



Financial Services Audit Committee Communication

Date: August 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Nicolette N. Bateson, CPA, Chief Financial Officer & Treasurer

Re: Feasibility Forecast Considerations

Background: As the Great Lakes Water Authority (GLWA) prepares for a potential water and sewer refunding and new money transaction for the local Detroit Water & Sewerage Department new money sewer transaction, a number of financial analyses have been prepared by the GLWA's feasibility advisor, The Foster Group.

Analysis: There are two reports attached for the Committee's review.

1. "MEMORANDUM: Series 2018 GLWA Revenue Bonds Preliminary Feasibility Report Forecasts" from The Foster Group dated August 20, 2018 (33 pages). This report serves as the basis and rationale for the draft feasibility report in connection with this transaction.
2. "MEMORANDUM: Series 2018 GLWA Revenue Bonds Preliminary Feasibility Report Forecasts" from The Foster Group dated August 7, 2018 (82 pages). This report provides multiple scenarios which resulted in the single scenario for purposes of the final feasibility report that will be contained in the preliminary official statement for this transaction.

Proposed Action: None at this time.

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MEMORANDUM

Series 2018 GLWA Revenue Bonds
Preliminary Feasibility Report Introduction

August 20, 2018

To: Nicolette Bateson

From: Bart Foster

This memorandum and the accompanying exhibits have been prepared to introduce our preliminary Feasibility Consultants Report(s) (the “Reports”) for the upcoming referenced transaction(s). Much of our analyses and financial projections will also be included in the body of the Preliminary Official Statement(s). The intent of this document is to provide additional information to support stakeholder review of our reports, which are concurrently being submitted under separate cover.

On August 7 we submitted the preliminary financial forecasts for initial review, with a brief introductory narrative. That material was heavy on analytical content and light on explanatory narrative, as we sought to facilitate early review opportunities. The exhibits in the August 7 submittal presented forecasted financial results for a five-year projection period (Fiscal Year 2019 through Fiscal Year 2023) for the capital and operating requirements of GLWA for both the Water Fund and the Sewer Fund. We presented three scenarios we were considering, each of which embraced slightly different assumptions regarding capital improvement and operating expenditures, and annual increases in total revenue requirements. The projections in the Reports are essentially identical to those reflected by Scenario 1 in the August 7 memorandum, although they reflect moderate adjustments based on ongoing review.

We originally envisioned structuring the Reports to formally include all three scenarios, perhaps with Scenarios 2 and 3 serving as appendices. After consultation with the financing team, we have concluded that limiting our Reports to a single scenario best meets the intent of the formal disclosure documents. We continue to believe that Scenarios 2 and 3 provide value to stakeholders as they review the Reports. This document continues to contain Scenario 2 and 3 projections.

Also, we have attempted to reflect initial comments we’ve received from the financing team and other stakeholders. In many cases, our adjustments are limited to format changes to tables, etc. There is one structural change of note, and one definitional opportunity as we seek to tell the unique GLWA story. First the definitional opportunity, as extracted from the Report(s):

Upon the effective date, the Authority assumed responsibility for the wholesale water and sewer services to the service area via operation of the portion of the System (the “Regional System”) that provides service to the wholesale customers. The portion of the System that provides service directly to retail customers in the City of Detroit (the “Local System”) continues to be operated by the City of Detroit through DWSD, just as the Authority’s wholesale customers provide retail services to their individual residents and businesses. The Authority’s customers (the “Customers”) include communities and districts served via wholesale service contracts and the City of Detroit retail customer class, served via the terms of the Water and Sewer Services Agreement. The Authority is authorized by its Articles of Incorporation to provide retail service, but does not currently provide retail service to any customers.

The revenues and revenue requirements of the Authority include wholesale amounts related to service provided by the Regional System and retail amounts related to service provided by the Local System. In this report, revenues and revenue requirements associated with the Regional System are defined as “Wholesale” and / or “Wholesale System” activities and those associated with the Local System are defined as “Retail” and / or “Retail System” activities. All revenues are deposited into a trust established under the Master Bond Ordinance. See “*GLWA Financial Planning Guiding Principles*” in the Report(s).

All Customers, including the City of Detroit retail customer class, receive Wholesale service and provide Wholesale revenue to the trust. Only the City of Detroit retail customer class receives Retail service and provides Retail revenues to the trust. The total of the Wholesale and Retail activities, after eliminating amounts that are duplicative (such as the Detroit customer class share of Wholesale activities) are referred to herein as “Combined” and / or “Combined System” revenues and revenue requirements.

Originally, we intended for the Reports to contain operational financing plan projections for both the Combined System(s) and the Wholesale System(s). Similar to the discussion above, after consultation with the financing team we have concluded that limiting our Reports to the Combined System(s) forecast best meets the intent of the formal disclosure documents. We have not included “Table 6a – Projected Wholesale System Operational Financing Plan” in the Reports. However, it is addressed in this memorandum, with full narrative introduction.

Also, we have added an additional “Table 6b - Projected Retail System Operational Financing Plan” summary in this submittal, again with full narrative introduction. In effect these two individual forecasts combine to form the Combined System projections contained in the Reports – once duplicative items have been reconciled and removed. We believe this approach provides a fully transparent understanding of how we arrived at the projections in our Reports.

To recap, we are “operationalizing” three terms and their related definitions for the purpose of identifying the sources for financial amounts in this report:

- **Wholesale System:** Amounts which are obtained from the GLWA financial statements, budgets, and related analysis.
- **Retail System:** Amounts which are obtained from the DWSD financial statements, budgets, and related analysis.
- **Combined System:** The sum of amounts for the Wholesale System and the Retail System, less the elimination of duplicative amounts. A prime example is water and sewer service charges from the Regional System to the Local System. In those instances, the amounts obtained from the GLWA and DWSD financial statements are identical.

As a reminder, here are the three scenarios we considered as we prepared our projections.

- Scenario 1 reflects the projections set forth in the Reports and mirrors the GLWA Management Plan forecast prepared in support of the recently approved FY 2019 Budget.
 - *That forecast assumed:*
 - Annual increases in revenue requirements (after FY 2019) of 4%;
 - Full funding of the requested operating expense budget;
 - Annual increases in operating expenses (after FY 2019) of 2%
 - Full funding of the published and approved Capital Improvement Programs (CIPs);
 - A financing plan that utilized audited **FY 2017** information to establish beginning available cash and investment balances, and that relied on FY 2018 **budgeted** material to initiate the forecast.
 - *We have updated that forecast to reflect subsequent developments, including:*
 - A preliminary “planning level” version of the CIPs;
 - Estimated **FY 2018** available cash and investment balances;
 - Awareness of commitments for additional capital financing sources, including approval of SRF loans.
- Scenario 2 embraces the fact that the Authority has successfully implemented efficiency measures, has recognized savings from budgeted operating expenses, and has experienced deferrals in execution of planned capital improvement expenditures. The Scenario 2 projections assume continuation of these recent trends throughout the study period.
 - *Key Scenario 2 assumption modifications include:*

- Annual increases in revenue requirements (after FY 2019) of 4%;
 - **Projected operating expenses will total 95% of forecasted budgets;**
 - Annual increases in operating expenses (after FY 2019) of 2%;
 - **Annual CIP financing requirements (after FY 2019) will total 80% of Scenario 1 figures;**
 - All other assumptions are consistent with Scenario 1.
- Scenario 3 recognizes that continued achievement of the Scenario 2 assumptions regarding operating and capital cost efficiencies provides the opportunity for stakeholder consideration to balance affordability and financial stability objectives. It is founded in a presumption that GLWA management will continue to develop financial plans focused on a “bottom line” perspective of delivering strong financial metrics, while embracing additional goals of affordability and stability.
 - *Key Scenario 3 assumption modifications include:*
 - **Annual increases in revenue requirements (after FY 2019) of 2%;**
 - All other assumptions are consistent with Scenario 2.

We encourage reviewers to read the Reports for a full introduction of the Scenario 1 projections. The next section of this memorandum sets forth the individual Wholesale System and Retail System operational financing plan projections for Scenario 1, including narrative introduction. *As mentioned above, these summaries are not contained in the Reports.* Subsequently we present key tables for Scenarios 2 and 3 that are impacted by changing the assumptions that define those scenarios.

We are prepared to further discuss this matter at your convenience.

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Operational Financing Plan

The Reports contain (in Table 6) projected financing plans for the annual operating and capital revenue requirements of the Combined Water and Sewer Systems for the 2019 through 2023 study period. Those projections represent a combination of the Wholesale System and Retail System forecasts. Each forecast is discussed herein, supported by summaries denoted as Tables 6a for the Wholesale System and 6b for the Retail System, which represents the Detroit Customer Class's revenue requirements for retail activities and the its share of Wholesale revenue requirements. The tables are identical in format for both the Water and Sewer Systems, and the discussion below is generally applicable to both.

Wholesale System Operational Financing Plan

Table 6a presents a projected plan for the annual Wholesale System operating and capital financing revenue requirements for the 2019 through 2023 study period. This presentation reflects the "wholesale" portion of the revenue and revenue requirement projections, presented in a format that aligns with the Master Bond Ordinance ("MBO") flow of funds. The table provides an indication of the adequacy of the Authority's revenues and the feasibility of future anticipated revenue bond sales and the associated capital financing plans. The overall financial plan summarized by these projections is designed to embrace the Authority's long-term financial stability strategy, which leverages efficiency savings and optimized infrastructure plans coupled with annual revenue adjustments, to produce increasing amounts of "unrestricted cash" that remains after providing for payment of operation and maintenance expenses, debt service payments, and funding of the various non-operating elements set forth in the foundational documents for the Authority.

Operating revenue projections from wholesale service charges are based on the Authority's current service charge schedule. Projected "Revenues from Adjustments" are presented on Lines 2 through 5, and reflect the amounts necessary to meet increases in annual in annual unit costs necessary to produce a revenue level equal to targeted levels contemplated by the terms of the Lease, which indicates 4.0% increases in annual revenue requirements. The effective projected annual adjustment to *Water* service charge revenue in Fiscal Year 2020 is slightly lower than the 4.0% revenue requirement increase due to a slight increase in projected wholesale water sales for Fiscal Year 2020. Similarly, the projected annual adjustments to service charge revenue in the remaining years are slightly higher than the 4.0% increases in revenue requirements due to slightly declining projections of non-operating revenue on Line 7. The projected revenue adjustments during the study period are believed to be comparable with those that should be experienced by GLWA's peers. *The Sewer figures are similarly impacted. Also, the Fiscal Year 2019 Sewer System revenues are adjusted on Line 6a to reflect the wholesale bad debt true-up adjustment related to Highland Park. For purposes of these projections we have assumed that this adjustment will cease after Fiscal Year 2019.*

Projected non-operating revenues of the Wholesale System include investment earnings from all eligible System funds and have been projected based on an analysis of funds

on hand, construction schedules, and average fund balances. An annual interest rate of one percent has been assumed in projecting interest income for all funds.

The Revenue Requirements in this table are presented in a manner that follows the flow of funds set forth in the MBO. Operation and maintenance expenses are provided for first, followed by debt service, followed by deposits to the Pension Obligation Payment Fund, the WRAP Fund, the Extraordinary Repair and Replacement Reserve Fund, and finally the I&E Fund (including the Lease Payment), as further described below.

The projected operation and maintenance expenses shown on Lines 9 and 10 reflect the total projected transfers to the Wholesale System Operation and Maintenance Accounts, including amounts to provide for the operating expense portion of the Pension Obligation, as summarized in Table 4 of the Reports.

