	11.06	11.06	11.06	11.06	11.06	11.06
56	Average Monthly Water Sales Per ERC (kgal)	2.21	3.81	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Commercial - Domestic													
57	Average Monthly Customers	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842
58	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
59	Average Monthly ERCs	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920
60	Average Monthly ERCs Per Customer	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30
61	Annual Water Sales (kgal)	1,041,032	851,067	914,356	977,694	1,041,032	1,041,032	1,041,032	1,041,032	1,041,032	1,041,032	1,041,032	1,041,032
62	Average Monthly Water Sales Per Customer (kgal)	47.09	38.49	41.36	44.22	47.09	47.09	47.09	47.09	47.09	47.09	47.09	47.09
63	Average Monthly Water Sales Per ERC (kgal)	10.95	8.96	9.62	10.29	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Commercial - Irrigation													
64	Average Monthly Customers	279	279	279	279	279	279	279	279	279	279	279	279
65	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
66	Average Monthly ERCs	1,916	1,916	1,916	1,916	1,916	1,916	1,916	1,916	1,916	1,916	1,916	1,916
67	Average Monthly ERCs Per Customer	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88
68	Annual Water Sales (kgal)	372,355	338,613	342,070	357,213	372,355	372,355	372,355	372,355	372,355	372,355	372,355	372,355
69	Average Monthly Water Sales Per Customer (kgal)	111.35	101.26	102.29	106.82	111.35	111.35	111.35	111.35	111.35	111.35	111.35	111.35
70	Average Monthly Water Sales Per ERC (kgal)	16.19	14.73	14.88	15.53	16.19	16.19	16.19	16.19	16.19	16.19	16.19	16.19

Table 1-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Historical and Projected Water and Sewer Customer Statistics

Line No.	Description	Historical	Fiscal Year Ending September 30,										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Hotel - Domestic													
71	Average Monthly Customers	268	268	268	268	268	268	268	268	268	268	268	268
72	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
73	Average Monthly ERCs	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329
74	Average Monthly ERCs Per Customer	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70	8.70
75	Annual Water Sales (kgal)	715,657	513,419	580,832	648,244	715,657	715,657	715,657	715,657	715,657	715,657	715,657	715,657
76	Average Monthly Water Sales Per Customer (kgal)	222.81	159.84	180.83	201.82	222.81	222.81	222.81	222.81	222.81	222.81	222.81	222.81
77	Average Monthly Water Sales Per ERC (kgal)	25.61	18.37	20.78	23.19	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61
Hotel - Irrigation													
78	Average Monthly Customers	69	69	69	69	69	69	69	69	69	69	69	69
79	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
80	Average Monthly ERCs	471	471	471	471	471	471	471	471	471	471	471	471
81	Average Monthly ERCs Per Customer	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84
82	Annual Water Sales (kgal)	253,324	120,852	163,908	208,616	253,324	253,324	253,324	253,324	253,324	253,324	253,324	253,324
83	Average Monthly Water Sales Per Customer (kgal)	306.32	146.13	198.20	252.26	306.32	306.32	306.32	306.32	306.32	306.32	306.32	306.32
84	Average Monthly Water Sales Per ERC (kgal)	44.78	21.36	28.97	36.88	44.78	44.78	44.78	44.78	44.78	44.78	44.78	44.78
City - Domestic													
85	Average Monthly Customers	111	111	111	111	111	111	111	111	111	111	111	111
86	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
87	Average Monthly ERCs	846	846	846	846	846	846	846	846	846	846	846	846
88	Average Monthly ERCs Per Customer	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65
89	Annual Water Sales (kgal)	87,701	88,402	80,353	84,027	87,701	87,701	87,701	87,701	87,701	87,701	87,701	87,701
90	Average Monthly Water Sales Per Customer (kgal)	66.09	66.62	60.55	63.32	66.09	66.09	66.09	66.09	66.09	66.09	66.09	66.09
91	Average Monthly Water Sales Per ERC (kgal)	8.64	8.71	7.92	8.28	8.64	8.64	8.64	8.64	8.64	8.64	8.64	8.64
City - Irrigation													
92	Average Monthly Customers	526	526	526	526	526	526	526	526	526	526	526	526
93	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
94	Average Monthly ERCs	3,388	3,388	3,388	3,388	3,388	3,388	3,388	3,388	3,388	3,388	3,388	3,388
95	Average Monthly ERCs Per Customer	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44
96	Annual Water Sales (kgal)	330,390	308,011	301,300	315,845	330,390	330,390	330,390	330,390	330,390	330,390	330,390	330,390
97	Average Monthly Water Sales Per Customer (kgal)	52.34	48.80	47.73	50.04	52.34	52.34	52.34	52.34	52.34	52.34	52.34	52.34
98	Average Monthly Water Sales Per ERC (kgal)	8.13	7.58	7.41	7.77	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13
Total Water													
99	Average Monthly Customers	13,478	13,478	13,478	13,478	13,478	13,478	13,478	13,478	13,478	13,478	13,478	13,478
100	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
101	Average Monthly ERCs	53,272	53,272	53,272	53,272	53,272	53,272	53,272	53,272	53,272	53,272	53,272	53,272
102	Change in Average Monthly ERCs		0	0	0	0	0	0	0	0	0	0	0
103	Average Monthly ERCs Per Customer	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.95
104	Annual Water Sales (kgal)	6,860,900	6,163,293	6,295,515	6,578,207	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900
105	Average Monthly Water Sales Per Customer (kgal)	42.42	38.11	38.92	40.67	42.42	42.42	42.42	42.42	42.42	42.42	42.42	42.42
106	Average Monthly Water Sales Per ERC (kgal)	10.73	9.64	9.85	10.29	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73
107	Total Water Purchased (MGD)	8,109,301	7,284,759	7,441,040	7,775,170	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301
108	Non-Revenue Water Percentage	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%

Table 1-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Historical and Projected Water and Sewer Customer Statistics

Line No.	Description	Historical	Fiscal Year Ending September 30,										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
SEWER - RETAIL													
Residential - Domestic													
109	Average Monthly Customers	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084
110	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
111	Average Monthly ERCs	13,667	13,667	13,667	13,667	13,667	13,667	13,667	13,667	13,667	13,667	13,667	13,667
112	Average Monthly ERCs Per Customer	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69
113	Annual Sewer Revenue Flow (kgal)	624,788	634,034	623,772	624,280	624,788	624,788	624,788	624,788	624,788	624,788	624,788	624,788
114	Average Monthly Sewer Revenue Flow Per Customer (kgal)	10.24	10.39	10.22	10.23	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24
115	Average Monthly Sewer Revenue Flow Per ERC (kgal)	3.81	3.87	3.80	3.81	3.81	3.81	3.81	3.81	3.81	3.81	3.81	3.81
Apartment - Domestic													
116	Average Monthly Customers	1,162	1,162	1,162	1,162	1,162	1,162	1,162	1,162	1,162	1,162	1,162	1,162
117	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
118	Average Monthly ERCs	3,939	3,939	3,939	3,939	3,939	3,939	3,939	3,939	3,939	3,939	3,939	3,939
119	Average Monthly ERCs Per Customer	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39
120	Annual Sewer Revenue Flow (kgal)	572,341	537,094	547,723	560,032	572,341	572,341	572,341	572,341	572,341	572,341	572,341	572,341
121	Average Monthly Sewer Revenue Flow Per Customer (kgal)	41.06	38.53	39.29	40.17	41.06	41.06	41.06	41.06	41.06	41.06	41.06	41.06
122	Average Monthly Sewer Revenue Flow Per ERC (kgal)	12.11	11.36	11.59	11.85	12.11	12.11	12.11	12.11	12.11	12.11	12.11	12.11
Condominium - Domestic													
123	Average Monthly Customers	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195	1,195
124	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
125	Average Monthly ERCs	8,550	8,550	8,550	8,550	8,550	8,550	8,550	8,550	8,550	8,550	8,550	8,550
126	Average Monthly ERCs Per Customer	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16
127	Annual Sewer Revenue Flow (kgal)	1,798,803	1,773,856	1,738,772	1,768,787	1,798,803	1,798,803	1,798,803	1,798,803	1,798,803	1,798,803	1,798,803	1,798,803
128	Average Monthly Sewer Revenue Flow Per Customer (kgal)	125.47	123.73	121.29	123.38	125.47	125.47	125.47	125.47	125.47	125.47	125.47	125.47
129	Average Monthly Sewer Revenue Flow Per ERC (kgal)	17.53	17.29	16.95	17.24	17.53	17.53	17.53	17.53	17.53	17.53	17.53	17.53
Duplex - Domestic													
130	Average Monthly Customers	22	22	22	22	22	22	22	22	22	22	22	22
131	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
132	Average Monthly ERCs	56	56	56	56	56	56	56	56	56	56	56	56
133	Average Monthly ERCs Per Customer	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
134	Annual Sewer Revenue Flow (kgal)	3,117	2,955	2,894	3,006	3,117	3,117	3,117	3,117	3,117	3,117	3,117	3,117
135	Average Monthly Sewer Revenue Flow Per Customer (kgal)	11.85	11.24	11.00	11.43	11.85	11.85	11.85	11.85	11.85	11.85	11.85	11.85
136	Average Monthly Sewer Revenue Flow Per ERC (kgal)	4.67	4.43	4.34	4.51	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67
Commercial - Domestic													
137	Average Monthly Customers	1,767	1,767	1,767	1,767	1,767	1,767	1,767	1,767	1,767	1,767	1,767	1,767
138	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
139	Average Monthly ERCs	7,595	7,595	7,595	7,595	7,595	7,595	7,595	7,595	7,595	7,595	7,595	7,595
140	Average Monthly ERCs Per Customer	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30
141	Annual Sewer Revenue Flow (kgal)	979,713	801,969	861,184	920,449	979,713	979,713	979,713	979,713	979,713	979,713	979,713	979,713
142	Average Monthly Sewer Revenue Flow Per Customer (kgal)	46.22	37.83	40.62	43.42	46.22	46.22	46.22	46.22	46.22	46.22	46.22	46.22
143	Average Monthly Sewer Revenue Flow Per ERC (kgal)	10.75	8.80	9.45	10.10	10.75	10.75	10.75	10.75	10.75	10.75	10.75	10.75

Table 1-1

City of Miami Beach, Florida
Water and Sewer Rate Study

Summary of Historical and Projected Water and Sewer Customer Statistics

Line No.	Description	Historical	Fiscal Year Ending September 30,										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Hotel - Domestic													
144	Average Monthly Customers	266	266	266	266	266	266	266	266	266	266	266	266
145	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
146	Average Monthly ERCs	2,316	2,316	2,316	2,316	2,316	2,316	2,316	2,316	2,316	2,316	2,316	2,316
147	Average Monthly ERCs Per Customer	8.71	8.71	8.71	8.71	8.71	8.71	8.71	8.71	8.71	8.71	8.71	8.71
148	Annual Sewer Revenue Flow (kgal)	710,923	510,030	576,995	643,959	710,923	710,923	710,923	710,923	710,923	710,923	710,923	710,923
149	Average Monthly Sewer Revenue Flow Per Customer (kgal)	222.72	159.78	180.76	201.74	222.72	222.72	222.72	222.72	222.72	222.72	222.72	222.72
150	Average Monthly Sewer Revenue Flow Per ERC (kgal)	25.58	18.35	20.76	23.17	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58
City - Domestic													
151	Average Monthly Customers	111	111	111	111	111	111	111	111	111	111	111	111
152	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
153	Average Monthly ERCs	846	846	846	846	846	846	846	846	846	846	846	846
154	Average Monthly ERCs Per Customer	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65
155	Annual Sewer Revenue Flow (kgal)	87,697	54,804	65,041	76,369	87,697	87,697	87,697	87,697	87,697	87,697	87,697	87,697
156	Average Monthly Sewer Revenue Flow Per Customer (kgal)	66.09	41.30	49.01	57.55	66.09	66.09	66.09	66.09	66.09	66.09	66.09	66.09
157	Average Monthly Sewer Revenue Flow Per ERC (kgal)	8.64	5.40	6.41	7.52	8.64	8.64	8.64	8.64	8.64	8.64	8.64	8.64
Total Retail Sewer													
158	Average Monthly Customers	9,606	9,606	9,606	9,606	9,606	9,606	9,606	9,606	9,606	9,606	9,606	9,606
159	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
160	Average Monthly ERCs	36,969	36,969	36,969	36,969	36,969	36,969	36,969	36,969	36,969	36,969	36,969	36,969
161	Change in Average Monthly ERCs		0	0	0	0	0	0	0	0	0	0	0
162	Average Monthly ERCs Per Customer	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
163	Annual Sewer Revenue Flow (kgal)	4,777,381	4,314,742	4,416,381	4,596,881	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381
164	Average Monthly Sewer Revenue Flow Per Customer (kgal)	41.45	37.43	38.31	39.88	41.45	41.45	41.45	41.45	41.45	41.45	41.45	41.45
165	Average Monthly Sewer Revenue Flow Per ERC (kgal)	10.77	9.73	9.96	10.36	10.77	10.77	10.77	10.77	10.77	10.77	10.77	10.77
SEWER - WHOLESALE													
Village of Bal Harbour													
166	Average Monthly Customers	1	1	1	1	1	1	1	1	1	1	1	1
167	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
168	Annual Sewer Revenue Flow (kgal)	301,828	301,828	301,828	301,828	301,828	301,828	301,828	301,828	301,828	301,828	301,828	301,828
169	Average Monthly Sewer Revenue Flow Per Customer (kgal)	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3	25,152.3
Town of Bay Harbor Islands													
170	Average Monthly Customers	1	1	1	1	1	1	1	1	1	1	1	1
171	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
172	Annual Sewer Revenue Flow (kgal)	272,204	272,204	272,204	272,204	272,204	272,204	272,204	272,204	272,204	272,204	272,204	272,204
173	Average Monthly Sewer Revenue Flow Per Customer (kgal)	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7	22,683.7
Town of Surfside													
174	Average Monthly Customers	1	1	1	1	1	1	1	1	1	1	1	1
175	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
176	Annual Sewer Revenue Flow (kgal)	331,736	331,736	331,736	331,736	331,736	331,736	331,736	331,736	331,736	331,736	331,736	331,736
177	Average Monthly Sewer Revenue Flow Per Customer (kgal)	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7	27,644.7

Table 1-1

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Historical and Projected Water and Sewer Customer Statistics

Line No.	Description	Historical 2019	2020	2021	2022	2023	Fiscal Year Ending September 30,						
							2024	2025	2026	2027	2028	2029	2030
Total Wholesale Sewer													
178	Average Monthly Customers	3	3	3	3	3	3	3	3	3	3	3	3
179	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
180	Annual Sewer Revenue Flow (kgal)	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768
181	Average Monthly Sewer Revenue Flow Per Customer (kgal)	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23	25,160.23
TOTAL RETAIL AND WHOLESALE SEWER													
182	Average Monthly Customers	9,609	9,609	9,609	9,609	9,609	9,609	9,609	9,609	9,609	9,609	9,609	9,609
183	Change in Average Monthly Accounts		0	0	0	0	0	0	0	0	0	0	0
184	Annual Sewer Revenue Flow (kgal)	5,683,150	5,220,511	5,322,150	5,502,650	5,683,150	5,683,150	5,683,150	5,683,150	5,683,150	5,683,150	5,683,150	5,683,150
182	Total Sewer Purchased (kgal)	8,058,069	7,365,444	7,517,610	7,787,839	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069
185	Total Wastewater Purchased (MGD)	22.08	20.18	20.60	21.34	22.08	22.08	22.08	22.08	22.08	22.08	22.08	22.08

Table 1-2

City of Miami Beach, Florida
Water and Sewer Rate Study

Projected Water and Sewer Retail User Rate Revenue Under Existing Rates

Line No.	Description	Historical 2019	2020	2021	2022	2023	Fiscal Year Ending September 30,						
							2024	2025	2026	2027	2028	2029	2030
WATER USER RATE REVENUE													
Residential - Domestic													
1	Base Facility Charges	\$ 599,869	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981	\$ 612,981
2	Consumption Charges	1,946,161	2,017,492	1,985,504	1,987,141	1,988,778	1,988,778	1,988,778	1,988,778	1,988,778	1,988,778	1,988,778	1,988,778
3	Purchased Water Pass-Through Charges	1,453,823	1,414,617	1,392,188	1,393,336	1,394,483	1,394,483	1,394,483	1,394,483	1,394,483	1,394,483	1,394,483	1,394,483
4	Total	\$ 3,999,852	\$ 4,045,090	\$ 3,990,673	\$ 3,993,458	\$ 3,996,243	\$ 3,996,243	\$ 3,996,243	\$ 3,996,243	\$ 3,996,243	\$ 3,996,243	\$ 3,996,243	\$ 3,996,243
Residential - Irrigation													
5	Base Facility Charges	\$ 206,169	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689	\$ 210,689
6	Consumption Charges	2,274,494	2,140,550	2,196,221	2,260,936	2,325,650	2,325,650	2,325,650	2,325,650	2,325,650	2,325,650	2,325,650	2,325,650
7	Purchased Water Pass-Through Charges	1,040,640	918,720	942,614	970,390	998,165	998,165	998,165	998,165	998,165	998,165	998,165	998,165
8	Total	\$ 3,521,303	\$ 3,269,959	\$ 3,349,524	\$ 3,442,014	\$ 3,534,504	\$ 3,534,504	\$ 3,534,504	\$ 3,534,504	\$ 3,534,504	\$ 3,534,504	\$ 3,534,504	\$ 3,534,504
Apartment - Domestic													
9	Base Facility Charges	\$ 349,804	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511	\$ 357,511
10	Consumption Charges	1,284,683	711,293	725,080	741,104	757,129	757,129	757,129	757,129	757,129	757,129	757,129	757,129
11	Purchased Water Pass-Through Charges	1,185,484	1,068,259	1,088,964	1,113,031	1,137,097	1,137,097	1,137,097	1,137,097	1,137,097	1,137,097	1,137,097	1,137,097
12	Total	\$ 2,819,972	\$ 2,137,064	\$ 2,171,555	\$ 2,211,646	\$ 2,251,737	\$ 2,251,737	\$ 2,251,737	\$ 2,251,737	\$ 2,251,737	\$ 2,251,737	\$ 2,251,737	\$ 2,251,737
Apartment - Irrigation													
13	Base Facility Charges	\$ 18,009	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406	\$ 18,406
14	Consumption Charges	139,896	112,880	122,937	132,994	143,051	143,051	143,051	143,051	143,051	143,051	143,051	143,051
15	Purchased Water Pass-Through Charges	71,129	53,837	58,633	63,430	68,226	68,226	68,226	68,226	68,226	68,226	68,226	68,226
16	Total	\$ 229,035	\$ 185,123	\$ 199,976	\$ 214,830	\$ 229,683	\$ 229,683	\$ 229,683	\$ 229,683	\$ 229,683	\$ 229,683	\$ 229,683	\$ 229,683
Condominium - Domestic													
17	Base Facility Charges	\$ 709,557	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165	\$ 725,165
18	Consumption Charges	4,484,072	4,518,014	4,431,746	4,509,354	4,586,962	4,586,962	4,586,962	4,586,962	4,586,962	4,586,962	4,586,962	4,586,962
19	Purchased Water Pass-Through Charges	3,655,514	3,453,605	3,387,661	3,446,985	3,506,309	3,506,309	3,506,309	3,506,309	3,506,309	3,506,309	3,506,309	3,506,309
20	Total	\$ 8,849,143	\$ 8,696,784	\$ 8,544,572	\$ 8,681,504	\$ 8,818,436	\$ 8,818,436	\$ 8,818,436	\$ 8,818,436	\$ 8,818,436	\$ 8,818,436	\$ 8,818,436	\$ 8,818,436
Condominium - Irrigation													
21	Base Facility Charges	\$ 109,739	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152	\$ 112,152
22	Consumption Charges	876,142	852,167	822,121	859,065	896,009	896,009	896,009	896,009	896,009	896,009	896,009	896,009
23	Purchased Water Pass-Through Charges	544,905	497,089	479,563	501,113	522,664	522,664	522,664	522,664	522,664	522,664	522,664	522,664
24	Total	\$ 1,530,785	\$ 1,461,408	\$ 1,413,836	\$ 1,472,330	\$ 1,530,825	\$ 1,530,825	\$ 1,530,825	\$ 1,530,825	\$ 1,530,825	\$ 1,530,825	\$ 1,530,825	\$ 1,530,825
Duplex - Domestic													
25	Base Facility Charges	\$ 5,359	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477	\$ 5,477
26	Consumption Charges	6,465	6,325	6,169	6,393	6,618	6,618	6,618	6,618	6,618	6,618	6,618	6,618
27	Purchased Water Pass-Through Charges	6,708	6,149	5,997	6,216	6,434	6,434	6,434	6,434	6,434	6,434	6,434	6,434
28	Total	\$ 18,532	\$ 17,951	\$ 17,643	\$ 18,086	\$ 18,529	\$ 18,529	\$ 18,529	\$ 18,529	\$ 18,529	\$ 18,529	\$ 18,529	\$ 18,529

Table 1-2

City of Miami Beach, Florida
Water and Sewer Rate Study

Projected Water and Sewer Retail User Rate Revenue Under Existing Rates

Line No.	Description	Historical	Fiscal Year Ending September 30,										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Duplex - Irrigation													
29	Base Facility Charges	\$ 411	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420	\$ 420
30	Consumption Charges	349	615	357	357	357	357	357	357	357	357	357	357
31	Purchased Water Pass-Through Charges	260	430	249	249	249	249	249	249	249	249	249	249
32	Total	\$ 1,020	\$ 1,465	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027	\$ 1,027
Commercial - Domestic													
33	Base Facility Charges	\$ 654,377	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763	\$ 668,763
34	Consumption Charges	2,512,567	2,100,890	2,257,121	2,413,473	2,569,825	2,569,825	2,569,825	2,569,825	2,569,825	2,569,825	2,569,825	2,569,825
35	Purchased Water Pass-Through Charges	2,040,423	1,600,007	1,718,990	1,838,065	1,957,140	1,957,140	1,957,140	1,957,140	1,957,140	1,957,140	1,957,140	1,957,140
36	Total	\$ 5,207,367	\$ 4,369,660	\$ 4,644,873	\$ 4,920,300	\$ 5,195,728	\$ 5,195,728	\$ 5,195,728	\$ 5,195,728	\$ 5,195,728	\$ 5,195,728	\$ 5,195,728	\$ 5,195,728
Commercial - Irrigation													
37	Base Facility Charges	\$ 153,811	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195	\$ 157,195
38	Consumption Charges	688,470	640,366	646,903	675,540	704,177	704,177	704,177	704,177	704,177	704,177	704,177	704,177
39	Purchased Water Pass-Through Charges	729,816	636,593	643,091	671,560	700,028	700,028	700,028	700,028	700,028	700,028	700,028	700,028
40	Total	\$ 1,572,097	\$ 1,434,155	\$ 1,447,190	\$ 1,504,295	\$ 1,561,400	\$ 1,561,400	\$ 1,561,400	\$ 1,561,400	\$ 1,561,400	\$ 1,561,400	\$ 1,561,400	\$ 1,561,400
Hotel - Domestic													
41	Base Facility Charges	\$ 185,992	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081	\$ 190,081
42	Consumption Charges	1,889,820	1,386,545	1,568,601	1,750,656	1,932,712	1,932,712	1,932,712	1,932,712	1,932,712	1,932,712	1,932,712	1,932,712
43	Purchased Water Pass-Through Charges	1,402,688	965,228	1,091,964	1,218,700	1,345,435	1,345,435	1,345,435	1,345,435	1,345,435	1,345,435	1,345,435	1,345,435
44	Total	\$ 3,478,499	\$ 2,541,854	\$ 2,850,646	\$ 3,159,437	\$ 3,468,228	\$ 3,468,228	\$ 3,468,228	\$ 3,468,228	\$ 3,468,228	\$ 3,468,228	\$ 3,468,228	\$ 3,468,228
Hotel - Irrigation													
45	Base Facility Charges	\$ 38,096	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934	\$ 38,934
46	Consumption Charges	1,119,365	546,012	740,538	942,531	1,144,523	1,144,523	1,144,523	1,144,523	1,144,523	1,144,523	1,144,523	1,144,523
47	Purchased Water Pass-Through Charges	496,515	227,202	308,146	392,198	476,249	476,249	476,249	476,249	476,249	476,249	476,249	476,249
48	Total	\$ 1,653,976	\$ 812,148	\$ 1,087,618	\$ 1,373,662	\$ 1,659,706	\$ 1,659,706	\$ 1,659,706	\$ 1,659,706	\$ 1,659,706	\$ 1,659,706	\$ 1,659,706	\$ 1,659,706
City - Domestic													
49	Base Facility Charges	\$ 67,829	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321	\$ 69,321
50	Consumption Charges	197,131	203,285	184,777	193,226	201,674	201,674	201,674	201,674	201,674	201,674	201,674	201,674
51	Purchased Water Pass-Through Charges	171,895	166,195	151,064	157,971	164,878	164,878	164,878	164,878	164,878	164,878	164,878	164,878
52	Total	\$ 436,855	\$ 438,801	\$ 405,163	\$ 420,519	\$ 435,874	\$ 435,874	\$ 435,874	\$ 435,874	\$ 435,874	\$ 435,874	\$ 435,874	\$ 435,874
City - Irrigation													
53	Base Facility Charges	\$ 310,691	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536	\$ 317,536
54	Consumption Charges	1,080,199	1,029,843	1,007,404	1,056,035	1,104,666	1,104,666	1,104,666	1,104,666	1,104,666	1,104,666	1,104,666	1,104,666
55	Purchased Water Pass-Through Charges	647,563	579,060	566,444	593,788	621,132	621,132	621,132	621,132	621,132	621,132	621,132	621,132
56	Total	\$ 2,038,454	\$ 1,926,440	\$ 1,891,384	\$ 1,967,359	\$ 2,043,335	\$ 2,043,335	\$ 2,043,335	\$ 2,043,335	\$ 2,043,335	\$ 2,043,335	\$ 2,043,335	\$ 2,043,335

Table 1-2

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Projected Water and Sewer Retail User Rate Revenue Under Existing Rates

Line No.	Description	Historical 2019	2020	2021	2022	2023	Fiscal Year Ending September 30,						
							2024	2025	2026	2027	2028	2029	2030
Total Water User Rate Revenue													
57	Base Facility Charges	\$ 3,409,714	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633	\$ 3,484,633
58	Consumption Charges	18,499,814	16,266,278	16,695,478	17,528,804	18,362,131	18,362,131	18,362,131	18,362,131	18,362,131	18,362,131	18,362,131	18,362,131
59	Purchased Water Pass-Through Charges	13,447,363	11,586,991	11,835,568	12,367,030	12,898,491	12,898,491	12,898,491	12,898,491	12,898,491	12,898,491	12,898,491	12,898,491
60	Total	\$35,356,891	\$31,337,902	\$32,015,679	\$33,380,467	\$34,745,255	\$34,745,255	\$34,745,255	\$34,745,255	\$34,745,255	\$34,745,255	\$34,745,255	\$34,745,255
SEWER USER RATE REVENUE													
Residential - Domestic													
61	Base Facility Charges	\$ 548,431	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632	\$ 560,632
62	Consumption Charges	2,829,895	2,935,171	2,887,662	2,890,014	2,892,365	2,892,365	2,892,365	2,892,365	2,892,365	2,892,365	2,892,365	2,892,365
63	Purchased Sewer Pass-Through Charges	3,323,409	3,493,043	3,436,505	3,439,303	3,442,102	3,442,102	3,442,102	3,442,102	3,442,102	3,442,102	3,442,102	3,442,102
64	Total	\$ 6,701,735	\$ 6,988,846	\$ 6,884,798	\$ 6,889,949	\$ 6,895,099	\$ 6,895,099	\$ 6,895,099	\$ 6,895,099	\$ 6,895,099	\$ 6,895,099	\$ 6,895,099	\$ 6,895,099
Apartment - Domestic													
65	Base Facility Charges	\$ 371,715	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896	\$ 379,896
66	Consumption Charges	2,592,344	2,486,399	2,535,607	2,592,588	2,649,570	2,649,570	2,649,570	2,649,570	2,649,570	2,649,570	2,649,570	2,649,570
67	Purchased Sewer Pass-Through Charges	3,044,430	2,958,976	3,017,536	3,085,348	3,153,160	3,153,160	3,153,160	3,153,160	3,153,160	3,153,160	3,153,160	3,153,160
68	Total	\$ 6,008,490	\$ 5,825,271	\$ 5,933,039	\$ 6,057,832	\$ 6,182,626	\$ 6,182,626	\$ 6,182,626	\$ 6,182,626	\$ 6,182,626	\$ 6,182,626	\$ 6,182,626	\$ 6,182,626
Condominium - Domestic													
69	Base Facility Charges	\$ 781,479	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694	\$ 798,694
70	Consumption Charges	8,147,447	8,211,811	8,049,396	8,188,349	8,327,303	8,327,303	8,327,303	8,327,303	8,327,303	8,327,303	8,327,303	8,327,303
71	Purchased Sewer Pass-Through Charges	9,568,304	9,772,587	9,579,302	9,744,666	9,910,030	9,910,030	9,910,030	9,910,030	9,910,030	9,910,030	9,910,030	9,910,030
72	Total	\$18,497,231	\$18,783,092	\$18,427,392	\$18,731,709	\$19,036,026	\$19,036,026	\$19,036,026	\$19,036,026	\$19,036,026	\$19,036,026	\$19,036,026	\$19,036,026
Duplex - Domestic													
73	Base Facility Charges	\$ 5,351	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469	\$ 5,469
74	Consumption Charges	14,119	13,681	13,399	13,915	14,431	14,431	14,431	14,431	14,431	14,431	14,431	14,431
75	Purchased Sewer Pass-Through Charges	16,581	16,281	15,945	16,559	17,173	17,173	17,173	17,173	17,173	17,173	17,173	17,173
76	Total	\$ 36,051	\$ 35,431	\$ 34,813	\$ 35,943	\$ 37,073	\$ 37,073	\$ 37,073	\$ 37,073	\$ 37,073	\$ 37,073	\$ 37,073	\$ 37,073
Commercial - Domestic													
77	Base Facility Charges	\$ 707,636	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232	\$ 723,232
78	Consumption Charges	4,437,483	3,712,603	3,986,730	4,261,085	4,535,441	4,535,441	4,535,441	4,535,441	4,535,441	4,535,441	4,535,441	4,535,441
79	Purchased Sewer Pass-Through Charges	5,211,349	4,418,238	4,744,467	5,070,968	5,397,468	5,397,468	5,397,468	5,397,468	5,397,468	5,397,468	5,397,468	5,397,468
80	Total	\$10,356,467	\$ 8,854,072	\$ 9,454,430	\$10,055,285	\$10,656,141	\$10,656,141	\$10,656,141	\$10,656,141	\$10,656,141	\$10,656,141	\$10,656,141	\$10,656,141
Hotel - Domestic													
81	Base Facility Charges	\$ 210,613	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254	\$ 215,254
82	Consumption Charges	3,220,034	2,361,113	2,671,114	2,981,115	3,291,116	3,291,116	3,291,116	3,291,116	3,291,116	3,291,116	3,291,116	3,291,116
83	Purchased Sewer Pass-Through Charges	3,781,585	2,809,877	3,178,799	3,547,720	3,916,641	3,916,641	3,916,641	3,916,641	3,916,641	3,916,641	3,916,641	3,916,641
84	Total	\$ 7,212,231	\$ 5,386,244	\$ 6,065,167	\$ 6,744,089	\$ 7,423,011	\$ 7,423,011	\$ 7,423,011	\$ 7,423,011	\$ 7,423,011	\$ 7,423,011	\$ 7,423,011	\$ 7,423,011

Table 1-2

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Projected Water and Sewer Retail User Rate Revenue Under Existing Rates

Line No.	Description	Historical 2019	2020	2021	2022	2023	Fiscal Year Ending September 30,							
							2024	2025	2026	2027	2028	2029	2030	
	City - Domestic													
85	Base Facility Charges	\$ 77,160	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	\$ 78,861	
86	Consumption Charges	397,210	253,706	301,099	353,539	405,979	405,979	405,979	405,979	405,979	405,979	405,979	405,979	
87	Purchased Sewer Pass-Through Charges	466,481	301,926	358,328	420,734	483,141	483,141	483,141	483,141	483,141	483,141	483,141	483,141	
88	Total	\$ 940,852	\$ 634,493	\$ 738,288	\$ 853,134	\$ 967,981	\$ 967,981	\$ 967,981	\$ 967,981	\$ 967,981	\$ 967,981	\$ 967,981	\$ 967,981	
	Total Sewer User Rate Revenue													
89	Base Facility Charges	\$ 2,702,385	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	\$ 2,762,037	
90	Consumption Charges	21,638,532	19,974,483	20,445,006	21,280,605	22,116,204	22,116,204	22,116,204	22,116,204	22,116,204	22,116,204	22,116,204	22,116,204	
91	Purchased Sewer Pass-Through Charges	25,412,140	23,770,929	24,330,882	25,325,299	26,319,716	26,319,716	26,319,716	26,319,716	26,319,716	26,319,716	26,319,716	26,319,716	
92	Total	\$49,753,057	\$46,507,450	\$47,537,926	\$49,367,941	\$51,197,957	\$51,197,957	\$51,197,957	\$51,197,957	\$51,197,957	\$51,197,957	\$51,197,957	\$51,197,957	
	TOTAL USER RATE REVENUE													
93	RECOGNIZED	<u>\$85,109,948</u>	<u>\$77,845,352</u>	<u>\$79,553,605</u>	<u>\$82,748,409</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	<u>\$85,943,213</u>	

Table 1-3

City of Miami Beach, Florida
Water and Sewer Rate Study
Water System

Development of Net Revenue Requirements from User Rates and Projected Revenue Adjustments - Water System

Line No.	Description	Fiscal Year Ending September 30,										
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Operating Expenses											
1	Water System Expenses (425-0410)	\$ 26,602,120	\$ 26,719,579	\$ 27,845,551	\$ 28,972,514	\$ 29,396,145	\$ 29,832,667	\$ 30,207,890	\$ 30,595,091	\$ 30,992,741	\$ 31,403,244	\$ 31,823,947
2	Total Operating Expenses	\$ 26,602,120	\$ 26,719,579	\$ 27,845,551	\$ 28,972,514	\$ 29,396,145	\$ 29,832,667	\$ 30,207,890	\$ 30,595,091	\$ 30,992,741	\$ 31,403,244	\$ 31,823,947
	Debt Service											
3	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A	\$ 1,238,831	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B	184,500	-	-	-	-	-	-	-	-	-	-
5	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C	553,500	-	-	-	-	-	-	-	-	-	-
6	Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017	2,831,378	2,791,854	2,722,154	2,722,052	2,722,564	4,191,389	4,193,234	3,550,047	3,548,407	3,548,714	3,548,612
7	Water and Sewer Revenue Refunding Bonds, Series 2020	-	217,464	326,196	1,174,527	1,171,596	311,928	311,518	343,580	344,544	345,466	346,348
8	Series 2022 Bonds	-	-	864,889	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924
9	Total Debt Service	\$ 4,808,209	\$ 3,009,318	\$ 3,913,239	\$ 5,393,502	\$ 5,391,083	\$ 6,000,241	\$ 6,001,676	\$ 5,390,550	\$ 5,389,874	\$ 5,391,104	\$ 5,391,883
	Other Revenue Requirements											
10	Transfer to Capital Replacement and Improvement Fund	\$ 4,358,980	\$ 2,055,300	\$ 1,554,907	\$ 763,582	\$ 3,447,234	\$ -	\$ 7,682,000	\$ 5,400,000	\$ 22,820,000	\$ 3,618,000	\$ 3,618,000
11	Capital Funded from Rates	645,000	1,472,000	685,804	614,000	627,870	659,338	479,867	739,126	739,126	739,126	739,126
12	Total Other Revenue Requirements	\$ 5,003,980	\$ 3,527,300	\$ 2,240,711	\$ 1,377,582	\$ 4,075,104	\$ 659,338	\$ 8,161,867	\$ 6,139,126	\$ 23,559,126	\$ 4,357,126	\$ 4,357,126
13	Gross Revenue Requirements	\$ 36,414,308	\$ 33,256,197	\$ 33,999,502	\$ 35,743,598	\$ 38,862,332	\$ 36,492,245	\$ 44,371,433	\$ 42,124,767	\$ 59,941,740	\$ 41,151,474	\$ 41,572,955
	Less Income and Funds from Other Sources											
14	Other Operating Revenue	\$ 783,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905	\$ 786,905
15	Unrestricted Interest Income	317,103	301,344	326,922	369,526	415,125	451,963	472,505	464,465	475,674	416,440	436,717
16	Impact Fees Used to Pay City Debt Service	411,881	-	-	-	-	-	-	-	-	-	-
18	Net Revenue Requirements	\$ 34,901,420	\$ 32,167,948	\$ 32,885,674	\$ 34,587,167	\$ 37,660,302	\$ 35,253,377	\$ 43,112,022	\$ 40,873,396	\$ 58,679,161	\$ 39,948,129	\$ 40,349,333
	Revenue from Existing Rates											
19	Water System Rate Revenue	\$ 31,337,902	\$ 32,015,679	\$ 33,380,467	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255
20	Prior Year Rate Adjustment	-	-	1,168,300	2,474,700	3,777,400	5,125,700	6,521,200	6,857,900	7,204,700	7,546,500	7,898,800
21	Total Applicable Rate Revenue	\$ 31,337,902	\$ 32,015,679	\$ 34,548,767	\$ 37,219,955	\$ 38,522,655	\$ 39,870,955	\$ 41,266,455	\$ 41,603,155	\$ 41,949,955	\$ 42,291,755	\$ 42,644,055
22	Rate Adjustments	0.00%	3.50%	3.50%	3.50%	3.50%	3.50%	0.82%	0.83%	0.81%	0.83%	0.85%
23	Effective Months	12	9	12	12	12	12	12	12	12	12	12
24	Percent of Current Year Effective	100.0%	75.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
25	Revenue from Current Rate Adjustment	\$ -	\$ 840,400	\$ 1,209,200	\$ 1,302,700	\$ 1,348,300	\$ 1,395,500	\$ 336,700	\$ 346,800	\$ 341,900	\$ 352,300	\$ 363,200
26	Total Rate Revenue	\$ 31,337,902	\$ 32,856,079	\$ 35,757,967	\$ 38,522,655	\$ 39,870,955	\$ 41,266,455	\$ 41,603,155	\$ 41,949,955	\$ 42,291,855	\$ 42,644,055	\$ 43,007,255
27	Revenue Surplus/(Deficiency) Under Proposed Rates	\$ (3,563,517)	\$ 688,131	\$ 2,872,293	\$ 3,935,489	\$ 2,210,653	\$ 6,013,079	\$ (1,508,867)	\$ 1,076,559	\$ (16,387,305)	\$ 2,695,927	\$ 2,657,923