The Wholesale System's allocated portion of the Authority's projected debt service is shown on Line 12. This figure reflects the total Authority debt service, less the amounts specifically assigned to the Local System via the Agreements. The debt service on outstanding bonds does not reflect potential savings provided by the Series 2018 Bonds. Line 12 includes existing debt service on outstanding bonds, plus estimated debt service on future bond sales indicated in Table 5 of the Reports. For purposes of these projections, a scale assuming level debt service based on a 30-year term and an interest rate of 4.25 percent has been assumed on all of these projected bond sales.

Transfers to the Pension Obligation Payment Fund are shown on Lines 13 through 15. These amounts reflect the Wholesale System's allocated share of the non-operating expense portion of the legacy Pension Obligation payments and the B and C Note payments. Transfers to the WRAP Fund, shown on Line 16, are established at 0.5% of total projected revenues from service charges. For purposes of these projections, we've assumed that annual amounts deposited into the WRAP Fund will be fully exhausted in the year they are transferred, and therefore these projections do not track WRAP Fund balances or activities.

Transfers to the Budget Stabilization Fund are not required of the Wholesale System. As part of the 2018 MOU implementation, the Extraordinary Repair and Replacement Reserve ("ER&R") Fund requirement was fully funded from existing cash and investment balances. As such, no future deposits to that Fund are projected to be required during the study period.

The next revenue requirement relates to the \$50 million annual Lease Payment. For purposes of determining the Wholesale System revenue requirements, the entire amount of the Lease Payment is included, even if the City of Detroit opts to apply a portion of the Lease Payment to effectively fund a portion of its allocated debt service responsibility.

All remaining balances are then available to be maintained as operating reserves in the Authority Wholesale Operation and Maintenance Account or transferred to the Authority Wholesale I&E subaccount of the I&E Fund held within the Trust. Our projections assume that

the Operation and Maintenance Account will be maintained at a level equivalent to 90 days of annual Authority operation and maintenance expense, including the operating portion of the transfer to the GLWA Pension O&M Account, in order to provide adequate working capital. Line 21 of Table 6a presents a revenue requirement established to ensure that this funding level is maintained.

All other remaining amounts are projected to be transferred to the Authority Wholesale I&E subaccount of the I&E Fund held within the Trust, as shown on Line 20. In effect, the projected amounts on this line reflect the total annual revenue requirement, as determined by the indexed four percent annual adjustments, less all other revenue requirements. The projected amounts are available to finance capital improvements and appear as a CIP financing source in Tables 5a and 5b of the Reports.

The financial plan presented herein is designed to enhance the System's balance sheet, reverse the erosion in net assets that has occurred in recent years, and improve the Water System's liquidity position. Authority management has embraced this planning strategy, which results in increasing debt service coverage ratios, as indicated in the table.

Retail System Operational Financing Plan

Table 6b presents a projected plan for the annual operating and capital financing revenue requirements for the City of Detroit Customer Class in total for the 2019 through 2023 study period. This presentation reflects the Retail System revenue requirements **and** the City of Detroit Customer Class share of Wholesale System revenue requirements. Once again, the revenue requirements are presented in a format that aligns with the MBO flow of funds. *The Fiscal Year 2019 revenues and revenue requirements in this table are identical to that approved by the Authority Board of Directors as part of the approved budget and service charge schedules. Our projections for the remaining years in the study period were developed based on review of published DWSD financial plans and through collaborative discussions for DWSD principals. They reflect our understanding of intended use of Lease Payments and other capital financing sources.*

Operating revenue projections under the City's current retail rate schedules are shown on Line 1. Projected "Revenues from Adjustments" are presented on Lines 2 through 5, and reflect the amounts necessary to meet the annual revenue requirements set forth below.

The City of Detroit Customer Class share of the Wholesale System wholesale revenue requirements are shown on Lines 9 through 11. The Fiscal Year 2019 amounts are consistent with the Authority's Fiscal Year 2019 budget. Amounts on Line 9 reflect the Detroit Customer Class's "gross" allocated wholesale revenue requirement, including its fully allocated share of the \$50 million annual Lease Payment. Projected amounts in Fiscal Year 2020 through 2023 reflect the projected annual 4.0% increases. These amounts are offset by the ownership benefit provided for in the Lease, which totals \$20.7 million for the Water System and \$5.516 million for the Sewer System, and results in the net amount shown on Line 11.

The remaining Revenue Requirements in this table reflect the Retail System's portion of the flow of funds set forth in the MBO, as further described below.

The projected operation and maintenance expenses shown on Lines 12 and 13 reflect the total projected transfers to the Retail System Operation and Maintenance Accounts, including amounts to provide for the operating expense portion of the Pension Obligation, as summarized in Table 4 of the Reports.

The Retail System's allocated portion of the Authority's projected debt service is shown as the "Obligation Payable" amounts on Line 15. This figure reflects the amounts specifically assigned to the Retail System via the Agreements. It includes the fixed amortization schedule established in the 2018 Memorandum of Understanding for allocated "pre-bifurcation" indebtedness, and annual debt service on "post-bifurcation" bonds issued by the Authority on behalf of the Retail System. It includes estimated amounts on additional bond issues as projected in Tables 5a and 5b in the Reports.

Transfers to the Pension Obligation Payment Fund are shown on Lines 16 through 18. These amounts reflect the Retail System's allocated share of the non-operating expense portion of the legacy Pension Obligation payments and the B and C Note payments. Transfers to the WRAP Fund, shown on Line 19, are established at 0.5% of total projected revenues from service charges. For purposes of these projections, we've assumed that annual amounts deposited into the WRAP Fund will be fully exhausted in the year they are transferred, and therefore these projections do not track WRAP Fund balances or activities.

The final Retail System revenue requirement in this presentation is the transfer of revenues to the Retail I&E subaccount of the I&E Fund held within the Trust. As shown on Line 20, our projections assume that the Detroit Customer Class will not generate any such revenues for transfer during the study period.

Total allocated revenue requirements for the Detroit Customer Class are shown on Line 21. Deducting these from the total revenues from Line 8 results in the indicated annual balance and/or deficiency shown on Line 22. As indicated in the table, the projections for each year represent amounts that must be met from directing a portion of the Lease Payment to address allocated debt service responsibility represented on the Obligation Payable shown on Line 15. These amounts are shown on Line 23 and have the effect of balancing revenues and revenue requirements in this presentation. The amounts shown on Line 23 are consistent with those discussed in the Reports and are based on our discussions with DWSD principals. For the Water System, these amounts reflect debt service related to the \$57 million in net bond proceeds from the 2016 Water Bonds issued in October 2016. For the Sewer System, they reflect estimated allocated debt service related to the \$91 million in net bond proceeds on the 2018 Sewer Bonds.

Water Table 6a
Operational Financing Plan - Wholesale System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
Projected Revenue from Adjustments						
2	FY 2020: 3.7%		12,191,300	12,191,300	12,191,300	12,191,300
3	FY 2021: 4.1%			14,088,500	14,088,500	14,088,500
4	FY 2022: 4.1%				14,729,400	14,729,400
5	FY 2023: 4.2%					15,381,700
6	Total Projected Revenue from Water Charges	327,564,200	340,987,700	355,076,200	369,805,600	385,187,300
7	Non-Operating Revenue	<u>3,836,600</u>	<u>3,668,800</u>	<u>3,366,600</u>	<u>2,974,900</u>	<u>2,504,400</u>
8	Total Revenue Available	331,400,800	344,656,500	358,442,800	372,780,500	387,691,700
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	121,562,600	123,993,900	126,473,800	129,003,300	131,583,400
10	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
11	Total O&M Expense	127,610,600	130,041,900	132,521,800	135,051,300	137,631,400
12	Debt Service Allocation - Regional System	134,214,600	141,942,500	153,278,800	149,482,900	153,838,100
13	Non-Operating Portion of Pension Obligation	5,392,800	5,392,800	5,392,800	5,392,800	5,392,800
14	B & C Note Non-Operating Payments	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>
15	Transfer to Pension Obligation Payment Fund	6,268,300	6,268,300	6,268,300	6,268,300	6,268,300
16	Transfer to WRAP Fund	1,673,400	1,723,300	1,792,200	1,863,900	1,938,500
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000
20	Transfer to GLWA Regional I&E Account	39,133,600	41,370,100	41,255,100	56,770,900	64,655,400
21	Operating Reserves	0	810,400	826,600	843,200	860,000
22	Total Revenue Requirements	331,400,500	344,656,500	358,442,800	372,780,500	387,691,700
23	Indicated Balance (Deficiency)	300	0	0	0	0
24	Projected Debt Service Coverage Ratio (Regional)	1.52	1.51	1.47	1.59	1.63
25	Net Revenues (8) - (11)	203,790,200	214,614,600	225,921,000	237,729,200	250,060,300
26	Net Revenues Available after Debt Service (25)-(12)	69,575,600	72,672,100	72,642,200	88,246,300	96,222,200
27	Applied to MBO Reserve Funds (15,16,17,18)	(7,941,700)	(7,991,600)	(8,060,500)	(8,132,200)	(8,206,800)
28	Applied as Lease Payment to DWSD (19)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)
29	Applied to Operating Reserves (21)	0	(810,400)	(826,600)	(843,200)	(860,000)
30	Available for I&E Fund (26) - (27,28,29)	39,133,900	41,370,100	41,255,100	56,770,900	64,655,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Water Table 6b
Operational Financing Plan - Retail System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	95,494,600	95,494,600	95,494,600	95,494,600	95,494,600
Projected Revenue from Adjustments						
2	FY 2020: 3.1%		2,924,100	2,924,100	2,924,100	2,924,100
3	FY 2021: 3.0%			2,946,300	2,946,300	2,946,300
4	FY 2022: 2.8%				2,849,600	2,849,600
5	FY 2023: 3.6%					3,739,300
6	Total Projected Revenue from Water Charges	95,494,600	98,418,700	101,365,000	104,214,600	107,953,900
7	Non-Operating Revenue	<u>2,200,000</u>	<u>2,200,000</u>	<u>2,200,000</u>	<u>2,200,000</u>	<u>2,200,000</u>
8	Total Revenue Available	97,694,600	100,618,700	103,565,000	106,414,600	110,153,900
Revenue Requirements						
9	GLWA Regional System Revenue Requirements	40,881,600	42,516,900	44,217,600	45,986,300	47,825,800
10	less: Ownership Benefit per Lease	<u>(20,700,000)</u>	<u>(20,700,000)</u>	<u>(20,700,000)</u>	<u>(20,700,000)</u>	<u>(20,700,000)</u>
11	Net GLWA Regional System Revenue Requirements	20,181,600	21,816,900	23,517,600	25,286,300	27,125,800
12	Transfer to DWSD Local O&M Account	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
13	Transfer to GLWA Pension O&M Account	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
14	Total O&M Expense	39,756,300	40,398,600	41,083,100	41,780,600	42,492,500
15	Obligation Payable to GLWA	36,747,200	36,946,600	37,507,300	37,886,800	39,063,400
16	Non-Operating Portion of Pension Obligation	3,809,200	3,809,200	3,809,200	3,809,200	3,809,200
17	B & C Note Non-Operating Payments	<u>618,200</u>	<u>618,200</u>	<u>618,200</u>	<u>618,200</u>	<u>618,200</u>
18	Transfer to Pension Obligation Payment Fund	4,427,400	4,427,400	4,427,400	4,427,400	4,427,400
19	Transfer to WRAP Fund	387,600	377,200	384,500	393,900	405,400
20	Transfer to DWSD Local I&E Account	0	0	0	0	0
21	Total Revenue Requirements	101,500,100	103,966,700	106,919,900	109,775,000	113,514,500
22	Indicated Balance (Deficiency)	(3,805,500)	(3,348,000)	(3,354,900)	(3,360,400)	(3,360,600)
23	Use of Lease Payment to Meet Obligation Payable	3,805,300	3,348,000	3,354,900	3,360,400	3,360,600
24	Adjusted Balance (Deficiency)	(200)	0	0	0	0
25	Projected Debt Service Coverage Ratio (Local)	1.03	1.04	1.04	1.04	1.04
26	Net Revenues (8) - (9) - (12)	37,756,700	38,403,200	38,964,300	39,347,700	40,535,600
27	Net Revenues Available after Oblig Payable (25)-(13)	1,009,500	1,456,600	1,457,000	1,460,900	1,472,200
28	Applied to MBO Reserve Funds (16,17)	(4,815,000)	(4,804,600)	(4,811,900)	(4,821,300)	(4,832,800)
29	Available for I&E Fund (26) - (27) + (22)	(200)	0	0	0	0