Table 1-4

City of Miami Beach, Florida
Water and Sewer Rate Study
Sewer System

Development of Net Revenue Requirements from User Rates and Projected Revenue Adjustments - Sewer System

Line No.	Description	Fiscal Year Ending September 30,										
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Operating Expenses											
1	Sewer System Expenses (425-0420)	\$ 39,507,077	\$ 39,888,871	\$ 41,280,476	\$ 42,678,101	\$ 43,063,440	\$ 43,458,324	\$ 43,838,884	\$ 44,231,455	\$ 44,633,347	\$ 45,048,143	\$ 45,471,701
2	Total Operating Expenses	\$ 39,507,077	\$ 39,888,871	\$ 41,280,476	\$ 42,678,101	\$ 43,063,440	\$ 43,458,324	\$ 43,838,884	\$ 44,231,455	\$ 44,633,347	\$ 45,048,143	\$ 45,471,701
	Debt Service											
3	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A	\$ 1,782,707	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B	265,500	-	-	-	-	-	-	-	-	-	-
5	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C	796,500	-	-	-	-	-	-	-	-	-	-
6	Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017	4,074,422	4,017,546	3,917,246	3,917,099	3,917,836	6,031,511	6,034,166	5,108,604	5,106,244	5,106,686	5,106,539
7	Water and Sewer Revenue Refunding Bonds, Series 2020	-	312,936	469,404	1,690,173	1,685,955	448,872	448,282	494,420	495,807	497,134	498,403
8	Series 2022 Bonds	-	-	598,478	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826
9	Total Debt Service	\$ 6,919,129	\$ 4,330,482	\$ 4,985,128	\$ 6,643,098	\$ 6,639,617	\$ 7,516,209	\$ 7,518,274	\$ 6,638,850	\$ 6,637,876	\$ 6,639,646	\$ 6,640,767
	Other Revenue Requirements											
10	Transfer to Capital Replacement and Improvement Fund	\$ 2,475,365	\$ 2,861,500	\$ 2,924,845	\$ 2,389,091	\$ 2,438,263	\$ 8,999,500	\$ 8,272,000	\$ 7,377,000	\$ 6,455,000	\$ 6,924,000	\$ 4,895,600
11	Capital Funded from Rates	25,000	1,218,000	332,444	58,313	1,388,573	666,366	291,578	568,468	568,468	568,468	568,468
12	Total Other Revenue Requirements	\$ 2,500,365	\$ 4,079,500	\$ 3,257,289	\$ 2,447,404	\$ 3,826,836	\$ 9,665,866	\$ 8,563,578	\$ 7,945,468	\$ 7,023,468	\$ 7,492,468	\$ 5,464,068
13	Gross Revenue Requirements	\$ 48,926,571	\$ 48,298,853	\$ 49,522,893	\$ 51,768,603	\$ 53,529,893	\$ 60,640,400	\$ 59,920,736	\$ 58,815,773	\$ 58,294,691	\$ 59,180,257	\$ 57,576,536
	Less Income and Funds from Other Sources											
14	Other Operating Revenue	\$ 3,584,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595	\$ 3,599,595
15	Unrestricted Interest Income	474,253	449,887	473,712	522,333	575,552	614,973	642,458	631,546	646,542	567,288	594,419
16	Impact Fees Used to Pay City Debt Service	624,464	-	-	-	-	-	-	-	-	-	-
17	Net Revenue Requirements	\$ 44,243,259	\$ 44,249,371	\$ 45,449,586	\$ 47,646,675	\$ 49,354,746	\$ 56,425,832	\$ 55,678,684	\$ 54,584,633	\$ 54,048,554	\$ 55,013,374	\$ 53,382,522
	Revenue from Existing Rates											
18	Wastewater System Rate Revenue	\$ 46,507,450	\$ 47,537,926	\$ 49,367,941	\$ 51,197,957	\$ 51,197,957	\$ 51,197,957	\$ 51,197,957	\$ 51,197,957	\$ 51,197,957	\$ 51,197,957	\$ 51,197,957
19	Prior Year Rate Adjustment	-	-	794,800	1,604,600	2,396,700	3,200,600	4,016,600	4,467,000	4,931,000	5,388,400	5,859,800
20	Total Applicable Rate Revenue	\$ 46,507,450	\$ 47,537,926	\$ 50,162,741	\$ 52,802,557	\$ 53,594,657	\$ 54,398,557	\$ 55,214,557	\$ 55,664,957	\$ 56,128,957	\$ 56,586,357	\$ 57,057,757
21	Rate Adjustments	0.00%	1.61%	1.50%	1.50%	1.50%	1.50%	0.82%	0.83%	0.81%	0.83%	0.85%
22	Effective Months	12	9	12	12	12	12	12	12	12	12	12
23	Percent of Current Year Effective	100.0%	75.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
24	Revenue from Current Rate Adjustment	\$ -	\$ 574,000	\$ 752,400	\$ 792,000	\$ 803,900	\$ 816,000	\$ 450,400	\$ 464,000	\$ 457,400	\$ 471,400	\$ 485,900
25	Total Rate Revenue	\$ 46,507,450	\$ 48,111,926	\$ 50,915,141	\$ 53,594,557	\$ 54,398,557	\$ 55,214,557	\$ 55,664,957	\$ 56,128,957	\$ 56,586,357	\$ 57,057,757	\$ 57,543,657
26	Revenue Surplus/(Deficiency) Under Proposed Rates	\$ 2,264,190	\$ 3,862,555	\$ 5,465,555	\$ 5,947,882	\$ 5,043,811	\$ (1,211,275)	\$ (13,727)	\$ 1,544,324	\$ 2,537,803	\$ 2,044,383	\$ 4,161,135

Table 1-5
City of Miami Beach, Florida
Water and Sewer Rate Study
Combined Water and Wastewater System

Projected Net Revenue Requirements - Combined Water and Sewer System

Line No.	Description	Fiscal Year Ending September 30,										
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Operating Expenses											
1	Water System Expenses (425-0410)	\$ 26,602,120	\$ 26,719,579	\$ 27,845,551	\$ 28,972,514	\$ 29,396,145	\$ 29,832,667	\$ 30,207,890	\$ 30,595,091	\$ 30,992,741	\$ 31,403,244	\$ 31,823,947
2	Wastewater Division - 5300	39,507,077	39,888,871	41,280,476	42,678,101	43,063,440	43,458,324	43,838,884	44,231,455	44,633,347	45,048,143	45,471,701
3	Total Operating Expenses	\$ 66,109,197	\$ 66,608,450	\$ 69,126,028	\$ 71,650,615	\$ 72,459,585	\$ 73,290,991	\$ 74,046,774	\$ 74,826,547	\$ 75,626,087	\$ 76,451,388	\$ 77,295,648
	Debt Service											
4	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A	\$ 3,021,538	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B	450,000	-	-	-	-	-	-	-	-	-	-
6	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C	1,350,000	-	-	-	-	-	-	-	-	-	-
7	Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017	6,905,800	6,809,400	6,639,400	6,639,150	6,640,400	10,222,900	10,227,400	8,658,650	8,654,650	8,655,400	8,655,150
8	Water and Sewer Revenue Refunding Bonds, Series 2020	-	530,400	795,600	2,864,700	2,857,550	760,800	759,800	838,000	840,350	842,600	844,750
9	Series 2022 Bonds	-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
10	Total Debt Service	\$ 11,727,338	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650
	Other Revenue Requirements											
11	Transfer to Capital Replacement Fund	\$ 6,834,345	\$ 4,916,800	\$ 4,479,752	\$ 3,152,672	\$ 5,885,497	\$ 8,999,500	\$ 15,954,000	\$ 12,777,000	\$ 29,275,000	\$ 10,542,000	\$ 8,513,600
12	Capital Funded from Rates	670,000	2,690,000	1,018,248	672,313	2,016,443	1,325,704	771,445	1,307,593	1,307,593	1,307,593	1,307,593
13	Total Other Revenue Requirements	\$ 7,504,345	\$ 7,606,800	\$ 5,498,000	\$ 3,824,985	\$ 7,901,940	\$ 10,325,204	\$ 16,725,445	\$ 14,084,593	\$ 30,582,593	\$ 11,849,593	\$ 9,821,193
14	Gross Revenue Requirements	\$ 85,340,880	\$ 81,555,050	\$ 83,522,394	\$ 87,512,201	\$ 92,392,226	\$ 97,132,645	\$ 104,292,169	\$ 100,940,540	\$ 118,236,431	\$ 100,331,731	\$ 99,149,491
	Less Income and Funds from Other Sources											
15	Other Operating Revenue	\$ 4,368,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500
16	Unrestricted Interest Income	791,356	751,231	800,634	891,858	990,677	1,066,936	1,114,963	1,096,011	1,122,216	983,728	1,031,136
17	Impact Fees Used to Pay City Debt Service	1,036,345	-	-	-	-	-	-	-	-	-	-
19	Net Revenue Requirements	\$ 79,144,679	\$ 76,417,319	\$ 78,335,260	\$ 82,233,842	\$ 87,015,048	\$ 91,679,209	\$ 98,790,706	\$ 95,458,029	\$ 112,727,715	\$ 94,961,503	\$ 93,731,855
	Revenue from Existing Rates											
20	System Rate Revenue	\$ 77,845,352	\$ 79,553,605	\$ 82,748,409	\$ 85,943,213	\$ 85,943,213	\$ 85,943,213	\$ 85,943,213	\$ 85,943,213	\$ 85,943,213	\$ 85,943,213	\$ 85,943,213
21	Prior Year Rate Adjustment	-	-	1,963,100	4,079,300	6,174,100	8,326,300	10,537,800	11,324,900	12,135,700	12,934,900	13,758,600
22	Total Applicable Rate Revenue	\$ 77,845,352	\$ 79,553,605	\$ 84,711,509	\$ 90,022,513	\$ 92,117,313	\$ 94,269,513	\$ 96,481,013	\$ 97,268,113	\$ 98,078,913	\$ 98,878,113	\$ 99,701,813
23	Effective Months	12	9	12	12	12	12	12	12	12	12	12
24	Percent of Current Year Effective	100.0%	75.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
25	Revenue from Current Rate Adjustment w/ Effective Months	\$ -	\$ 1,414,400	\$ 1,961,600	\$ 2,094,700	\$ 2,152,200	\$ 2,211,500	\$ 787,100	\$ 810,800	\$ 799,300	\$ 823,700	\$ 849,100
26	Revenue from Current Rate Adjustment w/ Full Year Implementation	\$ -	\$ 1,885,867	\$ 1,961,600	\$ 2,094,700	\$ 2,152,200	\$ 2,211,500	\$ 787,100	\$ 810,800	\$ 799,300	\$ 823,700	\$ 849,100
27	Total Revenue w/ Effective Months	\$ 77,845,352	\$ 80,968,005	\$ 86,673,109	\$ 92,117,213	\$ 94,269,513	\$ 96,481,013	\$ 97,268,113	\$ 98,078,913	\$ 98,878,213	\$ 99,701,813	\$ 100,550,913
28	Total Revenue w/ Full Year Implementation	\$ 77,845,352	\$ 81,439,471	\$ 86,673,109	\$ 92,117,213	\$ 94,269,513	\$ 96,481,013	\$ 97,268,113	\$ 98,078,913	\$ 98,878,213	\$ 99,701,813	\$ 100,550,913
29	Revenue Adjustment w/ Effective Months	0.00%	1.78%	2.32%	2.33%	2.34%	2.35%	0.82%	0.83%	0.81%	0.83%	0.85%
30	Revenue Adjustment w/ Full Year Implementation	0.00%	2.37%	2.32%	2.33%	2.34%	2.35%	0.82%	0.83%	0.81%	0.83%	0.85%

Table1-6

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Utility Budget and Allocation of Utility Operating Expenses to Individual Systems

Line No.	Expense Code	Description	CAFR Classification	Operating Expense? (Yes or No)	Actual	Actual	Actual	Actual	Actual	Budgeted	Adjustments	Adjusted	Budgeted	Adjustments	Adjusted	Allocation Amounts				
					Fiscal Year 2015	Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020		Fiscal Year 2020	Fiscal Year 2021		Fiscal Year 2020	Fiscal Year 2021	Fiscal Year 2020		Fiscal Year 2021	
																	Water	Wastewater	Water	Wastewater
Water System Expenses (425-0410)																				
Personnel Services																				
1	111	Salaries and Wages	Personal Services	Yes	\$ 2,735,224	\$ 2,863,333	\$ 2,801,076	\$ 2,572,256	\$ 2,590,809	\$ 2,864,000	\$ -	\$ 2,864,000	\$ 2,844,000	\$ -	\$ 2,844,000	\$ 2,864,000	\$ -	\$ 2,844,000	\$ -	
2	132	Shift Differential	Personal Services	Yes	4,000	3,755	3,428	2,050	8,835	3,000	-	3,000	3,000	-	3,000	3,000	-	3,000	-	
3	AddPers	Additional Personnel	Personal Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	133	Steeplejack	Personal Services	Yes	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	135	Overtime	Personal Services	Yes	179,101	272,886	383,444	172,145	198,911	181,000	-	181,000	20,000	-	20,000	181,000	-	20,000	-	
6	136	Holiday Pay - Overtime	Personal Services	Yes	22,199	12,310	13,116	9,241	5,352	12,000	-	12,000	12,000	-	12,000	12,000	-	12,000	-	
7	139	Work Above Classification	Personal Services	Yes	9,082	3,625	5,863	3,008	2,707	3,000	-	3,000	3,000	-	3,000	3,000	-	3,000	-	
8	153	Allowances	Personal Services	Yes	253,540	254,661	262,887	138,408	135,934	142,000	-	142,000	145,000	-	145,000	142,000	-	145,000	-	
9	154	Uniforms	Personal Services	Yes	22,455	29,594	28,049	26,444	27,471	-	-	-	-	-	-	-	-	-	-	
10	159	Transfers - Pension Obligation	Non-Operating	No	17,000	16,000	16,000	12,000	12,000	13,000	-	13,000	4,000	-	4,000	13,000	-	4,000	-	
11	160	401A Pension Contribution	Personal Services	Yes	12,109	12,498	12,953	13,391	13,334	13,000	-	13,000	13,000	-	13,000	13,000	-	13,000	-	
12	161	Retirement Contributions - Pension	Personal Services	Yes	812,000	827,000	867,000	825,000	784,000	820,000	-	820,000	833,000	-	833,000	820,000	-	833,000	-	
13	162	Health and Life Insurance	Personal Services	Yes	431,131	406,808	413,329	381,020	422,466	496,000	-	496,000	487,000	-	487,000	496,000	-	487,000	-	
14	163	Workmen's Compensation	Personal Services	Yes	37,000	4,000	3,000	3,000	3,000	3,000	-	3,000	1,000	-	1,000	3,000	-	1,000	-	
15	164	FICA	Personal Services	Yes	-	3,786	10,316	5,457	6,209	5,000	-	5,000	5,000	-	5,000	5,000	-	5,000	-	
16	165	Social Security and Medicare	Personal Services	Yes	41,074	44,558	47,749	38,917	40,107	47,000	-	47,000	47,000	-	47,000	47,000	-	47,000	-	
17	167	OPEB Contributions	Personal Services	Yes	3,283	7,387	45,812	16,000	46,000	70,000	-	70,000	74,000	-	74,000	70,000	-	74,000	-	
18	168	OPEB PayGo	Personal Services	Yes	387,000	215,000	252,000	231,000	277,000	299,000	-	299,000	291,000	-	291,000	299,000	-	291,000	-	
19	169	GASB 68 - Actuarial Expense	Personal Services	Yes	517,810	145,061	109,429	(590,257)	(78,915)	-	-	-	-	-	-	-	-	-	-	
20	170	GASB 75 - OPEB Expense	Personal Services	Yes	-	-	-	(247,559)	66,914	-	-	-	-	-	-	-	-	-	-	
21	357	Employee Fringe Benefits	Personal Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22		Total Personnel Services			\$ 5,484,030	\$ 5,122,261	\$ 5,276,449	\$ 3,611,520	\$ 4,562,135	\$ 4,971,000	\$ -	\$ 4,971,000	\$ 4,782,000	\$ -	\$ 4,782,000	\$ 4,971,000	\$ -	\$ 4,782,000	\$ -	
Operating Expenses																				
23	311	Temporary Labor	Contractual Services	Yes	\$ 38,838	\$ 13,969	\$ 8,637	\$ 27,338	\$ 8,623	\$ 3,000	\$ -	\$ 3,000	\$ 9,000	\$ -	\$ 9,000	\$ 3,000	\$ -	\$ 9,000	\$ -	
24	312	Professional Services	Contractual Services	Yes	159,780	225,393	192,058	175,086	719,186	1,210,000	-	1,210,000	460,000	-	460,000	1,210,000	-	460,000	-	
25	313	Bank Fees	Other Operating	Yes	-	-	-	191,242	146,172	190,000	-	190,000	111,000	-	111,000	190,000	-	111,000	-	
26	314	Electricity	Utilities	Yes	214,506	237,379	297,499	316,904	329,896	320,000	-	320,000	347,000	-	347,000	320,000	-	347,000	-	
27	316	Telephone	Utilities	Yes	18,035	24,453	21,892	33,446	30,554	33,000	-	33,000	33,000	-	33,000	33,000	-	33,000	-	
28	317	Water	Utilities	Yes	957	995	6,438	605	628	19,000	-	19,000	1,000	-	1,000	19,000	-	1,000	-	
29	318	Sewer Charges	Utilities	Yes	5,384	10,770	10,105	447	466	-	-	-	-	-	-	-	-	-	-	
30	319	Sanitation Fees	Utilities	Yes	-	-	-	-	-	2,000	-	2,000	-	-	-	2,000	-	-	-	
31	321	Postage and Shipping	Contractual Services	Yes	3,000	16	14,412	66	47	200	-	200	200	-	200	200	-	200	-	
32	322	Administration Fees	Administrative Fees	Yes	1,479,000	1,529,004	1,473,000	754,000	704,000	1,195,000	-	1,195,000	1,195,000	-	1,195,000	1,195,000	-	1,195,000	-	
33	323	Rent - Building and Equipment	Contractual Services	Yes	14,194	8,992	9,556	-	3,715	7,000	-	7,000	4,000	-	4,000	7,000	-	4,000	-	
34	324	Printing - External	Contractual Services	Yes	700	-	13,521	28,287	25,494	31,000	-	31,000	27,000	-	27,000	31,000	-	27,000	-	
35	325	Contract Maintenance	Contractual Services	Yes	20,671	134,226	659,692	413,434	949,368	492,000	-	492,000	492,000	-	492,000	492,000	-	492,000	-	
36	326	Supplies - Other	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	326	Supplies - Other	Operating Supplies	Yes	7,551	1,919	8,577	30,848	77,046	-	-	-	-	-	-	-	-	-	-	
38	327	Advertising	Contractual Services	Yes	-	-	249	-	250	500	-	500	1,000	-	1,000	500	-	1,000	-	
39	329	Storm Water	Utilities	Yes	59,229	53,844	66,060	90,311	93,489	-	-	-	-	-	-	-	-	-	-	
40	331	Supplies - Information Technology	Other Operating	Yes	2,431	7,626	6,422	7,361	936	4,000	-	4,000	4,000	-	4,000	4,000	-	4,000	-	
41	336	Water for Resale	Contractual Services	Yes	14,258,442	11,357,541	12,951,844	14,073,944	12,634,985	11,605,000	709,156	12,314,156	13,357,000	(2,566)	13,354,434	12,314,156	-	13,354,434	-	
42	336TU	WASD True-Up - Water	Contractual Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	341	Supplies - Office	Operating Supplies	Yes	8,443	7,907	9,991	6,898	3,632	7,000	-	7,000	7,000	-	7,000	7,000	-	7,000	-	
44	342RM	Repairs/Maintenance Supply	Operating Supplies	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	342	Contracted Services - Repair and Maintenance	Contractual Services	Yes	238,435	(196,428)	601,232	1,000,128	70,907	-	-	-	-	-	-	-	-	-	-	
46	343	Other Operating Expenditures	Other Operating	Yes	266,643	287,216	196,810	42,906	426,772	832,000	-	832,000	800,000	-	800,000	832,000	-	800,000	-	
47	349	Other Contractual Services (DERM)	Contractual Services	Yes	2,360,366	2,669,096	2,788,052	2,803,547	2,077,958	2,112,000	(231,726)	1,880,274	1,963,000	8,365	1,971,365	1,880,274	-	1,971,365	-	
48	350	Capital Repairs and Maintenance	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
49	351	Engine Fuel and Lubricants	Other Operating	Yes	-	3,459	-	-	2,099	4,000	-	4,000	20,000	-	20,000	4,000	-	20,000	-	
50	356	Contingencies	Contingency	Yes	-	-	-	-	-	1,203,000	-	1,203,000	1,215,000	-	1,215,000	1,203,000	-	1,215,000	-	
51	357	Employee Fringe Benefits	Other Operating	Yes	32,214	54,701	8,635	23,857	82,372	48,000	-	48,000	15,000	-	15,000	48,000	-	15,000	-	
52	358	Subscriptions	Operating Supplies	Yes	348	271	95	67	156	300	-	300	300	-	300	300	-	300	-	
53	360	E-Recording Fees	Other Operating	Yes	910	620	470	1,160	930	1,000	-	1,000	2,000	-	2,000	1,000	-	2,000	-	
54	361	Dues and Memberships	Contractual Services	Yes	267	557	635	1,800	1,889	2,000	-	2,000	2,000	-	2,000	2,000	-	2,000	-	
55	363	Travel	Contractual Services	Yes	-	56	4,041	-	-	-	-	-	-	-	-	-	-	-	-	
56	367	Training and Awards	Operating Supplies	Yes	2,592	30,683	44,439	45,283	34,822	60,000	-	60,000	70,000	-	70,000	60,000	-	70,000	-	
57	402	Uniform Expense	Operating Supplies	Yes	-	-	-	-	-	38,000	-	38,000	38,000	-	38,000	38,000	-	38,000	-	
58	BadDebt	Bad Debt Expense	Other Operating	Yes	-	-	-	-	-	-	156,690	156,690	-	164,280	164,280	156,690	-	164,280	-	
59	481	Inventory Purchase MX Stock	Operating Supplies	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
60	484	Depreciation	Depreciation	No	2,216,360	1,529,022	1,673,240	1,953,487	2,013,049	2,149,000	(2,149,000)	-	2,469,000	(2,469,000)	-	-	-	-	-	
61	494	Transfer Out - Debt Service	Non-Operating	No	-	-	-	-	1,000	-	-	-	-	-	-	-	-	-	-	
62	540	Amortization - Bond Issuance Cost and Discount	Amortization	No	11,268	11,268	11,269	(281,765)	(662,119)	-	-	-	-	-	-	-	-	-	-	
63		Total Operating Expenses			\$ 21,420,563	\$ 18,004,5														

Table1-6

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Utility Budget and Allocation of Utility Operating Expenses to Individual Systems

Line No.	Expense Code	Description	CAFR Classification	Operating Expense? (Yes or No)	Actual	Actual	Actual	Actual	Actual	Budgeted	Adjustments	Adjusted	Budgeted	Adjustments	Adjusted	Allocation Amounts			
					Fiscal Year 2015	Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020		Fiscal Year 2020	Fiscal Year 2021		Fiscal Year 2021	Fiscal Year 2020		Fiscal Year 2021	
					Water	Wastewater	Water	Wastewater											
67	504	Internal Services - Communication	Internal Charges	Yes	110,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	505	Internal Services - Self-Insurance	Internal Charges	Yes	794,000	829,000	958,000	1,009,000	1,036,000	982,000	-	982,000	982,000	-	982,000	982,000	-	982,000	-
69	506	Internal Services - Applications / Computer Hardware	Internal Charges	Yes	140,850	259,000	278,000	284,000	268,000	283,000	-	283,000	283,000	-	283,000	283,000	-	283,000	-
70	508	Property Management - Construction	Internal Charges	Yes	-	-	7,000	-	376	-	-	-	-	-	-	-	-	-	-
71	511	OIG Funding	Internal Charges	Yes	-	-	-	-	-	-	-	-	16,000	-	16,000	-	-	16,000	-
72	512	Internal Services - Electrical and Maintenance Contracts	Internal Charges	Yes	52,769	4,539	-	-	-	-	-	-	-	-	-	-	-	-	-
73	513	Internal Services - Automobile Accidents	Internal Charges	Yes	2,905	5,000	1,632	-	-	-	-	-	-	-	-	-	-	-	-
74		Total Internal Charges			\$ 1,307,939	\$ 1,371,401	\$ 1,478,020	\$ 1,600,000	\$ 1,624,376	\$ 1,578,000	\$ -	\$ 1,578,000	\$ 1,594,000	\$ -	\$ 1,594,000	\$ 1,578,000	\$ -	\$ 1,594,000	\$ -
75	672	Capitalized Items Fixed Assets	Non-Operating	No	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
76	673	Motor Vehicles	Non-Operating	No	279,131	251,436	47,434	56,432	236,986	495,000	(495,000)	-	997,000	(997,000)	-	-	-	-	-
77	674OM	Machinery and Equipment - O&M	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78	674	Machinery and Equipment	Non-Operating	No	25,826	30,033	37,250	-	-	191,000	(191,000)	-	-	-	-	-	-	-	-
79	676	Renovations	Non-Operating	No	-	-	-	154,089	-	-	-	-	-	-	-	-	-	-	-
80	680	Meter Services	Non-Operating	No	91,156	58,934	64,589	(1,152)	-	400,000	(400,000)	-	400,000	(400,000)	-	-	-	-	-
81	681	Firelines	Non-Operating	No	39,042	48,825	14,198	-	-	50,000	(50,000)	-	25,000	(25,000)	-	-	-	-	-
82	682	Hydrants	Non-Operating	No	24,422	6,589	12,391	26,566	-	25,000	(25,000)	-	40,000	(40,000)	-	-	-	-	-
83	683	Water Mains	Non-Operating	No	44,951	-	20,658	-	155,233	10,000	(10,000)	-	10,000	(10,000)	-	-	-	-	-
84	687OM	Pumping Stations - O&M	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	687	Pumping Stations	Non-Operating	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
86	690	Fixed Assets Module Acquisitions	Non-Operating	No	(504,529)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	999	Transfer to Fund Balance	Non-Operating	No	-	-	-	-	-	2,801,000	(2,801,000)	-	-	-	-	-	-	-	-
88		Total Capital Expenditures			\$ -	\$ 395,817	\$ 196,520	\$ 235,935	\$ 392,219	\$ 3,972,000	\$ (3,972,000)	\$ -	\$ 1,472,000	\$ (1,472,000)	\$ -	\$ -	\$ -	\$ -	\$ -
89		Total Water System Expenses (425-0410) Expenses			\$ 28,212,532	\$ 24,894,037	\$ 28,029,861	\$ 27,189,142	\$ 26,356,053	\$ 32,089,000	\$ (5,486,880)	\$ 26,602,120	\$ 30,490,500	\$ (3,770,921)	\$ 26,719,579	\$ 26,602,120	\$ -	\$ 26,719,579	\$ -
Sewer System Expenses (425-0420)																			
Personnel Services																			
90	111	Salaries and Wages	Personal Services	Yes	\$ 1,541,830	\$ 1,660,608	\$ 1,831,367	\$ 1,664,299	\$ 1,662,441	\$ 1,883,000	\$ -	\$ 1,883,000	\$ 1,901,000	\$ -	\$ 1,901,000	\$ -	\$ 1,883,000	\$ -	\$ 1,901,000
91	132	Shift Differential	Personal Services	Yes	2,526	2,772	2,820	2,551	8,534	3,000	-	3,000	3,000	-	3,000	-	3,000	-	3,000
92	AddPers	Additional Personnel	Personal Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	133	Steeplejack	Personal Services	Yes	9,686	11,320	15,615	14,234	6,361	10,000	-	10,000	10,000	-	10,000	-	10,000	-	10,000
94	135	Overtime	Personal Services	Yes	92,139	206,443	382,832	221,249	214,020	185,000	-	185,000	185,000	-	185,000	-	185,000	-	185,000
95	136	Holiday Pay - Overtime	Personal Services	Yes	12,786	11,378	16,813	20,142	11,591	15,000	-	15,000	15,000	-	15,000	-	15,000	-	15,000
96	139	Work Above Classification	Personal Services	Yes	4,258	4,662	6,200	4,455	6,734	5,000	-	5,000	5,000	-	5,000	-	5,000	-	5,000
97	153	Allowances	Personal Services	Yes	146,886	169,863	172,235	94,943	108,016	109,000	-	109,000	115,000	-	115,000	-	109,000	-	115,000
98	154	Uniforms	Personal Services	Yes	14,158	16,767	17,610	15,859	19,950	-	-	-	-	-	-	-	-	-	-
99	159	Transfers - Pension Obligation	Non-Operating	No	10,000	11,000	11,000	9,000	9,000	9,000	-	9,000	3,000	-	3,000	-	9,000	-	3,000
100	160	401 A Pension Contribution	Personal Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	161	Retirement Contributions - Pension	Personal Services	Yes	503,000	565,000	587,000	522,000	497,000	524,000	-	524,000	557,000	-	557,000	-	524,000	-	557,000
102	162	Health and Life Insurance	Personal Services	Yes	191,554	202,551	229,810	192,105	219,683	258,000	-	258,000	270,000	-	270,000	-	258,000	-	270,000
103	163	Workmen's Compensation	Personal Services	Yes	33,000	4,000	4,000	3,000	2,000	2,000	-	2,000	1,000	-	1,000	-	2,000	-	1,000
104	164	FICA	Personal Services	Yes	1,162	1,789	10,624	4,299	3,101	3,000	-	3,000	3,000	-	3,000	-	3,000	-	3,000
105	165	Social Security and Medicare	Personal Services	Yes	24,712	29,338	34,206	28,460	27,921	32,000	-	32,000	33,000	-	33,000	-	32,000	-	33,000
106	166	457 Pension Contribution	Personal Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107	167	OPEB Contributions	Personal Services	Yes	1,700	3,825	27,725	11,000	21,000	36,000	-	36,000	41,000	-	41,000	-	36,000	-	41,000
108	168	OPEB PayGo	Personal Services	Yes	247,000	146,000	153,000	136,000	129,000	150,000	-	150,000	162,000	-	162,000	-	150,000	-	162,000
109	169	GASB 68 - Actuarial Expense	Personal Services	Yes	(962,216)	(324,111)	74,134	(373,329)	(50,017)	-	-	-	-	-	-	-	-	-	-
110	170	GASB 75 - OPEB Expense	Personal Services	Yes	-	-	-	(147,333)	82,372	-	-	-	-	-	-	-	-	-	-
111	357	Employee Fringe Benefits	Personal Services	Yes	-	-	-	-	25,171	-	-	-	-	-	-	-	-	-	-
112		Total Personnel Services			\$ 1,874,183	\$ 2,723,205	\$ 3,576,990	\$ 2,422,934	\$ 3,003,878	\$ 3,224,000	\$ -	\$ 3,224,000	\$ 3,304,000	\$ -	\$ 3,304,000	\$ -	\$ 3,224,000	\$ -	\$ 3,304,000
Operating Expenses																			
113	311	Temporary Labor	Contractual Services	Yes	\$ 122,961	\$ 149,381	\$ 6,633	\$ 59,555	\$ 61,799	\$ 3,000	\$ -	\$ 3,000	\$ 3,000	\$ -	\$ -	\$ -	\$ 3,000	\$ -	\$ -
114	312	Professional Services	Contractual Services	Yes	699,639	32,856	107,069	117,451	579,988	1,149,000	-	1,149,000	399,000	-	399,000	-	1,149,000	-	399,000
115	313	Bank Fees	Other Operating	Yes	-	-	153,000	259,748	202,231	260,000	-	260,000	203,000	-	203,000	-	260,000	-	203,000
116	314	Electricity	Utilities	Yes	434,739	440,412	502,776	431,696	456,313	500,000	-	500,000	484,000	-	484,000	-	500,000	-	484,000
117	316	Telephone	Utilities	Yes	19,163	32,922	20,957	25,332	27,074	27,000	-	27,000	28,000	-	28,000	-	27,000	-	28,000
118	317	Water	Utilities	Yes	41,836	55,973	27,429	33,325	49,045	-	-	-	-	-	-	-	-	-	-
119	318	Sewer Charges	Utilities	Yes	55,143	85,296	33,373	42,351	55,067	48,000	-	48,000	56,000	-	56,000	-	48,000	-	56,000
120	319	Sanitation Fees	Utilities	Yes	-	-	-	-	-	7,000	-	7,000	7,000	-	7,000	-	7,000	-	7,000
121	321	Postage and Shipping	Contractual Services	Yes	52	-	109	79	-	500	-	500	500	-	500	-	500	-	500
122	322	Administration Fees	Administrative Fees	Yes	1,900,000	2,211,000	2,507,000	1,055,000	1,064,000	1,205,000	-	1,205,000	1,205,000	-	1,205,000	-	1,205,000	-	1,205,000
123	323	Rent - Building and Equipment	Contractual Services	Yes	57,512	148,219	50,609	25,592	37,498	62,000	-	62,000	62,000	-	62,000	-	62,000	-	62,000
124	325	Contract Maintenance	Contractual Services	Yes	81,667	216,886	686,345	669,806	974,525	947,000	-	947,000	963,000	-	963,000	-	947,000	-	963,000
125	326	Supplies - Other	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
126	326	Supplies - Other	Operating Supplies	Yes	943	9,755	14,944	16,018	127,619	-	-	-	-	-	-	-	-	-	-
127	327	Advertising	Contractual Services	Yes	-	249	-	-	250	500	-	500	500	-	500	-	500	-	500
128	329	Storm Water	Utilities	Yes	5,202	1,400	8,275	1,957	2,026	-	-	-	2,000	-	2,000	-	-	-	2,000
129	331	Supplies - Information Technology	Other Operating	Yes	2,066	117	1,892	830	-	-	-	-	-	-	-	-	-	-	-
130	337	Sewer Treatment	Contractual Services	Yes	20,865,353	25,954,307	25,971,150	23,656,233	24,627,210	24,020,000	(4								

Table1-6

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Utility Budget and Allocation of Utility Operating Expenses to Individual Systems