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

		Sewer Table 6a				
		Operational Financing Plan - Wholesale System				
Line No.	Item	<i>Fiscal Year Ending June 30,</i>				
		<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
Projected Revenue from Adjustments						
2	FY 2020: 4.3%		19,821,400	19,821,400	19,821,400	19,821,400
3	FY 2021: 4.0%			19,566,400	19,566,400	19,566,400
4	FY 2022: 4.0%				20,270,600	20,270,600
5	FY 2023: 4.0%					21,176,700
6a	Total Projected Revenue from Sewer Charges	465,584,900	485,406,300	504,972,700	525,243,300	546,420,000
6b	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6	Total Operating Revenue	467,456,400	485,406,300	504,972,700	525,243,300	546,420,000
7	Non-Operating Revenue	<u>4,570,900</u>	<u>3,555,800</u>	<u>3,547,800</u>	<u>3,618,000</u>	<u>3,595,700</u>
8	Total Revenue Available	472,027,300	488,962,100	508,520,500	528,861,300	550,015,700
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	191,079,400	194,901,000	198,799,000	202,775,000	206,830,500
10	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
11	Total O&M Expense	201,903,400	205,725,000	209,623,000	213,599,000	217,654,500
12	Debt Service Allocation - Regional System	214,600,700	220,730,900	219,547,500	228,597,300	224,958,800
13	Non-Operating Portion of Pension Obligation	9,651,400	9,651,400	9,651,400	9,651,400	9,651,400
14	B & C Note Non-Operating Payments	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>
15	Transfer to Pension Obligation Payment Fund	11,620,700	11,620,700	11,620,700	11,620,700	11,620,700
16	Transfer to WRAP Fund	2,374,100	2,444,800	2,542,600	2,644,300	2,750,100
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
20	Transfer to GLWA Regional I&E Account	14,028,400	19,666,900	36,387,600	43,574,900	64,180,100
21	Operating Reserves	0	1,273,900	1,299,300	1,325,300	1,351,800
22	Total Revenue Requirements	472,027,300	488,962,200	508,520,700	528,861,500	550,016,000
23	Indicated Balance (Deficiency)	0	(100)	(200)	(200)	(300)
24	Projected Debt Service Coverage Ratio (Regional)	1.26	1.28	1.36	1.38	1.48
25	<i>Net Revenues (8) - (11)</i>	270,123,900	283,237,100	298,897,500	315,262,300	332,361,200
26	<i>Net Revenues Available after Debt Service (25)-(12)</i>	55,523,200	62,506,200	79,350,000	86,665,000	107,402,400
27	<i>Applied to MBO Reserve Funds (15,16,17,18)</i>	(13,994,800)	(14,065,500)	(14,163,300)	(14,265,000)	(14,370,800)
28	<i>Applied as Lease Payment to DWSD (19)</i>	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)
29	<i>Applied to Operating Reserves (21)</i>	0	(1,273,900)	(1,299,300)	(1,325,300)	(1,351,800)
30	<i>Available for I&E Fund (26) - (27,28,29)</i>	14,028,400	19,666,800	36,387,400	43,574,700	64,179,800

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

**Sewer Table 6b
Operational Financing Plan - Retail System**

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	280,040,900	280,040,900	280,040,900	280,040,900	280,040,900
Projected Revenue from Adjustments						
2	FY 2020: 3.7%		10,403,500	10,403,500	10,403,500	10,403,500
3	FY 2021: 3.2%			9,162,800	9,162,800	9,162,800
4	FY 2022: 3.2%				9,520,700	9,520,700
5	FY 2023: 3.2%					9,809,600
6	Total Projected Revenue from Sewer Charges	280,040,900	290,444,400	299,607,200	309,127,900	318,937,500
7	Non-Operating Revenue	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
8	Total Revenue Available	280,540,900	290,944,400	300,107,200	309,627,900	319,437,500
Revenue Requirements						
9	GLWA Regional System Revenue Requirements	181,159,300	188,626,300	196,392,000	204,468,300	212,867,700
10	Transfer to DWSO Local O&M Account	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
11	Transfer to DWSO Pension O&M Account	2,856,000	2,856,000	2,856,000	2,856,000	2,856,000
12	Total O&M Expense	70,977,500	72,433,200	73,769,300	75,133,600	76,523,500
13	Obligation Payable to GLWA	27,865,400	32,052,500	32,052,500	32,052,500	32,052,500
14	Non-Operating Portion of Pension Obligation	2,546,600	2,546,600	2,546,600	2,546,600	2,546,600
15	B & C Note Non-Operating Payments	<u>520,200</u>	<u>520,200</u>	<u>520,100</u>	<u>520,100</u>	<u>520,200</u>
16	Transfer to Pension Obligation Payment Fund	3,066,800	3,066,800	3,066,700	3,066,700	3,066,800
17	Transfer to WRAP Fund	496,900	546,600	607,700	687,800	708,000
18	Transfer to DWSO Local I&E Account	0	0	0	0	0
19	Operating Reserves	0	0	0	0	0
20	Total Revenue Requirements	283,565,900	296,725,400	305,888,200	315,408,900	325,218,500
21	Indicated Balance (Deficiency)	(3,025,000)	(5,781,000)	(5,781,000)	(5,781,000)	(5,781,000)
22	Use of Lease Payment to Meet Obligation Payable	3,024,900	5,781,000	5,781,000	5,781,000	5,781,000
23	Adjusted Balance (Deficiency)	(100)	0	0	0	0
24	Projected Debt Service Coverage Ratio (Local)	1.02	0.93	0.93	0.94	0.94
25	Net Revenues (8) - (9) - (12)	28,404,100	29,884,900	29,945,900	30,026,000	30,046,300
26	Net Revenues Available after Oblig Payable (25)-(13)	538,700	(2,167,600)	(2,106,600)	(2,026,500)	(2,006,200)
27	Applied to MBO Reserve Funds (16, 17)	(3,563,700)	(3,613,400)	(3,674,400)	(3,754,500)	(3,774,800)
28	Available for I&E Fund (26) - (27) + (22)	(100)	0	0	0	0

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Scenario Exhibits

As noted in the introduction to this memorandum, our baseline projections contained in the Reports reflect assumptions consistent with the Authority's financial planning strategies, with modifications to reflect evolving CIP financing requirements and sources. The baseline projections assume continuation of projected annual four percent increases in revenue requirements, and full achievement of budgeted and planned operating expenses and capital improvement program expenditures. The Authority has successfully implemented efficiency measures and has recognized savings from budgeted operating expenses and has experienced deferrals in execution of planned capital improvement expenditures. In the exhibits that follow we offer alternative projection scenarios which assume continuation of these recent trends throughout the study period.

The baseline scenario presented in the Reports is referred to as Scenario 1 for purposes of this illustration. This appendix offers capital and operating financial plan projection summaries for two additional scenarios, as outlined in the introduction to this memorandum. We have provided key summary tables with minimal introductory commentary, as the narrative introduction to these pertinent tables is set forth in the Reports and earlier in this memorandum. We believe the analytical results adequately reflect the impact of alternative assumptions.

Water Forecast Exhibits

Scenario 2 - Rev Req't Increases 4%, CIP Funding 80%, O&M Funding 95%

PRELIMINARY

Table 5a
GLWA Wholesale System Capital Improvement Program Financing Plan

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
2	Major Capital Improvement Program (a)	<u>52,830,400</u>	<u>88,000,000</u>	<u>98,320,000</u>	<u>108,640,000</u>	<u>119,040,000</u>	<u>466,830,400</u>
3	Total Financing Requirements	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	242,939,700	254,872,000	262,510,300	258,860,100	251,480,100	242,939,700 (i)
Construction Bond Funds							
5	Beginning Balance (b)	140,308,100	101,392,700	51,522,700	3,722,700	2,636,700	140,308,100 (i)
Bond Proceeds							
6	Water System Revenue Bonds (c)	0	0	0	17,600,000	23,600,000	41,200,000
7	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
8	Less: Transfer to DWSD Const. Fund (e)	0	0	0	(16,544,000)	(22,184,000)	(38,728,000)
9	Less: Issuance Expenses (f)	<u>0</u>	<u>0</u>	<u>0</u>	<u>(1,056,000)</u>	<u>(1,416,000)</u>	<u>(2,472,000)</u>
10	Net Bond Proceeds Available	0	0	0	0	0	0
11	State Drinking Water Revolving Fund Loan	10,500,000	20,459,000	29,529,000	46,022,000	30,722,000	137,232,000
12	Less: Transfer to DWSD Constr. Fund	<u>(10,500,000)</u>	<u>(4,000,000)</u>	<u>(11,982,000)</u>	<u>0</u>	<u>0</u>	<u>(26,482,000)</u>
13	Net State DWRP Financing for Authority	0	16,459,000	17,547,000	46,022,000	30,722,000	110,750,000
14	Investment Income	<u>743,000</u>	<u>462,000</u>	<u>408,000</u>	<u>252,000</u>	<u>500,000</u>	<u>2,365,000</u>
15	Subtotal - Construction Bond Funds	<u>141,051,100</u>	<u>118,313,700</u>	<u>69,477,700</u>	<u>49,996,700</u>	<u>33,858,700</u>	<u>253,423,100</u>
16	Total Financing Sources Available	383,990,800	373,185,700	331,988,000	308,856,800	285,338,800	496,362,800
Application of Financing Sources							
17	I&E Funds - Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
18	I&E Funds - Specifically Designated I&E Prc	13,172,000	11,209,000	12,565,000	11,280,000	12,007,000	60,233,000
19	I&E Funding of Debt Eligible Projects	0	10,000,000	20,000,000	50,000,000	75,000,000	155,000,000
20	Project Expenditures from Construction Fund	<u>39,658,400</u>	<u>66,791,000</u>	<u>65,755,000</u>	<u>47,360,000</u>	<u>32,033,000</u>	<u>251,597,400</u>
21	Total Financing Sources Applied	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
22	Remaining Beginning Balance (g)	207,634,300	214,900,000	211,240,000	188,216,800	157,072,300	
23	Transfers from Water Receiving Fund	<u>47,237,700</u>	<u>47,610,300</u>	<u>47,620,100</u>	<u>63,263,300</u>	<u>71,511,400</u>	277,242,800
24	Total Improvement & Extension Fund	254,872,000	262,510,300	258,860,100	251,480,100	228,583,700	228,583,700 (j)
25	Construction Bond Funds (h)	<u>101,392,700</u>	<u>51,522,700</u>	<u>3,722,700</u>	<u>2,636,700</u>	<u>1,825,700</u>	<u>1,825,700 (j)</u>
26	Financing Sources Available for Future Req'	356,264,700	314,033,000	262,582,800	254,116,800	230,409,400	230,409,400 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) Par value for the Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Includes net effect of premium and discount elements and assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 17 through 19.

(h) Line 15 minus Line 20.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 6
Operational Financing Plan - Combined Wholesale and Retail System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	402,877,200	404,109,400	404,109,400	404,109,400	404,109,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 3.2%		13,007,300	13,007,300	13,007,300	13,007,300
3	FY 2021: 3.6%			15,020,900	15,020,900	15,020,900
4	FY 2022: 3.6%				15,495,800	15,495,800
5	FY 2023: 3.8%					17,014,100
6	Total Projected Revenue from Water Charges	402,877,200	417,116,700	432,137,600	447,633,400	464,647,500
7	Miscellaneous Operating Revenue	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000
8	Total Operating Revenue	405,077,200	419,316,700	434,337,600	449,833,400	466,847,500
9	Non-Operating Revenue	3,836,600	4,141,600	4,152,600	4,075,400	3,872,300
10	Total Revenue Available	408,913,800	423,458,300	438,490,200	453,908,800	470,719,800
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
12	Transfer to DWSD Local O&M Account	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
13	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
14	Transfer to DWSD Pension O&M Account	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
15	Total O&M Expense	161,288,800	164,240,800	167,281,200	170,381,700	173,544,700
<u>Debt Service - Bond Interest and Redemption Deposits</u>						
Senior Lien Bonds						
16	Outstanding Bonds	119,230,800	123,909,900	126,616,400	127,412,400	131,184,100
17	Future Bonds (<i>lien unspecified, assumed</i>)	0	0	0	374,000	1,550,400
18	Total Senior Lien Debt Service	119,230,800	123,909,900	126,616,400	127,786,400	132,734,500
Second Lien Bonds						
19	Outstanding Bonds (b)	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
20	The 2018 GLWA Bonds (b)	0	0	0	0	0
21	Total Second Lien Debt Service	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
22	Subtotal Debt Service	168,251,200	174,570,500	178,701,400	175,279,300	180,582,700
23	SRF Junior Lien Bonds	2,710,600	4,318,600	12,084,700	12,090,400	12,085,000
24	Total Debt Service	170,961,800	178,889,100	190,786,100	187,369,700	192,667,700
25	Non-Operating Portion of Pension Obligation	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
26	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
27	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700
28	Transfer to WRAP Fund	2,061,000	2,100,500	2,176,700	2,257,800	2,343,900
29	Transfer to Budget Stabilization Fund	0	0	0	0	0
30	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
31	Lease Payment - Transfer to Detroit Local I&E	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400
<u>Transfers to I&E Fund to Finance Capital Improvements</u>						
32	Transfer to GLWA Regional I&E Account	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
33	Transfer to DWSD Local I&E Account	0	0	0	0	0
34	Total Transfers to I&E Fund	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
35	Operating Reserves	(2,026,000)	769,900	785,300	801,000	817,000
36	Total Revenue Requirements	408,913,700	423,458,300	438,490,200	453,908,800	470,719,800
37	Indicated Balance (Deficiency)	100	0	0	0	0
Debt Service Coverage Projections						
38	Senior Lien for Rate Covenant Purposes	2.08	2.09	2.14	2.22	2.24
39	Second Lien for Rate Covenant Purposes	1.47	1.48	1.52	1.62	1.65
40	SRF Junior Lien for Rate Covenant Purposes	1.45	1.45	1.42	1.51	1.54
41	Net Revenues (10) - (15)	247,625,000	259,217,500	271,209,000	283,527,100	297,175,100
42	Net Revenues Available after Debt Service (41)-(24)	76,663,200	80,328,400	80,422,900	96,157,400	104,507,400
43	Applied to MBO Reserve Funds (27,28,29,30)	(12,756,700)	(12,796,200)	(12,872,400)	(12,953,500)	(13,039,600)
44	Applied as Lease Payment to DWSD I&E Acct (31)	(18,694,700)	(19,152,000)	(19,145,100)	(19,139,600)	(19,139,400)
45	Applied to Operating Reserves (36)	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
46	Available for I&E Fund Accounts (42) - (43,44,45)	47,237,800	47,610,300	47,620,100	63,263,300	71,511,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Does not reflect estimated impact of Series 2018 Refunding Bonds, which will lower debt service for all years in the study period.

TFG

Water Table 6a
Operational Financing Plan - Wholesale System

Line No.	Item	<i>Fiscal Year Ending June 30,</i>				
		<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
		\$	\$	\$	\$	\$
	Revenue (a)					
1	Operating Revenue Under Existing Charges	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
	<u>Projected Revenue from Adjustments</u>					
2	FY 2020: 3.6%		11,718,500	11,718,500	11,718,500	11,718,500
3	FY 2021: 4.0%			13,775,300	13,775,300	13,775,300
4	FY 2022: 4.1%				14,414,900	14,414,900
5	FY 2023: 4.1%					15,114,300
6	Total Projected Revenue from Water Charges	327,564,200	340,514,900	354,290,200	368,705,100	383,819,400
7	Non-Operating Revenue	<u>3,836,600</u>	<u>4,141,600</u>	<u>4,152,600</u>	<u>4,075,400</u>	<u>3,872,300</u>
8	Total Revenue Available	331,400,800	344,656,500	358,442,800	372,780,500	387,691,700
	Revenue Requirements					
9	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
10	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
11	Total O&M Expense	121,532,500	123,842,200	126,198,100	128,601,100	131,052,200
12	Debt Service Allocation - Regional System	134,214,600	141,942,500	153,278,800	149,482,900	153,604,300
13	Non-Operating Portion of Pension Obligation	5,392,800	5,392,800	5,392,800	5,392,800	5,392,800
14	B & C Note Non-Operating Payments	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>
15	Transfer to Pension Obligation Payment Fund	6,268,300	6,268,300	6,268,300	6,268,300	6,268,300
16	Transfer to WRAP Fund	1,673,400	1,723,300	1,792,200	1,863,900	1,938,500
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000
20	Transfer to GLWA Regional I&E Account	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
21	Operating Reserves	<u>(2,026,000)</u>	<u>769,900</u>	<u>785,300</u>	<u>801,000</u>	<u>817,000</u>
22	Total Revenue Requirements	331,400,500	344,656,500	358,442,800	372,780,500	387,691,700
23	Indicated Balance (Deficiency)	300	0	0	0	0
24	Projected Debt Service Coverage Ratio (Regional)	1.56	1.56	1.52	1.63	1.67
25	<i>Net Revenues (8) - (11)</i>	209,868,300	220,814,300	232,244,700	244,179,400	256,639,500
26	<i>Net Revenues Available after Debt Service (25)-(12)</i>	75,653,700	78,871,800	78,965,900	94,696,500	103,035,200
27	<i>Applied to MBO Reserve Funds (15,16,17,18)</i>	(7,941,700)	(7,991,600)	(8,060,500)	(8,132,200)	(8,206,800)
28	<i>Applied as Lease Payment to DWSD (19)</i>	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)
29	<i>Applied to Operating Reserves (21)</i>	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
30	<i>Available for I&E Fund (26) - (27,28,29)</i>	47,238,000	47,610,300	47,620,100	63,263,300	71,511,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Table 7
Projected Cash and Investment Fund Balances - Wholesale System (a)

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	<u>Operating Fund</u>					
1	Beginning Balance	42,803,500	40,777,500	41,547,400	42,332,700	43,133,700
2	Deposit from Operations	(2,026,000)	769,900	785,300	801,000	817,000
3	Ending Balance	40,777,500	41,547,400	42,332,700	43,133,700	43,950,700
	<u>Budget Stabilization Fund (a)</u>					
4	Beginning Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
	<u>ER&R Fund (a)</u>					
7	Beginning Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
	<u>I&E Fund (b)</u>					
10	Beginning Balance	242,939,700	254,872,000	262,510,300	258,860,100	251,480,100
11	Budgeted Capital Outlay	(22,133,400)	(18,763,000)	(18,705,300)	(9,363,300)	(7,400,800)
12	Capital Expenditures	(13,172,000)	(21,209,000)	(32,565,000)	(61,280,000)	(87,007,000)
13	Subtotal prior to Revenue Transfer	207,634,300	214,900,000	211,240,000	188,216,800	157,072,300
14	Deposits from Revenues (b)	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
15	Ending Balance	254,872,000	262,510,300	258,860,100	251,480,100	228,583,700
	<u>Total Revenue Generated Funds (c)</u>					
16	Beginning Balance	315,243,200	325,149,500	333,557,700	330,692,800	324,113,800
17	Net Sources and Uses	9,906,300	8,408,200	(2,864,900)	(6,579,000)	(22,079,400)
18	Ending Balance	325,149,500	333,557,700	330,692,800	324,113,800	302,034,400
	<u>Other Funds</u>					
19	Bond Reserve (excludes Surety)	20,969,800	20,969,800	20,969,800	20,969,800	20,969,800
20	Construction Fund	101,392,700	51,522,700	3,722,700	2,636,700	1,825,700
21	Total Funds	504,499,300	465,679,900	418,980,700	410,176,900	389,052,500
22	Subtotal w/o Construction Funds	403,106,600	414,157,200	415,258,000	407,540,200	387,226,800

(a) Technically includes "Combined System" amounts held by GLWA.