Line No.	Expense Code	Description	CAFR Classification	Operating Expense? (Yes or No)	Actual Fiscal Year 2015	Actual Fiscal Year 2016	Actual Fiscal Year 2017	Actual Fiscal Year 2018	Actual Fiscal Year 2019	Budgeted Fiscal Year 2020	Adjustments	Adjusted Fiscal Year 2020	Budgeted Fiscal Year 2021	Adjustments	Adjusted Fiscal Year 2021	Allocation Amounts			
																Fiscal Year 2020		Fiscal Year 2021	
																Water	Wastewater	Water	Wastewater
131	337TU	WASD True-Up - Wastewater	Contractual Services	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
132	341	Supplies - Office	Operating Supplies	Yes	-	16	1,118	11,201	3,641	7,000	-	7,000	7,000	-	7,000	-	7,000	-	7,000
133	342RM	Repairs/Maintenance Supply	Operating Supplies	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
134	342	Contracted Services - Repair and Maintenance	Contractual Services	Yes	359,014	(52,158)	590,972	515,124	139,565	137,000	-	137,000	142,000	-	142,000	-	137,000	-	142,000
135	343	Other Operating Expenditures	Other Operating	Yes	374,940	996,260	1,348,002	1,541,889	428,595	1,509,000	-	1,509,000	1,512,000	-	1,512,000	-	1,509,000	-	1,512,000
136	349	Other Contractual Services (DERM)	Contractual Services	Yes	2,557,063	3,356,893	3,453,937	3,863,069	2,847,919	2,893,000	-	2,893,000	2,693,000	200,000	2,893,000	-	2,893,000	-	2,893,000
137	350	Capital Repairs and Maintenance	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
138	351	Engine Fuel and Lubricants	Operating Supplies	Yes	(1,080)	8,622	21,629	-	493	7,000	-	7,000	17,000	-	17,000	-	7,000	-	17,000
139	356	Contingencies	Contingency	Yes	-	-	-	-	-	2,009,000	-	2,009,000	1,821,000	-	1,821,000	-	2,009,000	-	1,821,000
140	357	Employee Fringe Benefits	Other Operating	Yes	34,470	37,696	51,480	14,617	25,171	10,000	-	10,000	-	-	-	-	10,000	-	-
141	358	Subscriptions	Operating Supplies	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
142	361	Dues and Memberships	Contractual Services	Yes	120	75	167	490	705	1,000	-	1,000	1,000	-	1,000	-	1,000	-	1,000
143	363	Travel	Contractual Services	Yes	420	8,101	2,375	-	-	-	-	-	-	-	-	-	-	-	-
144	367	Training and Awards	Operating Supplies	Yes	2,474	21,783	27,881	27,394	50,835	63,000	-	63,000	73,000	-	73,000	-	63,000	-	73,000
145	368	Taxes and Licenses	Operating Supplies	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
146	402	Uniform Expense	Operating Supplies	Yes	-	-	-	-	-	26,000	-	26,000	26,000	-	26,000	-	26,000	-	26,000
147	BadDebt	Bad Debt Expense	Other Operating	Yes	-	-	-	-	-	-	232,537	232,537	-	240,560	240,560	-	232,537	-	240,560
148	481	Inventory Purchase MX Stock	Operating Supplies	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
149	484	Depreciation	Depreciation	Yes	2,559,923	3,181,997	3,338,188	3,661,676	3,740,835	4,028,000	(4,028,000)	-	1,601,500	(1,601,500)	-	-	-	-	-
150	540	Amortization - Bond Issuance Cost and Discount	Amortization	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
151	491	Transfers Out	Non-Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
152	999	Transfer to Fund Balance	Non-Operating	Yes	-	-	-	-	-	1,267,000	(1,267,000)	-	-	-	-	-	-	-	-
153		Total Operating Expenses			\$ 30,173,620	\$ 36,898,057	\$ 38,927,309	\$ 36,030,434	\$ 35,502,401	\$ 40,186,000	\$ (5,546,923)	\$ 34,639,077	\$ 36,101,500	\$ (1,169,629)	\$ 34,928,871	\$ -	\$ 34,639,077	\$ -	\$ 34,928,871
Internal Charges																			
154	501	Internal Services - Central Services	Internal Charges	Yes	\$ 13,654	\$ 6,112	\$ 2,073	\$ 6,000	\$ 2,000	\$ 2,000	\$ -	\$ 2,000	\$ 2,000	\$ -	\$ 2,000	\$ -	\$ 2,000	\$ -	\$ 2,000
155	502	Internal Services - Property Management	Internal Charges	Yes	80,556	129,112	20,998	9,000	62,000	99,000	-	99,000	99,000	-	99,000	-	99,000	-	99,000
156	503	Internal Services - Fleet Management	Internal Charges	Yes	267,536	276,604	262,456	333,000	408,000	368,000	-	368,000	368,000	-	368,000	-	368,000	-	368,000
157	504	Internal Services - Communication	Internal Charges	Yes	45,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
158	505	Internal Services - Self-Insurance	Internal Charges	Yes	932,000	973,000	1,124,000	1,174,000	1,206,000	986,000	-	986,000	986,000	-	986,000	-	986,000	-	986,000
159	506	Internal Services - Applications / Computer Hardware	Internal Charges	Yes	53,000	102,000	108,000	108,000	148,000	189,000	-	189,000	189,000	-	189,000	-	189,000	-	189,000
160	508	Property Management - Construction	Internal Charges	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
161	511	OIG Funding	Internal Charges	Yes	-	-	-	-	-	-	-	-	12,000	-	12,000	-	-	-	12,000
162	512	Internal Services - Electrical and Maintenance Contracts	Internal Charges	Yes	52,769	4,539	7,000	-	354	-	-	-	-	-	-	-	-	-	-
163	513	Internal Services - Automobile Accidents	Internal Charges	Yes	3,167	3,321	11,634	-	-	-	-	-	-	-	-	-	-	-	-
164		Total Internal Charges			\$ 1,447,681	\$ 1,494,688	\$ 1,536,161	\$ 1,630,000	\$ 1,826,354	\$ 1,644,000	\$ -	\$ 1,644,000	\$ 1,656,000	\$ -	\$ 1,656,000	\$ -	\$ 1,644,000	\$ -	\$ 1,656,000
Capital Outlay																			
165	672	Capitalized Items Fixed Assets	Non-Operating	No	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
166	673	Motor Vehicles	Non-Operating	No	34,834	1,153,908	74,153	633,044	68,073	236,000	(236,000)	-	554,500	(554,500)	-	-	-	-	-
167	674OM	Machinery and Equipment - O&M	Other Operating	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
168	674	Machinery and Equipment	Non-Operating	No	223,908	298,104	354,649	80,777	8,695	153,000	(153,000)	-	639,500	(639,500)	-	-	-	-	-
169	676	Renovations	Non-Operating	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170	680	Meter Services	Non-Operating	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
171	684	Sewer Lines	Non-Operating	No	1,469	1,057	2,749	-	-	-	-	-	-	-	-	-	-	-	-
172	685	Sewer Laterals	Non-Operating	No	11,765	24,333	23,675	13,759	453,484	25,000	(25,000)	-	24,000	(24,000)	-	-	-	-	-
173	686	Force Mains	Non-Operating	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
174	687	Pumping Stations	Non-Operating	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175	690	Fixed Assets Module Acquisitions	Non-Operating	No	(271,976)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
176		Total Capital Outlay			\$ -	\$ 1,477,403	\$ 455,227	\$ 727,580	\$ 530,252	\$ 414,000	\$ (414,000)	\$ -	\$ 1,218,000	\$ (1,218,000)	\$ -	\$ -	\$ -	\$ -	\$ -
177		Total Sewer System Expenses (425-0420) Expenses			\$ 33,495,484	\$ 42,593,353	\$ 44,495,686	\$ 40,810,948	\$ 40,862,886	\$ 45,468,000	\$ (5,960,923)	\$ 39,507,077	\$ 42,279,500	\$ (2,387,629)	\$ 39,888,871	\$ -	\$ 39,507,077	\$ -	\$ 39,888,871
178		Total Water and Sewer Fund Operating Expenditures			\$ 61,708,015	\$ 67,487,389	\$ 72,525,548	\$ 68,000,090	\$ 67,218,939	\$ 77,557,000	\$ (11,447,803)	\$ 66,109,197	\$ 72,770,000	\$ (6,158,550)	\$ 66,608,450	\$ 26,602,120	\$ 39,507,077	\$ 26,719,579	\$ 39,888,871
179		Actual Operating Expenses			\$ 59,453,387	\$ 64,046,878	\$ 70,162,291	\$ 65,342,853	\$ 64,924,538	\$ 71,000,000	\$ (4,912,803)	\$ 66,087,197	\$ 67,604,000		\$ 66,601,450	\$ 26,589,120	\$ 39,498,077	\$ 26,715,579	\$ 39,885,871

Table1-6

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Utility Budget and Allocation of Utility Operating Expenses to Individual Systems

Line No.	Expense Code	Description	CAFR Classification	Operating Expense? (Yes or No)	Actual Fiscal Year 2015	Actual Fiscal Year 2016	Actual Fiscal Year 2017	Actual Fiscal Year 2018	Actual Fiscal Year 2019	Budgeted Fiscal Year 2020	Adjustments	Adjusted Fiscal Year 2020	Budgeted Fiscal Year 2021	Adjustments	Adjusted Fiscal Year 2021	Allocation Amounts			
																Fiscal Year 2020		Fiscal Year 2021	
																Water	Wastewater	Water	Wastewater
CAFR Format:																			
180		Personal Services			\$7,331,213	\$7,818,466	\$8,826,439	\$6,013,455	\$7,545,013			\$8,173,000			\$8,079,000				
181		Operating Supplies			21,270	80,955	128,674	137,709	298,245			208,300			238,300				
182		Contractual Services			41,838,494	44,028,228	48,113,294	47,431,029	45,761,879			44,668,670			45,568,310				
183		Utilities			854,193	943,443	994,804	976,375	1,044,557			956,000			958,000				
184		Insurance			0	0	0	0	0			0			0				
185		Internal Charges			2,755,620	2,866,089	3,014,181	3,230,000	3,450,731			3,222,000			3,250,000				
186		Depreciation			4,776,284	4,711,020	5,011,428	5,615,163	5,753,884			0			0				
187		Administrative Fees			3,379,000	3,740,004	3,980,000	1,809,000	1,768,000			2,400,000			2,400,000				
188		Amortization			11,268	11,268	11,269	(281,765)	(662,119)			0			0				
189		Claims and Judgments			0	0	0	0	0			0			0				
190		Other Operating			713,674	1,387,696	1,766,712	2,083,609	1,315,278			3,247,227			3,071,840				
191		Contingency			0	0	0	0	0			3,212,000			3,036,000				
192		Total Current Expenses			\$61,681,015	\$65,587,169	\$71,846,801	\$67,014,575	\$66,275,467			\$66,087,197			\$66,601,450				
193		Less Administrative Fees, Depreciation, and Amortization			(8,166,552)	(8,462,292)	(9,002,697)	(7,142,398)	(6,859,765)			(2,400,000)			(2,400,000)				
194		Current Expenses for Debt Service Coverage Purposes			\$53,514,463	\$57,124,877	\$62,844,104	\$59,872,177	\$59,415,703			\$63,687,197			\$64,201,450				

Table 1-7

City of Miami Beach, Florida
Water and Sewer Rate Study
Water System

Projected Operating Expenses - Water System

Line No.	Expense Code	Description	Escalation Reference	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water System Expenses (425-0410)														
Personnel Services														
1	111	Salaries and Wages	Labor	\$ 2,864,000	\$ 2,844,000	\$ 2,929,320	\$ 3,017,200	\$ 3,107,716	\$ 3,200,947	\$ 3,296,975	\$ 3,395,885	\$ 3,497,761	\$ 3,602,694	\$ 3,710,775
2	132	Shift Differential	Labor	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
3	AddPers	Additional Personnel	Input	-	-	-	-	-	-	-	-	-	-	-
4		135	Overtime	Labor	181,000	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335
5	136	Holiday Pay - Overtime	Labor	12,000	12,000	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657
6	139	Work Above Classification	Labor	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
7	153	Allowances	Labor	142,000	145,000	149,350	153,831	158,445	163,199	168,095	173,138	178,332	183,682	189,192
8	159	Transfers - Pension Obligation	Labor	13,000	4,000	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219
9	160	401A Pension Contribution	Labor	13,000	13,000	13,390	13,792	14,205	14,632	15,071	15,523	15,988	16,468	16,962
10	161	Retirement Contributions - Pension	Labor	820,000	833,000	857,990	883,730	910,242	937,549	965,675	994,646	1,024,485	1,055,219	1,086,876
11	162	Health and Life Insurance	HealthIns	496,000	487,000	511,350	536,918	563,763	591,952	621,549	652,627	685,258	719,521	755,497
12	163	Workmen's Compensation	Labor	3,000	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305
13	164	FICA	Labor	5,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
14	165	Social Security and Medicare	Labor	47,000	47,000	48,410	49,862	51,358	52,899	54,486	56,120	57,804	59,538	61,324
15	167	OPEB Contributions	Labor	70,000	74,000	76,220	78,507	80,862	83,288	85,786	88,360	91,011	93,741	96,553
16	168	OPEB PayGo	Labor	299,000	291,000	299,730	308,722	317,984	327,523	337,349	347,469	357,893	368,630	379,689
17	Total Personnel Services			\$ 4,971,000	\$ 4,782,000	\$ 4,935,200	\$ 5,093,483	\$ 5,257,026	\$ 5,426,012	\$ 5,600,631	\$ 5,781,081	\$ 5,967,566	\$ 6,160,298	\$ 6,359,498
Operating Expenses														
18	311	Temporary Labor	Labor	\$ 3,000	\$ 9,000	\$ 9,270	\$ 9,548	\$ 9,835	\$ 10,130	\$ 10,433	\$ 10,746	\$ 11,069	\$ 11,401	\$ 11,743
19	312	Professional Services	Labor	1,210,000	460,000	473,800	488,014	502,654	517,734	533,266	549,264	565,742	582,714	600,196
20	313	Bank Fees	WRRevenue	190,000	111,000	120,804	130,144	134,699	139,413	140,576	141,721	142,901	144,119	144,119
21	314	Electricity	ElectricW	320,000	347,000	377,085	409,021	425,382	442,397	460,093	478,497	497,637	517,542	538,244
22	316	Telephone	Inflation	33,000	33,000	33,858	34,704	35,537	36,355	37,191	38,046	38,883	39,739	40,613
23	317	Water	Inflation	19,000	1,000	1,026	1,052	1,077	1,102	1,127	1,153	1,178	1,204	1,231
24	319	Sanitation Fees	Inflation	2,000	-	-	-	-	-	-	-	-	-	-
25	321	Postage and Shipping	Inflation	200	200	205	210	215	220	225	231	236	241	246
26	322	Administration Fees	Labor	1,195,000	1,195,000	1,230,850	1,267,776	1,305,809	1,344,983	1,385,333	1,426,892	1,469,699	1,513,790	1,559,204
27	323	Rent - Building and Equipment	Inflation	7,000	4,000	4,104	4,207	4,308	4,407	4,508	4,612	4,713	4,817	4,923
28	324	Printing - External	Inflation	31,000	27,000	27,702	28,395	29,076	29,745	30,429	31,129	31,814	32,513	33,229
29	325	Contract Maintenance	Repair	492,000	492,000	511,680	532,147	553,433	575,570	598,593	622,537	647,438	673,336	700,269
30	327	Advertising	Inflation	500	1,000	1,026	1,052	1,077	1,102	1,127	1,153	1,178	1,204	1,231
31	331	Supplies - Information Technology	Inflation	4,000	4,000	4,104	4,207	4,308	4,407	4,508	4,612	4,713	4,817	4,923
32	336	Water for Resale	Calculated	12,314,156	13,354,434	13,954,098	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763
33	341	Supplies - Office	Inflation	7,000	7,000	7,182	7,362	7,538	7,712	7,889	8,070	8,248	8,429	8,615
34	343	Other Operating Expenditures	Inflation	832,000	800,000	820,800	841,320	861,512	881,326	901,597	922,334	942,625	963,363	984,557
35	349	Other Contractual Services (DERM)	Calculated	1,880,274	1,971,365	2,145,478	2,311,359	2,392,257	2,475,987	2,496,189	2,516,997	2,537,511	2,558,643	2,580,435
36	351	Engine Fuel and Lubricants	Fuel	4,000	20,000	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027
37	356	Contingencies	Constant	1,203,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000
38	357	Employee Fringe Benefits	Labor	48,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572
39	358	Subscriptions	Inflation	300	300	308	315	323	330	338	346	353	361	369
40	360	E-Recording Fees	Inflation	1,000	2,000	2,052	2,103	2,154	2,203	2,254	2,306	2,357	2,408	2,461
41	361	Dues and Memberships	Inflation	2,000	2,000	2,052	2,103	2,154	2,203	2,254	2,306	2,357	2,408	2,461
42	367	Training and Awards	Inflation	60,000	70,000	71,820	73,616	75,382	77,116	78,890	80,704	82,480	84,294	86,149
43	402	Uniform Expense	Inflation	38,000	38,000	38,988	39,963	40,922	41,863	42,826	43,811	44,775	45,760	46,766
44	BadDebt	Bad Debt Expense	WRRevenue	156,690	164,280	178,790	192,613	199,355	206,332	208,052	209,748	211,495	213,296	213,296
45	Total Operating Expenses			\$ 20,053,120	\$ 20,343,579	\$ 21,268,531	\$ 22,187,957	\$ 22,397,313	\$ 22,612,594	\$ 22,759,376	\$ 22,910,691	\$ 23,064,755	\$ 23,223,715	\$ 23,384,641

Table 1-7

City of Miami Beach, Florida
Water and Sewer Rate Study
Water System

Projected Operating Expenses - Water System

Line No.	Expense Code	Description	Escalation Reference	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
		Internal Charges												
46	501	Internal Services - Central Services	Labor	\$ 5,000	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628	\$ 5,796	\$ 5,970	\$ 6,149	\$ 6,334	\$ 6,524
47	502	Internal Services - Property Management	Labor	77,000	77,000	79,310	81,689	84,140	86,664	89,264	91,942	94,700	97,541	100,468
48	503	Internal Services - Fleet Management	Labor	231,000	231,000	237,930	245,068	252,420	259,993	267,792	275,826	284,101	292,624	301,403
49	505	Internal Services - Self-Insurance	Labor	982,000	982,000	1,011,460	1,041,804	1,073,058	1,105,250	1,138,407	1,172,559	1,207,736	1,243,968	1,281,287
50	506	Internal Services - Applications / Computer Hardware	Labor	283,000	283,000	291,490	300,235	309,242	318,519	328,075	337,917	348,054	358,496	369,251
51	511	OIG Funding	Labor	-	16,000	16,480	16,974	17,484	18,008	18,548	19,105	19,678	20,268	20,876
52		Total Internal Charges		\$ 1,578,000	\$ 1,594,000	\$ 1,641,820	\$ 1,691,075	\$ 1,741,807	\$ 1,794,061	\$ 1,847,883	\$ 1,903,319	\$ 1,960,419	\$ 2,019,232	\$ 2,079,808
53		TOTAL WATER SYSTEM OPERATING EXPENSES		\$ 26,602,120	\$ 26,719,579	\$ 27,845,551	\$ 28,972,514	\$ 29,396,145	\$ 29,832,667	\$ 30,207,890	\$ 30,595,091	\$ 30,992,741	\$ 31,403,244	\$ 31,823,947

Table 1-8

City of Miami Beach, Florida
Water and Sewer Rate Study
Sewer System

Projected Operating Expenses - Sewer System

Line No.	Expense Code	Description	Escalation Reference	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Sewer System Expenses (425-0420)														
Personnel Services														
1	111	Salaries and Wages	Labor	\$ 1,883,000	\$ 1,901,000	\$ 1,958,030	\$ 2,016,771	\$ 2,077,274	\$ 2,139,592	\$ 2,203,780	\$ 2,269,893	\$ 2,337,990	\$ 2,408,130	\$ 2,480,374
2	132	Shift Differential	Labor	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
3	AddPers	Additional Personnel	Input	-	-	-	-	-	-	-	-	-	-	-
4		133	Steeplejack	Labor	10,000	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668
5	135	Overtime	Labor	185,000	185,000	190,550	196,267	202,154	208,219	214,466	220,900	227,527	234,352	241,383
6	136	Holiday Pay - Overtime	Labor	15,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572
7	139	Work Above Classification	Labor	5,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
8	153	Allowances	Labor	109,000	115,000	118,450	122,004	125,664	129,434	133,317	137,316	141,435	145,679	150,049
9	159	Transfers - Pension Obligation	Labor	9,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
10	161	Retirement Contributions - Pension	Labor	524,000	557,000	573,710	590,921	608,649	626,908	645,716	665,087	685,040	705,591	726,759
11	162	Health and Life Insurance	HealthIns	258,000	270,000	283,500	297,675	312,559	328,187	344,596	361,826	379,917	398,913	418,859
12	163	Workmen's Compensation	Labor	2,000	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305
13	164	FICA	Labor	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
14	165	Social Security and Medicare	Labor	32,000	33,000	33,990	35,010	36,060	37,142	38,256	39,404	40,586	41,803	43,058
166		457 Pension Contribution	Labor	-	-	-	-	-	-	-	-	-	-	-
15	167	OPEB Contributions	Labor	36,000	41,000	42,230	43,497	44,802	46,146	47,530	48,956	50,425	51,938	53,496
16	168	OPEB PayGo	Labor	150,000	162,000	166,860	171,866	177,022	182,332	187,802	193,436	199,240	205,217	211,373
17		Total Personnel Services		\$ 3,224,000	\$ 3,304,000	\$ 3,408,520	\$ 3,516,446	\$ 3,627,892	\$ 3,742,980	\$ 3,861,834	\$ 3,984,580	\$ 4,111,354	\$ 4,242,293	\$ 4,377,540
Operating Expenses														
18	311	Temporary Labor	Labor	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
19	312	Professional Services	Labor	1,149,000	399,000	410,970	423,299	435,998	449,078	462,550	476,427	490,720	505,441	520,605
20	313	Bank Fees	SRevenue	260,000	203,000	214,828	226,133	229,525	232,968	234,910	236,825	238,797	240,831	240,831
21	314	Electricity	ElectricS	500,000	484,000	503,360	523,494	544,434	566,212	588,860	612,414	636,911	662,387	688,883
22	316	Telephone	Inflation	27,000	28,000	28,728	29,446	30,153	30,846	31,556	32,282	32,992	33,718	34,459
23	318	Sewer Charges	Inflation	48,000	56,000	57,456	58,892	60,306	61,693	63,112	64,563	65,984	67,435	68,919
24	319	Sanitation Fees	Inflation	7,000	7,000	7,182	7,362	7,538	7,712	7,889	8,070	8,248	8,429	8,615
25	321	Postage and Shipping	Inflation	500	500	513	526	538	551	563	576	589	602	615
26	322	Administration Fees	Labor	1,205,000	1,205,000	1,241,150	1,278,385	1,316,736	1,356,238	1,396,925	1,438,833	1,481,998	1,526,458	1,572,252
27	323	Rent - Building and Equipment	Inflation	62,000	62,000	63,612	65,202	66,767	68,303	69,874	71,481	73,053	74,661	76,303
28	325	Contract Maintenance	Repair	947,000	963,000	1,001,520	1,041,581	1,083,244	1,126,574	1,171,637	1,218,502	1,267,242	1,317,932	1,370,649
29	327	Advertising	Inflation	500	500	513	526	538	551	563	576	589	602	615
30	329	Storm Water	Inflation	-	2,000	2,052	2,103	2,154	2,203	2,254	2,306	2,357	2,408	2,461
31	337	Sewer Treatment	Calculated	23,535,540	24,786,311	25,677,285	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259
32	341	Supplies - Office	Inflation	7,000	7,000	7,182	7,362	7,538	7,712	7,889	8,070	8,248	8,429	8,615
33	342	Contracted Services - Repair and Maintenance	Repair	137,000	142,000	147,680	153,587	159,731	166,120	172,765	179,675	186,862	194,337	202,110
34	343	Other Operating Expenditures	Inflation	1,509,000	1,512,000	1,551,312	1,590,095	1,628,257	1,665,707	1,704,018	1,743,211	1,781,561	1,820,756	1,860,812
35	349	Other Contractual Services (DERM)	Calculated	2,893,000	2,893,000	3,054,908	3,215,673	3,263,913	3,312,873	3,339,897	3,367,737	3,395,181	3,423,465	3,452,619
36	350	Capital Repairs and Maintenance	Repair	-	-	-	-	-	-	-	-	-	-	-
37	351	Engine Fuel and Lubricants	Fuel	7,000	17,000	17,850	18,743	19,680	20,664	21,697	22,782	23,921	25,117	26,373
38	356	Contingencies	Constant	2,009,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000
39	357	Employee Fringe Benefits	Labor	10,000	-	-	-	-	-	-	-	-	-	-
40	361	Dues and Memberships	Inflation	1,000	1,000	1,026	1,052	1,077	1,102	1,127	1,153	1,178	1,204	1,231
41	367	Training and Awards	Inflation	63,000	73,000	74,898	76,770	78,613	80,421	82,271	84,163	86,015	87,907	89,841
42	402	Uniform Expense	Inflation	26,000	26,000	26,676	27,343	27,999	28,643	29,302	29,976	30,635	31,309	31,998
43	BadDebt	Bad Debt Expense	SRevenue	232,537	240,560	254,576	267,973	271,993	276,073	278,374	280,643	282,980	285,390	285,390
44		Total Operating Expenses		\$ 34,639,077	\$ 34,928,871	\$ 36,166,276	\$ 37,404,805	\$ 37,625,992	\$ 37,851,501	\$ 38,057,292	\$ 38,269,524	\$ 38,485,321	\$ 38,708,079	\$ 38,933,456

Table 1-8

City of Miami Beach, Florida
Water and Sewer Rate Study
Sewer System

Projected Operating Expenses - Sewer System

Line No.	Expense Code	Description	Escalation Reference	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
45	501	Internal Charges												
		Internal Services - Central Services	Labor	\$ 2,000	\$ 2,000	\$ 2,060	\$ 2,122	\$ 2,185	\$ 2,251	\$ 2,319	\$ 2,388	\$ 2,460	\$ 2,534	\$ 2,610
46	502	Internal Services - Property Management	Labor	99,000	99,000	101,970	105,029	108,180	111,425	114,768	118,211	121,758	125,410	129,173
47	503	Internal Services - Fleet Management	Labor	368,000	368,000	379,040	390,411	402,124	414,187	426,613	439,411	452,594	466,171	480,157
48	504	Internal Services - Communication	Labor	-	-	-	-	-	-	-	-	-	-	-
49	505	Internal Services - Self-Insurance	Labor	986,000	986,000	1,015,580	1,046,047	1,077,429	1,109,752	1,143,044	1,177,336	1,212,656	1,249,035	1,286,506
50	506	Internal Services - Applications / Computer Hardware	Labor	189,000	189,000	194,670	200,510	206,525	212,721	219,103	225,676	232,446	239,420	246,602
51	511	OIG Funding	Labor	-	12,000	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657
52		Total Internal Charges		\$ 1,644,000	\$ 1,656,000	\$ 1,705,680	\$ 1,756,850	\$ 1,809,556	\$ 1,863,843	\$ 1,919,758	\$ 1,977,351	\$ 2,036,671	\$ 2,097,771	\$ 2,160,704
53		Total Sewer System Expenses (425-0420) Expenses		\$ 39,507,077	\$ 39,888,871	\$ 41,280,476	\$ 42,678,101	\$ 43,063,440	\$ 43,458,324	\$ 43,838,884	\$ 44,231,455	\$ 44,633,347	\$ 45,048,143	\$ 45,471,701
54		TOTAL SEWER SYSTEM OPERATING EXPENSES		\$ 39,507,077	\$ 39,888,871	\$ 41,280,476	\$ 42,678,101	\$ 43,063,440	\$ 43,458,324	\$ 43,838,884	\$ 44,231,455	\$ 44,633,347	\$ 45,048,143	\$ 45,471,701

Table 1-9

City of Miami Beach, Florida
Water and Sewer Rate Study
Combined System

Projected Combined Water and Sewer Operating Expenses

Line No.	Expense Code	Description	CAFR Classification	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water System Expenses (425-0410)														
Personnel Services														
1	111	Salaries and Wages	Personal Services	\$ 2,864,000	\$ 2,844,000	\$ 2,929,320	\$ 3,017,200	\$ 3,107,716	\$ 3,200,947	\$ 3,296,975	\$ 3,395,885	\$ 3,497,761	\$ 3,602,694	\$ 3,710,775
2	132	Shift Differential	Personal Services	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
3	AddPers	Additional Personnel	Personal Services	-	-	-	-	-	-	-	-	-	-	-
4		135	Overtime	Personal Services	181,000	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335
5	136	Holiday Pay - Overtime	Personal Services	12,000	12,000	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657
6	139	Work Above Classification	Personal Services	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
7	153	Allowances	Personal Services	142,000	145,000	149,350	153,831	158,445	163,199	168,095	173,138	178,332	183,682	189,192
8	159	Transfers - Pension Obligation	Non-Operating	13,000	4,000	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219
9	160	401A Pension Contribution	Personal Services	13,000	13,000	13,390	13,792	14,205	14,632	15,071	15,523	15,988	16,468	16,962
10	161	Retirement Contributions - Pension	Personal Services	820,000	833,000	857,990	883,730	910,242	937,549	965,675	994,646	1,024,485	1,055,219	1,086,876
11	162	Health and Life Insurance	Personal Services	496,000	487,000	511,350	536,918	563,763	591,952	621,549	652,627	685,258	719,521	755,497
12	163	Workmen's Compensation	Personal Services	3,000	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305
13	164	FICA	Personal Services	5,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
14	165	Social Security and Medicare	Personal Services	47,000	47,000	48,410	49,862	51,358	52,899	54,486	56,120	57,804	59,538	61,324
15	167	OPEB Contributions	Personal Services	70,000	74,000	76,220	78,507	80,862	83,288	85,786	88,360	91,011	93,741	96,553
16	168	OPEB PayGo	Personal Services	299,000	291,000	299,730	308,722	317,984	327,523	337,349	347,469	357,893	368,630	379,689
17		Total Personnel Services		\$ 4,971,000	\$ 4,782,000	\$ 4,935,200	\$ 5,093,483	\$ 5,257,026	\$ 5,426,012	\$ 5,600,631	\$ 5,781,081	\$ 5,967,566	\$ 6,160,298	\$ 6,359,498
Operating Expenses														
18	311	Temporary Labor	Contractual Services	\$ 3,000	\$ 9,000	\$ 9,270	\$ 9,548	\$ 9,835	\$ 10,130	\$ 10,433	\$ 10,746	\$ 11,069	\$ 11,401	\$ 11,743
19	312	Professional Services	Contractual Services	1,210,000	460,000	473,800	488,014	502,654	517,734	533,266	549,264	565,742	582,714	600,196
20	313	Bank Fees	Other Operating	190,000	111,000	120,804	130,144	134,699	139,413	140,576	141,721	142,901	144,119	144,119
21	314	Electricity	Utilities	320,000	347,000	377,085	409,021	425,382	442,397	460,093	478,497	497,637	517,542	538,244
22	316	Telephone	Utilities	33,000	33,000	33,858	34,704	35,537	36,355	37,191	38,046	38,883	39,739	40,613
23	317	Water	Utilities	19,000	1,000	1,026	1,052	1,077	1,102	1,127	1,153	1,178	1,204	1,231
24	319	Sanitation Fees	Utilities	2,000	-	-	-	-	-	-	-	-	-	-
25	321	Postage and Shipping	Contractual Services	200	200	205	210	215	220	225	231	236	241	246
26	322	Administration Fees	Administrative Fees	1,195,000	1,195,000	1,230,850	1,267,776	1,305,809	1,344,983	1,385,333	1,426,892	1,469,699	1,513,790	1,559,204
27	323	Rent - Building and Equipment	Contractual Services	7,000	4,000	4,104	4,207	4,308	4,407	4,508	4,612	4,713	4,817	4,923
28	324	Printing - External	Contractual Services	31,000	27,000	27,702	28,395	29,076	29,745	30,429	31,129	31,814	32,513	33,229
29	325	Contract Maintenance	Contractual Services	492,000	492,000	511,680	532,147	553,433	575,570	598,593	622,537	647,438	673,336	700,269
30	327	Advertising	Contractual Services	500	1,000	1,026	1,052	1,077	1,102	1,127	1,153	1,178	1,204	1,231
31	331	Supplies - Information Technology	Other Operating	4,000	4,000	4,104	4,207	4,308	4,407	4,508	4,612	4,713	4,817	4,923
32	336	Water for Resale	Contractual Services	12,314,156	13,354,434	13,954,098	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763	14,553,763
33	341	Supplies - Office	Operating Supplies	7,000	7,000	7,182	7,362	7,538	7,712	7,889	8,070	8,248	8,429	8,615
34	343	Other Operating Expenditures	Other Operating	832,000	800,000	820,800	841,320	861,512	881,326	901,597	922,334	942,625	963,363	984,557
35	349	Other Contractual Services (DERM)	Contractual Services	1,880,274	1,971,365	2,145,478	2,311,359	2,392,257	2,475,987	2,496,189	2,516,997	2,537,511	2,558,643	2,580,435
36	351	Engine Fuel and Lubricants	Other Operating	4,000	20,000	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027
37	356	Contingencies	Contingency	1,203,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000	1,215,000
38	357	Employee Fringe Benefits	Other Operating	48,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572
39	358	Subscriptions	Operating Supplies	300	300	308	315	323	330	338	346	353	361	369
40	360	E-Recording Fees	Other Operating	1,000	2,000	2,052	2,103	2,154	2,203	2,254	2,306	2,357	2,408	2,461
41	361	Dues and Memberships	Contractual Services	2,000	2,000	2,052	2,103	2,154	2,203	2,254	2,306	2,357	2,408	2,461
42	367	Training and Awards	Operating Supplies	60,000	70,000	71,820	73,616	75,382	77,116	78,890	80,704	82,480	84,294	86,149
43	402	Uniform Expense	Operating Supplies	38,000	38,000	38,988	39,963	40,922	41,863	42,826	43,811	44,775	45,760	46,766
44	BadDebt	Bad Debt Expense	Other Operating	156,690	164,280	178,790	192,613	199,355	206,332	208,052	209,748	211,495	213,296	213,296
45		Total Operating Expenses		\$ 20,053,120	\$ 20,343,579	\$ 21,268,531	\$ 22,187,957	\$ 22,397,313	\$ 22,612,594	\$ 22,759,376	\$ 22,910,691	\$ 23,064,755	\$ 23,223,715	\$ 23,384,641
Internal Charges														
46	501	Internal Services - Central Services	Internal Charges	\$ 5,000	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628	\$ 5,796	\$ 5,970	\$ 6,149	\$ 6,334	\$ 6,524
47	502	Internal Services - Property Management	Internal Charges	77,000	77,000	79,310	81,689	84,140	86,664	89,264	91,942	94,700	97,541	100,468