(b) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

Water Forecast Exhibits

Scenario 3 - Rev Req't Increases 2%, CIP Funding 80%, O&M Funding 95%

PRELIMINARY

Table 5a
GLWA Wholesale System Capital Improvement Program Financing Plan

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
2	Major Capital Improvement Program (a)	<u>52,830,400</u>	<u>88,000,000</u>	<u>98,320,000</u>	<u>108,640,000</u>	<u>119,040,000</u>	<u>466,830,400</u>
3	Total Financing Requirements	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	242,939,700	254,872,000	255,915,500	238,679,900	210,309,800	242,939,700 (i)
Construction Bond Funds							
5	Beginning Balance (b)	140,308,100	101,392,700	51,522,700	3,722,700	2,636,700	140,308,100 (i)
Bond Proceeds							
6	Water System Revenue Bonds (c)	0	0	0	17,600,000	23,600,000	41,200,000
7	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
8	Less: Transfer to DWSD Const. Fund (e)	0	0	0	(16,544,000)	(22,184,000)	(38,728,000)
9	Less: Issuance Expenses (f)	<u>0</u>	<u>0</u>	<u>0</u>	<u>(1,056,000)</u>	<u>(1,416,000)</u>	<u>(2,472,000)</u>
10	Net Bond Proceeds Available	0	0	0	0	0	0
11	State Drinking Water Revolving Fund Loan	10,500,000	20,459,000	29,529,000	46,022,000	30,722,000	137,232,000
12	Less: Transfer to DWSD Constr. Fund	<u>(10,500,000)</u>	<u>(4,000,000)</u>	<u>(11,982,000)</u>	<u>0</u>	<u>0</u>	<u>(26,482,000)</u>
13	Net State DWRP Financing for Authority	0	16,459,000	17,547,000	46,022,000	30,722,000	110,750,000
14	Investment Income	<u>743,000</u>	<u>462,000</u>	<u>408,000</u>	<u>252,000</u>	<u>500,000</u>	<u>2,365,000</u>
15	Subtotal - Construction Bond Funds	<u>141,051,100</u>	<u>118,313,700</u>	<u>69,477,700</u>	<u>49,996,700</u>	<u>33,858,700</u>	<u>253,423,100</u>
16	Total Financing Sources Available	383,990,800	373,185,700	325,393,200	288,676,600	244,168,500	496,362,800
Application of Financing Sources							
17	I&E Funds - Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
18	I&E Funds - Specifically Designated I&E Prc	13,172,000	11,209,000	12,565,000	11,280,000	12,007,000	60,233,000
19	I&E Funding of Debt Eligible Projects	0	10,000,000	20,000,000	50,000,000	75,000,000	155,000,000
20	Project Expenditures from Construction Fund	<u>39,658,400</u>	<u>66,791,000</u>	<u>65,755,000</u>	<u>47,360,000</u>	<u>32,033,000</u>	<u>251,597,400</u>
21	Total Financing Sources Applied	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
22	Remaining Beginning Balance (g)	207,634,300	214,900,000	204,645,200	168,036,600	115,902,000	
23	Transfers from Water Receiving Fund	<u>47,237,700</u>	<u>41,015,500</u>	<u>34,034,700</u>	<u>42,273,200</u>	<u>42,683,200</u>	207,244,300
24	Total Improvement & Extension Fund	254,872,000	255,915,500	238,679,900	210,309,800	158,585,200	158,585,200 (j)
25	Construction Bond Funds (h)	<u>101,392,700</u>	<u>51,522,700</u>	<u>3,722,700</u>	<u>2,636,700</u>	<u>1,825,700</u>	<u>1,825,700 (j)</u>
26	Financing Sources Available for Future Req'	356,264,700	307,438,200	242,402,600	212,946,500	160,410,900	160,410,900 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) Par value for the Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Includes net effect of premium and discount elements and assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 17 through 19.

(h) Line 15 minus Line 20.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 6
Operational Financing Plan - Combined Wholesale and Retail System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	402,877,200	404,109,400	404,109,400	404,109,400	404,109,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 1.6%		6,445,300	6,445,300	6,445,300	6,445,300
3	FY 2021: 2.0%			8,131,000	8,131,000	8,131,000
4	FY 2022: 2.0%				8,263,800	8,263,800
5	FY 2023: 2.2%					9,424,900
6	Total Projected Revenue from Water Charges	402,877,200	410,554,700	418,685,700	426,949,500	436,374,400
7	Miscellaneous Operating Revenue	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000
8	Total Operating Revenue	405,077,200	412,754,700	420,885,700	429,149,500	438,574,400
9	Non-Operating Revenue	3,836,600	4,075,600	3,950,800	3,663,700	3,172,300
10	Total Revenue Available	408,913,800	416,830,300	424,836,500	432,813,200	441,746,700
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
12	Transfer to DWSD Local O&M Account	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
13	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
14	Transfer to DWSD Pension O&M Account	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
15	Total O&M Expense	161,288,800	164,240,800	167,281,200	170,381,700	173,544,700
<u>Debt Service - Bond Interest and Redemption Deposits</u>						
Senior Lien Bonds						
16	Outstanding Bonds	119,230,800	123,909,900	126,616,400	127,412,400	131,184,100
17	Future Bonds (<i>lien unspecified, assumed</i>)	0	0	0	374,000	1,550,400
18	Total Senior Lien Debt Service	119,230,800	123,909,900	126,616,400	127,786,400	132,734,500
Second Lien Bonds						
19	Outstanding Bonds (b)	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
20	The 2018 GLWA Bonds (b)	0	0	0	0	0
21	Total Second Lien Debt Service	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
22	Subtotal Debt Service	168,251,200	174,570,500	178,701,400	175,279,300	180,582,700
23	SRF Junior Lien Bonds	2,710,600	4,318,600	12,084,700	12,090,400	12,085,000
24	Total Debt Service	170,961,800	178,889,100	190,786,100	187,369,700	192,667,700
25	Non-Operating Portion of Pension Obligation	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
26	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
27	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700
28	Transfer to WRAP Fund	2,061,000	2,067,300	2,108,400	2,152,300	2,199,000
29	Transfer to Budget Stabilization Fund	0	0	0	0	0
30	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
31	Lease Payment - Transfer to Detroit Local I&E	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400
<u>Transfers to I&E Fund to Finance Capital Improvements</u>						
32	Transfer to GLWA Regional I&E Account	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
33	Transfer to DWSD Local I&E Account	0	0	0	0	0
34	Total Transfers to I&E Fund	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
35	Operating Reserves	(2,026,000)	769,900	785,300	801,000	817,000
36	Total Revenue Requirements	408,913,700	416,830,300	424,836,500	432,813,200	441,746,700
37	Indicated Balance (Deficiency)	100	0	0	0	0
Debt Service Coverage Projections						
38	Senior Lien for Rate Covenant Purposes	2.08	2.04	2.03	2.05	2.02
39	Second Lien for Rate Covenant Purposes	1.47	1.45	1.44	1.50	1.49
40	SRF Junior Lien for Rate Covenant Purposes	1.45	1.41	1.35	1.40	1.39
41	Net Revenues (10) - (15)	247,625,000	252,589,500	257,555,300	262,431,500	268,202,000
42	Net Revenues Available after Debt Service (41)-(24)	76,663,200	73,700,400	66,769,200	75,061,800	75,534,300
43	Applied to MBO Reserve Funds (27,28,29,30)	(12,756,700)	(12,763,000)	(12,804,100)	(12,848,000)	(12,894,700)
44	Applied as Lease Payment to DWSD I&E Acct (31)	(18,694,700)	(19,152,000)	(19,145,100)	(19,139,600)	(19,139,400)
45	Applied to Operating Reserves (36)	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
46	Available for I&E Fund Accounts (42) - (43,44,45)	47,237,800	41,015,500	34,034,700	42,273,200	42,683,200

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Does not reflect estimated impact of Series 2018 Refunding Bonds, which will lower debt service for all years in the study period.

TFG

Water Table 6a

Operational Financing Plan - Wholesale System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
Projected Revenue from Adjustments						
2	FY 2020: 1.6%		5,156,500	5,156,500	5,156,500	5,156,500
3	FY 2021: 2.1%			6,885,400	6,885,400	6,885,400
4	FY 2022: 2.1%				7,182,900	7,182,900
5	FY 2023: 2.2%					7,525,100
6	Total Projected Revenue from Water Charges	327,564,200	333,952,900	340,838,300	348,021,200	355,546,300
7	Non-Operating Revenue	<u>3,836,600</u>	<u>4,075,600</u>	<u>3,950,800</u>	<u>3,663,700</u>	<u>3,172,300</u>
8	Total Revenue Available	331,400,800	338,028,500	344,789,100	351,684,900	358,718,600
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
10	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
11	Total O&M Expense	121,532,500	123,842,200	126,198,100	128,601,100	131,052,200
12	Debt Service Allocation - Regional System	134,214,600	141,942,500	153,278,800	149,482,900	153,604,300
13	Non-Operating Portion of Pension Obligation	5,392,800	5,392,800	5,392,800	5,392,800	5,392,800
14	B & C Note Non-Operating Payments	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>
15	Transfer to Pension Obligation Payment Fund	6,268,300	6,268,300	6,268,300	6,268,300	6,268,300
16	Transfer to WRAP Fund	1,673,400	1,690,100	1,723,900	1,758,400	1,793,600
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000
20	Transfer to GLWA Regional I&E Account	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
21	Operating Reserves	<u>(2,026,000)</u>	<u>769,900</u>	<u>785,300</u>	<u>801,000</u>	<u>817,000</u>
22	Total Revenue Requirements	331,400,500	338,028,500	344,789,100	351,684,900	358,718,600
23	Indicated Balance (Deficiency)	300	0	0	0	0
24	Projected Debt Service Coverage Ratio (Regional)	1.56	1.51	1.43	1.49	1.48
25	Net Revenues (8) - (11)	209,868,300	214,186,300	218,591,000	223,083,800	227,666,400
26	Net Revenues Available after Debt Service (25)-(12)	75,653,700	72,243,800	65,312,200	73,600,900	74,062,100
27	Applied to MBO Reserve Funds (15,16,17,18)	(7,941,700)	(7,958,400)	(7,992,200)	(8,026,700)	(8,061,900)
28	Applied as Lease Payment to DWSD (19)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)
29	Applied to Operating Reserves (21)	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
30	Available for I&E Fund (26) - (27,28,29)	47,238,000	41,015,500	34,034,700	42,273,200	42,683,200

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Table 7
Projected Cash and Investment Fund Balances - Wholesale System (a)

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	42,803,500	40,777,500	41,547,400	42,332,700	43,133,700
2	Deposit from Operations	(2,026,000)	769,900	785,300	801,000	817,000
3	Ending Balance	40,777,500	41,547,400	42,332,700	43,133,700	43,950,700
<u>Budget Stabilization Fund (a)</u>						
4	Beginning Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
<u>ER&R Fund (a)</u>						
7	Beginning Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
<u>I&E Fund (b)</u>						
10	Beginning Balance	242,939,700	254,872,000	255,915,500	238,679,900	210,309,800
11	Budgeted Capital Outlay	(22,133,400)	(18,763,000)	(18,705,300)	(9,363,300)	(7,400,800)
12	Capital Expenditures	(13,172,000)	(21,209,000)	(32,565,000)	(61,280,000)	(87,007,000)
13	Subtotal prior to Revenue Transfer	207,634,300	214,900,000	204,645,200	168,036,600	115,902,000
14	Deposits from Revenues (b)	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
15	Ending Balance	254,872,000	255,915,500	238,679,900	210,309,800	158,585,200
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	315,243,200	325,149,500	326,962,900	310,512,600	282,943,500
17	Net Sources and Uses	9,906,300	1,813,400	(16,450,300)	(27,569,100)	(50,907,600)
18	Ending Balance	325,149,500	326,962,900	310,512,600	282,943,500	232,035,900
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	20,969,800	20,969,800	20,969,800	20,969,800	20,969,800
20	Construction Fund	101,392,700	51,522,700	3,722,700	2,636,700	1,825,700
21	Total Funds	504,499,300	459,085,100	398,800,500	369,006,600	319,054,000
22	Subtotal w/o Construction Funds	403,106,600	407,562,400	395,077,800	366,369,900	317,228,300

(a) Technically includes "Combined System" amounts held by GLWA.

(b) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

Sewer Forecast Exhibits

Scenario 2 - Rev Req't Increases 4%, CIP Funding 80%, O&M Funding 95%

PRELIMINARY

Table 5a
GLWA Wholesale System Capital Improvement Program Financing Plan

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
2	Major Capital Improvement Program (a)	<u>84,146,400</u>	<u>80,240,000</u>	<u>80,240,000</u>	<u>88,720,000</u>	<u>88,720,000</u>	<u>422,066,400</u>
3	Total Financing Requirements	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	96,762,200	106,075,600	91,069,600	78,958,300	89,317,400	96,762,200 (i)
Construction Bond Funds							
5	Beginning Balance (b)	99,814,100	66,795,700	57,969,900	50,353,700	50,211,900	99,814,100 (i)
Bond Proceeds							
6	Sewer System Revenue Bonds (c)	97,000,000	0	0	45,000,000	5,000,000	147,000,000
7	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
8	Less: Transfer to DWSD Const. Fund (e)	(91,000,000)	0	0	0	0	(91,000,000)
9	Less: Issuance Expenses (f)	<u>(6,000,000)</u>	<u>0</u>	<u>0</u>	<u>(2,700,000)</u>	<u>(300,000)</u>	<u>(9,000,000)</u>
10	Net Bond Proceeds Available	0	0	0	42,300,000	4,700,000	47,000,000
11	State Clean Water Revolving Fund Loans	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
12	Less: Transfer to DWSD Constr. Fund	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
13	Net State CWRP Financing for Authority	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
14	Investment Income	<u>619,000</u>	<u>471,200</u>	<u>471,800</u>	<u>239,200</u>	<u>469,900</u>	<u>2,271,100</u>
15	Subtotal - Construction Bond Funds	<u>142,630,100</u>	<u>97,327,900</u>	<u>71,934,700</u>	<u>103,079,900</u>	<u>56,984,800</u>	<u>246,626,200</u>
16	Total Financing Sources Available	239,392,300	203,403,500	163,004,300	182,038,200	146,302,200	343,388,400
Application of Financing Sources							
17	I&E Funds - Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
18	I&E Funds - Specifically Designated I&E Proje	8,312,000	10,882,000	13,659,000	10,852,000	12,280,000	55,985,000
19	I&E Funding of Debt Eligible Projects	0	30,000,000	45,000,000	25,000,000	70,000,000	170,000,000
20	Project Expenditures from Construction Funds	<u>75,834,400</u>	<u>39,358,000</u>	<u>21,581,000</u>	<u>52,868,000</u>	<u>6,440,000</u>	<u>196,081,400</u>
21	Total Financing Sources Applied	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
22	Remaining Beginning Balance (g)	82,493,200	60,382,700	27,978,800	28,059,300	2,766,200	
23	Transfers from Sewer Receiving Fund	<u>23,582,400</u>	<u>30,686,900</u>	<u>50,979,500</u>	<u>61,258,100</u>	<u>84,366,000</u>	250,872,900
24	Total Improvement & Extension Fund	106,075,600	91,069,600	78,958,300	89,317,400	87,132,200	87,132,200 (j)
25	Construction Bond Funds (h)	<u>66,795,700</u>	<u>57,969,900</u>	<u>50,353,700</u>	<u>50,211,900</u>	<u>50,544,800</u>	<u>50,544,800 (j)</u>
26	Financing Sources Available for Future Req'ts	172,871,300	149,039,500	129,312,000	139,529,300	137,677,000	137,677,000 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) Par value for the Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2018 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that no additional DWSD CIP financing will be required from additional future bonds during the study period.

(f) Includes net effect of premium and discount elements and assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 17 through 19.

(h) Line 15 minus Line 20.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 6
Operational Financing Plan - Combined Wholesale and Retail System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	564,466,500	564,466,500	564,466,500	564,466,500	564,466,500
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 4.0%		22,756,800	22,756,800	22,756,800	22,756,800
3	FY 2021: 3.6%			21,079,500	21,079,500	21,079,500
4	FY 2022: 3.6%				21,648,500	21,648,500
5	FY 2023: 3.6%					22,593,400
6	Total Projected Revenue from Sewer Charges	564,466,500	587,223,300	608,302,800	629,951,300	652,544,700
7	Miscellaneous Operating Revenue (b)	<u>2,371,500</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
8	Total Operating Revenue	566,838,000	587,723,300	608,802,800	630,451,300	653,044,700
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,556,900</u>	<u>3,432,900</u>	<u>3,569,600</u>	<u>3,540,800</u>
10	Total Revenue Available	571,408,900	591,280,200	612,235,700	634,020,900	656,585,500
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	<u>181,525,400</u>	<u>185,156,000</u>	<u>188,859,100</u>	<u>192,636,300</u>	<u>196,489,000</u>
12	Transfer to DWSD Local O&M Account	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
13	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
14	Transfer to DWSD Pension O&M Account	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>
15	Total O&M Expense	263,326,900	268,413,200	273,452,400	278,593,900	283,836,500
<u>Debt Service - Bond Interest and Redemption Deposits</u>						
Senior Lien Bonds						
16	Outstanding Bonds (c)	147,013,100	146,598,900	132,509,100	144,220,000	151,243,100
17	The 2018 GLWA Bonds	1,593,900	5,781,000	5,781,000	5,781,000	5,781,000
18	Future Bonds (lien unspecified)	<u>0</u>	<u>0</u>	<u>0</u>	<u>956,300</u>	<u>2,788,200</u>
19	Total Senior Lien Debt Service	148,607,000	152,379,900	138,290,100	150,957,300	159,812,300
Second Lien Bonds						
20	Outstanding Bonds	<u>43,922,600</u>	<u>45,878,900</u>	<u>54,642,100</u>	<u>48,104,300</u>	<u>38,785,500</u>
21	Total Second Lien Debt Service	<u>43,922,600</u>	<u>45,878,900</u>	<u>54,642,100</u>	<u>48,104,300</u>	<u>38,785,500</u>
22	Subtotal Debt Service	192,529,600	198,258,800	192,932,200	199,061,600	198,597,800
23	SRF Junior Lien Bonds	<u>49,936,400</u>	<u>53,313,400</u>	<u>54,080,700</u>	<u>54,109,900</u>	<u>48,636,600</u>
24	Total Debt Service	242,466,000	251,572,200	247,012,900	253,171,500	247,234,400
25	Non-Operating Portion of Pension Obligation	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
26	B & C Note Non-Operating Payments	<u>2,489,500</u>	<u>2,489,500</u>	<u>2,489,400</u>	<u>2,489,400</u>	<u>2,489,500</u>
27	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500
28	Transfer to WRAP Fund	2,871,000	2,991,400	3,150,300	3,332,100	3,458,100
29	Transfer to Budget Stabilization Fund	0	0	0	0	0
30	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
31	Lease Payment - Transfer to Detroit Local I&E	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000
<u>Transfers to I&E Fund to Finance Capital Improvements</u>						
32	Transfer to GLWA Regional I&E Account	23,582,400	30,686,900	50,979,500	61,258,100	84,366,000
33	Transfer to DWSD Local I&E Account	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
34	Total Transfers to I&E Fund	23,582,400	30,686,900	50,979,500	61,258,100	84,366,000
35	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
36	Total Revenue Requirements	571,408,900	591,280,400	612,235,900	634,021,100	656,585,700
37	Indicated Balance (Deficiency)	0	(200)	(200)	(200)	(200)
Debt Service Coverage Projections						
38	Senior Lien for Rate Covenant Purposes	2.07	2.12	2.45	2.35	2.33
39	Second Lien for Rate Covenant Purposes	1.60	1.63	1.76	1.79	1.88
40	SRF Junior Lien for Rate Covenant Purposes	1.27	1.28	1.37	1.40	1.51
41	Net Revenues (10) - (15)	308,082,000	322,867,000	338,783,300	355,427,000	372,749,000
42	Net Revenues Available after Debt Service (41)-(24)	65,616,000	71,294,800	91,770,400	102,255,500	125,514,600
43	Applied to MBO Reserve Funds (27,28,29,30)	(17,558,500)	(17,678,900)	(17,837,700)	(18,019,500)	(18,145,600)
44	Applied as Lease Payment to DWSD I&E Acct (31)	(24,475,100)	(21,719,000)	(21,719,000)	(21,719,000)	(21,719,000)
45	Applied to Operating Reserves (36)	0	(1,210,200)	(1,234,400)	(1,259,100)	(1,284,200)
46	Available for I&E Fund Accounts (42) - (43,44,45)	23,582,400	30,686,700	50,979,300	61,257,900	84,365,800

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Includes Wholesale Bad Debt True Up Revenue for FY 2019.

(c) Includes remaining Senior Lien SRF Bonds.

Sewer Table 6a
Operational Financing Plan - Wholesale System

Line No.	Item	<i>Fiscal Year Ending June 30,</i>				
		<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
Projected Revenue from Adjustments						
2	FY 2020: 4.3%		19,820,300	19,820,300	19,820,300	19,820,300
3	FY 2021: 4.1%			19,682,400	19,682,400	19,682,400
4	FY 2022: 4.0%				20,204,100	20,204,100
5	FY 2023: 4.0%					21,183,200
6a	Total Projected Revenue from Sewer Charges	465,584,900	485,405,200	505,087,600	525,291,700	546,474,900
6b	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6	Total Operating Revenue	467,456,400	485,405,200	505,087,600	525,291,700	546,474,900
7	Non-Operating Revenue	<u>4,570,900</u>	<u>3,556,900</u>	<u>3,432,900</u>	<u>3,569,600</u>	<u>3,540,800</u>
8	Total Revenue Available	472,027,300	488,962,100	508,520,500	528,861,300	550,015,700
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
10	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
11	Total O&M Expense	192,349,400	195,980,000	199,683,100	203,460,300	207,313,000
12	Debt Service Allocation - Regional System	214,600,700	219,519,600	214,960,400	221,119,000	215,182,000
13	Non-Operating Portion of Pension Obligation	9,651,400	9,651,400	9,651,400	9,651,400	9,651,400
14	B & C Note Non-Operating Payments	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>
15	Transfer to Pension Obligation Payment Fund	11,620,700	11,620,700	11,620,700	11,620,700	11,620,700
16	Transfer to WRAP Fund	2,374,100	2,444,800	2,542,600	2,644,300	2,750,100
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
20	Transfer to GLWA Regional I&E Account	23,582,400	30,686,900	50,979,500	61,258,100	84,366,000
21	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
22	Total Revenue Requirements	472,027,300	488,962,200	508,520,700	528,861,500	550,016,000
23	Indicated Balance (Deficiency)	0	(100)	(200)	(200)	(300)
24	Projected Debt Service Coverage Ratio (Regional)	1.30	1.33	1.44	1.47	1.59
25	<i>Net Revenues (8) - (11)</i>	279,677,900	292,982,100	308,837,400	325,401,000	342,702,700
26	<i>Net Revenues Available after Debt Service (25)-(12)</i>	65,077,200	73,462,500	93,877,000	104,282,000	127,520,700
27	<i>Applied to MBO Reserve Funds (15,16,17,18)</i>	(13,994,800)	(14,065,500)	(14,163,300)	(14,265,000)	(14,370,800)
28	<i>Applied as Lease Payment to DWSD (19)</i>	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)
29	<i>Applied to Operating Reserves (21)</i>	0	(1,210,200)	(1,234,400)	(1,259,100)	(1,284,200)
30	<i>Available for I&E Fund (26) - (27,28,29)</i>	23,582,400	30,686,800	50,979,300	61,257,900	84,365,700

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Table 7
Projected Cash and Investment Fund Balances - Wholesale System (a)

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	67,301,100	67,301,100	68,511,300	69,745,700	71,004,800
2	Deposit from Operations	0	1,210,200	1,234,400	1,259,100	1,284,200
3	Ending Balance	67,301,100	68,511,300	69,745,700	71,004,800	72,289,000
<u>Budget Stabilization Fund (a)</u>						
4	Beginning Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
<u>ER&R Fund (a)</u>						
7	Beginning Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
<u>I&E Fund (b)</u>						
10	Beginning Balance	96,762,200	104,204,300	89,198,300	77,087,000	87,446,100
11	Budgeted Capital Outlay	(5,957,000)	(4,810,900)	(4,431,800)	(15,047,000)	(4,271,200)
12	Capital Expenditures	(8,312,000)	(40,882,000)	(58,659,000)	(35,852,000)	(82,280,000)
13	Subtotal prior to Revenue Transfer	82,493,200	58,511,400	26,107,500	26,188,000	894,900
14	Deposits from Revenues (b)	21,711,100	30,686,900	50,979,500	61,258,100	84,366,000
15	Ending Balance	104,204,300	89,198,300	77,087,000	87,446,100	85,260,900
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	213,563,300	221,005,400	207,209,600	196,332,700	207,950,900
17	Net Sources and Uses	7,442,100	(13,795,800)	(10,876,900)	11,618,200	(901,000)
18	Ending Balance	221,005,400	207,209,600	196,332,700	207,950,900	207,049,900
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	64,621,500	64,621,500	64,621,500	64,621,500	64,621,500
20	Construction Fund	66,795,700	57,969,900	50,353,700	50,211,900	50,544,800
21	Total Funds	433,244,600	413,658,400	393,645,500	407,174,800	404,627,700
22	Subtotal w/o Construction Funds	366,448,900	355,688,500	343,291,800	356,962,900	354,082,900

(a) Technically includes "Combined System" amounts held by GLWA.