Table 1-9

City of Miami Beach, Florida
Water and Sewer Rate Study
Combined System

Projected Combined Water and Sewer Operating Expenses

Line No.	Expense Code	Description	CAFR Classification	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
48	503	Internal Services - Fleet Management	Internal Charges	231,000	231,000	237,930	245,068	252,420	259,993	267,792	275,826	284,101	292,624	301,403
49	505	Internal Services - Self-Insurance	Internal Charges	982,000	982,000	1,011,460	1,041,804	1,073,058	1,105,250	1,138,407	1,172,559	1,207,736	1,243,968	1,281,287
50	506	Internal Services - Applications / Computer Hardw	Internal Charges	283,000	283,000	291,490	300,235	309,242	318,519	328,075	337,917	348,054	358,496	369,251
51	511	OIG Funding	Internal Charges	-	16,000	16,480	16,974	17,484	18,008	18,548	19,105	19,678	20,268	20,876
52		Total Internal Charges		\$ 1,578,000	\$ 1,594,000	\$ 1,641,820	\$ 1,691,075	\$ 1,741,807	\$ 1,794,061	\$ 1,847,883	\$ 1,903,319	\$ 1,960,419	\$ 2,019,232	\$ 2,079,808
53		Total Water System Expenses (425-0410) Expenses		\$ 26,602,120	\$ 26,719,579	\$ 27,845,551	\$ 28,972,514	\$ 29,396,145	\$ 29,832,667	\$ 30,207,890	\$ 30,595,091	\$ 30,992,741	\$ 31,403,244	\$ 31,823,947
		Sewer System Expenses (425-0420)												
		Personnel Services												
54	111	Salaries and Wages	Personal Services	\$ 1,883,000	\$ 1,901,000	\$ 1,958,030	\$ 2,016,771	\$ 2,077,274	\$ 2,139,592	\$ 2,203,780	\$ 2,269,893	\$ 2,337,990	\$ 2,408,130	\$ 2,480,374
55	132	Shift Differential	Personal Services	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
56	AddPers	Additional Personnel	Personal Services	-	-	-	-	-	-	-	-	-	-	-
57	133	Steeplejack	Personal Services	10,000	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048
58	135	Overtime	Personal Services	185,000	185,000	190,550	196,267	202,154	208,219	214,466	220,900	227,527	234,352	241,383
59	136	Holiday Pay - Overtime	Personal Services	15,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572
60	139	Work Above Classification	Personal Services	5,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
61	153	Allowances	Personal Services	109,000	115,000	118,450	122,004	125,664	129,434	133,317	137,316	141,435	145,679	150,049
62	159	Transfers - Pension Obligation	Non-Operating	9,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
63	161	Retirement Contributions - Pension	Personal Services	524,000	557,000	573,710	590,921	608,649	626,908	645,716	665,087	685,040	705,591	726,759
64	162	Health and Life Insurance	Personal Services	258,000	270,000	283,500	297,675	312,559	328,187	344,596	361,826	379,917	398,913	418,859
65	163	Workmen's Compensation	Personal Services	2,000	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305
66	164	FICA	Personal Services	3,000	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
67	165	Social Security and Medicare	Personal Services	32,000	33,000	33,990	35,010	36,060	37,142	38,256	39,404	40,586	41,803	43,058
68	167	OPEB Contributions	Personal Services	36,000	41,000	42,230	43,497	44,802	46,146	47,530	48,956	50,425	51,938	53,496
69	168	OPEB PayGo	Personal Services	150,000	162,000	166,860	171,866	177,022	182,332	187,802	193,436	199,240	205,217	211,373
70		Total Personnel Services		\$ 3,224,000	\$ 3,304,000	\$ 3,408,520	\$ 3,516,446	\$ 3,627,892	\$ 3,742,980	\$ 3,861,834	\$ 3,984,580	\$ 4,111,354	\$ 4,242,293	\$ 4,377,540
		Operating Expenses												
71	311	Temporary Labor	Contractual Services	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
72	312	Professional Services	Contractual Services	1,149,000	399,000	410,970	423,299	435,998	449,078	462,550	476,427	490,720	505,441	520,605
73	313	Bank Fees	Other Operating	260,000	203,000	214,828	226,133	229,525	232,968	234,910	236,825	238,797	240,831	240,831
74	314	Electricity	Utilities	500,000	484,000	503,360	523,494	544,434	566,212	588,860	612,414	636,911	662,387	688,883
75	316	Telephone	Utilities	27,000	28,000	28,728	29,446	30,153	30,846	31,556	32,282	32,992	33,718	34,459
76	318	Sewer Charges	Utilities	48,000	56,000	57,456	58,892	60,306	61,693	63,112	64,563	65,984	67,435	68,919
77	319	Sanitation Fees	Utilities	7,000	7,000	7,182	7,362	7,538	7,712	7,889	8,070	8,248	8,429	8,615
78	321	Postage and Shipping	Contractual Services	500	500	513	526	538	551	563	576	589	602	615
79	322	Administration Fees	Administrative Fees	1,205,000	1,205,000	1,241,150	1,278,385	1,316,736	1,356,238	1,396,925	1,438,833	1,481,998	1,526,458	1,572,252
80	323	Rent - Building and Equipment	Contractual Services	62,000	62,000	63,612	65,202	66,767	68,303	69,874	71,481	73,053	74,661	76,303
81	325	Contract Maintenance	Contractual Services	947,000	963,000	1,001,520	1,041,581	1,083,244	1,126,574	1,171,637	1,218,502	1,267,242	1,317,932	1,370,649
82	327	Advertising	Contractual Services	500	500	513	526	538	551	563	576	589	602	615
83	329	Storm Water	Utilities	-	2,000	2,052	2,103	2,154	2,203	2,254	2,306	2,357	2,408	2,461
84	337	Sewer Treatment	Contractual Services	23,535,540	24,786,311	25,677,285	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259	26,568,259
85	341	Supplies - Office	Operating Supplies	7,000	7,000	7,182	7,362	7,538	7,712	7,889	8,070	8,248	8,429	8,615
86	342	Contracted Services - Repair and Maintenance	Contractual Services	137,000	142,000	147,680	153,587	159,731	166,120	172,765	179,675	186,862	194,337	202,110
87	343	Other Operating Expenditures	Other Operating	1,509,000	1,512,000	1,551,312	1,590,095	1,628,257	1,665,707	1,704,018	1,743,211	1,781,561	1,820,756	1,860,812
88	349	Other Contractual Services (DERM)	Contractual Services	2,893,000	2,893,000	3,054,908	3,215,673	3,263,913	3,312,873	3,339,897	3,367,737	3,395,181	3,423,465	3,452,619
89	351	Engine Fuel and Lubricants	Operating Supplies	7,000	17,000	17,850	18,743	19,680	20,664	21,697	22,782	23,921	25,117	26,373
90	356	Contingencies	Contingency	2,009,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000	1,821,000
91	357	Employee Fringe Benefits	Other Operating	10,000	-	-	-	-	-	-	-	-	-	-
92	361	Dues and Memberships	Contractual Services	1,000	1,000	1,026	1,052	1,077	1,102	1,127	1,153	1,178	1,204	1,231
93	367	Training and Awards	Operating Supplies	63,000	73,000	74,898	76,770	78,613	80,421	82,271	84,163	86,015	87,907	89,841
94	402	Uniform Expense	Operating Supplies	26,000	26,000	26,676	27,343	27,999	28,643	29,302	29,976	30,635	31,309	31,998

Table 1-9

**City of Miami Beach, Florida
Water and Sewer Rate Study
Combined System**

Projected Combined Water and Sewer Operating Expenses

Line No.	Expense Code	Description	CAFR Classification	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
95	BadDebt	Bad Debt Expense	Other Operating	232,537	240,560	254,576	267,973	271,993	276,073	278,374	280,643	282,980	285,390	285,390
96		Total Operating Expenses		\$ 34,639,077	\$ 34,928,871	\$ 36,166,276	\$ 37,404,805	\$ 37,625,992	\$ 37,851,501	\$ 38,057,292	\$ 38,269,524	\$ 38,485,321	\$ 38,708,079	\$ 38,933,456
		Internal Charges												
97	501	Internal Services - Central Services	Internal Charges	\$ 2,000	\$ 2,000	\$ 2,060	\$ 2,122	\$ 2,185	\$ 2,251	\$ 2,319	\$ 2,388	\$ 2,460	\$ 2,534	\$ 2,610
98	502	Internal Services - Property Management	Internal Charges	99,000	99,000	101,970	105,029	108,180	111,425	114,768	118,211	121,758	125,410	129,173
99	503	Internal Services - Fleet Management	Internal Charges	368,000	368,000	379,040	390,411	402,124	414,187	426,613	439,411	452,594	466,171	480,157
100	505	Internal Services - Self-Insurance	Internal Charges	986,000	986,000	1,015,580	1,046,047	1,077,429	1,109,752	1,143,044	1,177,336	1,212,656	1,249,035	1,286,506
101	506	Internal Services - Applications / Computer Hardw	Internal Charges	189,000	189,000	194,670	200,510	206,525	212,721	219,103	225,676	232,446	239,420	246,602
102	511	OIG Funding	Internal Charges	-	12,000	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657
103		Total Internal Charges		\$ 1,644,000	\$ 1,656,000	\$ 1,705,680	\$ 1,756,850	\$ 1,809,556	\$ 1,863,843	\$ 1,919,758	\$ 1,977,351	\$ 2,036,671	\$ 2,097,771	\$ 2,160,704
		Total Sewer System Expenses (425-0420) Expenses		\$ 39,507,077	\$ 39,888,871	\$ 41,280,476	\$ 42,678,101	\$ 43,063,440	\$ 43,458,324	\$ 43,838,884	\$ 44,231,455	\$ 44,633,347	\$ 45,048,143	\$ 45,471,701
104		TOTAL COMBINED SYSTEM OPERATING EXPENSES		\$ 66,109,197	\$ 66,608,450	\$ 69,126,028	\$ 71,650,615	\$ 72,459,585	\$ 73,290,991	\$ 74,046,774	\$ 74,826,547	\$ 75,626,087	\$ 76,451,388	\$ 77,295,648
		CAFR Format:												
105		Personal Services		\$ 8,173,000	\$ 8,079,000	\$ 8,336,510	\$ 8,602,502	\$ 8,877,269	\$ 9,161,114	\$ 9,454,350	\$ 9,757,303	\$ 10,070,311	\$ 10,393,724	\$ 10,727,905
106		Operating Supplies		208,300	238,300	244,904	251,473	257,995	264,461	271,101	277,922	284,674	291,607	298,726
107		Contractual Services		44,668,670	45,568,310	47,487,442	49,400,503	49,628,838	49,864,271	50,018,024	50,177,125	50,339,495	50,507,544	50,681,503
108		Utilities		956,000	958,000	1,010,747	1,066,075	1,106,581	1,148,520	1,192,082	1,237,332	1,284,190	1,332,864	1,383,425
109		Internal Charges		3,222,000	3,250,000	3,347,500	3,447,925	3,551,363	3,657,904	3,767,641	3,880,670	3,997,090	4,117,003	4,240,513
110		Administrative Fees		2,400,000	2,400,000	2,472,000	2,546,160	2,622,545	2,701,221	2,782,258	2,865,726	2,951,697	3,040,248	3,131,456
111		Other Operating		3,247,227	3,071,840	3,183,715	3,292,551	3,371,345	3,449,623	3,517,204	3,586,111	3,654,020	3,723,530	3,786,987
112		Contingency		3,212,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000
113		Total Current Expenses		\$ 66,087,197	\$ 66,601,450	\$ 69,118,818	\$ 71,643,189	\$ 72,451,936	\$ 73,283,112	\$ 74,038,659	\$ 74,818,188	\$ 75,617,478	\$ 76,442,520	\$ 77,286,514
114		Less Administrative Fees, Depreciation, and Amortization		(2,400,000)	(2,400,000)	(2,472,000)	(2,546,160)	(2,622,545)	(2,701,221)	(2,782,258)	(2,865,726)	(2,951,697)	(3,040,248)	(3,131,456)
115		Current Expenses for Debt Service Coverage Purposes		\$63,687,197	\$64,201,450	\$66,646,818	\$69,097,029	\$69,829,392	\$70,581,891	\$71,256,401	\$71,952,463	\$72,665,781	\$73,402,272	\$74,155,059

Table 1-10

City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System

Escalation References

Line No.	Description	Reference	Fiscal Year Ending September 30,									
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Constant Factor	Constant	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	General Inflation (CPI Price Index) [1]	Inflation	1.0250	1.0260	1.0250	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
3	Labor	Labor	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
4	Health Insurance	HealthIns	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500
5	Customer Growth + Inflation - Water	Cust-Water	1.0250	1.0260	1.0250	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
6	Customer Growth + Inflation - Sewer	Cust-Sewer	1.0250	1.0260	1.0250	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
7	Water Rate Revenue	WRevenue	1.0484	1.0883	1.0773	1.0350	1.0350	1.0083	1.0082	1.0083	1.0085	1.0000
8	Wastewater Rate Revenue	SRevenue	1.0345	1.0583	1.0526	1.0150	1.0150	1.0083	1.0081	1.0083	1.0085	1.0000
9	Repair and Maintenance	Repair	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
10	Water Billed + Inflation	Bill-W	1.0470	1.0721	1.0690	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
11	Wastewater Billed + Inflation	Bill-S	1.0491	1.0679	1.0652	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
12	Water Produced + Inflation	Prod-W	1.0470	1.0721	1.0690	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
13	Wastewater Treated + Inflation	Treat-S	1.0250	1.0260	1.0250	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
14	Electricity - Commodity	ElectricCommod	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
15	Electricity - Water	ElectricW	1.0623	1.0867	1.0847	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
16	Electricity - Wastewater	ElectricS	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
17	Chemicals - Commodity	ChemicalCommod	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
18	Chemicals - Water	ChemicalW	1.0623	1.0867	1.0847	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
19	Chemicals - Wastewater	ChemicalS	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
20	Fuel	Fuel	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500
21	Inflation/Employee Growth	Inf/Emp	1.0250	1.0260	1.0250	1.0240	1.0230	1.0230	1.0230	1.0220	1.0220	1.0220
22	Property/General Insurance Liability	Insurance	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
23	Marginal Escalator	Marginal	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
24	Elimination Factor	Eliminate	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	Payment to General Fund	GenFund	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
26	Late Fees	LateFees	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
27	Miami-Dade Wholesale Water Rate Increas	MDBulkW	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
28	Miami-Dade Wholesale Sewer Rate Increas	MDBulkS	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
29	Additional Item 1	Add1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30	Additional Item 2	Add2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Footnotes:

[1] Estimates based on projections contained in "The Budget and Economic Outlook: 2020 to 2030" published by the Congressional Budget Office in January 2020.

Table 1-11

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Projection of Wholesale Water and Sewer Charges from Miami-Dade County

Line No.	Description	Escalation Reference	Historical Fiscal Ended September 30,					Fiscal Year Ending September 30,									
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Miami-Dade County Wholesale Water Charges																	
1	Water Sales (000's Gallons)						6,860,900	6,163,293	6,295,515	6,578,207	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900
2	Percent Purchased from Miami-Dade County						100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
3	Amount Purchased from Miami-Dade (000's Gallons)						6,860,900	6,163,293	6,295,515	6,578,207	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900	6,860,900
4	Allowance for Non-Revenue Water						15.39%	15.39%	15.39%	15.39%	15.39%	15.39%	15.39%	15.39%	15.39%	15.39%	15.39%
5	Projected Water Purchases (000's Gallons) [Line 1 / (1 - Line 4)]		8,345,720	8,429,053	8,566,212	8,413,202	8,109,301	7,284,759	7,441,040	7,775,170	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301
6	Projected Water Treatment (MGD)						22.22	19.96	20.39	21.30	22.22	22.22	22.22	22.22	22.22	22.22	22.22
7	Volumetric Charges																
8	Total Flow (000's Gallons)						8,109,301	7,284,759	7,441,040	7,775,170	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301	8,109,301
9	Rate Per 1,000 Gallons	MDBulkW						\$ 1.6904	\$ 1.7947	\$ 1.7947	\$ 1.7947	\$ 1.7947	\$ 1.7947	\$ 1.7947	\$ 1.7947	\$ 1.7947	\$ 1.7947
10	Total Miami-Dade County Wholesale Water Charges							\$ 12,314,156	\$ 13,354,434	\$ 13,954,098	\$ 14,553,763	\$ 14,553,763	\$ 14,553,763	\$ 14,553,763	\$ 14,553,763	\$ 14,553,763	\$ 14,553,763
Miami-Dade County Wholesale Sewer Charges																	
11	Billed Wastewater Flow to Miami-Beach Customers (000's Gallons)						4,777,381	4,314,742	4,416,381	4,596,881	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381	4,777,381
12	City of Miami Beach Gallons Treated By Miami-Dade County						7,152,301	6,459,676	6,611,841	6,882,071	7,152,301	7,152,301	7,152,301	7,152,301	7,152,301	7,152,301	7,152,301
13	Allowance for Inflow and Infiltration / Unbilled Sewer						33.20%	33.20%	33.20%	33.20%	33.20%	33.20%	33.20%	33.20%	33.20%	33.20%	33.20%
14	Flow from Satellite Cities						905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768	905,768
15	Projected Wastewater Flow Treated (000's Gallons) [Line 12 + Line 14]		8,398,801	8,796,945	8,054,079	8,082,041	8,058,069	7,365,444	7,517,610	7,787,839	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069
16	Projected Wastewater Treatment (MGD)						22.077	20.179	20.596	21.337	22.077	22.077	22.077	22.077	22.077	22.077	22.077
17	Volumetric Charges																
17	Total Flow (000's Gallons)							7,365,444	7,517,610	7,787,839	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069	8,058,069
18	Average Rate Per 1,000 Gallons	MDBulkS						\$ 3.1954	\$ 3.2971	\$ 3.2971	\$ 3.2971	\$ 3.2971	\$ 3.2971	\$ 3.2971	\$ 3.2971	\$ 3.2971	\$ 3.2971
19	Total Miami-Dade County Wholesale Sewer Charges							\$ 23,535,540	\$ 24,786,311	\$ 25,677,285	\$ 26,568,259	\$ 26,568,259	\$ 26,568,259	\$ 26,568,259	\$ 26,568,259	\$ 26,568,259	\$ 26,568,259
20	Total Miami-Dade County Wholesale Charges								\$ 35,849,696	\$ 38,140,745	\$ 39,631,383	\$ 41,122,022	\$ 41,122,022	\$ 41,122,022	\$ 41,122,022	\$ 41,122,022	\$ 41,122,022

[*] Historical and projected billed wastewater flow by entity is as follows:

Historical Wastewater Flow By Entity [*]					
Entity	Historical Fiscal Ended September 30,				
	2015	2016	2017	2018	2019
City of Miami Beach	7,625,118	8,021,330	7,223,208	7,256,958	7,152,301
<u>Satellite Municipalities:</u>					
Village of Bal Harbour	279,283	280,417	275,540	282,491	301,828
Town of Bay Harbor Islands	236,114	234,893	240,092	230,405	272,204
Town of Surfside	258,286	260,305	315,239	312,186	331,736
Total Flow from Satellite Municipalities	773,683	775,615	830,871	825,083	905,768
Total Billed Wastewater Flow (kgal)	8,398,801	8,796,945	8,054,079	8,082,041	8,058,069

[*] Amounts shown are in thousands of gallons (kgal).

Table 1-12

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Debt Service Allocation to Individual Systems

Line No.	Description	Percent		Fiscal Year Ending September 30,										
		Water	Sewer	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EXISTING DEBT SERVICE														
Existing Senior Lien Debt														
Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A														
1	Amount Funded	41.00%	59.00%	\$ 5,780,000										
2	Start Balance			\$ 5,780,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	Plus: Interest			196,538	-	-	-	-	-	-	-	-	-	-
4	Less: Payments			3,021,538	-	-	-	-	-	-	-	-	-	-
5	Balance End of Year			\$ 2,955,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B														
6	Amount Funded	41.00%	59.00%	\$ 10,000,000										
7	Start Balance			\$ 10,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8	Plus: Interest			450,000	-	-	-	-	-	-	-	-	-	-
9	Less: Payments			450,000	-	-	-	-	-	-	-	-	-	-
10	Balance End of Year			\$ 10,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C														
11	Amount Funded	41.00%	59.00%	\$ 30,000,000										
12	Start Balance			\$ 30,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13	Plus: Interest			1,350,000	-	-	-	-	-	-	-	-	-	-
14	Less: Payments			1,350,000	-	-	-	-	-	-	-	-	-	-
15	Balance End of Year			\$ 30,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017														
16	Amount Funded	41.00%	59.00%	\$ 115,180,000										
17	Start Balance			\$ 113,090,000	\$ 111,555,000	\$ 110,055,000	\$ 108,650,000	\$ 107,175,000	\$ 105,625,000	\$ 100,415,000	\$ 94,940,000	\$ 90,760,000	\$ 86,375,000	\$ 81,770,000
18	Plus: Interest			5,370,800	5,309,400	5,234,400	5,164,150	5,090,400	5,012,900	4,752,400	4,478,650	4,269,650	4,050,400	3,820,150
19	Less: Payments			6,905,800	6,809,400	6,639,400	6,639,150	6,640,400	10,222,900	10,227,400	8,658,650	8,654,650	8,655,400	8,655,150
20	Balance End of Year			\$ 111,555,000	\$ 110,055,000	\$ 108,650,000	\$ 107,175,000	\$ 105,625,000	\$ 100,415,000	\$ 94,940,000	\$ 90,760,000	\$ 86,375,000	\$ 81,770,000	\$ 76,935,000
Water and Sewer Revenue Refunding Bonds, Series														
21	Amount Funded	41.00%	59.00%	\$ 39,780,000										
22	Start Balance			\$ -	\$ 39,780,000	\$ 39,780,000	\$ 39,780,000	\$ 37,690,000	\$ 35,565,000	\$ 35,515,000	\$ 35,465,000	\$ 35,335,000	\$ 35,200,000	\$ 35,060,000
23	Plus: Interest			-	530,400	795,600	774,700	732,550	710,800	709,800	708,000	705,350	702,600	699,750
24	Less: Payments			-	530,400	795,600	2,864,700	2,857,550	760,800	759,800	838,000	840,350	842,600	844,750
25	Balance End of Year			\$ -	\$ 39,780,000	\$ 39,780,000	\$ 37,690,000	\$ 35,565,000	\$ 35,515,000	\$ 35,465,000	\$ 35,335,000	\$ 35,200,000	\$ 35,060,000	\$ 34,915,000
Total Existing Senior Lien Debt														
26	Amount Funded			\$ 200,740,000										
27	Start Balance			\$ 158,870,000	\$ 151,335,000	\$ 149,835,000	\$ 148,430,000	\$ 144,865,000	\$ 141,190,000	\$ 135,930,000	\$ 130,405,000	\$ 126,095,000	\$ 121,575,000	\$ 116,830,000
28	Plus: Interest			7,367,338	5,839,800	6,030,000	5,938,850	5,822,950	5,723,700	5,462,200	5,186,650	4,975,000	4,753,000	4,519,900
29	Less: Payments			11,727,338	7,339,800	7,435,000	9,503,850	9,497,950	10,983,700	10,987,200	9,496,650	9,495,000	9,498,000	9,499,900
30	Balance End of Year			\$ 154,510,000	\$ 149,835,000	\$ 148,430,000	\$ 144,865,000	\$ 141,190,000	\$ 135,930,000	\$ 130,405,000	\$ 126,095,000	\$ 121,575,000	\$ 116,830,000	\$ 111,850,000

Table 1-12

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Debt Service Allocation to Individual Systems

Line No.	Description	Percent		Fiscal Year Ending September 30,										
		Water	Sewer	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Total Existing Debt													
31	Amount Funded			\$ 200,740,000										
32	Start Balance			\$ 158,870,000	\$ 151,335,000	\$ 149,835,000	\$ 148,430,000	\$ 144,865,000	\$ 141,190,000	\$ 135,930,000	\$ 130,405,000	\$ 126,095,000	\$ 121,575,000	\$ 116,830,000
33	Plus: Interest			7,367,338	5,839,800	6,030,000	5,938,850	5,822,950	5,723,700	5,462,200	5,186,650	4,975,000	4,753,000	4,519,900
34	Less: Payments			11,727,338	7,339,800	7,435,000	9,503,850	9,497,950	10,983,700	10,987,200	9,496,650	9,495,000	9,498,000	9,499,900
35	Balance End of Year			\$ 154,510,000	\$ 149,835,000	\$ 148,430,000	\$ 144,865,000	\$ 141,190,000	\$ 135,930,000	\$ 130,405,000	\$ 126,095,000	\$ 121,575,000	\$ 116,830,000	\$ 111,850,000
	PROPOSED DEBT SERVICE													
	<u>Proposed Senior Lien Debt</u>													
	Series 2022 Bonds													
36	Amount Funded	59.10%	40.90%	\$ 50,655,000										
37	Start Balance			\$ -	\$ -	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000
38	Plus: Interest			-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
39	Less: Payments			-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
40	Balance End of Year			\$ -	\$ -	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000
	Total Proposed Senior Lien Debt													
41	Amount Funded			\$ 50,655,000										
42	Start Balance			\$ -	\$ -	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000
43	Plus: Interest			-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
44	Less: Payments			-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
45	Balance End of Year			\$ -	\$ -	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000
	Total Proposed Debt													
46	Amount Funded			\$ 50,655,000										
47	Start Balance			\$ -	\$ -	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000
48	Plus: Interest			-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
49	Less: Payments			-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
50	Balance End of Year			\$ -	\$ -	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000	\$ 50,655,000
	TOTAL DEBT													
51	Amount Funded			\$ 251,395,000										
52	Start Balance			\$ 158,870,000	\$ 151,335,000	\$ 200,490,000	\$ 199,085,000	\$ 195,520,000	\$ 191,845,000	\$ 186,585,000	\$ 181,060,000	\$ 176,750,000	\$ 172,230,000	\$ 167,485,000
53	Plus: Interest			7,367,338	5,839,800	7,493,367	8,471,600	8,355,700	8,256,450	7,994,950	7,719,400	7,507,750	7,285,750	7,052,650
54	Less: Payments			11,727,338	7,339,800	8,898,367	12,036,600	12,030,700	13,516,450	13,519,950	12,029,400	12,027,750	12,030,750	12,032,650
55	Balance End of Year			\$ 154,510,000	\$ 149,835,000	\$ 199,085,000	\$ 195,520,000	\$ 191,845,000	\$ 186,585,000	\$ 181,060,000	\$ 176,750,000	\$ 172,230,000	\$ 167,485,000	\$ 162,505,000
56	Total Interest Payments			\$ 7,367,338	\$ 5,839,800	\$ 7,493,367	\$ 8,471,600	\$ 8,355,700	\$ 8,256,450	\$ 7,994,950	\$ 7,719,400	\$ 7,507,750	\$ 7,285,750	\$ 7,052,650
57	Total Principal Payments			4,360,000	1,500,000	1,405,000	3,565,000	3,675,000	5,260,000	5,525,000	4,310,000	4,520,000	4,745,000	4,980,000
58	Total Debt Service			\$ 11,727,338	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650

Table 1-12

City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System

Debt Service Allocation to Individual Systems

Line No.	Description	Percent		Fiscal Year Ending September 30,										
		Water	Sewer	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
WATER SYSTEM DEBT SERVICE														
59	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A	41.00%		\$ 1,238,831	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
60	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B	41.00%		184,500	-	-	-	-	-	-	-	-	-	-
61	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C	41.00%		553,500	-	-	-	-	-	-	-	-	-	-
62	Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017	41.00%		2,831,378	2,791,854	2,722,154	2,722,052	2,722,564	4,191,389	4,193,234	3,550,047	3,548,407	3,548,714	3,548,612
63	Water and Sewer Revenue Refunding Bonds, Series 2020	41.00%		-	217,464	326,196	1,174,527	1,171,596	311,928	311,518	343,580	344,544	345,466	346,348
64	Series 2022 Bonds	59.10%		-	-	864,889	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924	1,496,924
65	Total			\$ 4,808,209	\$ 3,009,318	\$ 3,913,239	\$ 5,393,502	\$ 5,391,083	\$ 6,000,241	\$ 6,001,676	\$ 5,390,550	\$ 5,389,874	\$ 5,391,104	\$ 5,391,883
SEWER SYSTEM DEBT SERVICE														
66	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A	59.00%		\$ 1,782,707	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
67	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B	59.00%		265,500	-	-	-	-	-	-	-	-	-	-
68	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C	59.00%		796,500	-	-	-	-	-	-	-	-	-	-
69	Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017	59.00%		4,074,422	4,017,546	3,917,246	3,917,099	3,917,836	6,031,511	6,034,166	5,108,604	5,106,244	5,106,686	5,106,539
70	Water and Sewer Revenue Refunding Bonds, Series 2020	59.00%		-	312,936	469,404	1,690,173	1,685,955	448,872	448,282	494,420	495,807	497,134	498,403
71	Series 2022 Bonds	40.90%		-	-	598,478	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826	1,035,826
72	Total			\$ 6,919,129	\$ 4,330,482	\$ 4,985,128	\$ 6,643,098	\$ 6,639,617	\$ 7,516,209	\$ 7,518,274	\$ 6,638,850	\$ 6,637,876	\$ 6,639,646	\$ 6,640,767
73	Water System (%)			41.00%	41.00%	43.98%	44.81%	44.81%	44.39%	44.39%	44.81%	44.81%	44.81%	44.81%
74	Sewer System (%)			59.00%	59.00%	56.02%	55.19%	55.19%	55.61%	55.61%	55.19%	55.19%	55.19%	55.19%
75	Total			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 1-13

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Estimated Multi-Year Capital Improvement Program and Funding Sources

Line No.	Description	Main Project Number	Project Number	Funding Source	Escalation Factor	Fiscal Year Ending September 30,											Total
						Adjusted 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
WATER SYSTEM CAPITAL IMPROVEMENT PROGRAM																	
Departmental Capital																	
1	Vehicles and Equipment - Water			REV	None	\$ 160,000	\$ 997,000	\$ 210,804	\$ 139,000	\$ 152,870	\$ 184,338	\$ 4,867	\$ 264,126	\$ 264,126	\$ 264,126	\$ 264,126	\$ 2,905,381
2	Other Departmental Capital - Water			REV	None	485,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000	5,235,000
3	Subtotal - Departmental Capital					\$ 645,000	\$ 1,472,000	\$ 685,804	\$ 614,000	\$ 627,870	\$ 659,338	\$ 479,867	\$ 739,126	\$ 739,126	\$ 739,126	\$ 739,126	\$ 8,140,381
Major Capital Projects																	
4	W-2 Booster Station Rehabilitation	28520	W-02	2017Bonds	None	\$ 1,200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,200,000
5	Fire Hydrant Density Evaluation	0	W-31	CRF	None	150,000	-	-	-	-	-	-	-	-	-	-	150,000
6	Replacement of WM aerial crossings Venetian Isles	28520	W-36	2017Bonds	None	4,420,000	-	-	-	-	-	-	-	-	-	-	4,420,000
7	Rehabilitation of WM aerial crossings on MacArthur	28520	W-37	2017Bonds	None	1,547,000	-	-	-	-	-	-	-	-	-	-	1,547,000
8	Rehabilitation of WM aerial crossings on MacArthur	28520	W-37	B1		-	-	-	724,478	-	-	-	-	-	-	-	724,478
9	Water Man PoF/CoF Priority 1	28520	W-45A/W-45B/W-45C/W-45D/W-45F	2017Bonds	None	180,000	3,298,575	-	-	-	-	-	-	-	-	-	3,478,575
10	Water Man PoF/CoF Priority 1	28520	W-45A/W-45B/W-45C/W-45D/W-45F	B1		-	-	3,588,494	9,408,379	7,132,123	-	-	-	-	-	-	20,128,997
11	Water Man PoF/CoF Priority 1	28520	W-45A/W-45B/W-45C/W-45D/W-45F	CRF		-	-	-	-	1,520,226	-	-	-	-	-	-	1,520,226
12	Fire Flow Project 1	28520	W-14	CRF	None	520,000	-	-	-	-	-	-	-	-	-	-	520,000
13	Fire Flow Project 13	28520	W-26	CRF	None	-	484,100	-	-	-	-	-	-	-	-	-	484,100
14	Fire Flow Project 2	28520	W-15	CRF	None	-	-	456,187	-	-	-	-	-	-	-	-	456,187
15	Fire Flow Project 3	28520	W-16	CRF	None	250,000	-	-	-	-	-	-	-	-	-	-	250,000
16	Fire Flow Project 4	28520	W-17	CRF	None	-	-	169,744	-	-	-	-	-	-	-	-	169,744
17	Fire Flow Project 15	28520	W-28	CRF	None	-	-	307,661	-	-	-	-	-	-	-	-	307,661
18	Fire Flow Project 6	28520	W-19	CRF	None	-	-	-	98,345	-	-	-	-	-	-	-	98,345
19	Fire Flow Project 8	28520	W-21	CRF	None	-	-	-	131,127	-	-	-	-	-	-	-	131,127
20	Fire Flow Project 10	28520	W-23	CRF	None	-	-	-	87,418	-	-	-	-	-	-	-	87,418
21	Fire Flow Project 11	28520	W-24	CRF	None	-	-	-	109,273	-	-	-	-	-	-	-	109,273
22	Fire Flow Project 12	28520	W-25	CRF	None	-	-	-	87,418	-	-	-	-	-	-	-	87,418
23	Fire Flow Project 5	28520	W-18	CRF	None	150,000	-	-	-	-	-	-	-	-	-	-	150,000
24	Meter Replacement	60319	N/A	2017Bonds	None	7,483,267	-	-	-	-	-	-	-	-	-	-	7,483,267
25	Meter Replacement	60319	N/A	CRF		3,621,627	-	-	-	-	-	-	-	-	-	-	3,621,627
26	Surge and Water Hammer Analysis	0	W-32	CRF	None	200,000	-	-	-	-	-	-	-	-	-	-	200,000
27	Installation of Additional Pressure Monitoring Devices	0	W-33	CRF	None	100,000	-	-	-	-	-	-	-	-	-	-	100,000
28	Installation of Additional Blow-off valves	0	W-34	CRF	None	50,000	-	-	-	-	-	-	-	-	-	-	50,000
29	Development of a Distribution System Flushing Plan	0	W-35	CRF	None	200,000	-	-	-	-	-	-	-	-	-	-	200,000
30	Valve Assessment and Replacement Program	NEW	W-51A/W-51B/W-51C	CRF	None	350,000	360,500	371,315	-	-	-	-	-	-	-	-	1,081,815
31	Water SCADA	20719	N/A	CRF	None	406,313	-	-	-	-	-	-	-	-	-	-	406,313
32	Fire Flow Project 7	28520	W-20	CRF	None	-	72,100	-	-	-	-	-	-	-	-	-	72,100
33	Fire Flow Project 16	28520	W-29	CRF	None	-	638,600	-	-	-	-	-	-	-	-	-	638,600
34	Construction of New Booster Station	28120	W-07	2017Bonds	None	-	5,592,900	-	-	-	-	-	-	-	-	-	5,592,900
35	Aerial Crossing Water Main Replacement	28520	W-38	2017Bonds	None	-	72,100	-	-	-	-	-	-	-	-	-	72,100
36	Aerial Crossing Water Main Replacement	28520	W-39	2017Bonds	None	-	206,000	-	-	-	-	-	-	-	-	-	206,000
37	Aerial Crossing Water Main Replacement	28520	W-40	2017Bonds	None	-	185,400	-	-	-	-	-	-	-	-	-	185,400
38	Water Main on MacArthur Causeway - Capacity	28520	W-12	B1	None	-	-	4,105,683	-	-	-	-	-	-	-	-	4,105,683
39	Belle Isle Booster Station Rehabilitation	28120	W-05	B1	None	-	-	4,710,396	-	-	-	-	-	-	-	-	4,710,396
40	Fire Flow Project 9	28520	W-22	CRF	None	-	-	-	-	821,621	-	-	-	-	-	-	821,621
41	Fire Flow Project 14	28520	W-27	CRF	None	-	-	-	-	855,387	-	-	-	-	-	-	855,387
42	Water Pump Station Generators Replacement/New Install	0	0	CRF	None	-	500,000	250,000	250,000	250,000	-	-	-	-	-	-	1,250,000
43	Normandy Isle Booster Station (W-3) R&R			CRF	None	-	-	-	-	-	-	1,454,000	-	-	-	-	1,454,000
44	Terminal Island Booster Station (W-7) R&R			CRF	None	-	-	-	-	-	-	2,220,000	-	-	-	-	2,220,000
45	Water Main Aerial Crossing along Alton Road Between Chase Avenue and West 34th Street Rehabilitation			CRF	None	-	-	-	-	-	-	70,000	-	-	-	-	70,000
	Water Main Aerial Crossing Along Biarritz Drive between South Shore Drive and Calais																
46	Drive Rehabilitation			CRF	None	-	-	-	-	-	-	70,000	-	-	-	-	70,000
47	Water Main Aerial Crossing Along Wayne Avenue Pedestrian Bridge Between Wayne Avenue and Tatum Waterway Rehabilitation			CRF	None	-	-	-	-	-	-	50,000	-	-	-	-	50,000
	Water Main Aerial Crossings along Alton Road between West 48th Street and Lakeview Drive Rehabilitation																
48	Water Mains PoF/CoF - Priority 2			CRF	None	-	-	-	-	-	-	200,000	-	-	-	-	200,000
49	25th Street Booster Station (W-1) R&R			CRF	None	-	-	-	-	-	-	3,618,000	-	-	-	-	3,618,000
50	41st Street Booster Station (W-4) R&R			CRF	None	-	-	-	-	-	-	-	2,504,000	-	-	-	2,504,000
51	Capacity – Project 2 (Julia Tuttle Causeway)			CRF	None	-	-	-	-	-	-	-	2,896,000	-	-	-	2,896,000
52	Water Mains PoF/CoF - Priority 2			CRF	None	-	-	-	-	-	-	-	-	22,820,000	-	-	22,820,000
53	Water Mains PoF/CoF - Priority 2			CRF	None	-	-	-	-	-	-	-	-	-	3,618,000	-	3,618,000
54	Water Mains PoF/CoF - Priority 2			CRF	None	-	-	-	-	-	-	-	-	-	-	3,618,000	3,618,000

Table 1-13

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Estimated Multi-Year Capital Improvement Program and Funding Sources