(b) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond Interest and Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

Sewer Forecast Exhibits

Scenario 3 - Rev Req't Increases 2%, CIP Funding 80%, O&M Funding 95%

PRELIMINARY

Table 5a
GLWA Wholesale System Capital Improvement Program Financing Plan

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
2	Major Capital Improvement Program (a)	<u>84,146,400</u>	<u>80,240,000</u>	<u>80,240,000</u>	<u>88,720,000</u>	<u>88,720,000</u>	<u>422,066,400</u>
3	Total Financing Requirements	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	96,762,200	106,075,600	86,713,500	89,414,800	91,880,100	96,762,200 (i)
Construction Bond Funds							
5	Beginning Balance (b)	99,814,100	66,795,700	52,944,900	50,523,400	49,698,300	99,814,100 (i)
Bond Proceeds							
6	Sewer System Revenue Bonds (c)	97,000,000	0	43,000,000	71,000,000	53,000,000	264,000,000
7	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
8	Less: Transfer to DWSD Const. Fund (e)	(91,000,000)	0	0	0	0	(91,000,000)
9	Less: Issuance Expenses (f)	<u>(6,000,000)</u>	<u>0</u>	<u>(2,580,000)</u>	<u>(4,260,000)</u>	<u>(3,180,000)</u>	<u>(16,020,000)</u>
10	Net Bond Proceeds Available	0	0	40,420,000	66,740,000	49,820,000	156,980,000
11	State Clean Water Revolving Fund Loans	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
12	Less: Transfer to DWSD Constr. Fund	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
13	Net State CWRP Financing for Authority	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
14	Investment Income	<u>619,000</u>	<u>446,200</u>	<u>246,500</u>	<u>115,900</u>	<u>239,800</u>	<u>1,667,400</u>
15	Subtotal - Construction Bond Funds	<u>142,630,100</u>	<u>97,302,900</u>	<u>107,104,400</u>	<u>127,566,300</u>	<u>101,361,100</u>	<u>356,002,500</u>
16	Total Financing Sources Available	239,392,300	203,378,500	193,817,900	216,981,100	193,241,200	452,764,700
Application of Financing Sources							
17	I&E Funds - Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
18	I&E Funds - Specifically Designated I&E Proje	8,312,000	10,882,000	13,659,000	10,852,000	12,280,000	55,985,000
19	I&E Funding of Debt Eligible Projects	0	25,000,000	10,000,000	0	25,000,000	60,000,000
20	Project Expenditures from Construction Funds	<u>75,834,400</u>	<u>44,358,000</u>	<u>56,581,000</u>	<u>77,868,000</u>	<u>51,440,000</u>	<u>306,081,400</u>
21	Total Financing Sources Applied	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
22	Remaining Beginning Balance (g)	82,493,200	65,382,700	58,622,700	63,515,800	50,328,900	
23	Transfers from Sewer Receiving Fund	<u>23,582,400</u>	<u>21,330,800</u>	<u>30,792,100</u>	<u>28,364,300</u>	<u>38,335,200</u>	142,404,800
24	Total Improvement & Extension Fund	106,075,600	86,713,500	89,414,800	91,880,100	88,664,100	88,664,100 (j)
25	Construction Bond Funds (h)	<u>66,795,700</u>	<u>52,944,900</u>	<u>50,523,400</u>	<u>49,698,300</u>	<u>49,921,100</u>	<u>49,921,100 (j)</u>
26	Financing Sources Available for Future Req'ts	172,871,300	139,658,400	139,938,200	141,578,400	138,585,200	138,585,200 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) Par value for the Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2018 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that no additional DWSD CIP financing will be required from additional future bonds during the study period.

(f) Includes net effect of premium and discount elements and assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 17 through 19.

(h) Line 15 minus Line 20.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 6
Operational Financing Plan - Combined Wholesale and Retail System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	564,466,500	564,466,500	564,466,500	564,466,500	564,466,500
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 2.4%		13,397,300	13,397,300	13,397,300	13,397,300
3	FY 2021: 1.9%			10,961,000	10,961,000	10,961,000
4	FY 2022: 1.9%				11,162,300	11,162,300
5	FY 2023: 1.9%					11,421,100
6	Total Projected Revenue from Sewer Charges	564,466,500	577,863,800	588,824,800	599,987,100	611,408,200
7	Miscellaneous Operating Revenue (b)	2,371,500	500,000	500,000	500,000	500,000
8	Total Operating Revenue	566,838,000	578,363,800	589,324,800	600,487,100	611,908,200
9	Non-Operating Revenue	4,570,900	3,513,300	3,540,500	3,605,600	3,573,300
10	Total Revenue Available	571,408,900	581,877,100	592,865,300	604,092,700	615,481,500
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
12	Transfer to DWSD Local O&M Account	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
13	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
14	Transfer to DWSD Pension O&M Account	2,856,000	2,856,000	2,856,000	2,856,000	2,856,000
15	Total O&M Expense	263,326,900	268,413,200	273,452,400	278,593,900	283,836,500
<u>Debt Service - Bond Interest and Redemption Deposits</u>						
Senior Lien Bonds						
16	Outstanding Bonds (c)	147,013,100	146,598,900	132,509,100	144,220,000	151,243,100
17	The 2018 GLWA Bonds	1,593,900	5,781,000	5,781,000	5,781,000	5,781,000
18	Future Bonds (lien unspecified)	0	0	913,800	4,071,500	7,920,500
19	Total Senior Lien Debt Service	148,607,000	152,379,900	139,203,900	154,072,500	164,944,600
Second Lien Bonds						
20	Outstanding Bonds	43,922,600	45,878,900	54,642,100	48,104,300	38,785,500
21	Total Second Lien Debt Service	43,922,600	45,878,900	54,642,100	48,104,300	38,785,500
22	Subtotal Debt Service	192,529,600	198,258,800	193,846,000	202,176,800	203,730,100
23	SRF Junior Lien Bonds	49,936,400	53,313,400	54,080,700	54,109,900	48,636,600
24	Total Debt Service	242,466,000	251,572,200	247,926,700	256,286,700	252,366,700
25	Non-Operating Portion of Pension Obligation	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
26	B & C Note Non-Operating Payments	2,489,500	2,489,500	2,489,400	2,489,400	2,489,500
27	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500
28	Transfer to WRAP Fund	2,871,000	2,944,400	3,053,500	3,182,500	3,252,600
29	Transfer to Budget Stabilization Fund	0	0	0	0	0
30	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
31	Lease Payment - Transfer to Detroit Local I&E	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000
<u>Transfers to I&E Fund to Finance Capital Improvements</u>						
32	Transfer to GLWA Regional I&E Account	23,582,400	21,330,800	30,792,100	28,364,300	38,335,200
33	Transfer to DWSD Local I&E Account	0	0	0	0	0
34	Total Transfers to I&E Fund	23,582,400	21,330,800	30,792,100	28,364,300	38,335,200
35	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
36	Total Revenue Requirements	571,408,900	581,877,300	592,865,500	604,092,900	615,481,700
37	Indicated Balance (Deficiency)	0	(200)	(200)	(200)	(200)
Debt Service Coverage Projections						
38	Senior Lien for Rate Covenant Purposes	2.07	2.06	2.29	2.11	2.01
39	Second Lien for Rate Covenant Purposes	1.60	1.58	1.65	1.61	1.63
40	SRF Junior Lien for Rate Covenant Purposes	1.27	1.25	1.29	1.27	1.31
41	Net Revenues (10) - (15)	308,082,000	313,463,900	319,412,900	325,498,800	331,645,000
42	Net Revenues Available after Debt Service (41)-(24)	65,616,000	61,891,700	71,486,200	69,212,100	79,278,300
43	Applied to MBO Reserve Funds (27,28,29,30)	(17,558,500)	(17,631,900)	(17,740,900)	(17,869,900)	(17,940,100)
44	Applied as Lease Payment to DWSD I&E Acct (31)	(24,475,100)	(21,719,000)	(21,719,000)	(21,719,000)	(21,719,000)
45	Applied to Operating Reserves (36)	0	(1,210,200)	(1,234,400)	(1,259,100)	(1,284,200)
46	Available for I&E Fund Accounts (42) - (43,44,45)	23,582,400	21,330,600	30,791,900	28,364,100	38,335,000

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Includes Wholesale Bad Debt True Up Revenue for FY 2019.

(c) Includes remaining Senior Lien SRF Bonds.

Sewer Table 6a
Operational Financing Plan - Wholesale System

Line No.	Item	<i>Fiscal Year Ending June 30,</i>				
		<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
Projected Revenue from Adjustments						
2	FY 2020: 2.2%		10,460,800	10,460,800	10,460,800	10,460,800
3	FY 2021: 2.0%			9,563,900	9,563,900	9,563,900
4	FY 2022: 2.0%				9,717,900	9,717,900
5	FY 2023: 2.0%					10,010,900
6a	Total Projected Revenue from Sewer Charges	465,584,900	476,045,700	485,609,600	495,327,500	505,338,400
6b	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6	Total Operating Revenue	467,456,400	476,045,700	485,609,600	495,327,500	505,338,400
7	Non-Operating Revenue	<u>4,570,900</u>	<u>3,513,300</u>	<u>3,540,500</u>	<u>3,605,600</u>	<u>3,573,300</u>
8	Total Revenue Available	472,027,300	479,559,000	489,150,100	498,933,100	508,911,700
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
10	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
11	Total O&M Expense	192,349,400	195,980,000	199,683,100	203,460,300	207,313,000
12	Debt Service Allocation - Regional System	214,600,700	219,519,600	215,874,200	224,234,200	220,314,300
13	Non-Operating Portion of Pension Obligation	9,651,400	9,651,400	9,651,400	9,651,400	9,651,400
14	B & C Note Non-Operating Payments	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>
15	Transfer to Pension Obligation Payment Fund	11,620,700	11,620,700	11,620,700	11,620,700	11,620,700
16	Transfer to WRAP Fund	2,374,100	2,397,800	2,445,800	2,494,700	2,544,600
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
20	Transfer to GLWA Regional I&E Account	23,582,400	21,330,800	30,792,100	28,364,300	38,335,200
21	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
22	Total Revenue Requirements	472,027,300	479,559,100	489,150,300	498,933,300	508,912,000
23	Indicated Balance (Deficiency)	0	(100)	(200)	(200)	(300)
24	Projected Debt Service Coverage Ratio (Regional)	1.30	1.29	1.34	1.32	1.37
25	<i>Net Revenues (8) - (11)</i>	279,677,900	283,579,000	289,467,000	295,472,800	301,598,700
26	<i>Net Revenues Available after Debt Service (25)-(12)</i>	65,077,200	64,059,400	73,592,800	71,238,600	81,284,400
27	<i>Applied to MBO Reserve Funds (15,16,17,18)</i>	(13,994,800)	(14,018,500)	(14,066,500)	(14,115,400)	(14,165,300)
28	<i>Applied as Lease Payment to DWSD (19)</i>	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)
29	<i>Applied to Operating Reserves (21)</i>	0	(1,210,200)	(1,234,400)	(1,259,100)	(1,284,200)
30	<i>Available for I&E Fund (26) - (27,28,29)</i>	23,582,400	21,330,700	30,791,900	28,364,100	38,334,900