Line No.	Description	Main Project Number	Project Number	Funding Source	Escalation Factor	Fiscal Year Ending September 30,											Total
						Adjusted 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
55	Subtotal - Major Capital Projects					\$ 20,828,206	\$ 11,410,275	\$ 13,959,480	\$ 10,896,439	\$ 10,579,357	\$ -	\$ 7,682,000	\$ 5,400,000	\$ 22,820,000	\$ 3,618,000	\$ 3,618,000	\$ 110,811,757
56	TOTAL WATER SYSTEM CAPITAL IMPROVEMENT PROGRAM					\$ 21,473,206	\$ 12,882,275	\$ 14,645,284	\$ 11,510,439	\$ 11,207,227	\$ 659,338	\$ 8,161,867	\$ 6,139,126	\$ 23,559,126	\$ 4,357,126	\$ 4,357,126	\$ 118,952,139
SEWER SYSTEM CAPITAL IMPROVEMENT PROGRAM																	
Departmental Capital																	
57	Vehicles and Equipment - Sewer			REV	None	\$ -	\$ 1,194,000	\$ 308,444	\$ 34,313	\$ 1,364,573	\$ 642,366	\$ 267,578	\$ 544,468	\$ 544,468	\$ 544,468	\$ 544,468	\$ 5,989,145
58	Other Departmental Capital - Sewer			REV	None	25,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	265,000
59	Subtotal - Departmental Capital					\$ 25,000	\$ 1,218,000	\$ 332,444	\$ 58,313	\$ 1,388,573	\$ 666,366	\$ 291,578	\$ 568,468	\$ 568,468	\$ 568,468	\$ 568,468	\$ 6,254,145
Major Capital Projects																	
60	Water Pump Station Generators Replacement/New Install	0	0	CRF	None	-	-	-	-	-	-	-	-	-	-	-	-
61	Gravity Main Replacement - Priority 1	28520	S-04	2017Bonds	None	\$ 926,000	\$ 953,780	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,879,780
62	Gravity Main Replacement - Priority 1	28520	S-04	B1		-	-	982,393	1,011,865	1,042,221	-	-	-	-	-	-	3,036,480
63	Gravity Mains I/I Reduction - Priority 1 (a)	28520	S-01A	2017Bonds	None	730,000	751,900	-	-	-	-	-	-	-	-	-	1,481,900
64	Gravity Mains I/I Reduction - Priority 1 (a)	28520	S-01A	B1		-	-	774,457	-	-	-	-	-	-	-	-	774,457
65	Gravity Siphon Inspection and Capacity Evaluation	#N/A	S-08	CRF	None	30,000	-	-	-	-	-	-	-	-	-	-	30,000
66	Venetian Way Aerial Crossing Replacement in Kind	28520	S-18	CRF	None	770,000	-	-	-	-	-	-	-	-	-	-	770,000
67	Valve Assessment and Replacement	NEW	S-37A/S-37B	CRF	None	550,000	566,500	583,495	-	-	-	-	-	-	-	-	1,699,995
68	Pump Station No. 2 Force Main Replacement	28520	S-09	2017Bonds	None	2,550,000	-	-	-	-	-	-	-	-	-	-	2,550,000
69	Force Mains PoF/CoF Priority 1	28520	S-31A/S-31B/S-31C	2017Bonds	None	1,850,000	1,545,000	-	-	-	-	-	-	-	-	-	3,395,000
70	Force Mains PoF/CoF Priority 1	28520	S-31A/S-31B/S-31C	B1		-	-	1,930,838	1,988,763	2,048,426	-	-	-	-	-	-	5,968,027
71	Force Mains PoF/CoF Priority 1	28520	S-31A/S-31B/S-31C	2017Bonds	None	450,000	-	-	-	-	-	-	-	-	-	-	450,000
72	Pump Station No. 18 Force Main Replacement	28520	S-13	2017Bonds	None	550,000	-	-	-	-	-	-	-	-	-	-	550,000
73	Odor Control System	28320	N/A	2017Bonds	None	850,600	-	-	-	-	-	-	-	-	-	-	850,600
74	Sewer SCADA	20719	N/A	CRF	None	1,218,938	-	-	-	-	-	-	-	-	-	-	1,218,938
75	Manhole Inspection and Rehabilitation	28220	N/A	CRF	None	1,500,000	1,545,000	1,591,350	1,639,091	1,688,263	-	-	-	-	-	-	7,963,704
76	Pump Station 6, 7 and 8 Rerouting	28520	S-17	2017Bonds	None	-	1,194,800	-	-	-	-	-	-	-	-	-	1,194,800
77	Aerial Crossing Pine Tree Drive 51st Street to 47th St.	28520	S-19	2017Bonds	None	-	700,400	-	-	-	-	-	-	-	-	-	700,400
78	Pump Station No. 28 Rehabilitation	20619	S-28	2017Bonds	None	-	11,103,400	-	-	-	-	-	-	-	-	-	11,103,400
79	Pump Station No. 1 Rehabilitation	20619	S-22	B1	None	-	-	3,140,264	-	-	-	-	-	-	-	-	3,140,264
80	Pump Station No. 30, Well Lining, and Electrical Upgrades	20619	S-30	B1	None	-	-	2,068,755	-	-	-	-	-	-	-	-	2,068,755
81	Pump Station No. 4 Force Main Replacement	28520	S-10	B1	None	-	-	477,405	-	-	-	-	-	-	-	-	477,405
82	Pump Stations No. 5 Force Main Replacement	28520	S-11	B1	None	-	-	413,751	-	-	-	-	-	-	-	-	413,751
83	Pump Station No. 14 Force Main Replacement	28520	S-12	B1	None	-	-	901,765	-	-	-	-	-	-	-	-	901,765
84	Pump Station No. 23 Force Main Replacement	28520	S-14	B1	None	-	-	53,045	-	-	-	-	-	-	-	-	53,045
85	Pump Station No. 27 Force Main Replacement	28520	S-15	B1	None	-	-	53,045	-	-	-	-	-	-	-	-	53,045
86	Gravity Mains I/I Reduction - Priority 1 (b)	28520	S-01B	B1	None	-	-	-	1,794,804	1,848,648	-	-	-	-	-	-	3,643,452
87	Sewer Pump Station Generator Replacement/Install	0	0	CRF	None	-	750,000	750,000	750,000	750,000	-	-	-	-	-	-	3,000,000
88	Gravity Main Replacement – Priority 2		S-05a	CRF	None	-	-	-	-	-	1,902,000	-	-	-	-	-	1,902,000
89	Aerial crossing Along Pine Tree Drive Between La Gorce Circle and North Bay Road Rehabilitation		S-20	CRF	None	-	-	-	-	-	50,000	-	-	-	-	-	50,000
90	Aerial crossing along 71st Street Between Bay Drive and Bonita Drive Rehabilitation		S-21	CRF	None	-	-	-	-	-	50,000	-	-	-	-	-	50,000
91	Pump Station 2 R&R		S-23	CRF	None	-	-	-	-	-	1,140,000	-	-	-	-	-	1,140,000
92	Pump Station 18 R&R		S-26	CRF	None	-	-	-	-	-	870,000	-	-	-	-	-	870,000
93	Force Mains PoF/CoF – Priority 1		S-31d	CRF	None	-	-	-	-	-	4,987,500	-	-	-	-	-	4,987,500
94	Gravity Main Replacement – Priority 2		S-05b	CRF	None	-	-	-	-	-	-	1,902,000	-	-	-	-	1,902,000
95	Pump Station 29 R&R		S-29	CRF	None	-	-	-	-	-	-	6,370,000	-	-	-	-	6,370,000
96	Gravity Mains I/I Reduction – Priority 2		S-02a	CRF	None	-	-	-	-	-	-	-	1,205,000	-	-	-	1,205,000
97	Gravity Main Replacement – Priority 2		S-05c	CRF	None	-	-	-	-	-	-	-	1,902,000	-	-	-	1,902,000
98	Pump Station 14 R&R		S-24	CRF	None	-	-	-	-	-	-	-	880,000	-	-	-	880,000
99	Pump Station 15 R&R		S-25	CRF	None	-	-	-	-	-	-	-	970,000	-	-	-	970,000
100	Pump Station 27 R&R		S-27	CRF	None	-	-	-	-	-	-	-	2,420,000	-	-	-	2,420,000
101	Gravity Mains I/I Reduction – Priority 2		S-02b	CRF	None	-	-	-	-	-	-	-	-	1,205,000	-	-	1,205,000
102	Gravity Main Replacement – Priority 2		S-05d	CRF	None	-	-	-	-	-	-	-	-	1,902,000	-	-	1,902,000
103	Force Mains PoF/CoF – Priority 2		S-32a	CRF	None	-	-	-	-	-	-	-	-	3,348,000	-	-	3,348,000
104	Gravity Main Replacement – Priority 2		S-05e	CRF	None	-	-	-	-	-	-	-	-	-	1,902,000	-	1,902,000
105	Force Mains PoF/CoF – Priority 2		S-32b	CRF	None	-	-	-	-	-	-	-	-	-	5,022,000	-	5,022,000
106	Gravity Mains I/I Reduction – Priority 3		S-03a	CRF	None	-	-	-	-	-	-	-	-	-	-	795,600	795,600
107	Gravity Main Replacement – Priority 3		S-06a	CRF	None	-	-	-	-	-	-	-	-	-	-	752,000	752,000
108	Force Mains PoF/CoF – Priority 2		S-32c	CRF	None	-	-	-	-	-	-	-	-	-	-	3,348,000	3,348,000
109	Subtotal - Major Capital Projects					\$ 11,975,538	\$ 19,110,780	\$ 13,720,563	\$ 7,184,523	\$ 7,377,559	\$ 8,999,500	\$ 8,272,000	\$ 7,377,000	\$ 6,455,000	\$ 6,924,000	\$ 4,895,600	\$ 102,292,062
110	TOTAL SEWER SYSTEM CAPITAL IMPROVEMENT PROGRAM					\$ 12,000,538	\$ 20,328,780	\$ 14,053,007	\$ 7,242,836	\$ 8,766,132	\$ 9,665,866	\$ 8,563,578	\$ 7,945,468	\$ 7,023,468	\$ 7,492,468	\$ 5,464,068	\$ 108,546,207

Table 1-13

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Estimated Multi-Year Capital Improvement Program and Funding Sources

Line No.	Description	Main Project Number	Project Number	Funding Source	Escalation Factor	Fiscal Year Ending September 30,										Total	
						Adjusted 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029		2030
111	TOTAL WATER AND SEWER SYSTEM CAPITAL IMPROVEMENT PROGRAM					\$ 33,473,743	\$ 33,211,055	\$ 28,698,292	\$ 18,753,275	\$ 19,973,359	\$ 10,325,204	\$ 16,725,445	\$ 14,084,593	\$ 30,582,593	\$ 11,849,593	\$ 9,821,193	\$ 227,498,346
	FUNDING SOURCES																
	WATER SYSTEM																
112	Capital Replacement Fund Deposits			CRF		\$ 5,997,939	\$ 2,055,300	\$ 1,554,907	\$ 763,582	\$ 3,447,234	\$ -	\$ 7,682,000	\$ 5,400,000	\$ 22,820,000	\$ 3,618,000	\$ 3,618,000	\$ 56,956,962
113	Proceeds from Series 2017 Bonds			2017Bonds		14,830,267	9,354,975	-	-	-	-	-	-	-	-	-	24,185,242
114	Proceeds from Series 2022 Bonds			B1		-	-	12,404,573	10,132,857	7,132,123	-	-	-	-	-	-	29,669,554
115	User Rate Revenue			REV		645,000	1,472,000	685,804	614,000	627,870	659,338	479,867	739,126	739,126	739,126	739,126	8,140,381
116	TOTAL WATER SYSTEM FUNDING SOURCES					\$ 21,473,206	\$ 12,882,275	\$ 14,645,284	\$ 11,510,439	\$ 11,207,227	\$ 659,338	\$ 8,161,867	\$ 6,139,126	\$ 23,559,126	\$ 4,357,126	\$ 4,357,126	\$ 118,952,139
	SEWER SYSTEM																
117	Capital Replacement Fund Deposits			CRF		\$ 4,068,938	\$ 2,861,500	\$ 2,924,845	\$ 2,389,091	\$ 2,438,263	\$ 8,999,500	\$ 8,272,000	\$ 7,377,000	\$ 6,455,000	\$ 6,924,000	\$ 4,895,600	\$ 57,605,736
118	Proceeds from Series 2017 Bonds			2017Bonds		7,906,600	16,249,280	-	-	-	-	-	-	-	-	-	24,155,880
119	Proceeds from Series 2022 Bonds			B1		-	-	10,795,718	4,795,432	4,939,295	-	-	-	-	-	-	20,530,446
120	User Rate Revenue			REV		25,000	1,218,000	332,444	58,313	1,388,573	666,366	291,578	568,468	568,468	568,468	568,468	6,254,145
121	TOTAL SEWER SYSTEM FUNDING SOURCES					\$ 12,000,538	\$ 20,328,780	\$ 14,053,007	\$ 7,242,836	\$ 8,766,132	\$ 9,665,866	\$ 8,563,578	\$ 7,945,468	\$ 7,023,468	\$ 7,492,468	\$ 5,464,068	\$ 108,546,207
	COMBINED WATER AND SEWER SYSTEM																
122	Capital Replacement and Improvement Fund Deposits			CRF		\$ 10,066,877	\$ 4,916,800	\$ 4,479,752	\$ 3,152,672	\$ 5,885,497	\$ 8,999,500	\$ 15,954,000	\$ 12,777,000	\$ 29,275,000	\$ 10,542,000	\$ 8,513,600	\$ 114,562,698
123	Proceeds from Series 2017 Bonds			2017Bonds		22,736,867	25,604,255	-	-	-	-	-	-	-	-	-	48,341,122
124	Proceeds from Series 2022 Bonds			B1		-	-	23,200,292	14,928,290	12,071,418	-	-	-	-	-	-	50,200,000
125	User Rate Revenue			REV		670,000	2,690,000	1,018,248	672,313	2,016,443	1,325,704	771,445	1,307,593	1,307,593	1,307,593	1,307,593	14,394,526
126	TOTAL WATER AND SEWER SYSTEM FUNDING SOURCES					\$ 33,473,743	\$ 33,211,055	\$ 28,698,292	\$ 18,753,275	\$ 19,973,359	\$ 10,325,204	\$ 16,725,445	\$ 14,084,593	\$ 30,582,593	\$ 11,849,593	\$ 9,821,193	\$ 227,498,346

Table 1-14

City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System

Projected Cash Balances and Interest Earnings By Fund

Line No.	Description	[1]	Fiscal Year Ending September 30,										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
OPERATING FUND - 425													
1	Beginning Balance		\$ 68,410,482										
2	Adjustment for Open Purchase Orders		-										
3	Adjusted Beginning Balance		\$ 68,410,482	\$ 67,111,155	\$ 71,661,841	\$ 79,999,690	\$ 89,883,060	\$ 97,137,524	\$ 101,939,328	\$ 100,416,734	\$ 103,037,618	\$ 89,188,115	\$ 93,928,424
4	Transfers In - Grant Reimbursement		-	-	-	-	-	-	-	-	-	-	-
5	Transfers Out - Capital Improvement Program - Water		-	-	-	-	-	-	-	-	-	-	-
6	Transfers Out - Capital Improvement Program - Sewer		-	-	-	-	-	-	-	-	-	-	-
7	Transfers Out - Renewal and Replacement Fund - Water		-	-	-	-	-	-	-	-	-	-	-
8	Transfers Out - Renewal and Replacement Fund - Sewer		-	-	-	-	-	-	-	-	-	-	-
9	Transfers In / (Out) - Surplus / (Deficiency) - Water		(3,563,517)	688,131	2,872,293	3,935,489	2,210,653	6,013,079	(1,508,867)	1,076,559	(16,387,305)	2,695,927	2,657,923
10	Transfers In / (Out) - Surplus / (Deficiency) - Sewer		2,264,190	3,862,555	5,465,555	5,947,882	5,043,811	(1,211,275)	(13,727)	1,544,324	2,537,803	2,044,383	4,161,135
11	Interest Rate	(S)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
12	Interest Income		684,105	671,112	716,618	799,997	898,831	971,375	1,019,393	1,004,167	1,030,376	891,881	939,284
13	Recognition of Interest Earnings in Revenue Requirements		684,105	671,112	716,618	799,997	898,831	971,375	1,019,393	1,004,167	1,030,376	891,881	939,284
14	Ending Balance		\$ 67,111,155	\$ 71,661,841	\$ 79,999,690	\$ 89,883,060	\$ 97,137,524	\$ 101,939,328	\$ 100,416,734	\$ 103,037,618	\$ 89,188,115	\$ 93,928,424	\$ 100,747,482
Days of Rate Revenue (Target = 120 Days)													
15	With Rate Stabilization Fund Balance		315	323	337	356	376	386	377	383	329	344	366
16	Without Rate Stabilization Fund Balance		315	323	337	356	376	386	377	383	329	344	366
Days of Operation & Maintenance Expenses													
17	With Rate Stabilization Fund Balance		385	407	438	475	508	527	514	523	448	467	496
18	Without Rate Stabilization Fund Balance		385	407	438	475	508	527	514	523	448	467	496
19	Percent Allocable to Water System		40.26%	40.58%	41.26%	41.82%	42.29%	42.77%	42.77%	42.77%	42.77%	42.77%	42.77%
20	Interest Income Allocable to Water System	UW	\$ 275,397	\$ 272,331	\$ 295,649	\$ 334,552	\$ 380,157	\$ 415,473	\$ 436,011	\$ 429,499	\$ 440,709	\$ 381,472	\$ 401,747
21	Interest Income Allocable to Sewer System	US	408,707	398,781	420,969	465,445	518,673	555,903	583,382	574,669	589,667	510,409	537,537
CAPITAL REPLACEMENT AND IMPROVEMENT FUND - WATER													
22	Beginning Balance		\$ 3,787,959										
23	Adjustment For Open Purchase Orders		-										
24	Adjusted Beginning Balance		\$ 3,787,959	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000
25	Transfers In		4,358,980	2,055,300	1,554,907	763,582	3,447,234	-	7,682,000	5,400,000	22,820,000	3,618,000	3,618,000
26	Transfers Out - Capital Improvement Program		5,997,939	2,055,300	1,554,907	763,582	3,447,234	-	7,682,000	5,400,000	22,820,000	3,618,000	3,618,000
27	Interest Rate	(S)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
28	Interest Income		29,685	21,490	21,490	21,490	21,490	21,490	21,490	21,490	21,490	21,490	21,490
29	Recognition of Interest Earnings in Revenue Requirements		29,685	21,490	21,490	21,490	21,490	21,490	21,490	21,490	21,490	21,490	21,490
30	Ending Balance		\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000	\$ 2,149,000
31	Percent Allocable to Water System		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
32	Interest Income Allocable to Water System	UW	\$ 29,685	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490	\$ 21,490
33	Interest Income Allocable to Sewer System	US	0	0	0	0	0	0	0	0	0	0	0

Table 1-14

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Projected Cash Balances and Interest Earnings By Fund

Line			Fiscal Year Ending September 30,										
No.	Description	[1]	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CAPITAL REPLACEMENT AND IMPROVEMENT FUND - SEWER													
34	Beginning Balance		\$ 5,621,573										
35	Adjustment For Open Purchase Orders		-										
36	Adjusted Beginning Balance		\$ 5,621,573	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000	\$ 4,028,000
37	Transfers In		2,475,365	2,861,500	2,924,845	2,389,091	2,438,263	8,999,500	8,272,000	7,377,000	6,455,000	6,924,000	4,895,600
38	Transfers Out - Capital Improvement Program		4,068,938	2,861,500	2,924,845	2,389,091	2,438,263	8,999,500	8,272,000	7,377,000	6,455,000	6,924,000	4,895,600
39	Interest Rate	(S)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
40	Interest Income		48,248	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280
	Recognition of Interest Earnings												
41	in Revenue Requirements		48,248	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280
42	Ending Balance		\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000	\$4,028,000
43	Percent Allocable to Water System		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
44	Interest Income Allocable to Water System	UW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
45	Interest Income Allocable to Sewer System	US	48,248	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280	40,280
CUSTOMER DEPOSITS													
46	Beginning Balance		\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350	\$ 6,838,350
47	Transfers In		0	0	0	0	0	0	0	0	0	0	0
48	Transfers Out		0	0	0	0	0	0	0	0	0	0	0
49	Interest Rate		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
50	Interest Income		0	0	0	0	0	0	0	0	0	0	0
	Recognition of Interest Earnings												
51	in Revenue Requirements		0	0	0	0	0	0	0	0	0	0	0
52	Ending Balance		6,838,350	6,838,350	6,838,350	6,838,350	6,838,350	6,838,350	6,838,350	6,838,350	6,838,350	6,838,350	6,838,350
53	Percent Allocable to Water System		58.39%	58.39%	58.39%	58.39%	58.39%	58.39%	58.39%	58.39%	58.39%	58.39%	58.39%
54	Interest Income Allocable to Water System	RW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
55	Interest Income Allocable to Sewer System	RS	-	-	-	-	-	-	-	-	-	-	-
SINKING FUND													
56	Sinking Fund Deposit		\$ 11,727,338	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650
57	Average Balance		2,931,835	1,834,950	2,224,592	3,009,150	3,007,675	3,379,113	3,379,988	3,007,350	3,006,938	3,007,688	3,008,163
58	Interest Rate	(S)	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
59	Interest Income		29,318	18,350	22,246	30,092	30,077	33,791	33,800	30,074	30,069	30,077	30,082
	Recognition of Interest Earnings												
60	in Revenue Requirements		29,318	18,350	22,246	30,092	30,077	33,791	33,800	30,074	30,069	30,077	30,082
61	Percent Allocable to Water System		41.00%	41.00%	43.98%	44.81%	44.81%	44.39%	44.39%	44.81%	44.81%	44.81%	44.81%
62	Interest Income Allocable to Water System	UW	\$ 12,021	\$ 7,523	\$ 9,783	\$ 13,484	\$ 13,478	\$ 15,001	\$ 15,004	\$ 13,476	\$ 13,475	\$ 13,478	\$ 13,480
63	Interest Income Allocable to Sewer System	US	17,298	10,826	12,463	16,608	16,599	18,791	18,796	16,597	16,595	16,599	16,602

Table 1-14

City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System

Projected Cash Balances and Interest Earnings By Fund

Line No.	Description	[1]	Fiscal Year Ending September 30,										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CONSTRUCTION FUND													
64	Balance as of September 30, 2019		\$ 48,341,122										
65	Adjustment For Open Purchase Orders		-										
66	Adjusted Beginning Balance		\$ 48,341,122	\$ 25,604,255	\$ -	\$ 26,999,708	\$ 12,071,418	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
67	Transfers In		-	-	50,200,000	-	-	-	-	-	-	-	-
68	Transfers Out - Capital Improvement Program		22,736,867	25,604,255	23,200,292	14,928,290	12,071,418	-	-	-	-	-	-
69	Interest Rate	(C)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
70	Interest Income		-	-	-	-	-	-	-	-	-	-	-
	Recognition of Interest Earnings												
71	in Revenue Requirements		-	-	-	-	-	-	-	-	-	-	-
72	Ending Balance		\$ 25,604,255	\$ -	\$ 26,999,708	\$ 12,071,418	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
73	Percent Allocable to Water System		59.10%	59.10%	59.10%	59.10%	59.10%	59.10%	59.10%	59.10%	59.10%	59.10%	59.10%
74	Interest Income Allocable to Water System	RW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
75	Interest Income Allocable to Sewer System	RS	-	-	-	-	-	-	-	-	-	-	-
WATER IMPACT FEE FUND													
76	Beginning Balance		\$ 411,881										
77	Adjustment For Open Purchase Orders		-										
78	Adjusted Beginning Balance		\$ 411,881	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
79	Transfers In		-	-	-	-	-	-	-	-	-	-	-
80	Transfers In - Grant Funding		-	-	-	-	-	-	-	-	-	-	-
81	Transfers Out - Capital Improvement Program		-	-	-	-	-	-	-	-	-	-	-
82	Transfers Out - Payment of City Debt Service		411,881	-	-	-	-	-	-	-	-	-	-
83	Transfers Out - Developer Reimbursement		-	-	-	-	-	-	-	-	-	-	-
84	Interest Rate		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
85	Interest Income		-	-	-	-	-	-	-	-	-	-	-
	Recognition of Interest Earnings												
86	in Revenue Requirements		-	-	-	-	-	-	-	-	-	-	-
87	Ending Balance		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
88	Percent Allocable to Water System		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
89	Interest Income Allocable to Water System	RW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
90	Interest Income Allocable to Sewer System	RS	-	-	-	-	-	-	-	-	-	-	-
SEWER IMPACT FEE FUND													
91	Beginning Balance		\$ 624,464										
92	Adjustment For Open Purchase Orders		-										
93	Adjusted Beginning Balance		\$ 624,464	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
94	Transfers In		-	-	-	-	-	-	-	-	-	-	-
95	Transfers Out - Capital Improvement Program		-	-	-	-	-	-	-	-	-	-	-
96	Transfers Out - Payment of City Debt Service		624,464	-	-	-	-	-	-	-	-	-	-
97	Transfers Out - Developer Reimbursement		-	-	-	-	-	-	-	-	-	-	-
98	Interest Rate		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
99	Interest Income		-	-	-	-	-	-	-	-	-	-	-
	Recognition of Interest Earnings												
100	in Revenue Requirements		-	-	-	-	-	-	-	-	-	-	-
101	Ending Balance		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
102	Percent Allocable to Water System		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
103	Interest Income Allocable to Water System	RW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
104	Interest Income Allocable to Sewer System	RS	-	-	-	-	-	-	-	-	-	-	-

Table 1-14

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Projected Cash Balances and Interest Earnings By Fund

Line No.	Description	[1]	Fiscal Year Ending September 30,											
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
INTEREST INCOME														
Unrestricted														
105	Water System	UW	\$ 317,103	\$ 301,344	\$ 326,922	\$ 369,526	\$ 415,125	\$ 451,963	\$ 472,505	\$ 464,465	\$ 475,674	\$ 416,440	\$ 436,717	
106	Sewer System	US	474,253	449,887	473,712	522,333	575,552	614,973	642,458	631,546	646,542	567,288	594,419	
107	Total		\$ 791,356	\$ 751,231	\$ 800,634	\$ 891,858	\$ 990,677	\$ 1,066,936	\$ 1,114,963	\$ 1,096,011	\$ 1,122,216	\$ 983,728	\$ 1,031,136	
Restricted														
108	Water System	RW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
109	Sewer System	RS	-	-	-	-	-	-	-	-	-	-	-	
110	Total		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
TOTAL INTEREST INCOME														
111	Water System		\$ 317,103	\$ 301,344	\$ 326,922	\$ 369,526	\$ 415,125	\$ 451,963	\$ 472,505	\$ 464,465	\$ 475,674	\$ 416,440	\$ 436,717	
112	Sewer System		474,253	449,887	473,712	522,333	575,552	614,973	642,458	631,546	646,542	567,288	594,419	
113	Total		\$ 791,356	\$ 751,231	\$ 800,634	\$ 891,858	\$ 990,677	\$ 1,066,936	\$ 1,114,963	\$ 1,096,011	\$ 1,122,216	\$ 983,728	\$ 1,031,136	

Footnotes:

- [1] UW or US = Interest earnings unrestricted and assumed to be available to meet system expenditure requirements.
RW or RS = Interest earnings restricted and assumed to not be available to meet system expenditure requirements.

Table 1-15

**City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System**

Projected Other Operating Revenues

Line No.	Revenue Code	Description	Escalation Reference	Fiscal Year Ending September 30,										
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
WATER SYSTEM														
1	343320.0000	Firelines	Constant	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000	\$ 391,000
2	34340.0000	Water Tapping	Constant	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
3	343341.0000	Sub-Meter Service	Constant	1,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
4	343900.0000	Utility Service	Constant	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
5	36994.0000	Utility Penalties	Constant	298,905	298,905	298,905	298,905	298,905	298,905	298,905	298,905	298,905	298,905	298,905
6	369997.0000	Miscellaneous Water	Constant	10,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000
7	36999.0000	Miscellaneous	Constant	17,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
8		Total Other Water Operating Revenue		<u>\$ 783,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>	<u>\$ 786,905</u>
SEWER SYSTEM														
9	343520.0000	Sewer Connection Fees	Constant	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
10	343550.0000	Sewer Fees - Outside	Constant	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000	3,068,000
11	343900.0000	Utility Service	Constant	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
12	36994.0000	Utility Penalties	Constant	443,595	443,595	443,595	443,595	443,595	443,595	443,595	443,595	443,595	443,595	443,595
13	369998.0000	Miscellaneous Sewer	Constant	30,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000
14	36999.0000	Miscellaneous	Constant	17,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
15		Total Other Wastewater Operating Revenue		<u>\$ 3,584,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>	<u>\$ 3,599,595</u>
16		Total Other Operating Revenue		<u>\$ 4,368,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>	<u>\$ 4,386,500</u>

Table 1-16

City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System

Projected Operating Results and Debt Service Coverage

Line No.	Description	Fiscal Year Ending September 30,										
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	System Revenue											
	User Rate Revenue											
1	Water User Rate Revenue	\$ 31,337,902	\$ 32,015,679	\$ 33,380,467	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255	\$ 34,745,255
2	Sewer User Rate Revenue	46,507,450	47,537,926	49,367,941	51,197,957	51,197,957	51,197,957	51,197,957	51,197,957	51,197,957	51,197,957	51,197,957
	<u>Water System</u>											
3	Rate Adjustment (%)	0.00%	3.50%	3.50%	3.50%	3.50%	3.50%	0.82%	0.83%	0.81%	0.83%	0.85%
	<u>Sewer System</u>											
4	Rate Adjustment (%)	0.00%	1.61%	1.50%	1.50%	1.50%	1.50%	0.82%	0.83%	0.81%	0.83%	0.85%
5	Cumulative Additional User Rate Adjustment Revenue - Water	\$ -	\$ 840,400	\$ 2,377,500	\$ 3,777,400	\$ 5,125,700	\$ 6,521,200	\$ 6,857,900	\$ 7,204,700	\$ 7,546,600	\$ 7,898,800	\$ 8,262,000
6	Cumulative Additional User Rate Adjustment Revenue - Sewer	-	574,000	1,547,200	2,396,600	3,200,600	4,016,600	4,467,000	4,931,000	5,388,400	5,859,800	6,345,700
7	Total User Rate Revenue	\$ 77,845,352	\$ 80,968,005	\$ 86,673,109	\$ 92,117,213	\$ 94,269,513	\$ 96,481,013	\$ 97,268,113	\$ 98,078,913	\$ 98,878,213	\$ 99,701,813	\$ 100,550,913
8	Other Operating Revenue	\$ 4,368,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500	\$ 4,386,500
9	Unrestricted Interest Income	791,356	751,231	800,634	891,858	990,677	1,066,936	1,114,963	1,096,011	1,122,216	983,728	1,031,136
10	Total System Revenue	\$ 83,005,208	\$ 86,105,736	\$ 91,860,243	\$ 97,395,571	\$ 99,646,690	\$ 101,934,449	\$ 102,769,576	\$ 103,561,423	\$ 104,386,928	\$ 105,072,041	\$ 105,968,548
	Current Expenses for Debt Service Coverage Purposes											
11	Personal Services	\$ 8,173,000	\$ 8,079,000	\$ 8,336,510	\$ 8,602,502	\$ 8,877,269	\$ 9,161,114	\$ 9,454,350	\$ 9,757,303	\$ 10,070,311	\$ 10,393,724	\$ 10,727,905
12	Operating Supplies	208,300	238,300	244,904	251,473	257,995	264,461	271,101	277,922	284,674	291,607	298,726
13	Contractual Services	44,668,670	45,568,310	47,487,442	49,400,503	49,628,838	49,864,271	50,018,024	50,177,125	50,339,495	50,507,544	50,681,503
14	Utilities	956,000	958,000	1,010,747	1,066,075	1,106,581	1,148,520	1,192,082	1,237,332	1,284,190	1,332,864	1,383,425
15	Internal Charges	3,222,000	3,250,000	3,347,500	3,447,925	3,551,363	3,657,904	3,767,641	3,880,670	3,997,090	4,117,003	4,240,513
16	Administrative Fees	2,400,000	2,400,000	2,472,000	2,546,160	2,622,545	2,701,221	2,782,258	2,865,726	2,951,697	3,040,248	3,131,456
17	Other Operating	3,247,227	3,071,840	3,183,715	3,292,551	3,371,345	3,449,623	3,517,204	3,586,111	3,654,020	3,723,530	3,786,987
18	Contingency	3,212,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000	3,036,000
19	Less Administrative Fees, Depreciation, and Amortization	(2,400,000)	(2,400,000)	(2,472,000)	(2,546,160)	(2,622,545)	(2,701,221)	(2,782,258)	(2,865,726)	(2,951,697)	(3,040,248)	(3,131,456)
20	Total Current Expenses for Debt Service Coverage Purposes	\$ 63,687,197	\$ 64,201,450	\$ 66,646,818	\$ 69,097,029	\$ 69,829,392	\$ 70,581,891	\$ 71,256,401	\$ 71,952,463	\$ 72,665,781	\$ 73,402,272	\$ 74,155,059
21	Operating Ratio	77%	75%	73%	71%	70%	69%	69%	69%	70%	70%	70%
22	Net Revenues Available for Debt Service	\$ 19,318,011	\$ 21,904,286	\$ 25,213,425	\$ 28,298,542	\$ 29,817,298	\$ 31,352,558	\$ 31,513,174	\$ 31,608,960	\$ 31,721,147	\$ 31,669,768	\$ 31,813,490
	Senior Lien Indebtedness											
23	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1A	\$ 3,021,538	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
24	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1B	450,000	-	-	-	-	-	-	-	-	-	-
25	Water and Sewer Revenue Refunding Bonds, Taxable Series 2009J-1C	1,350,000	-	-	-	-	-	-	-	-	-	-
26	Water and Sewer Revenue and Revenue Refunding Bonds, Series 2017	6,905,800	6,809,400	6,639,400	6,639,150	6,640,400	10,222,900	10,227,400	8,658,650	8,654,650	8,655,400	8,655,150
27	Water and Sewer Revenue Refunding Bonds, Series 2020	-	530,400	795,600	2,864,700	2,857,550	760,800	759,800	838,000	840,350	842,600	844,750
28	Series 2022 Bonds	-	-	1,463,367	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750	2,532,750
29	Total Annual Debt Service on Senior Lien Indebtedness	\$ 11,727,338	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650

Table 1-16

City of Miami Beach, Florida
Water and Sewer Rate Study
Water and Sewer System

Projected Operating Results and Debt Service Coverage

Line No.	Description	Fiscal Year Ending September 30,										
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
SENIOR LIEN BONDS DEBT SERVICE COVERAGE:												
Net Revenues Debt Service Coverage												
30	Net Revenues Available for Debt Service	\$ 19,318,011	\$ 21,904,286	\$ 25,213,425	\$ 28,298,542	\$ 29,817,298	\$ 31,352,558	\$ 31,513,174	\$ 31,608,960	\$ 31,721,147	\$ 31,669,768	\$ 31,813,490
31	Total Annual Debt Service on Senior Lien Indebtedness	\$ 11,727,338	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650
32	Debt Service Coverage (110% Required)	165%	298%	283%	235%	248%	232%	233%	263%	264%	263%	264%
ALL-IN / OVERALL DEBT SERVICE COVERAGE:												
Net Revenues Debt Service Coverage												
33	Gross Revenues	\$ 83,005,208	\$ 86,105,736	\$ 91,860,243	\$ 97,395,571	\$ 99,646,690	\$ 101,934,449	\$ 102,769,576	\$ 103,561,423	\$ 104,386,928	\$ 105,072,041	\$ 105,968,548
34	Less All Operating Expenses	66,109,197	66,608,450	69,126,028	71,650,615	72,459,585	73,290,991	74,046,774	74,826,547	75,626,087	76,451,388	77,295,648
35	Net Revenues	\$ 16,896,011	\$ 19,497,286	\$ 22,734,215	\$ 25,744,956	\$ 27,187,104	\$ 28,643,458	\$ 28,722,801	\$ 28,734,877	\$ 28,760,841	\$ 28,620,653	\$ 28,672,901
36	Senior and Junior Lien Indebtedness	\$ 11,727,338	\$ 7,339,800	\$ 8,898,367	\$ 12,036,600	\$ 12,030,700	\$ 13,516,450	\$ 13,519,950	\$ 12,029,400	\$ 12,027,750	\$ 12,030,750	\$ 12,032,650
37	Debt Service Coverage (200% Target)	144%	266%	255%	214%	226%	212%	212%	239%	239%	238%	238%
Net Revenues After Payment of Debt Service and Required Transfers -												
38	Available for Other System Purposes	\$ 5,168,673	\$ 12,157,486	\$ 13,835,849	\$ 13,708,356	\$ 15,156,404	\$ 15,127,008	\$ 15,202,851	\$ 16,705,477	\$ 16,733,091	\$ 16,589,903	\$ 16,640,251

Table 1-17

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Summary of Projected Sources and Uses of Funds

Line No.	Description	Fiscal Year Ending September 30,										
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Unrestricted Cash Balances from Below	\$ 73,288,155	\$ 77,838,841	\$ 86,176,690	\$ 96,060,060	\$ 103,314,524	\$ 108,116,328	\$ 106,593,734	\$ 109,214,618	\$ 95,365,115	\$ 100,105,424	\$ 106,924,482
OPERATING FUND - 425 AND RATE STABILIZATION FUND												
<u>Sources of Funds</u>												
2	Water and Wastewater User Rate Revenue	\$ 77,845,352	\$ 80,968,005	\$ 86,673,109	\$ 92,117,213	\$ 94,269,513	\$ 96,481,013	\$ 97,268,113	\$ 98,078,913	\$ 98,878,213	\$ 99,701,813	\$ 100,550,913
3	Other Operating Revenue	4,368,500	4,386,500	4,386,500	4,386,500	4,386,500	4,386,500	4,386,500	4,386,500	4,386,500	4,386,500	4,386,500
4	Unrestricted Interest Income	791,356	751,231	800,634	891,858	990,677	1,066,936	1,114,963	1,096,011	1,122,216	983,728	1,031,136
5	Impact Fees Used to Pay City Debt Service	1,036,345	-	-	-	-	-	-	-	-	-	-
6	Available Cash Balances	68,410,482	67,111,155	71,661,841	79,999,690	89,883,060	97,137,524	101,939,328	100,416,734	103,037,618	89,188,115	93,928,424
7	Total Sources of Funds	\$ 152,452,035	\$ 153,216,891	\$ 163,522,084	\$ 177,395,260	\$ 189,529,750	\$ 199,071,973	\$ 204,708,903	\$ 203,978,158	\$ 207,424,546	\$ 194,260,156	\$ 199,896,973
<u>Uses of Funds</u>												
8	Operating Expenses:	\$ 66,109,197	\$ 66,608,450	\$ 69,126,028	\$ 71,650,615	\$ 72,459,585	\$ 73,290,991	\$ 74,046,774	\$ 74,826,547	\$ 75,626,087	\$ 76,451,388	\$ 77,295,648
9	City Debt Service	11,727,338	7,339,800	8,898,367	12,036,600	12,030,700	13,516,450	13,519,950	12,029,400	12,027,750	12,030,750	12,032,650
10	Capital Funded from Rates	670,000	2,690,000	1,018,248	672,313	2,016,443	1,325,704	771,445	1,307,593	1,307,593	1,307,593	1,307,593
11	Transfers to Capital Replacement Funds	6,834,345	4,916,800	4,479,752	3,152,672	5,885,497	8,999,500	15,954,000	12,777,000	29,275,000	10,542,000	8,513,600
12	Total Uses of Funds	\$ 85,340,880	\$ 81,555,050	\$ 83,522,394	\$ 87,512,201	\$ 92,392,226	\$ 97,132,645	\$ 104,292,169	\$ 100,940,540	\$ 118,236,431	\$ 100,331,731	\$ 99,149,491
13	Ending Cash Balances	\$ 67,111,155	\$ 71,661,841	\$ 79,999,690	\$ 89,883,060	\$ 97,137,524	\$ 101,939,328	\$ 100,416,734	\$ 103,037,618	\$ 89,188,115	\$ 93,928,424	\$ 100,747,482
14	Total Uses of Funds and Ending Cash Balances	\$ 152,452,035	\$ 153,216,891	\$ 163,522,084	\$ 177,395,260	\$ 189,529,750	\$ 199,071,973	\$ 204,708,903	\$ 203,978,158	\$ 207,424,546	\$ 194,260,156	\$ 199,896,973
CAPITAL REPLACEMENT AND IMPROVEMENT FUNDS (COMBINED WATER AND WASTEWATER)												
<u>Sources of Funds</u>												
15	Available Cash Balances	\$ 9,409,532	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000
16	Transfers In - Operations	6,834,345	4,916,800	4,479,752	3,152,672	5,885,497	8,999,500	15,954,000	12,777,000	29,275,000	10,542,000	8,513,600
17	Interest Income	77,933	61,770	61,770	61,770	61,770	61,770	61,770	61,770	61,770	61,770	61,770
18	Total Sources of Funds	\$ 16,321,809	\$ 11,155,570	\$ 10,718,522	\$ 9,391,442	\$ 12,124,267	\$ 15,238,270	\$ 22,192,770	\$ 19,015,770	\$ 35,513,770	\$ 16,780,770	\$ 14,752,370
<u>Uses of Funds</u>												
19	Capital Projects	\$ 10,066,877	\$ 4,916,800	\$ 4,479,752	\$ 3,152,672	\$ 5,885,497	\$ 8,999,500	\$ 15,954,000	\$ 12,777,000	\$ 29,275,000	\$ 10,542,000	\$ 8,513,600
20	Interest Income to Fund Operations	77,933	61,770	61,770	61,770	61,770	61,770	61,770	61,770	61,770	61,770	61,770
21	Total Uses of Funds	\$ 10,144,809	\$ 4,978,570	\$ 4,541,522	\$ 3,214,442	\$ 5,947,267	\$ 9,061,270	\$ 16,015,770	\$ 12,838,770	\$ 29,336,770	\$ 10,603,770	\$ 8,575,370
22	Ending Cash Balances	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000	\$ 6,177,000
23	Total Uses of Funds and Ending Cash Balances	\$ 16,321,809	\$ 11,155,570	\$ 10,718,522	\$ 9,391,442	\$ 12,124,267	\$ 15,238,270	\$ 22,192,770	\$ 19,015,770	\$ 35,513,770	\$ 16,780,770	\$ 14,752,370

Table 1-17

City of Miami Beach, Florida
Water and Sewer Rate Study

Summary of Projected Sources and Uses of Funds

Line No.	Description	Fiscal Year Ending September 30,											
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
WATER IMPACT FEE FUND													
<u>Sources of Funds</u>													
24	Available Cash Balances	\$ 411,881	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
25	Transfers In - Water Impact Fee Collections	-	-	-	-	-	-	-	-	-	-	-	
26	Interest Income	-	-	-	-	-	-	-	-	-	-	-	
27	Total Sources of Funds	\$ 411,881	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
<u>Uses of Funds</u>													
28	Capital Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	
29	Payment of Clty Debt Service	411,881	-	-	-	-	-	-	-	-	-	-	
30	Total Uses of Funds	\$ 411,881	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	
31	Ending Cash Balances	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
32	Total Uses of Funds and Ending Cash Balances	\$ 411,881	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
SEWER IMPACT FEE FUND													
<u>Sources of Funds</u>													
33	Available Cash Balances	\$ 624,464	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
34	Transfers In - Wastewater Impact Fee Collections	-	-	-	-	-	-	-	-	-	-	-	
35	Interest Income	-	-	-	-	-	-	-	-	-	-	-	
36	Total Sources of Funds	\$ 624,464	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
<u>Uses of Funds</u>													
37	Capital Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	
38	Payment of Debt Service	624,464	-	-	-	-	-	-	-	-	-	-	
39	Transfers Out - Developer Reimbursement	-	-	-	-	-	-	-	-	-	-	-	
40	Total Uses of Funds	\$ 624,464	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	
41	Ending Cash Balances	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	
42	Total Uses of Funds and Ending Cash Balances	\$ 624,464	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	

SECTION 2: USER RATE DESIGN

SECTION 2:

USER RATE DESIGN

2-1: User Rate Design - General

User rate design involves the calculation of monthly rates and charges for each customer classification (e.g., residential, commercial, etc.). As noted in the transmittal letter of this report, developing a financial and rate plan for the System involves multiple considerations:

- The financial and rate plan should consider utility best management practices and should promote financial sustainability and creditworthiness.
- The proposed monthly user rates should be considered equitable, affordable, and competitive.
- The proposed rate plan should not cause "rate shock" to customers. From a best financial management practices standpoint, smaller incremental increases over time can help avoid future rate shock and large "catch up" rate increases.
- The proposed rates should enable the utility to perform the necessary capital improvements and operational changes to remain compliant with the regulatory requirements of the Florida Department of Environmental Protection and the Florida Department of Health.
- The proposed user rates should provide the System with an adequate level of revenue stability given the seasonality and cyclicity of water sales and corresponding billable sewer flow.

The City provided GovRates with detailed customer and sales information by customer classification and service type. The billing information was used to develop bill frequency analyses for the water system. These bill frequency analyses were used to develop a projection of detailed billing determinants (i.e., water usage by rate block) which, along with the customer and sales forecast, provides the basis for estimating utility rate revenues and projecting the effects of proposed rate changes.

2-2: Design of Proposed Monthly Water Rates

In accordance with the rate design guidelines, customer forecast, projected net revenue requirements, and discussions with the City staff, GovRates developed the proposed water user rates shown in Table ES-1 of the executive summary of this report. The proposed monthly water rates reflect:

- Gradual increase of the percentage of revenue recovered through fixed / base charges.
- Maintenance of the relationships among customer classes consistent with those recognized in the 2016 rate study.
- Adjustment of the water pass-through rate applied to all billed usage based on the latest data, summarized in the following Exhibit 2-1:

**Exhibit 2-1: Water System
Pass-Through Rate for Fiscal Year 2021**

Description	Amount
Water Billed Sales (kgal)	6,295,515
Allowance for Non-Revenue Water	15.39%
Projected Water Purchases (kgal)	7,441,040
Miami-Dade Wholesale Rate for Fiscal Year 2021	\$1.7947
Total Purchased Water Cost	\$13,354,434
Adjustment for DERM (6%)	\$14,206,844
Cost Per 1,000 Gallons	\$2.26

The proposed water rates are designed to generate the water revenue amounts needed during the Forecast Period.

2-3: Design of Proposed Monthly Sewer Rates

In accordance with the rate design guidelines, customer forecast, projected net revenue requirements, and discussions with the City staff, GovRates developed the proposed sewer rates shown in Table ES-1 of the executive summary of this report. The proposed monthly sewer rates reflect:

- Gradual increase of the percentage of revenue recovered through fixed / base charges.
- Maintenance of the relationships among customer classes consistent with those recognized in the 2016 rate study.

- Adjustment of the sewer pass-through rate applied to all billed usage based on the latest data, summarized in the following Exhibit 2-2:

**Exhibit 2-2: Sewer System
Pass-Through Rate for Fiscal Year 2021**

Description	Amount
Wastewater Billed Flow (kgal)	4,416,381
Allowance for Inflow and Infiltration	33.20%
Projected Wastewater Treated (kgal)	6,611,841
Miami-Dade Wholesale Rate for Fiscal Year 2021	\$3.2971
Total Purchased Wastewater Cost - Retail	\$21,799,902
Adjustment for DERM (6%)	\$23,191,385
Cost Per 1,000 Gallons	<u>\$5.25</u>

The proposed sewer rates are designed to generate the sewer revenue amounts needed during the Forecast Period.

2-4: Bill Comparisons – Neighboring Utilities

In order to provide the City with additional information regarding the current rates charged for service, a comparison of the City's existing and proposed rates for customers served by a 5/8-inch or 3/4-inch meter (representative of the single-family residential class and a large portion of the commercial class) with charges for similar service by 29 neighboring utilities in southeast Florida has been made. It should be recognized that a rate or bill comparison is not a "report card" on how well a utility is performing. Several factors have an effect on the level of rates charged. These factors may include, but are not limited to, the following:

1. Source of water supply and level of treatment required before the distribution of water to the ultimate customer, including how much of water supply is purchased from other utilities;
2. Plant capacity utilization, age and assistance in the funding of such plant capacity by federal grants, connection fees, etc.;
3. Overall size of the customer base (economies of scale) served as well as the type of customer served (certain customers may have higher usage requirements which may dampen per unit rates which is common for high commercial or industrialized customer bases for utilities);
4. Geographic density of the customer base (utilities with many high-density multifamily customers may have lower unit costs);
5. General fund and administrative fee transfers made by municipal and county systems which may account for differences in level of rates charged;

6. Bond covenants and funding requirements of the rates; and
7. Level of capital improvements required to meet service area needs, including the construction of growth-related assets in relation to service area expansion.

For the utilities included in the rate comparisons on Tables 2-1 through 2-3 at the end of this section, no analysis has been made of the above-mentioned factors as they relate to the reported water and sewer rates currently being charged by the other utilities surveyed for the purposes of this rate review. However, the proposed water and sewer rates of the City produce bills that are comparable / competitive with those of neighboring utilities.

Figure 2-1 at the end of this section shows a graphical comparison of how bills under the proposed Fiscal Year 2021 rates compare with those of other "neighboring" utilities for a single family residential customer with a monthly usage of 7,000 gallons – the historical average monthly usage for a 5/8" or 3/4" meter customer in this class. As indicated in Figure 2-1, at the 7,000-gallon usage level, seven (7) utilities – the City of Lake Worth Beach, the City of Hollywood, the City of Dania Beach, the City of Wilton Manors, the City of North Miami Beach, the City of Oakland Park, and the Town of Davie – currently charge more for combined water and sewer service than what the City would charge under the Fiscal Year 2021 proposed rates. Moreover, it is important to note that the majority of the surveyed utilities are currently evaluating the sufficiency of their water and sewer rates or have already scheduled future rate adjustments.

2-5: Wholesale Sewer Rates

The City currently provides wholesale sanitary sewer service to the Village of Bal Harbour, the Town of Bay Harbor Islands, and the Town of Surfside (previously defined as the "Satellite Municipalities"). Pursuant to the agreement for service between the City and the Satellite Municipalities, the wholesale rate is a volumetric-only rate which includes: i) the pass-through of the cost of purchased sewer service from the County; ii) an allowance for transmission-related operating expenses and administration; and iii) an allowance for the funding of renewals and replacements. Based on our review, GovRates recommends wholesale rates of \$4.0935 per 1,000 gallons of service for the wet season and \$3.2129 per 1,000 gallons for the dry season (\$3.6532 per 1,000 gallons average rate) effective in Fiscal Year 2021. The determination of this rate is included on Table 2-6 at the end of this section, and the following is a summary discussion of the cost components considered in the derivation of the wholesale sewer rate:

- The Miami-Dade County wholesale sanitary sewer rate charged to the City for sanitary sewer treatment and disposal service. For the Fiscal Year 2021, the County wholesale sanitary sewer rate will be \$3.7092 during the wet season and \$2.8850 during the dry season, or an average of \$3.2971 per 1,000 gallons.

- An Operation and Maintenance charge to recover the City's costs of facilities shared with each of the Satellite Municipalities – Booster Pump Stations No. 28 and 29 plus force mains between the interconnection point for each of the Satellite Municipalities, the booster stations, and the County mains. These costs were initially identified in a study performed by CDM Smith, Inc., the results of which were summarized in their "City of Miami Beach 2007 Satellite City Wastewater Transmission Cost of Service Letter Report" dated December 6, 2007 (the "CDM Report"). The CDM Report identified operation and maintenance charges of \$0.0460 per 1,000 gallons for Booster Station 28 and \$0.0520 for Booster Station 29. These amounts have been indexed based on the historical change in the Miami-Fort Lauderdale-West Palm Beach Index, the index utilized for most of the City's rates, fees, and charges. From December 2007 to December 2019, this CPI factor has increased by 24.66%. The Operation and Maintenance Expense Charge included in the rate for Fiscal Year 2021 was \$0.1222 per 1,000 gallons based on the application of the index.
- An Administration Fee of 1.5% as allowed per the City's agreements with the wholesale customers.
- A renewal and replacement allowance equal to 5% of the total rate to provide for the recovery of depreciation expenses as allowed per the agreements with the Satellite Municipalities.

Based on discussions with City staff, this methodology is proposed to be applied for deriving the Fiscal Year 2021 wholesale sewer rate. The derivation of the proposed wholesale sewer rates for the Satellite Municipalities as shown in Table 2-4 and summarized in the following Exhibit 2-3:

**Exhibit 2-3: Derivation of
Satellite Municipalities Wholesale Sewer Rates for Fiscal Year 2021 [1]**

Description	Wet Season	Dry Season
Miami-Dade County Wholesale Sewer Rate (\$ / 1,000 Gallons) [2]	\$3.7092	\$2.8850
Operation and Maintenance Charges [3]	0.1222	0.1222
Subtotal	\$3.8314	\$3.0072
Administration Charge of 1.5% [4]	0.0575	0.0451
Rate with Administration Charge	\$3.8888	\$3.0523
Renewal and Replacement Allowance of 5.00% of Total Rate [5]	0.2047	0.1606
Total Rate (\$ / 1,000 Gallons)	\$4.0935	\$3.2129

[1] Amounts derived from Table 2-4.

[2] County rates effective October 1, 2020.

[3] Reflects costs identified in the CDM Report adjusted for historical changes in the CPI.

[4] The 1.5% administration fee is allowed per the agreements with the Satellite Municipalities.

[5] The renewal and replacement allowance provides for the recovery of depreciation expenses as allowed per the agreements with the Satellite Municipalities.

Table 2-1
City of Miami Beach, Florida

Comparison of Typical Monthly Residential Bills for Water Service

Residential Service for a 5/8" or 3/4" Meter [1]											
Line No.	Description	WATER USAGE									
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons [2]	10,000 Gallons	12,000 Gallons	15,000 Gallons	20,000 Gallons	
City of Miami Beach, Florida											
1	Existing Water Rates - Effective 10/1/2019	\$ 8.50	\$ 14.22	\$ 19.94	\$ 22.80	\$ 28.52	\$ 40.54	\$ 49.70	\$ 63.44	\$ 91.58	
2	Proposed Water Rates - Effective ASAP	9.35	15.55	21.75	24.85	31.05	43.30	52.45	66.17	93.53	
3	Difference - Amount	0.85	1.33	1.81	2.05	2.53	2.76	2.75	2.73	1.95	
4	Difference - Percent	10.0%	9.4%	9.1%	9.0%	8.9%	6.8%	5.5%	4.3%	2.1%	
Surveyed Utilities - Located in Miami-Dade County											
5	City of Coral Gables [3]	\$ 3.92	\$ 3.92	\$ 10.60	\$ 14.41	\$ 25.07	\$ 41.68	\$ 52.75	\$ 75.47	\$ 116.52	
6	City of Hialeah [4][5]	5.11	10.41	15.71	18.36	24.08	32.66	38.64	47.61	62.56	
7	City of Homestead [4][5]	7.54	9.26	11.31	12.50	14.89	18.67	21.47	26.14	35.55	
8	Miami-Dade County [6]	3.92	3.92	10.60	14.41	25.07	41.68	52.75	75.47	116.52	
9	City of North Miami Beach [5]	13.70	21.34	28.98	32.80	40.44	53.19	61.69	77.59	104.09	
10	City of Opa-Locka [4]	4.48	10.40	16.32	19.28	26.68	37.78	61.86	97.98	188.28	
Surveyed Utilities - Located Outside Miami-Dade County											
11	City of Boynton Beach [6]	\$ 12.65	\$ 16.03	\$ 19.41	\$ 21.10	\$ 24.48	\$ 30.89	\$ 36.95	\$ 46.04	\$ 61.19	
12	Broward County [6]	17.13	20.37	24.90	27.81	37.54	58.00	71.64	96.39	137.64	
13	City of Cooper City [6]	12.79	19.13	25.47	28.64	35.98	46.99	56.29	70.24	93.49	
14	City of Coral Springs [6]	13.95	17.43	20.91	23.60	28.98	39.73	47.79	65.91	96.11	
15	City of Dania Beach [6]	14.55	22.73	30.91	35.00	48.08	67.70	80.78	102.03	142.88	
16	Town of Davie [6]	22.23	29.57	36.91	40.58	51.52	67.93	82.53	104.43	140.93	
17	City of Delray Beach	15.72	15.72	16.97	18.22	20.72	24.47	26.97	32.97	42.97	
18	City of Fort Lauderdale [6]	6.77	11.67	19.53	24.94	35.76	54.71	68.25	95.64	141.29	
19	City of Hallandale Beach [6]	19.81	27.91	36.29	40.48	49.22	62.33	72.03	86.58	110.83	
20	City of Hollywood [6]	7.82	14.50	22.06	28.74	42.11	62.16	80.74	120.80	187.58	
21	City of Lake Worth Beach [6]	21.14	27.96	34.78	40.03	50.53	70.00	84.22	121.54	183.74	
22	City of Margate [6]	12.46	19.90	27.34	31.06	39.43	53.38	62.68	76.63	104.58	
23	City of Miramar [6]	15.93	22.87	29.81	33.28	41.78	54.53	63.03	75.78	102.48	
24	City of Oakland Park [6]	15.19	28.27	42.15	49.49	64.17	88.31	105.11	131.35	178.55	
25	Palm Beach County [6]	14.80	17.78	20.76	24.06	30.66	40.56	57.18	82.11	123.66	
26	City of Pembroke Pines [6]	17.38	17.38	24.13	30.88	44.38	64.63	78.13	98.38	132.13	
27	City of Plantation [6]	14.24	18.28	22.32	24.34	30.41	42.56	50.66	68.87	99.22	
28	City of Riviera Beach [6]	18.13	23.35	28.57	31.18	38.32	49.03	58.43	72.53	96.03	
29	Seacoast Utility Authority	21.11	23.25	25.39	26.46	31.74	44.37	52.79	65.42	86.47	

Table 2-1
City of Miami Beach, Florida

Comparison of Typical Monthly Residential Bills for Water Service

Residential Service for a 5/8" or 3/4" Meter [1]											
Line No.	Description	WATER USAGE									
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons [2]	10,000 Gallons	12,000 Gallons	15,000 Gallons	20,000 Gallons	
30	City of Sunrise [6]	20.87	29.05	37.23	41.32	49.50	61.77	69.95	82.22	102.67	
31	City of Tamarac [6]	11.77	15.31	19.44	21.80	27.72	38.40	45.52	64.21	95.36	
32	City of West Palm Beach [6]	23.08	30.22	37.36	40.93	48.99	62.43	71.41	87.21	113.55	
33	City of Wilton Manors [6]	26.69	35.43	44.17	48.54	57.28	70.39	79.13	92.24	118.94	
34	Other Florida Utilities Average	\$ 14.31	\$ 19.43	\$ 25.53	\$ 29.11	\$ 37.43	\$ 51.07	\$ 61.77	\$ 80.68	\$ 114.34	
35	Minimum	3.92	3.92	10.60	12.50	14.89	18.67	21.47	26.14	35.55	
36	Maximum	26.69	35.43	44.17	49.49	64.17	88.31	105.11	131.35	188.28	

Footnotes:

- [1] Amounts reflect bills under single family residential user rates in effect July 2020 and do not include any taxes, franchise fees, or water restriction surcharges, if any. These bills also reflect rates charged to customers within the municipal borders (e.g., no outside-municipality surcharges, if applied, are included in the bill comparison).
- [2] Reflects historical average usage of a typical single family residential customer with both water and wastewater service within the service area of the City of Miami Beach's utility system.
- [3] The Miami-Dade Water and Sewer Department currently provides water on a retail basis for the City of Coral Gables; Coral Gables provides retail sanitary sewer.
- [4] Utility purchases sanitary sewer on a wholesale basis from the Miami-Dade Water and Sewer Department.
- [5] Utility purchases potable water service on a wholesale basis from the Miami-Dade Water and Sewer Department.
- [6] Utility is currently involved in a rate study, is planning to conduct a rate study, or plans to implement a rate revision or price index / pass-through adjustment within the next twelve months following the comparison preparation date.

Table 2-2
City of Miami Beach, Florida

Comparison of Typical Monthly Residential Bills for Sewer Service

Residential Service for a 5/8" or 3/4" Meter [1]										
Line No.	Description	METERED WATER USAGE								
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons [2]	10,000 Gallons	12,000 Gallons	15,000 Gallons	20,000 Gallons
City of Miami Beach, Florida										
1	Existing Sewer Rates - Effective 10/1/2019	\$ 9.19	\$ 29.47	\$ 49.75	\$ 59.89	\$ 80.17	\$ 110.59	\$ 130.87	\$ 161.29	\$ 211.99
2	Proposed Sewer Rates - Effective ASAP	10.11	30.63	51.15	61.41	81.93	112.71	133.23	164.01	215.31
3	Difference - Amount	0.92	1.16	1.40	1.52	1.76	2.12	2.36	2.72	3.32
4	Difference - Percent	10.0%	3.9%	2.8%	2.5%	2.2%	1.9%	1.8%	1.7%	1.6%
Surveyed Utilities - Located in Miami-Dade County										
5	City of Coral Gables [3]	\$ 4.80	\$ 13.20	\$ 22.56	\$ 30.42	\$ 46.18	\$ 70.16	\$ 86.15	\$ 110.13	\$ 150.10
6	City of Hialeah [4][5]	5.59	18.13	30.67	36.94	50.42	70.64	84.58	105.49	140.34
7	City of Homestead [4][5]	15.27	21.74	28.21	31.44	37.92	47.62	54.09	63.80	79.98
8	Miami-Dade County [6]	6.83	6.83	21.71	30.18	47.13	72.54	89.49	114.91	157.27
9	City of North Miami Beach [5]	34.50	47.48	61.46	68.95	83.93	108.26	124.48	149.80	192.00
10	City of Opa-Locka [4]	4.48	14.14	23.80	28.63	42.41	63.08	94.16	140.78	218.48
Surveyed Utilities - Located Outside Miami-Dade County										
11	City of Boynton Beach [6]	\$ 19.16	\$ 23.56	\$ 27.96	\$ 30.16	\$ 34.56	\$ 34.56	\$ 34.56	\$ 34.56	\$ 34.56
12	Broward County [6]	20.54	29.06	37.58	41.84	50.36	63.14	71.66	84.44	84.44
13	City of Cooper City [6]	27.67	33.99	40.31	43.47	49.79	59.27	59.27	59.27	59.27
14	City of Coral Springs [6]	23.04	31.80	40.56	44.94	53.70	66.84	75.60	88.74	110.64
15	City of Dania Beach [6]	21.52	36.44	51.36	58.82	73.74	96.12	111.04	133.42	170.72
16	Town of Davie [6]	39.83	54.17	68.51	75.68	90.02	111.53	125.87	147.38	147.38
17	City of Delray Beach 0	18.04	24.82	31.61	35.00	41.78	51.96	58.74	58.74	58.74
18	City of Fort Lauderdale [6]	11.33	19.65	33.00	42.19	60.57	88.14	106.52	134.09	180.04
19	City of Hallandale Beach [6]	20.21	28.47	37.01	41.28	50.20	63.58	73.48	88.33	113.08
20	City of Hollywood [6]	7.83	27.24	46.65	56.36	75.77	104.89	116.73	116.73	116.73
21	City of Lake Worth Beach [6]	15.66	29.64	43.62	50.61	64.59	85.56	99.54	99.54	99.54
22	City of Margate [6]	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62
23	City of Miramar [6]	18.65	28.35	38.05	42.90	52.60	67.15	76.85	91.40	115.65
24	City of Oakland Park [6]	18.00	30.76	43.52	49.90	62.66	81.80	94.56	113.70	113.70
25	Palm Beach County [6]	16.60	20.64	24.68	29.42	38.90	53.12	53.12	53.12	53.12
26	City of Pembroke Pines [6]	22.24	22.24	28.99	35.74	49.24	69.49	82.99	103.24	136.99
27	City of Plantation [6]	18.65	29.07	39.49	44.70	55.12	70.75	81.17	96.80	122.85
28	City of Riviera Beach [6]	17.54	23.18	28.82	31.64	37.28	45.74	45.74	45.74	45.74
29	Seacoast Utility Authority 0	30.84	32.26	33.68	34.39	35.81	37.94	37.94	37.94	37.94

Table 2-2
City of Miami Beach, Florida

Comparison of Typical Monthly Residential Bills for Sewer Service

Residential Service for a 5/8" or 3/4" Meter [1]											
Line No.	Description	METERED WATER USAGE									
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons [2]	10,000 Gallons	12,000 Gallons	15,000 Gallons	20,000 Gallons	
30	City of Sunrise [6]	29.68	38.00	46.32	50.48	58.80	71.28	79.60	92.08	96.24	
31	City of Tamarac [6]	18.75	28.35	37.95	42.75	52.35	66.75	76.35	76.35	76.35	
32	City of West Palm Beach [6]	13.77	24.63	35.48	40.91	51.76	68.05	78.73	78.73	78.73	
33	City of Wilton Manors [6]	11.44	27.24	43.04	50.94	66.74	90.44	106.24	129.94	129.94	
34	Other Florida Utilities Average	\$ 18.76	\$ 27.47	\$ 37.18	\$ 42.49	\$ 53.31	\$ 69.38	\$ 79.69	\$ 92.44	\$ 108.70	
35	Minimum	4.48	6.83	21.71	28.63	31.62	31.62	31.62	31.62	31.62	
36	Maximum	39.83	54.17	68.51	75.68	90.02	111.53	125.87	149.80	218.48	

Footnotes:

- [1] Amounts reflect bills under single family residential user rates in effect July 2020 and do not include any taxes, franchise fees, or water restriction surcharges, if any. These bills also reflect rates charged to customers within the municipal borders (e.g., no outside-municipality surcharges, if applied, are included in the bill comparison).
- [2] Reflects historical average usage of a typical single family residential customer with both water and wastewater service within the service area of the City of Miami Beach's utility system.
- [3] The Miami-Dade Water and Sewer Department currently provides water on a retail basis for the City of Coral Gables; Coral Gables provides retail sanitary sewer.
- [4] Utility purchases sanitary sewer on a wholesale basis from the Miami-Dade Water and Sewer Department.
- [5] Utility purchases potable water service on a wholesale basis from the Miami-Dade Water and Sewer Department.
- [6] Utility is currently involved in a rate study, is planning to conduct a rate study, or plans to implement a rate revision or price index / pass-through adjustment within the next twelve months following the comparison preparation date.

Table 2-3
City of Miami Beach, Florida

Comparison of Typical Monthly Residential Bills for Combined Water and Sewer Service

Residential Service for a 5/8" or 3/4" Meter [1]											
COMBINED WATER AND SEWER											
Line No.	Description	0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons [2]	10,000 Gallons	12,000 Gallons	15,000 Gallons	20,000 Gallons	
City of Miami Beach, Florida											
1	Existing Combined Rates - Effective 10/1/2019	\$ 17.69	\$ 43.69	\$ 69.69	\$ 82.69	\$ 108.69	\$ 151.13	\$ 180.57	\$ 224.73	\$ 303.57	
2	Proposed Combined Rates - Effective ASAP	19.46	46.18	72.90	86.26	112.98	156.01	185.68	230.18	308.84	
3	Difference - Amount	1.77	2.49	3.21	3.57	4.29	4.88	5.11	5.45	5.27	
4	Difference - Percent	10.0%	5.7%	4.6%	4.3%	3.9%	3.2%	2.8%	2.4%	1.7%	
Surveyed Utilities - Located in Miami-Dade County											
5	City of Coral Gables [3]	\$ 8.72	\$ 17.12	\$ 33.16	\$ 44.83	\$ 71.25	\$ 111.84	\$ 138.90	\$ 185.60	\$ 266.61	
6	City of Hialeah [4][5]	10.70	28.54	46.38	55.30	74.50	103.30	123.22	153.10	202.90	
7	City of Homestead [4][5]	22.80	30.99	39.52	43.95	52.80	66.30	75.56	89.95	115.53	
8	Miami-Dade County [6]	10.75	10.75	32.31	44.59	72.20	114.22	142.24	190.37	273.79	
9	City of North Miami Beach [5]	48.20	68.82	90.44	101.75	124.37	161.45	186.17	227.39	296.09	
10	City of Opa-Locka [4]	8.96	24.54	40.12	47.91	69.09	100.86	156.02	238.76	406.76	
Surveyed Utilities - Located Outside Miami-Dade County											
11	City of Boynton Beach [6]	\$ 31.81	\$ 39.59	\$ 47.37	\$ 51.26	\$ 59.04	\$ 65.45	\$ 71.51	\$ 80.60	\$ 95.75	
12	Broward County [6]	37.67	49.43	62.48	69.65	87.90	121.14	143.30	180.83	222.08	
13	City of Cooper City [6]	40.46	53.12	65.78	72.11	85.77	106.26	115.56	129.51	152.76	
14	City of Coral Springs [6]	36.99	49.23	61.47	68.54	82.68	106.57	123.39	154.65	206.75	
15	City of Dania Beach [6]	36.07	59.17	82.27	93.82	121.82	163.82	191.82	235.45	313.60	
16	Town of Davie [6]	62.06	83.74	105.42	116.26	141.54	179.46	208.40	251.81	288.31	
17	City of Delray Beach	33.76	40.54	48.58	53.22	62.50	76.43	85.71	91.71	101.71	
18	City of Fort Lauderdale [6]	18.10	31.32	52.53	67.13	96.33	142.85	174.77	229.73	321.33	
19	City of Hallandale Beach [6]	40.02	56.38	73.30	81.76	99.42	125.91	145.51	174.91	223.91	
20	City of Hollywood [6]	15.65	41.75	68.71	85.10	117.88	167.05	197.47	237.53	304.31	
21	City of Lake Worth Beach [6]	36.80	57.60	78.40	90.64	115.12	155.56	183.76	221.08	283.28	
22	City of Margate [6]	44.08	51.52	58.96	62.68	71.05	85.00	94.30	108.25	136.20	
23	City of Miramar [6]	34.58	51.22	67.86	76.18	94.38	121.68	139.88	167.18	218.13	
24	City of Oakland Park [6]	33.19	59.03	85.67	99.39	126.83	170.11	199.67	245.05	292.25	
25	Palm Beach County [6]	31.40	38.42	45.44	53.48	69.56	93.68	110.30	135.23	176.78	
26	City of Pembroke Pines [6]	39.62	39.62	53.12	66.62	93.62	134.12	161.12	201.62	269.12	
27	City of Plantation [6]	32.89	47.35	61.81	69.04	85.53	113.31	131.83	165.67	222.07	
28	City of Riviera Beach [6]	35.67	46.53	57.39	62.82	75.60	94.77	104.17	118.27	141.77	
29	Seacoast Utility Authority	51.95	55.51	59.07	60.85	67.55	82.31	90.73	103.36	124.41	

Table 2-3
City of Miami Beach, Florida

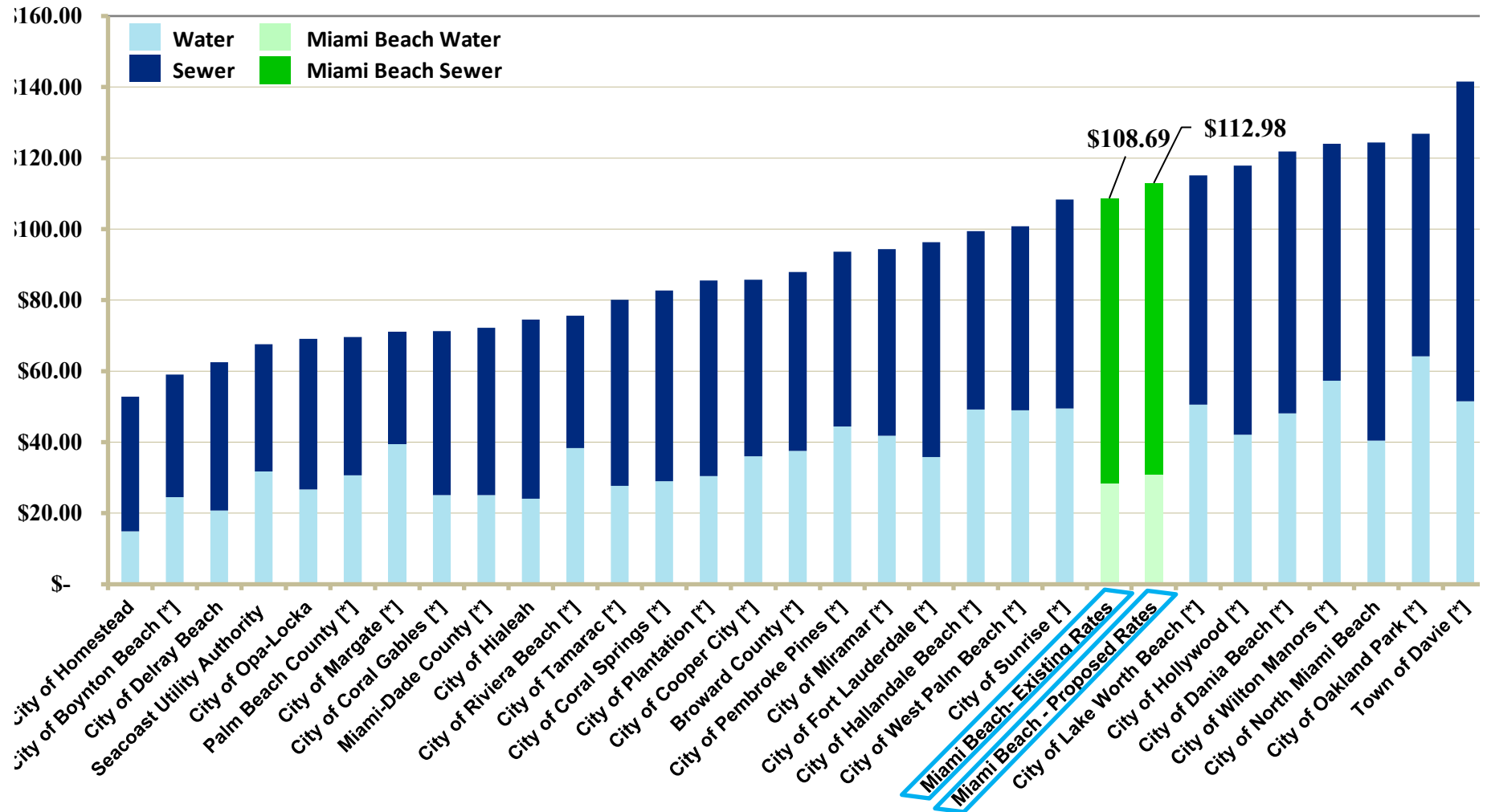
Comparison of Typical Monthly Residential Bills for Combined Water and Sewer Service

		Residential Service for a 5/8" or 3/4" Meter [1]								
		COMBINED WATER AND SEWER								
Line No.	Description	0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons [2]	10,000 Gallons	12,000 Gallons	15,000 Gallons	20,000 Gallons
30	City of Sunrise [6]	50.55	67.05	83.55	91.80	108.30	133.05	149.55	174.30	198.91
31	City of Tamarac [6]	30.52	43.66	57.39	64.55	80.07	105.15	121.87	140.56	171.71
32	City of West Palm Beach [6]	36.85	54.84	72.84	81.84	100.75	130.47	150.14	165.94	192.28
33	City of Wilton Manors [6]	38.13	62.67	87.21	99.48	124.02	160.83	185.37	222.18	248.88
34	Other Florida Utilities Average	\$ 33.07	\$ 46.90	\$ 62.71	\$ 71.60	\$ 90.74	\$ 120.45	\$ 141.46	\$ 173.12	\$ 223.03
35	Minimum	8.72	10.75	32.31	43.95	52.80	65.45	71.51	80.60	95.75
36	Maximum	62.06	83.74	105.42	116.26	141.54	179.46	208.40	251.81	406.76

Footnotes:

- [1] Amounts reflect bills under single family residential user rates in effect July 2020 and do not include any taxes, franchise fees, or water restriction surcharges, if any. These bills also reflect rates charged to customers within the municipal borders (e.g., no outside-municipality surcharges, if applied, are included in the bill comparison).
- [2] Reflects historical average usage of a typical single family residential customer with both water and wastewater service within the service area of the City of Miami Beach's utility system.
- [3] The Miami-Dade Water and Sewer Department currently provides water on a retail basis for the City of Coral Gables; Coral Gables provides retail sanitary sewer.
- [4] Utility purchases sanitary sewer on a wholesale basis from the Miami-Dade Water and Sewer Department.
- [5] Utility purchases potable water service on a wholesale basis from the Miami-Dade Water and Sewer Department.
- [6] Utility is currently involved in a rate study, is planning to conduct a rate study, or plans to implement a rate revision or price index / pass-through adjustment within the next twelve months following the comparison preparation date.

Figure 2-1
City of Miami Beach, Florida
Comparison of Monthly Charges for
Combined Water and Sewer Service for
Single Family Residential Customers Using 7,000 Gallons



[*] Utility is currently involved in a rate study, is planning to conduct a rate study, or plans to implement a rate revision or price index / pass through adjustment within the next twelve months following the comparison preparation date

Table 2-4

**City of Miami Beach, Florida
Water and Sewer Rate Study**

Derivation of Satellite Municipalities Wholesale Sewer Rates for Fiscal Year 2021

Line No.	Description	Determinants	Booster Station 28	Booster Station 29	Total	Wet Season	Dry Season
1	Average Miami-Dade County Wholesale Sanitary Sewer Rate (\$ / 1,000 Gallons) [1]				\$3.2971	\$3.7092	\$2.8850
2	Operation and Maintenance Charges (\$ / 1,000 Gallons) in 2007 [2]		\$0.0460	\$0.0520			
	Inflation from December 2007 to December 2019						
3	Consumer Price Index, All Urban Consumers - Miami-Fort Lauderdale-West Palm Beach, All Items - December 2007 [3]	217.319					
4	Consumer Price Index, All Urban Consumers - Miami-Fort Lauderdale-West Palm Beach, All Items - December 2019 [3]	270.918					
5	Change	24.66%	24.66%	24.66%			
6	FY 2021 Operation and Maintenance Cost		\$0.0573	\$0.0648	\$0.1222	\$0.1222	\$0.1222
7	Subtotal				\$3.4193	\$3.8314	\$3.0072
8	Administration Fee of 1.50%	1.50%			0.0513	0.0575	0.0451
9	Rate with Administration Charge				\$3.4706	\$3.8888	\$3.0523
10	Renewal and Replacement Allowance of 5.00% of Total Rate [4]	5.00%			0.1827	0.2047	0.1606
11	Rate with Renewal and Replacement Allowance (\$ / 1,000 Gallons)				\$3.6532	\$4.0935	\$3.2129
12	Adjustment for DERM (0.00%)	0.00%			\$3.6532	\$4.0935	\$3.2129

Footnotes:

- [1] The County has informed the City that these rates will become effective on October 1, 2020.
- [2] Source: CDM City of Miami Beach 2007 Satellite City Wastewater Transmission Cost of Service Analysis Letter Report dated December 6, 2007, Tables 8 and 9.
- [3] Source: Bureau of Labor Statistics Consumer Price Index, All Urban Consumers - Miami-Fort Lauderdale-West Palm Beach - CUURS35BSA0. (<https://data.bls.gov/cgi-bin/srgate>).
- [4] The renewal and replacement allowance provides for the recovery of depreciation expenses as allowed per the agreements with the Satellite Municipalities.

APPENDIX: EXISTING RATE ORDINANCE

AN ORDINANCE OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AMENDING CHAPTER 110 OF THE CODE OF THE CITY OF MIAMI BEACH ENTITLED "UTILITIES," ARTICLE IV, ENTITLED "FEES, CHARGES, RATES AND BILLING PROCEDURE," AT SECTION 110-166, ENTITLED "SCHEDULE OF WATER RATES AND TAPPING CHARGES;" AT SECTION 110-168, ENTITLED "SANITARY SEWER SERVICE CHARGE" ARE TO BE AMENDED; AND CREATING SECTION 110-171, ENTITLED "RATE INDEXING," IN ORDER TO ADJUST AND MODIFY HOW WATER AND SANITARY SEWER RATES ARE CALCULATED AND APPLIED; AND ALSO AMENDING APPENDIX A TO CHAPTER 110, ENTITLED "FEE SCHEDULE" TO INCREASE AND RESTRUCTURE THE WATER RATES AND SANITARY SEWER SERVICE CHARGES IMPOSED BY THE CITY PURSUANT TO SECTIONS 110-166, 110-168, AND 110-171; PROVIDING FOR CODIFICATION; REPEALER; SEVERABILITY; AND AN EFFECTIVE DATE.

WHEREAS, Chapter 110, of the Code of the City of Miami Beach, entitled "Utilities," establishes the City's potable water rates and how to calculate the rate and apply the rate to all water users and the sanitary sewer rates and how to calculate the rate and apply the rate to all sanitary sewer users; and

WHEREAS, the City's utility rates for water and sanitary sewer services are structured to collect the necessary revenues to meet annual operating and maintenance costs of the water and sanitary sewer infrastructure, to cover debt service for water and sewer bonds, to fund capital improvements to the City's utility system infrastructure, maintain adequate operating fund and capital reserves, and to pay Miami-Dade County Water and Sewer Department (WASD) for wholesale water purchased and for the treatment of the collected City sewage; and

WHEREAS, WASD has historically raised the rates for wholesale water and sanitary sewer to recover its cost of providing service and it is anticipated by WASD that it will continue to raise the rates for service due operating expenditures and debt service increases and the need to fund future capital improvements; and

WHEREAS, the City adopted Resolution No. 95-21585, as amended and supplemented from time to time, which authorized the issuance of utility revenue bonds to finance capital improvements to the utility system (herein after "System") which included a requirement that the revenues of the System shall at all times meet the rate covenant requirements as delineated in such resolution for the protection of the bondholders; and

WHEREAS, in addition to the above WASD rate increase, the City Commission directed that the City review its utility rates and method of calculating the fees under Chapter 110; and

WHEREAS, the City retained the firm of Public Resources Management Group, Inc. (PRMG) to assist in determination of revised water and sanitary sewer rates in order to meet the projected expenditure and funding needs of the City's utility system as identified in the Fiscal Year 2016/2017 budget; and

WHEREAS, PRMG recommended revised rates and rate policies to be more consistent with industry norms in the application of rates; promote water conservation and the most efficient use of potable water; initiate a rate structure that over time will more adequately recover the cost of service and promote the overall sustainability of the utility system; provide the ability to adjust rates due to changes in the cost of wholesale water and wastewater service as provided by WASD; and provide the ability to index the rates for inflation and other expenses to provide utility operating margins to fund capital improvements and the repayment of debt issued by the City in support of the funding of capital improvements; and

WHEREAS, in order to properly fund the City's water and sewer program, and to implement the PRMG rate structure findings, so that the city can not only take into account the actual WASD rate increases, but, also the other PRMG recommendations due to continued inflation on the cost of providing water and sanitary sewer by the City, the City seeks to amend Chapter 110, to codify and pass through to the residents the WASD rate increases; to index rates annually to pass through to the residents increases in costs due to inflation on the cost of operations and maintenance; and to incorporate an adjustment for operating expenses would serve to keep the rate stabilization fund healthy and user fees consistent with the cost of providing service; and

WHEREAS, during the August 29, 2014 meeting of the Finance and Citywide Projects Committee (FCWPC), the Committee recommended approval of the pass through of the respective water and sewer rate increases, as well as establishing a policy of automatically implementing the percentage increases of water and sewer rates that are enacted by Miami-Dade WASD to the entire fund without further Commission action; and

WHEREAS, the Committee also directed the Administration to follow up with all appropriate administrative actions to assure that fees are commensurate with the cost of service provided to the Satellite Cities; and

WHEREAS, the amendments set forth below are necessary to accomplish the above objectives.

NOW THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA:

SECTION 1. Chapter 110 of the Miami Beach City Code entitled "Utilities," Article IV, entitled "Fees, charges, rates and billing procedure," at section 110-166, entitled "Schedule of water rates and tapping charges;" Section 110-168, entitled "Sanitary sewer service charge," and Section 110-171, entitled "Rate indexing" are hereby amended as follows:

* * *

Chapter 110 – UTILITIES

* * *

DIVISION 2. - RATES, FEES AND CHARGES

* * *

Sec. 110-166. - Schedule of monthly water user rates and tapping charges.

- (a) There is hereby imposed, upon all premises within the city connected to or using the facilities of the city's potable water system, a monthly water user rate. Everywater supply service shall have premise connected to or using the facilities of the city's potable water system shall be billed monthly user rates consisting of: i) a base facility charge which serves as the monthly minimum service charge on each service installed, varying with and based upon the size of the service pipe required and meter installed in accordance with the rules of the public works department; ii) a water consumption charge; and iii) a purchased water pass-through adjustment rate to recover the cost of purchased wholesale water as billed - All monthly minimum service charges and rates shall be adjusted by the same percentage enacted by the Miami-Dade Water and Sewer Department (WASD). This minimum- The monthly water user rates charged for service shall be in accordance with the consumer applicability provisions and the corresponding schedule set forth in Appendix A, in appendix A and shall entitle the consumer to have supplied through the meter the number of gallons of water set forth in appendix A as may be adjusted from time to time based on the provisions of the section. There shall not be a rental charge on meters.

The monthly water user rates shall be charged to each individually metered water consumer each month in accordance with the following applicability provisions:

- (1) Individual Metered Residential Service – applicable to all consumers that represent service to a residential dwelling unit that is individually metered for potable water service that is not classified as irrigation service.
- (2) Master Metered Multifamily Residential Service - applicable to all consumers that represent service to a residential dwelling units that is master-metered (more than one residential dwelling unit being served by the water meter measuring service to the premise) which would include, but not be limited to, condominiums, apartments, and duplexes, that are not classified as irrigation service.
- (3) Non-residential Service – Applicable to all water customers that are not classified as individually metered residential service, master-metered residential service, or irrigation service which primarily represents service to commercial customers public authorities, and institutional customers.
- (4) Residential Irrigation Service – Applicable to all residential dwelling units that are individually metered for domestic water use (reference Sec. 110-166 (a)(i)) and which have a separate meter for irrigation service or other similar water use.
- (5) Master Metered Multifamily Residential Irrigation Service – applicable to all master metered residential customers that are individually metered for domestic use (reference Sec. 110-166 (a)(ii)) and which have a separate meter for irrigation service or other similar water use.
- (6) Non-residential Irrigation Service – applicable to all customers classified as non-residential that are individually metered for domestic use (reference Sec. 110-166 (a)(ii)) and which have a separate meter for irrigation service or other similar water use.

(b) To the extent practical, all water delivered to a consumer shall be metered and shall be billed the water consumption charge and the purchased water pass-through charge, which rate shall be prorated for each 100 gallons in the event of increments of less than 1,000 gallons for all consumers of water. With respect to the billing for water use, the water consumption rates and the purchased water pass-through rate as defined in this section may be added together for rate application or billing purposes on a consumers bill.

(c) *Pass-Through of Purchased Wholesale Water Charges.* The Purchased Water Pass-through Rate, which is applied to all water consumers being billed for potable water service, shall be increased or decreased by the city by applying a pass-through adjustment factor for any change in the average annual rates charged to the city for wholesale potable water purchased from WASD (the "Water Pass-Through Adjustment") to the Purchased Water Pass-through Rate charged by the city.

(1) *Adjustment Schedule.* The implementation of the adjustment to the Purchased Water Pass-Through Rate for any month that a change in wholesale potable water rates by WASD is effectuated ("Water Cost Recovery") shall occur without a public hearing. Water Cost Recovery shall be employed each time that WASD adjusts the average annual wholesale potable water rates that are billed to the city. Any adjustment to the Purchased Water Pass-Through Rate based on the determination of the change in wholesale rates shall be implemented in the month immediately following the determination of the Purchased Water Pass-Through Adjustment. The Purchased Water Pass-Through Rate as shown on Appendix A and as may be further adjusted automatically in the future by the implementation of the provisions of this section and which are then in effect shall be increased or decreased by the city by applying a Purchased Water Pass-through Adjustment established in accordance with this subsection to the then effective Purchased Water Pass-Through Rate prior to such application. Nothing herein shall preclude the city from making additional changes to the monthly water user rates for service.

(2) *Applicability of Purchased Water Rates.* The Purchased Water Pass-Through Rate shall be in addition to any water consumption rates for all retail and wholesale customers that are billed for potable water service by the city. The following are the customers that shall be subject to the application of the Purchased Water Pass-through Rate and shall be subject to the pass-through for changes in the cost of purchased water from WASD (the "Applicable Customers"):

- (i) The retail water customer classes that are billed the water consumption charge referenced in this section.
- (ii) All separate utilities or local governments that may receive wholesale potable water service provided by the city currently or in the future which is not considered as retail customers.

(3) *Calculation of Purchased Water Pass-Through Adjustment.* The Purchased Water Pass-Through Adjustment shall be calculated using the following formula:

$$PWPTA = ((IWWC - PWWC) * (1 / (1 - (DF+T+O))))$$

Where:

PWPTA = The Purchased Water Pass-Through Adjustment to be used for Water Cost Recovery to determine the monetary adjustment in the Purchased Water Pass-through Rate to be applied the Applicable Customers. The PWPTA represents the respective dollar increase or decrease to account for changes in wholesale potable water rates charged by WASD to the city that is added or subtracted, respectively to the Purchased Water Pass-Through Rate.

IWWC = The increased annual average wholesale or purchased water rate charged by WASD expressed on a dollar per 1,000 gallons basis that became effective for the month immediately after the PWWC.

PWWC = The prior annual average wholesale or purchased water rate charged by WASD expressed on a dollar per 1,000 gallons basis immediately prior to the billing of the adjusted wholesale or purchased water rate defined as the IWWC.

DF = The fee paid to the Department of Environmental Resources Management (DERM) which is based on a percent of rate revenues billed by the city.

T = Any and all taxes or tax equivalents that may be paid by the water system that is based on revenues billed by the city, including any payment in lieu of tax imposed by the city on its water system.

O = Any and all charges that may be paid by the city on behalf of the water system that is based on revenues billed by the city, including any funding of renewals and replacement fund deposits that is determined as a percent of revenues billed.

(4) *Determination of Purchased Water Pass-Through Rate.* The Purchased Water Pass-Through Rate shall be determined based on the addition or subtraction of the Purchased Water Pass-Through Adjustment to the rates in effect immediately preceding such adjustment and shall be rounded to the nearest cent. The Purchased Water Pass-Through Adjustment application shall be based on the following formula:

$$\text{APWTR} = \text{PWPTR} + \text{PWPTA}$$

Where:

APWTR = The Adjusted Purchased Water Pass-Through Rate that is to be placed in effect after the application of the Purchased Water Pass-Through Adjustment to all Applicable Customers billed for potable water service.

PWPTR = The Purchased Water Pass-Through Rate in effect immediately prior to the application of the PWPTA.

PWPTA = The Purchased Water Pass-Through Adjustment as determined as a result of a change in wholesale water rates as billed by WASD.

(5) An example of the calculation of the determination of the Purchased Water Pass-Through Adjustment and the corresponding change to the Purchased Water Pass-Through Rate is illustrated in the following table:

	<u>Line No.</u>	<u>Formula Reference</u>	<u>Amount</u>
Prior Wholesale Purchased Water Rate (\$/1,000 gallons)	<u>1</u>	<u>PWWC</u>	<u>\$1.7350</u>
Increased Wholesale Purchased Water Rate (\$/1,000 gallons)	<u>2</u>	<u>IWWC</u>	<u>\$1.7700</u>
Percent Change in Wholesale Purchased Water Rate	<u>3=(2-1)/1</u>		<u>2.02%</u>
Adjustments			
Department of Environmental Resources Management	<u>4</u>	<u>DF</u>	<u>8.00%</u>
Taxes and Tax Equivalents	<u>5</u>	<u>T</u>	<u>0.00%</u>
Other Adjustments	<u>6</u>	<u>O</u>	<u>0.00%</u>
Adjustment Factor = $1/(1-(D+T+O)) = 1/0.92$	<u>7</u>		<u>1.08696</u>
Purchased Water Pass-Through Percent Adjustment	<u>8=(3*7)</u>		<u>2.20%</u>
Prior Purchased Water Pass-Through Rate (\$/1,000 gallons)	<u>9</u>	<u>PWPTR</u>	<u>\$1.93</u>
Purchased Water Pass-Through Adjustment	<u>10=9*8</u>	<u>PWPTA</u>	<u>\$0.02</u>
Adjusted Purchased Water Pass-Through Rate (\$/1,000 gallons)	<u>11=9+10</u>	<u>APWTR</u>	<u>\$1.95</u>

(d) Pass-Through Adjustment Charges. The Applicable Rates as shown on Appendix A and as may be further adjusted automatically in the future by the implementation of the provisions of this section and which are then in effect shall be increased or decreased by the city by applying a pass-through adjustment factor established in accordance with this subsection (the "Pass-Through Factor") to the then effective Applicable Rates for increases or decreases in the Applicable Costs. All Applicable Rates so adjusted (the "Pass-Through Rates") shall be charged by the city's water system.

(1) Adjustment Schedule. The implementation of Pass-Through Rates for any month associated with a change in Applicable Costs ("Cost Recovery") shall be placed into effect automatically and shall occur without a public hearing. Nothing herein shall preclude the city from making additional changes to the monthly water user rates for service.

(2) Applicable Rates. The water base facility, water consumption charges, and Purchased Water Pass-through Rate referenced in subsection 110-166(a) shall be subject to Cost Recovery.

(3) Applicable Costs. Only the following cost categories qualify as Applicable Costs for Cost Recovery:

- (i) All increases or decreases in the percentage charge of the Department of Environmental Resources Management.

- (ii) All increases or decreases in the application of any tax or tax equivalents, including any payment in lieu of tax imposed by the city on its water system.
 - (iii) All other cost increases incurred by the water system as a result of any regulatory changes or requirements imposed by any regulatory agency having jurisdiction over the utility system operations (a "Regulator")
- (4) Calculation of Pass-Through Factor. The Pass-Through Factor shall be calculated using the following formula:

$$PTF = ARR / ER$$

Where:

PTF = The Pass-Through Factor used for Cost Recovery to determine the monetary adjustment in the Applicable Rates. The PTF represents the estimated annual increase in the Applicable Costs, expressed as a percentage of the most recent historical revenues derived from the Applicable Rates for the most recently completed fiscal year.

ARR = Additional Required Revenue equal to the estimated annual change in the Applicable Costs that will affect the overall cost of providing water system services as determined by the city.

ER = The total actual revenues earned by the Enterprise System from the Applicable Rates for the potable water system as reported in the city for the most recently completed fiscal year.

(5) Determination of Pass-Through Rates. The Pass-Through Rates shall be determined based on the Pass-Through Factor applied uniformly to the Applicable Rates in effect and shall be rounded to the nearest cent. The Pass-through application shall be based on the following formula:

$$PTR = (AR)(1 + PTF)$$

Where:

PTR = The Pass-Through Rates that are to be placed in effect for the current fiscal year through application of the Pass-Through Factor.

AR = The Applicable Rates in effect immediately prior to the application of the Pass-Through Factor.

PTF = The Pass-Through Factor as determined by the city to recover the net change in Applicable Costs.

- (e) On all water supply service, each month shall be a complete period in itself, and no excess consumption of water during one month shall be charged ~~against the minimum service charge~~ or be added to the consumption of any other month.

(1) Exception. The provisions contained in this subsection (e) shall not apply to an owner or consumer of a single-family home that participates in the "budget billing" process of the utility billing system. The "budget billing" process allows owners or consumers to pay the same monthly amount for water and sewer consumption based on the average of the previous annual consumption history. If the variance in actual consumption becomes more than 50 percent of the annual consumption average, the budgeted amount would be recalculated or the budget billing would cease and regular billing would commence. To be eligible to use this "budget billing" feature, the owner and/or consumer would have to submit an application to the finance department for budget billing. After the approval of the finance department, the budget billing would commence and would only cease upon written request by the owner or consumer or the failure to pay the budget amount when the payment is due.

- (f) A monthly base facility charge as shown on Appendix A shall be billed to all privately owned fire-protection systems and equipment connected to the city water system in accordance with the size of the service line connecting the private system to the city's system. All costs of providing fire sprinkler service, including the service lateral, meter vault and detector check meter shall be the applicant's responsibility. If any consumer shall connect any appurtenance other than sprinkler heads to a fire service line, that consumer shall pay all connection-related charges set out in this section and the monthly water service charges identified in this section regarding service to customers delineated under the general service designation.

- (g) Upon the application of the owner or consumer for water service on the premises to which there has not been made any previous service for water, the tapping charges as specified in appendix A shall be made to cover the cost of the tap and the installation of the service to the property line of the lot to be supplied with water service.

- (~~h~~e) Every owner or consumer making an application for water service shall be required to make a deposit with the public works department called a guarantee of payment deposit. The amount of such deposit shall be according to the size of the service, as specified in appendix A. If the owner or consumer making such deposit wishes the service to be discontinued, the guarantee of payment deposit shall be refunded less outstanding charges for water, sewer, stormwater or garbage and waste. If at any time the total service charges for a given account exceed the amount of the deposit, the city reserves the right to demand an additional deposit up to four times the amount of any previous monthly bill on that service.

- (if) A request by the owner or consumer to have the water meter re-read for validation of the correctness of a meter reading will result in a fee in accordance with the schedule set forth in appendix A. This fee will be charged only if the re-read validates the accuracy of the reading in question.

- (ig) A request by the owner or consumer to have a special water meter read at a time other than a normally scheduled read date as set by the utility will result in a fee in accordance with the schedule set forth in appendix A.

- (kh) Meter/meter equipment and City of Miami Beach utility property servicing a premises found damaged, destroyed or missing will be charged to the owner or consumer in accordance with the schedule set forth in appendix A.
- (li) A request by the owner or consumer to have a field visit by a technician. This fee will be charged only if the technician finds that the problem/issue is not that of the utility.

* * *

Sec. 110-168. – Schedule of monthly sanitary sewer user rates. service charge.

- (a) There is hereby imposed, upon all premises within the city connected to or using the facilities of the city's sanitary sewer system, a monthly sanitary sewer ~~service charge user rate~~. ~~Such sanitary sewer service charge shall be in an amount as specified in appendix A, which charge shall be prorated for each 100 gallons of increments of less than 1,000 gallons, as shown by the water bills rendered in accordance with this article. The sanitary sewer service charge shall be and become effective and binding on October 5, 1997. The amount of such sanitary sewer service charge shall be shown as a separate item on such water bills and shall be paid by the owner, tenant or occupant in possession of such premises at the same time and in the same manner as is provided in this article for the payment of water bills. All sanitary sewer rates shall be adjusted by the same percentage enacted by the Miami Dade Water and Sewer Department (WASD). For the purpose of irrigation, the customer may apply for an irrigation meter. Sanitary sewer charges will not be applied to consumption metered through irrigation meters. Every premise connected to or using the facilities of the city's sanitary sewer system shall be billed monthly user rates consisting of:~~

- (1) a base facility charge which serves as the monthly minimum service charge on each service installed, varying with and based upon the size of the meter installed in accordance with the rules of the public works department;
- (2) a sanitary sewer consumption charge; and
- (3) purchased sanitary sewer pass-through adjustment rate to recover the cost of purchased wastewater treatment and disposal services as billed by WASD.

The monthly sewer user rates charged for service shall be in accordance with the consumer applicability provisions and the corresponding schedule set in Appendix A as may be adjusted from time to time based on the provisions of the section.

- ~~(b) The billed sewer consumption shall be based on the metered water delivered to the consumer for which the monthly water user rates apply. The provisions of this section shall not be applicable to any water sold and delivered through separate meters measuring water delivered and consumed solely for swimming pools, lawn sprinkler systems, cooling towers or other purposes not requiring the use of sanitary sewer system facilities of the city. The provisions of this section shall not be applicable to any water sold and delivered through separate meters measuring water delivered and consumed solely for swimming pools, lawn sprinkler systems, cooling towers or other purposes not requiring the use of sanitary sewer system facilities of the city.~~

The monthly sanitary sewer user rates shall be charged to each consumer each month in accordance with the following applicability provisions:

(1) *Individual Metered Residential Service* – Applicable to all consumers that represent service to a residential dwelling unit that is individually metered for water service.

(2) *Master-metered Multifamily Residential Service* – Applicable to all sewer consumers that represent service to a residential dwelling units that is master-metered (more than one residential dwelling unit being served by the water meter measuring service to the premise) which would include, but not be limited to, condominiums, apartments, and duplexes.

(3) *Non-residential Service* – Applicable to all sewer customers that are not classified as individually metered residential service or master-metered residential service which primarily represents service to commercial, public authorities, and institutional customers.

(b) To the extent practical, all sanitary sewer service provided to a consumer shall be based on the metered water delivered to the premise, exclusive of water-only service which is separately metered by the city, and shall be billed the sewer consumption charge and the purchased sanitary sewer pass-through charge, which rate shall be prorated for each 100 gallons in the event of increments of less than 1,000 gallons for all consumers being billed for sanitary sewer service. With respect to the billing for sanitary sewer use, the sewer consumption rates and the purchased sanitary sewer pass-through rate as defined in this section may be added together for rate application or billing purposes on a consumers bill.

(c) *Pass-Through of Purchased Wholesale Sanitary Sewer Charges.* The Purchased Sanitary Sewer Pass-through Rate, which is applied to all sanitary sewer consumers being billed for sewer service, shall be increased or decreased by the city by applying a pass-through adjustment factor for any change in the rates charged to the city for wholesale wastewater treatment and disposal services purchased from WASD (the "Sanitary Sewer Pass-Through Adjustment") to the Purchased Sewer Pass-through Rate charged by the city.

(1) *Adjustment Schedule.* The implementation of the adjustment to the Purchased Sanitary Sewer Pass-Through Rate for any month that a change in wholesale sanitary sewer rates by WASD is effectuated ("Sewer Cost Recovery") shall occur without a public hearing. Sewer Cost Recovery shall be employed each time that WASD adjusts the average annual wholesale sanitary sewer rates that are billed to the city. Any adjustment to the Purchased Sanitary Sewer Pass-Through Rate based on the determination of the change in wholesale rates shall be implemented in the month immediately following the determination of the Purchased Sanitary Sewer Pass-Through Adjustment. The Purchased Sanitary Sewer Pass-Through Rate as shown on Appendix A and as may be further adjusted automatically in the future by the implementation of the provisions of this section and which are then in effect shall be increased or decreased by the city by applying a Purchased Sanitary Sewer Pass-through Adjustment established in accordance with this subsection to the then effective Purchased Sanitary Sewer Pass-Through Rate

prior to such application. Nothing herein shall preclude the city from making additional changes to the monthly sanitary sewer user rates for service.

(2) Applicability of Purchased Sanitary Sewer Rates. The Purchased Sanitary Sewer Pass-Through Rate shall be in addition to any sewer consumption rates for all retail and wholesale customers that are billed for wastewater treatment and disposal services by the city. The following are the customers that shall be subject to the application of the Purchased Sanitary Sewer Pass-through Rate and shall be subject to the pass-through for changes in the cost of purchased wastewater treatment and disposal services from WASD (the "Applicable Customers"):

(i) The retail water customer classes that are billed the sewer consumption charge referenced in this section.

(ii) All separate utilities or local governments that may receive wholesale sewer service provided by the city currently or in the future which is not considered as retail customers.

(3) Calculation of Purchased Sanitary Sewer Pass-Through Adjustment. The Purchased Sanitary Sewer Pass-Through Adjustment shall be calculated using the following formula:

$$PSPTA = ((IWWC - PWWC) * (1 / (1 - (DF + T + O))))$$

Where:

PSPTA = The Purchased Sanitary Sewer Pass-Through Adjustment to be used for Sewer Cost Recovery to determine the monetary adjustment in the Purchased Sanitary Sewer Pass-through Rate to be applied the Applicable Customers. The PSPTA represents the respective dollar increase or decrease to account for changes in average annual wholesale wastewater rates charged by WASD to the city that is added or subtracted, respectively to the Purchased Sanitary Sewer Pass-Through Rate.

IWSC = The increased average annual wholesale or purchased sanitary sewer rate charged by WASD expressed on a dollar per 1,000 gallons basis that became effective for the month immediately after the PWSC.

PWSC = The prior average annual wholesale or purchased sanitary sewer rate charged by WASD expressed on a dollar per 1,000 gallons basis immediately prior to the billing of the adjusted wholesale or purchased sewer rate by WASD.

DF = The fee paid to the Department of Environmental Resources Management (DERM) which is based on a percent of rate revenues billed by the city.

T = Any and all taxes or tax equivalents that may be paid by the sewer system that is based on revenues billed by the city, including any payment in lieu of tax imposed by the city on its sanitary sewer system.

O = Any and all charges that may be paid by the city on behalf of the sanitary sewer system that is based on revenues billed by the city, including any funding of renewals and replacement fund deposits that is determined as a percent of revenues billed.

(4) Determination of Purchased Sanitary Sewer Pass-Through Rate. The Purchased Sanitary Sewer Pass-Through Rate shall be determined based on the addition or subtraction of the Purchased Sanitary Sewer Pass-Through Adjustment to the rates in effect immediately preceding such adjustment and shall be rounded to the nearest cent. The Purchased Sanitary Sewer Pass-Through Adjustment application shall be based on the following formula:

$$\text{APSTR} = \text{PSTR} + \text{PSPTA}$$

Where:

APSTR = The Adjusted Purchased Sanitary Sewer Pass-Through Rate that is to be placed in effect after the application of the Purchased Sewer Pass-Through Adjustment to all Applicable Customers billed for wastewater service.

PSTR = The Purchased Sanitary Sewer Pass-Through Rate in effect immediately prior to the application of the PSPTA.

PSPTA = The Purchased Sanitary Sewer Pass-Through Adjustment as determined as a result of a change in wholesale wastewater rates as billed by WASD.

(5) An example of the calculation of the determination of the Purchased Sanitary Sewer Pass-Through Adjustment and the corresponding change to the Purchased Sanitary Sewer Pass-Through Rate is illustrated in the following table:

	<u>Line No.</u>	<u>Formula Reference</u>	<u>Amount</u>
<u>Prior Wholesale Purchased Sanitary Sewer Rate (\$/1,000 gallons)</u>	<u>1</u>	<u>PWSC</u>	<u>\$2.7879</u>
<u>Increased Wholesale Purchased Sanitary Sewer Rate (\$/1,000 gallons)</u>	<u>2</u>	<u>IWSC</u>	<u>\$2.9477</u>
<u>Percent Change in Wholesale Purchased Sanitary Sewer Rate</u>	<u>3=(2-1)/1</u>		<u>5.73%</u>
<u>Adjustments</u>			
<u>Department of Environmental Resources Management</u>	<u>4</u>	<u>DF</u>	<u>8.00%</u>
<u>Taxes and Tax Equivalents</u>	<u>5</u>	<u>T</u>	<u>0.00%</u>
<u>Other Adjustments</u>	<u>6</u>	<u>O</u>	<u>0.00%</u>
<u>Adjustment Factor = 1/(1-(D+T+O)) = 1/0.92</u>	<u>7</u>		<u>1.08696</u>
<u>Purchased Sewer Pass-Through Percent Adjustment</u>	<u>8=(3*7)</u>		<u>6.22%</u>
<u>Prior Purchased Sanitary Sewer Pass-Through Rate (\$/1,000 gallons)</u>	<u>9</u>	<u>PSTR</u>	<u>\$3.50</u>
<u>Purchased Sanitary Sewer Pass-Through Adjustment</u>	<u>10=9*8</u>	<u>PSPTA</u>	<u>\$0.22</u>
<u>Adjusted Purchased Sanitary Sewer Pass-Through Rate (\$/1,000 gallons)</u>	<u>11=9+10</u>	<u>APSTR</u>	<u>\$3.72</u>

(d) Pass-Through Adjustment Charges. The Applicable Rates as shown in Appendix A and as may be further adjusted automatically in the future by implementation of the provisions of this section and which are then in effect shall be increased or decreased by the city by applying a pass-through adjustment factor established in accordance with this subsection (the "Pass-Through Factor") to the Applicable Rates for increases or decreases in the Applicable Costs. All Applicable Rates so adjusted (the "Pass-Through Rates") shall be charged by the city's sanitary sewer system.

(1) Adjustment Schedule. The implementation of Pass-Through Rates for any month associated with a change in Applicable Costs ("Cost Recovery") shall be placed into effect automatically and shall occur without a public hearing. Nothing herein shall preclude the city from making additional changes to the monthly sanitary sewer user rates for service.

(2) Applicable Rates. The sewer base facility, sewer consumption charges, and Purchased Sewer Pass-through Rate referenced in subsection 110-167(a) shall be subject to Cost Recovery.

(3) Applicable Costs. Only the following cost categories qualify as Applicable Costs for Cost Recovery:

(i) All increases or decreases in the percentage charge of the Department of Environmental Resources Management.

(ii) All increases or decreases in the application of any tax or tax equivalents, including any payment in lieu of tax imposed by the city on its sanitary sewer system.

(iii) All other cost increases incurred by the sanitary sewer system as a result of any regulatory changes or requirements imposed by any regulatory agency having jurisdiction over the utility system operations (a "Regulator").

(4) Calculation of Pass-Through Factor. The Pass-Through Factor shall be calculated using the following formula:

$$\text{PTF} = \text{ARR} / \text{ER}$$

Where:

PTF = The Pass-Through Factor used for Cost Recovery to determine the monetary adjustment in the Applicable Rates. The PTF represents the estimated annual increase in the Applicable Costs, expressed as a percentage of the most recent historical revenues derived from the Applicable Rates for the most recently completed fiscal year.

ARR = Additional Required Revenue equal to the estimated annual change in the Applicable Costs that will affect the overall cost of providing sanitary sewer system services as determined by the city.

ER = The total actual revenues earned by the Enterprise System from the Applicable Rates for the sanitary sewer system as reported in the city for the most recently completed fiscal year.

(5) Determination of Pass-Through Rates. The Pass-Through Rates shall be determined based on the Pass-Through Factor applied uniformly to the Applicable Rates in effect and shall be rounded to the nearest cent. The Pass-through application shall be based on the following formula:

$$\text{PTR} = (\text{AR})(1 + \text{PTF})$$

Where:

PTR = The Pass-Through Rates that are to be placed in effect for the current fiscal year through application of the Pass-Through Factor.

AR = The Applicable Rates in effect immediately prior to the application of the Pass-Through Factor.

PTF = The Pass-Through Factor as determined by the city to recover the net change in Applicable Costs.

* * *

Sec. 110-171 Rate Indexing.

(a) Except as otherwise provided in this subsection, the monthly user rates established in subsections 110-167(a) for the water system and 110-168(a) for the sanitary sewer system (collectively, the "Applicable Rates") as shown on Attachment A and as may be further adjusted automatically in the future by implementation of the provisions of this section and which are then in effect shall be increased by the City each year by applying the price index factor established for that year in accordance with this subsection (the "Price Index Factor") to the then Applicable Rates to offset the effects of inflation on the cost of operating and maintaining the system. The Rate Index shall never be less than 0.0%. All Applicable Rates so adjusted (the "Indexed Rates") shall be implemented by the City.

(1) *Adjustment Schedule.* Each implementation of Indexed Rates ("Rate Indexing") shall be placed into effect automatically and shall occur without a public hearing. Rate Indexing shall not be employed more than once in any fiscal year. Any Indexed Rates based on the operating and maintenance expenses for the most recently completed fiscal year shall be implemented as of October 1st of the subsequent fiscal year. Nothing herein shall preclude the City from making additional changes to the water or wastewater rates for service.

(2) *Applicable Rates.* The water base facility charge and water consumption charges referenced in subsections 110-167(a) for the water system and sanitary sewer base facility charge and sanitary sewer consumption charges referenced in subsections 110-168(a) for the sanitary sewer system shall be subject to Rate Indexing. The purchased water pass-through rate and the purchased sanitary sewer pass-through rates as referenced in the respective subsections shall not be subject to Rate Indexing.

(3) *Calculation of Price Index Factor.* The Price Index Factor shall be determined based on the actual reported financial results as contained in the annual comprehensive annual financial report and the records for the most recently completed fiscal year preceding the determination of the Rate Index (the "Calculation Period"). By way of example, the Rate Index to be applied on October 1, 2017 would be based on the actual financial results for the twelve months ended September 30, 2016. The Price Index Factor shall be calculated using the following formula:

$$\text{PIF} = ([\text{OP} - (\text{PWE} + \text{PSE} + \text{PT})] * \text{EPI}) / [(\text{ER} - \text{PTR}) / * (1 / (1 - (\text{DF} + \text{T} + \text{O})))]$$

Where:

PIF = The Price Index Factor used for Rate Indexing to determine the monetary adjustment in the Applicable Rates. The PIF represents the estimated increase in operation and maintenance expenses during the Calculation Period that is subject to inflation, expressed as a percentage of Applicable Rates revenues earned during the Calculation Period. The amount of the Rate Index increase is a component of any additional revenue required by the Utility System to ensure compliance with the Bond Covenants and fiscal requirements of the utility system (the "Additional Required Revenue").

- OP = The total expenses, paid or accrued, for the operations, maintenance, and repair of the water and wastewater systems as reported in the comprehensive annual financial report and other financial records for the city for the Calculation Period after excluding: (a) allowances for depreciation and amortization expense; and (b) capitalized salaries and other overhead related to the city's Capital Improvement Program (CIP). Such total expenses as adjusted for the stated exclusions are hereinafter referred to as the "Operating Expenses".
- PWE = That component of the Operating Expenses (OP) that represent the cost of purchased water service from WASD for the Calculation Period, adjusted to include the fee paid to the Department of Environmental Resources Management (DERM) which is based on a percent of rate revenues billed by the city for this component of expense.
- PSE = That component of the Operating Expenses (OP) that represent the cost of purchased sanitary sewer service from WASD for the Calculation Period, adjusted to include the fee paid to the Department of Environmental Resources Management (DERM) which is based on a percent of rate revenues billed by the city for this component of expense.
- PT = The sum of all other components of the Operating Expenses (OP) for the Calculation Period for which increases in those components may be recovered separately as a pass-through adjustment pursuant to subsections 110-167(d) for the water system and 110-168(a) for the wastewater system.
- EPI = The Consumer Price Index – All Urban Consumers, Miami-Fort Lauderdale, as published by Bureau of Labor Statistics (the "Effective Price Index") as reported for the month of April of the current year compared to the index reported for the immediately preceding month of April. By way of example, the Effective Price Index published by Bureau of Labor Statistics – All Urban Consumers, Miami-Fort Lauderdale, as of April 2015 was 245.195 and as of April 2016 was 248.741 or a change of 1.446% which shall be applied to the applicable Operating Expenses reported for Fiscal Year 2015.
- ER = The total actual revenues earned by the Utility System from the Applicable Rates as reported in the comprehensive annual financial reports and other financial records for the Calculation Period.
- PTR = The total actual revenues earned by the Utility System during the Calculation Period from the application of i) the Purchased-Water Pass-Through Rate; ii) the Purchased-Wastewater Pass-Through Rate; and iii) any other expense that was categorized as a pass-through expense and separately evaluated.

(4) Price Index calculation example.

- (i) An example of the calculation of the Price Index Factor based on reported Fiscal Year 2015 information is illustrated in the following table:

	<u>Line No.</u>	<u>Formula Reference</u>	<u>Amount</u>
Total Operating Expenses	<u>1</u>	<u>OP</u>	\$56,906,238
Less:			
Purchased Water Expenses	<u>2</u>	<u>PWPTR</u>	\$14,258,442
Purchased Wastewater Expenses	<u>3</u>	<u>PSPTR</u>	20,865,353
Other Pass-through Expenses	<u>4</u>	<u>PT</u>	0
Adjusted Operating Expenses	<u>5=1-2-3-4</u>		\$21,782,443
Effective Price Index		<u>EPI</u>	
April 2015 CPI Index	<u>6</u>		245.195
April 2016 CPI Index	<u>7</u>		248.741
Change in CPI Index	<u>8=7-6</u>		3.546
Annual Percent Change	<u>9=8/6</u>		1.44%
Additional Required Revenue (Numerator)	<u>10=5*9</u>		\$313,667
Actual Applicable Rate Revenues Earned	<u>11</u>	<u>ER</u>	\$73,291,986
Less:		<u>PTR</u>	
Purchased-Water Pass-Through Rate Revenue	<u>12</u>		\$15,498,307
Purchased-Sanitary Sewer Pass-Through Rate Revenue	<u>13</u>		22,679,732
Applicable-Rate Revenue (Denominator)	<u>14=11-12-13</u>		\$35,113,974
Price Index Factor before Adjustments	<u>15=10/14</u>		0.89%
Adjustments:			
Department of Environmental Resources Management	<u>16</u>	<u>DF</u>	8.00%
Taxes and Tax Equivalents	<u>17</u>	<u>T</u>	0.00%
Other Adjustments	<u>18</u>	<u>O</u>	0.00%
Adjustment Factor = $1/(1-(D+T+O)) = 1/0.92$	<u>19</u>		1.08696
Price Index Adjustment	<u>20=15*19</u>	<u>PIF</u>	0.97%

(ii) Determination of Indexed Rates. The Indexed Rates shall be determined based on the Price Index Factor applied uniformly to the Applicable Rates in effect and shall be rounded to the nearest cent. The determination shall be based on the following formula:

$$IR = (AR)(1 + PIF)$$

Where:

IR = The Indexed Applicable Rates that are to be placed in effect for the current fiscal year through application of the Price Index Factor.

AR = The Applicable Rates in effect immediately prior to the application of the Price Index Factor.

PIF = The Price Index Factor determined for the Calculation Period.

SECTION 2. That Chapter 110, "UTILITIES," Article IV "Fees, charges, rates and billing procedures," at APPENDIX A is hereby amended as follows:

* * *

**APPENDIX A
FEE SCHEDULE**

* * *

	Article IV. Fees, Charges, Rates and Billing Procedures	
	Division 2. Rates, Fees and Charges	
110-166(a)	Minimum service charge:	

Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2000)
¾"	5,000	\$11.05
1"	7,000	15.47
1½"	11,000	24.31
2"	17,000	37.57
3"	40,000	88.40
4"	80,000	176.80

Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2001)
¾"	5,000	\$11.30
1"	7,000	15.82
1½"	11,000	24.86
2"	17,000	38.42
3"	40,000	90.40
4"	80,000	180.80
6"	120,000	271.20
8"	200,000	452.00
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2002)
¾"	5,000	\$11.55
1"	7,000	16.17
1½"	11,000	25.41
2"	17,000	39.27
3"	40,000	92.40
4"	80,000	184.80

6"	120,000	277.20
8"	200,000	462.00
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2003)
¾"	5,000	\$11.88
1"	7,000	16.60
1½"	11,000	26.04
2"	17,000	40.20
3"	40,000	94.48
4"	80,000	188.88
6"	120,000	283.28
8"	200,000	472.08
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2004)
¾"	5,000	\$12.13
1"	7,000	16.95

1½"	11,000	26.59
2"	17,000	41.05
3"	40,000	96.48
4"	80,000	192.88
6"	120,000	289.28
8"	200,000	482.08
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2005)
¾"	5,000	\$12.38
1"	7,000	17.30
1½"	11,000	27.14
2"	17,000	41.90
3"	40,000	98.48
4"	80,000	196.88
6"	120,000	295.28
8"	200,000	492.08
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after

		October 1, 2006)
¾"	5,000	\$13.95
1"	7,000	19.53
1½"	11,000	30.69
2"	17,000	47.43
3"	40,000	111.60
4"	80,000	223.20
6"	120,000	334.80
8"	200,000	558.00
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2007)
¾"	5,000	\$16.15
1"	7,000	22.61
1.05"	11,000	35.53
2"	17,000	54.91
3"	40,000	129.20
4"	80,000	258.40
6"	120,000	387.60
8"	200,000	646.00
Size of	Gallons of	Minimum

Meter	Water per Month	Monthly Service Charge (effective for billings on or after October 1, 2008)
¾"	5,000	\$19.40
1"	7,000	27.16
1.5"	11,000	42.68
2"	17,000	65.96
3"	40,000	155.20
4"	80,000	310.40
6"	120,000	465.60
8"	200,000	776.00
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2009)
¾"	5,000	\$21.80
1"	7,000	30.52
1.5"	11,000	47.96
2"	17,000	74.12
3"	40,000	174.40
4"	80,000	348.80
6"	120,000	523.20

8"	200,000	872.00
Size of Meter	Gallons of Water per Month	Minimum Monthly Service Charge (effective for billings on or after October 1, 2014)
3/4"	5,000	\$22.15
1"	7,000	31.01
1.5"	11,000	48.73
2"	17,000	75.31
3"	40,000	177.20
4"	80,000	354.40
6"	120,000	531.60
8"	200,000	886.00

<i>Section this Code</i>	<i>Description</i>	<i>Amount</i>
110-166(b)	Water in excess of subsection 110-166(a), shall be as follows: \$2.21 per 1,000 gallons, effective with billings on or after October 1, 2000; \$2.26 per 1,000 gallons, effective with billings on or after October 1, 2001; \$2.31 per 1,000 gallons, effective with billings on or after October 1, 2002; \$2.44 per 1,000 gallons, effective with billings on or after October 1, 2003; \$2.49 per 1,000 gallons, effective with billings on or after October 1, 2004; and \$2.54 per 1,000 gallons, effective with billings on or after October 1, 2005; and \$2.79 per 1,000 gallons, effective with billings on or after October 1, 2006;	

	<p>\$3.23 per 1,000 gallons, effective with billings on or after October 1, 2007; \$3.88 per 1,000 gallons, effective with billings on or after October 1, 2008; and \$4.36 per 1,000 gallons, effective with billings on or after October 1, 2009; and \$4.43 per 1,000 gallons, effective with billings on or after October 1, 2014; and \$4.61 per 1,000 gallons, effective with billings on or after October 1, 2015.</p>	
--	---	--

110-166(a)(1)	Individual Metered Residential Service	
	Base Facility Charge (per meter size)	Rate
	3/4-inch	\$7.82
	1-inch	8.16
	1-1/2-inch	8.96
	2-inch	9.76
	3-inch	10.24
	4-inch	11.80
	Water Consumption Charge (per 1,000 gallons)	
	0 to 8,000 Gallons	\$0.90
	8,001 to 16,000 Gallons	2.48
	16,001 to 24,000 Gallons	3.69
	Above 24,000 Gallons	5.04
	Purchased Water Pass-Through Rate (per 1,000 gallons)	
	All Water Use	\$1.93

110-166(a)(2)	Master-Metered Multifamily Residential Service	
	Base Facility Charge (per meter size)	Rate
	3/4-inch	\$7.82
	1-inch	16.88
	1-1/2-inch	32.20
	2-inch	50.43
	3-inch	97.39
	4-inch	151.24
	6-inch	302.99
	8-inch	478.48
	10-inch	686.84
	12-inch	1,269.69
	Water Consumption Charge (per 1,000 gallons) [*]	
	Block 1	\$1.58
	Block 2	2.70
	Block 3	3.60

	Purchased Water Pass-Through Rate (per 1,000 gallons)	
	All Water Use	\$1.93
	[*] Usage blocks by meter size:	
	<u>Size of Meter</u>	<u>Block 1 (gallons)</u> <u>Block 2 (gallons)</u> <u>Block 3 (gallons)</u>
	3/4-Inch	0 to 16,000 16,001 to 32,000 Over 32,000
	1-Inch	0 to 40,000 40,001 to 80,000 Over 80,000
	1.5-Inch	0 to 80,000 80,001 to 160,000 Over 160,000
	2-Inch	0 to 128,000 128,001 to 256,000 Over 256,000
	3-Inch	0 to 256,000 256,001 to 512,000 Over 512,000
	4-Inch	0 to 400,000 400,001 to 800,000 Over 800,000
	6-Inch	0 to 800,000 800,001 to 1,600,000 Over 1,600,000
	8-Inch	0 to 1,280,000 1,280,001 to 2,560,000 Over 2,560,000
	10-Inch	0 to 1,840,000 1,840,001 to 3,680,000 Over 3,680,000
	12-Inch	0 to 3,440,000 3,440,001 to 6,880,000 Over 6,880,000

110-166(a)(3)	Non-Residential Service	
	Base Facility Charge (per meter size)	Rate
	3/4-inch	\$7.82
	1-inch	16.88
	1-1/2-inch	32.20
	2-inch	50.43
	3-inch	97.39
	4-inch	151.24
	6-inch	302.99
	8-inch	478.48
	10-inch	686.84
	12-inch	1,269.69
	Water Consumption Charge (per 1,000 gallons) [*]	
	Block 1	\$1.58
	Block 2	2.70
	Block 3	3.60
	Purchased Water Pass-Through Rate (per 1,000 gallons)	
	All Water Use	\$1.93
	[*] Usage blocks by meter size:	
	<u>Size of Meter</u>	<u>Block 1 (gallons)</u> <u>Block 2 (gallons)</u> <u>Block 3 (gallons)</u>
	3/4-Inch	0 to 16,000 16,001 to 32,000 Over 32,000
	1-Inch	0 to 40,000 40,001 to 80,000 Over 80,000
	1.5-Inch	0 to 80,000 80,001 to 160,000 Over 160,000
	2-Inch	0 to 128,000 128,001 to 256,000 Over 256,000
	3-Inch	0 to 256,000 256,001 to 512,000 Over 512,000
	4-Inch	0 to 400,000 400,001 to 800,000 Over 800,000
	6-Inch	0 to 800,000 800,001 to 1,600,000 Over 1,600,000
	8-Inch	0 to 1,280,000 1,280,001 to 2,560,000 Over 2,560,000
	10-Inch	0 to 1,840,000 1,840,001 to 3,680,000 Over 3,680,000
	12-Inch	0 to 3,440,000 3,440,001 to 6,880,000 Over 6,880,000

110-166(a)(4)	Individual Metered Residential Irrigation Service	
	Base Facility Charge (per meter size)	Rate
	3/4-inch	\$7.82
	1-inch	8.16
	1-1/2-inch	8.96
	2-inch	9.76
	3-inch	10.24
	4-inch	11.80
	Water Consumption Charge (per 1,000 gallons)	
	0 to 16,000 Gallons	\$2.47
	Above 16,000 Gallons	5.04
	Purchased Water Pass-Through Rate (per 1,000 gallons)	
	All Water Use	\$1.93

110-166(a)(5)	Master-Metered Multifamily Residential Irrigation Service																															
	Base Facility Charge (per meter size)	Rate																														
	3/4-inch	\$7.82																														
	1-inch	16.88																														
	1-1/2-inch	32.20																														
	2-inch	50.43																														
	3-inch	97.39																														
	4-inch	151.24																														
	6-inch	302.99																														
	8-inch	478.48																														
	10-inch	686.84																														
	12-inch	1,269.69																														
	Water Consumption Charge (per 1,000 gallons) [*]																															
	Block 1	\$2.47																														
	Block 2	5.04																														
	Purchased Water Pass-Through Rate (per 1,000 gallons)																															
	All Water Use	\$1.93																														
	[*] Usage blocks by meter size:																															
	<table> <tr> <th>Size of Meter</th><th>Block 1 (gallons)</th><th>Block 2 (gallons)</th></tr> <tr> <td>3/4-Inch</td><td>0 to 32,000</td><td>Over 32,000</td></tr> <tr> <td>1-Inch</td><td>0 to 80,000</td><td>Over 80,000</td></tr> <tr> <td>1.5-Inch</td><td>0 to 160,000</td><td>Over 160,000</td></tr> <tr> <td>2-Inch</td><td>0 to 256,000</td><td>Over 256,000</td></tr> <tr> <td>3-Inch</td><td>0 to 512,000</td><td>Over 512,000</td></tr> <tr> <td>4-Inch</td><td>0 to 800,000</td><td>Over 800,000</td></tr> <tr> <td>6-Inch</td><td>0 to 1,600,000</td><td>Over 1,600,000</td></tr> <tr> <td>8-Inch</td><td>0 to 2,560,000</td><td>Over 2,560,000</td></tr> <tr> <td>10-Inch</td><td>0 to 3,680,000</td><td>Over 3,680,000</td></tr> </table>	Size of Meter	Block 1 (gallons)	Block 2 (gallons)	3/4-Inch	0 to 32,000	Over 32,000	1-Inch	0 to 80,000	Over 80,000	1.5-Inch	0 to 160,000	Over 160,000	2-Inch	0 to 256,000	Over 256,000	3-Inch	0 to 512,000	Over 512,000	4-Inch	0 to 800,000	Over 800,000	6-Inch	0 to 1,600,000	Over 1,600,000	8-Inch	0 to 2,560,000	Over 2,560,000	10-Inch	0 to 3,680,000	Over 3,680,000	
Size of Meter	Block 1 (gallons)	Block 2 (gallons)																														
3/4-Inch	0 to 32,000	Over 32,000																														
1-Inch	0 to 80,000	Over 80,000																														
1.5-Inch	0 to 160,000	Over 160,000																														
2-Inch	0 to 256,000	Over 256,000																														
3-Inch	0 to 512,000	Over 512,000																														
4-Inch	0 to 800,000	Over 800,000																														
6-Inch	0 to 1,600,000	Over 1,600,000																														
8-Inch	0 to 2,560,000	Over 2,560,000																														
10-Inch	0 to 3,680,000	Over 3,680,000																														

	12-Inch	0 to 6,880,000	Over 6,880,000
--	---------	----------------	----------------

110-166(a)(6)	Non-Residential Irrigation Service	
	<u>Base Facility Charge (per meter size)</u>	<u>Rate</u>
	<u>3/4-inch</u>	<u>\$7.82</u>
	<u>1-inch</u>	<u>16.88</u>
	<u>1-1/2-inch</u>	<u>32.20</u>
	<u>2-inch</u>	<u>50.43</u>
	<u>3-inch</u>	<u>97.39</u>
	<u>4-inch</u>	<u>151.24</u>
	<u>6-inch</u>	<u>302.99</u>
	<u>8-inch</u>	<u>478.48</u>
	<u>10-inch</u>	<u>686.84</u>
	<u>12-inch</u>	<u>1,269.69</u>
	<u>Water Consumption Charge (per 1,000 gallons) [*]</u>	
	<u>Block 1</u>	<u>\$2.47</u>
	<u>Block 2</u>	<u>5.04</u>
	<u>Purchased Water Pass-Through Rate (per 1,000 gallons)</u>	
	<u>All Water Use</u>	<u>\$1.93</u>
	<u>[*] Usage blocks by meter size:</u>	
	<u>Size of Meter</u>	<u>Block 1 (gallons)</u>
	<u>3/4-Inch</u>	<u>Over 32,000</u>
	<u>1-Inch</u>	<u>Over 80,000</u>
	<u>1.5-Inch</u>	<u>Over 160,000</u>
	<u>2-Inch</u>	<u>Over 256,000</u>
	<u>3-Inch</u>	<u>Over 512,000</u>
	<u>4-Inch</u>	<u>Over 800,000</u>
	<u>6-Inch</u>	<u>Over 1,600,000</u>
	<u>8-Inch</u>	<u>Over 2,560,000</u>
	<u>10-Inch</u>	<u>Over 3,680,000</u>
	<u>12-Inch</u>	<u>Over 6,880,000</u>

110-166(f)	Fire sprinkler system	Rate
	Base Facility Charge (per meter size)	
	2-inch	\$9.34
	3-inch	17.18
	4-inch	26.00
	6-inch	50.50
	8-inch	79.90
	10-inch	114.20

110-166(g)	Tapping fee, per size of tap in inches:	Rate
	3/4-inch	4,726.00
	1-inch	4,665.00

	<u>1½ -inch</u>	5,106.00
	<u>2-inch</u>	5,116.00
	<u>3-inch</u>	5,627.00
	<u>4-inch</u>	6,189.00
	<u>6-inch</u>	6.808.00

110-166(h)	Guarantee of payment deposit, per service in inches:	
	$\frac{3}{4}$	40.00
	1	50.00
	1½	60.00
	2	100.00
	3	500.00
	4	600.00
	6	1,000.00
	8	1,500.00
110-166(i)	Re-read fee (Charged if meter found to be working properly)	25.00
110-166(j)	Special read fee	25.00
110-166(k)	Servicing a meter found damaged, destroyed or missing will require actual replacement cost plus all costs associated with replacement of meter	Actual costs
110-166(l)	Field visit fee:	
	Normal business hours	25.00
	After normal business hours	50.00

110-168(a)	Sanitary sewer service charge, shall be as follows: \$3.73 per 1,000 gallons, effective with billings on or after October 1, 2000; \$3.81 per 1,000 gallons, effective with billings on or after October 1, 2001; \$3.90 per 1,000 gallons, effective with billings on or after October 1, 2002; \$4.03 per 1,000 gallons, effective with billings on or after October 1, 2003; \$4.12 per 1,000 gallons, effective with billings on or after October 1, 2004; and \$4.21 per 1,000 gallons, effective with billings on or after October 1, 2005; and \$4.25 per 1,000 gallons, effective with billings on or after October 1, 2006; \$4.93 per 1,000 gallons, effective with billings on or after October 1, 2007; \$5.62 per 1,000 gallons, effective with billings on or after October 1, 2008; and \$6.04 per 1,000 gallons, effective with billings on or after October 1, 2009; and \$6.34 per 1,000 gallons, effective with billings on or after October 1, 2013; and \$7.55 per 1,000 gallons, effective with billing on or after October 1, 2014; and \$8.23 per 1,000 gallons effective with billing on or after October 1, 2015	
------------	---	--

110-168(a)(1)	Individual Metered Residential Service	
	<u>Base Facility Charge (all meter sizes)</u>	<u>Rate</u>
	<u>All Meter Sizes</u>	<u>\$8.45</u>
	<u>Sewer Consumption Charge (per 1,000 gallons)</u>	
	<u>All Gallons (based on metered water consumption)</u>	<u>\$4.26</u>
	<u>Purchased Sanitary Sewer Pass-Through Rate (per 1,000 gallons)</u>	
	<u>All Gallons (based on metered water consumption)</u>	<u>\$4.76</u>

110-168(a)(2)	Master-Metered Multifamily Residential Service	
	<u>Base Facility Charge (per meter size)</u>	<u>Rate</u>
	<u>3/4-inch</u>	<u>\$8.45</u>
	<u>1-inch</u>	<u>18.88</u>
	<u>1-1/2-inch</u>	<u>36.25</u>
	<u>2-inch</u>	<u>57.10</u>

	3-inch	112.70
	4-inch	175.25
	6-inch	349.00
	8-inch	557.50
	10-inch	800.75
	12-inch	1,495.75
	<u>Sewer Consumption Charge (per 1,000 gallons)</u>	
	<u>All Gallons (based on metered water consumption)</u>	\$4.26
	<u>Purchased Sanitary Sewer Pass-Through Rate (per 1,000 gallons)</u>	
	<u>All Gallons (based on metered water consumption)</u>	\$4.76

110-168(a)(3)	<u>Non-Residential Service</u>	
	<u>Base Facility Charge (per meter size)</u>	<u>Rate</u>
	3/4-inch	\$8.45
	1-inch	18.88
	1-1/2-inch	36.25
	2-inch	57.10
	3-inch	112.70
	4-inch	175.25
	6-inch	349.00
	8-inch	557.50
	10-inch	800.75
	12-inch	1,495.75
	<u>Sewer Consumption Charge (per 1,000 gallons)</u>	
	<u>All Gallons (based on metered water consumption)</u>	\$4.26
	<u>Purchased Sanitary Sewer Pass-Through Rate (per 1,000 gallons)</u>	
	<u>All Gallons (based on metered water consumption)</u>	\$4.76

* * *

SECTION 3. REPEALER

All ordinances or parts of ordinances and all section and parts of sections in conflict herewith be and the same are hereby repealed.

SECTION 4. CODIFICATION

It is the intention of the City Commission, and it is hereby ordained that the provisions of this ordinance shall become and be made part of the Code of the City of Miami Beach as

amended; that the sections of this ordinance may be renumbered or relettered to accomplish such intention; and that the word "ordinance" may be changed to "section" or other appropriate word.

SECTION 5. SEVERABILITY

If any section, subsection, clause or provision of this Ordinance is held invalid, the remainder shall not be affected by such invalidity.

SECTION 6. EFFECTIVE DATE

This Ordinance shall take effect ten days following adoption.

PASSED and ADOPTED this 27 day of September, 2016.

Mayor Philip Levine

ATTEST:

RS 9/30/16

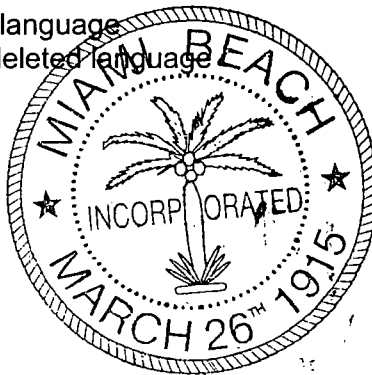
City Clerk Rafael Granado

**APPROVED AS TO
FORM & LANGUAGE
& FOR EXECUTION**

Rafael Granado 9/16/16

City Attorney Date

Underline denotes new language
Strikethrough denotes deleted language



MIAMI BEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Jimmy L. Morales, City Manager
DATE: September 27, 2016

5:10 p.m. Second Reading Public Hearing

SUBJECT: AN ORDINANCE OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, AMENDING CHAPTER 110 OF THE CODE OF THE CITY OF MIAMI BEACH ENTITLED "UTILITIES," ARTICLE IV, ENTITLED "FEES, CHARGES, RATES AND BILLING PROCEDURE," AT SECTION 110-166, ENTITLED "SCHEDULE OF WATER RATES AND TAPPING CHARGES;" AT SECTION 110-168, ENTITLED "SANITARY SEWER SERVICE CHARGE" ARE TO BE AMENDED; AND CREATING SECTION 110-171, ENTITLED "RATE INDEXING," IN ORDER TO ADJUST AND MODIFY HOW WATER AND SANITARY SEWER RATES ARE CALCULATED AND APPLIED; AND ALSO AMENDING APPENDIX A TO CHAPTER 110, ENTITLED "FEE SCHEDULE" TO INCREASE AND RESTRUCTURE THE WATER RATES AND SANITARY SEWER SERVICE CHARGES IMPOSED BY THE CITY PURSUANT TO SECTIONS 110-166, 110-168, AND 110-171; PROVIDING FOR CODIFICATION; REPEALER; SEVERABILITY; AND AN EFFECTIVE DATE.

RECOMMENDATION

The Administration recommends the City Commission adopt such rates to enable collecting revenues sufficient to cover the cost of operating, maintaining, repairing and financing the water and sewer enterprise funds. The Miami-Dade Water and Sewer Department (WASD) proposed a sewer rate increase to all wholesale customers of \$.1598 for sewer per 1000 gallons effective October 1, 2016. In order to further the City goal of sustainability, the Administration is recommending that we transition to a conservation rate structure consistent with the guidance and recommendations of the South Florida Water Management District and approving the Ordinance on Second Reading Public Hearing.

ANALYSIS

The City's utility rates for water and sanitary sewer services are structured to collect the necessary revenues to meet annual operating and maintenance costs of the infrastructure, to cover debt service for water and sewer bonds, to maintain adequate operating fund reserves, and, to pay Miami-Dade County for wholesale water purchased, the treatment of the City's sewage and other fees.

In general, the rates for water supply and sanitary sewer services are based on full cost recovery principles and consist of:

- Pass-through of the wholesale rate the City pays to Miami-Dade County for the purchase of potable water and treatment of sewage;
- Debt service for the Water and Sewer Revenue Bonds;
- Operating and maintenance costs for the water and sewer utility; 8 % fee of previous year total revenue paid to the Miami-Dade County Environmental Resource Management Department (DERM).

Public Resources Management Group, Inc. ("PRMG") was asked to evaluate the current rate structure and propose alternative (redesigned) rates as necessary to recover the costs of providing service given the target monthly user rate revenues for the Fiscal Year 2016/17 for consideration by the City Commission which will incentivize conservation of valuable water resources, meet industry standards regarding cost recovery/rate application to its customers, and maintain rate reasonableness among customers.

The Miami-Dade Water and Sewer Department has informed all wholesale customers that the proposed water rate for FY2016/17 will remain unchanged. WASD has also notified wholesale customers that their proposed sewer rate will be \$2.9477, an increase of \$0.1598 above the current rate of \$2.7879 per 1000 gallons. The cost of the proposed FY2016/17 sewer rate increase to Miami Beach is approximately \$2,926,000. The proposed WASD wholesale water and sewer rates are subject to approval by the Board of County Commissioners at their Public Budget Hearings, scheduled for September 8 and September 22, 2016.

Based on their review of the City's existing rates and projected rate revenues, billing statistics and operating costs, and understanding the City desire to enact a conservation rate, the recommended rate structure adjustments are listed below:

A) Implementation of water and wastewater monthly base facility charges for the residential class.

B) Implementation of water and wastewater monthly base facility charges for the general services class (commercial, master-metered residential, government, etc.) that increase based on meter size to recognize the diverse capacity (demand) characteristics among such customers which is consistent with utility rate structure norms and structures recommended by the Florida Public Service Commission (FPSC).

C) Removal of the minimum water flow in the water minimum service charges to promote conservation and provide a pricing structure where water consumption charges are based solely on the amount of water a consumer uses:

D) Implementation of tiered water rates to incentivize water conservation to those customers with discretionary water use (i.e., individually metered residential and irrigation customers); and

E) Provide a cost recovery mechanism to promote long-term rate sustainability by the implementation of a purchased water and wastewater pass-through and price index rate adjustment.

Water Revenue Review and Recommendation

All operational expenditure increases related to the proposed cost of living adjustment to salaries, increased costs of health insurance and pension, and increases in other operating costs can be absorbed without the requirement to increase the water rate. PRMG is proposing to modify the monthly billing to consist of: i) a base facility charge which serves as the monthly minimum service charge on each service installed, based upon the size of the meter installed in accordance with the standards of the Public Works Department; ii) a water consumption charge; and iii) a purchased water pass-through adjustment rate to recover the cost of purchased water

as billed by the Miami-Dade Water and Sewer Department (WASD). The monthly water user rates charged for service have been proposed and may be adjusted from time to time.

PRMG also recommends that a monthly base facility charge be billed to all privately-owned fire protection systems and equipment connected to the city water system based on the size of the service line connecting the private system to the City's system. These systems provide fire protection and are not metered. The recommended monthly base facility charges are as follows:

Proposed Fire Protection Fees By Meter Size	
Base Facility Charge (per meter size)	Rate
2-inch	\$9.34
3-inch	17.18
4-inch	26.00
6-inch	50.50
8-inch	79.90
10-inch	114.20

The derivation of these charges are based on the methodology utilized by the Florida Public Service Commission (the "FPSC") in the regulation of private utilities that is often applied by public utilities in the State of Florida. In accordance with Section 25-30.465 of the Florida Administrative Code:

25-30.465 Private Fire Protection Rates.

The rate for private fire protection service shall be a charge based on the size of the connection rather than the number of fixtures connected. The rate shall be one-twelfth the current base facility charge of the utility's meter sizes, unless otherwise supported by the utility.

Sewer Revenue Review and Recommendation

A significant portion of the sewer rate revenue requirement consists of the WASD charges for sewer treatment which has increased by six percent or approximately \$3 million and DERM fees of approximately \$400,000. The debt service is also proposed to increase by \$2.5 million. Similar to the water rate, the revenue requirements will be met utilizing a base facility charge which will serve as the monthly minimum service charge, a consumption charge, and WASD pass through charges.

Based on the rate determination methodology established, PRMG also recommends the City should increase the wastewater wholesale rates charged to the Village of Bal Harbour, the Town of Bay Harbor Islands, and the Town of Surfside (collectively, the "Satellite Cities") from \$3.1050 to \$3.2705 per 1,000 gallons of service effective October 1, 2016.

Typical Proposed Rate Comparison

3/4"-Meter Residential Customer - Domestic

	Fiscal Year 2016	Fiscal Year 2017	Difference
Water Rates			
Minimum Service Charge / Base Facility Charge	\$22.15	\$7.82	

Consumption Charge per 1,000 Gallons			
0 to 4,000 Gallons	\$0.00	\$0.63	[1]
4,001 to 5,000 Gallons	0.00	1.42	[1]
5,001 to 8,000 Gallons	4.61	1.42	[1]
8,001 to 16,000 Gallons	4.61	2.21	[1]
16,001 to 24,000 Gallons	4.61	2.99	[1]
Over 24,000 Gallons	4.61	3.78	[1]
Purchased Water Pass-Through Rate per 1,000 Gallons (All Usage)		\$1.93	[1]

Wastewater Rates

Base Facility Charge	N/A	\$8.45	
Consumption Charge per 1,000 Gallons (All Flow)			
All Flow per 1,000 Gallons	\$8.23	\$4.26	[2]
Purchased Sewer Pass-Through Rate per 1,000 Gallons (All Flow)	N/A	\$4.76	[2]

Bill Comparison

Monthly Cost to 10,000 Gallon Customer			
Water	\$45.20	\$39.74	(\$5.46)
Wastewater	82.30	98.65	16.35
Combined	\$127.50	\$138.39	\$10.89
Monthly Cost to 5,000 Gallon Customer			
Water	\$22.15	\$21.41	(\$0.74)
Wastewater	41.15	53.55	12.40
Combined	\$63.30	\$74.96	\$11.66

Footnotes:

[1] The water consumption charge per 1,000 gallons and purchased water pass-through rate per 1,000 gallons are additive

[2] The wastewater consumption charge per 1,000 gallons and purchased sewer pass-through rate per 1,000 gallons are additive

CONCLUSION

The Administration recommends approving the Ordinance on Second Reading Public Hearing.

KEY INTENDED OUTCOMES SUPPORTED

Ensure Expenditure Trends Are Sustainable Over The Long Term

Legislative Tracking

Public Works

Sponsor

Commissioner Ricky Arriola

ATTACHMENTS:**Description**

- Ordinance

2020

**CITY OF MIAMI BEACH, FLORIDA
WATER AND SEWER
RATE STUDY**