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Table 7
Projected Cash and Investment Fund Balances - Wholesale System (a)

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	67,301,100	67,301,100	68,511,300	69,745,700	71,004,800
2	Deposit from Operations	0	1,210,200	1,234,400	1,259,100	1,284,200
3	Ending Balance	67,301,100	68,511,300	69,745,700	71,004,800	72,289,000
<u>Budget Stabilization Fund (a)</u>						
4	Beginning Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
<u>ER&R Fund (a)</u>						
7	Beginning Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
<u>I&E Fund (b)</u>						
10	Beginning Balance	96,762,200	104,204,300	84,842,200	87,543,500	90,008,800
11	Budgeted Capital Outlay	(5,957,000)	(4,810,900)	(4,431,800)	(15,047,000)	(4,271,200)
12	Capital Expenditures	(8,312,000)	(35,882,000)	(23,659,000)	(10,852,000)	(37,280,000)
13	Subtotal prior to Revenue Transfer	82,493,200	63,511,400	56,751,400	61,644,500	48,457,600
14	Deposits from Revenues (b)	21,711,100	21,330,800	30,792,100	28,364,300	38,335,200
15	Ending Balance	104,204,300	84,842,200	87,543,500	90,008,800	86,792,800
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	213,563,300	221,005,400	202,853,500	206,789,200	210,513,600
17	Net Sources and Uses	7,442,100	(18,151,900)	3,935,700	3,724,400	(1,931,800)
18	Ending Balance	221,005,400	202,853,500	206,789,200	210,513,600	208,581,800
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	64,621,500	64,621,500	64,621,500	64,621,500	64,621,500
20	Construction Fund	66,795,700	52,944,900	50,523,400	49,698,300	49,921,100
21	Total Funds	433,244,600	404,277,300	404,576,300	410,262,300	407,246,700
22	Subtotal w/o Construction Funds	366,448,900	351,332,400	354,052,900	360,564,000	357,325,600

(a) Technically includes "Combined System" amounts held by GLWA.

(b) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond Interest and Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.



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MEMORANDUM

Series 2018 GLWA Revenue Bonds
Preliminary Feasibility Report Forecasts

August 7, 2018

To: Nicolette Bateson

From: Bart Foster

The accompanying exhibits delineate our preliminary financial forecasts in a format that will be consistent with the “Feasibility Consultants Report” in the upcoming referenced transaction(s). Our projections will also be included in the body of the Preliminary Official Statement. The financing schedule is aided by providing these preliminary projections in advance of the availability of the narrative portion of the report(s). Herewith a brief introduction to facilitate review.

The exhibits present forecasted financial results for a five-year projection period (Fiscal Year 2019 through Fiscal Year 2023) for the capital and operating requirements of GLWA for both the Water Fund and the Sewer Fund. Three scenarios are presented for each Fund.

- Scenario 1 reflects our “baseline” projections and mirrors the GLWA Management Plan forecast prepared in support of the recently approved FY 2019 Budget.
 - *That forecast assumed:*
 - Annual increases in revenue requirements (after FY 2019) of 4%;
 - Full funding of the requested operating expense budget;
 - Annual increases in operating expenses (after FY 2019) of 2%
 - Full funding of the published and approved Capital Improvement Programs (CIPs);
 - A financing plan that utilized audited **FY 2017** information to establish beginning available cash and investment balances, and that relied on FY 2018 **budgeted** material to initiate the forecast.
 - *We have updated that forecast to reflect subsequent developments, including:*
 - A preliminary “planning level” version of the CIPs
 - Estimated **FY 2018** available cash and investment balances;
 - Awareness of commitments for additional capital financing sources, including approval of SRF loans.

- Scenario 2 embraces the fact that the Authority has successfully implemented efficiency measures, has recognized savings from budgeted operating expenses, and has experienced deferrals in execution of planned capital improvement expenditures. The Scenario 2 projections assume continuation of these recent trends throughout the study period.
 - *Key Scenario 2 assumption modifications include:*
 - Annual increases in revenue requirements (after FY 2019) of 4%;
 - **Projected operating expenses will total 95% of forecasted budgets;**
 - Annual increases in operating expenses (after FY 2019) of 2%;
 - **Annual CIP financing requirements (after FY 2019) will total 80% of Scenario 1 figures;**
 - All other assumptions are consistent with Scenario 1.

- Scenario 3 recognizes that continued achievement of the Scenario 2 assumptions regarding operating and capital cost efficiencies provides the opportunity for stakeholder consideration to balance affordability and financial stability objectives. It is founded in a presumption that GLWA management will continue to develop financial plans focused on a “bottom line” perspective of delivering strong financial metrics, while embracing additional goals of affordability and stability.
 - *Key Scenario 3 assumption modifications include:*
 - **Annual increases in revenue requirements (after FY 2019) of 2%;**
 - All other assumptions are consistent with Scenario 2.

We anticipate structuring the Feasibility Report(s) to include all three Scenarios, in a manner to be determined. The current thinking is to present Scenario 1 as the “baseline forecast” and include Scenarios 2 and 3 in an appendix to serve as a sensitivity analysis. The precise approach remains under consideration.

Our analytical approach to establishing the forecasts is consistent with that presented in our “GLWA Financial Forecast Model” memorandum and report that was presented to the Audit Committee in May, and we’ll not duplicate much of the introductory narrative here. We have also included the graphical exhibits in that report for these updated forecasts – although limited to the 5-year study period – to aid in the review of the various alternative scenarios. The individual exhibits for the Feasibility Report are tabular, and are structured in a manner to “build towards” the comprehensive forecasts, which are largely reflected by the Operational Financing Plans presented in the various versions of Table 6.

We encourage specific review of the various Table 6 representations, which are structured to assist in furthering understanding of the unique GLWA / DWSD structure.

- **Table 1** – Recent historical sales volumes.
 - *Provides historical perspective on recent sales levels.*
 - *Water designed to illustrate non-master metered and Flint / Genesee County developments.*

- **Table 2** – Projected Regional System CIP expenditure requirements.
 - *Recognizing the assumptions set forth above.*

- **Table 3** – Projected Revenues under existing charges.
 - *Indicates both Wholesale Regional and Detroit Local Retail figures.*
 - *While we have conducted detailed evaluations on potential sales / revenue growth / decline, we’re comfortable assuming “level” sales / revenue levels.*

- **Table 4** – Projected Operating (and selected non-operating) expenses.
 - *Indicates both Wholesale Regional and Detroit Local figures.*
 - *Recognizing the assumptions set forth above.*

- **Table 5a** – Projected Regional System CIP Financing Plan.
 - *Our forecast anticipates a strategic, gradual application of Improvement and Extension (I&E) Funds to finance major capital improvements, coupled with issuance of additional debt (including approved SRF loans).*
 - *It follows the general policy assumptions set forth in our May memorandum.*

- **Table 5b** – Projected Local System CIP Financing Plan.
 - *Same basic forecast approach, again following the general policy assumptions previously presented, for the Local System.*
 - *Note that we’ve made some assumptions in this forecast that have not been fully vetted with DWSD. While we don’t anticipate material changes, this schedule in particular should be considered preliminary pending additional review.*

- **Table 6** – Projected Consolidated System Operational Financing Plan.
 - *Represents the MBO / Trust Indenture presentation. Revenues reflect all estimated receipts into the trust, and the table is structured to align with MBO flow of funds.*

- **Table 6a** – Projected Regional System Operational Financing Plan.
 - *Only reflects the “wholesale” revenues and revenue requirements. This table is structured to align with the Regional System Budget requirements.*
 - *Includes “wholesale” revenues and revenue requirements from both Suburban Wholesale Customers and the “wholesale” portion from the Detroit Customer Class.*

- **Table 7** – Projected Cash and Investment Fund Balances.
 - *Reflects Regional System only.*
 - *Ignores debt service payment accounts and other “pass through” accounts.*

- **Table 8** – Additional Bonds Test Calculations.
 - *Pending – not included in this submittal.*

We continue to review the format and content of analytical material to include in the Feasibility Report, and this structure may evolve as the review process continues.

One final note, consistent with our approach from prior transactions, we’ve not reflected any potential debt service savings in the projections for purposes of the Preliminary Official Statement. It is our practice to update our projections for the Final Official Statement to reflect the achievement of such savings.

We are prepared to further discuss this matter at your convenience.

Water Forecast Exhibits

Scenario 1 - FY 2019 GLWA Mgmt Plan / Modified FY 2020 CIP Estimate

Table 1
Water System Sales and Non-Revenue Water

Line No.		Fiscal Year Ending June 30,				
		<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
		<i>Mcf</i>	<i>Mcf</i>	<i>Mcf</i>	<i>Mcf</i>	<i>Mcf</i>
Water Sales Volumes						
<u>Suburban Wholesale Customers</u>						
<u>Master Metered Customers (a)</u>						
1	Customers outside Genesee County	13,796,800	12,954,100	12,332,600	13,002,800	12,920,300
2	Flint	1,189,800	1,178,700	0	432,200	594,800
3	Genesee County DC	<u>0</u>	<u>0</u>	<u>517,100</u>	<u>542,300</u>	<u>544,100</u>
4	Subtotal Master Metered	14,986,600	14,132,800	12,849,700	13,977,300	14,059,200
5	Dearborn (c)	701,300	645,700	613,900	628,800	645,100
6	Highland Park (c)	<u>0</u>	<u>0</u>	<u>109,900</u>	<u>109,900</u>	<u>109,900</u>
7	Total Wholesale Customers	15,687,900	14,778,500	13,573,500	14,716,000	14,814,200
8	Detroit Retail Customer Class (c)	<u>3,660,300</u>	<u>3,410,600</u>	<u>3,173,700</u>	<u>3,057,100</u>	<u>2,912,000</u>
9	Total System			16,747,200	17,773,100	17,726,200
10	Total Water Production	26,832,800	26,088,800	23,238,000	23,580,700	23,915,600
11	Non-Revenue Water	26,832,800	26,088,800	6,490,800	5,807,600	6,189,400
12	Non-Revenue % of Production	100.0%	100.0%	27.9%	24.6%	25.9%

(a) Reflects wholesale water sales as measured by master meters.

(b) Flint / Genesee County were a combined Customer through FY 2014. (actually April 30, 2014)

(c) Reflects retail meter sales - excludes any estimated distribution non revenue water.

Table 2
Regional Water System Capital Improvement Program
Projected Expenditure Schedule - Fiscal Years 2019 through 2023

	<i>Fiscal Year Ending June 30,</i>					<u>Total</u>
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	
	\$	\$	\$	\$	\$	\$
<u>Water Production</u>						
Water Works Park	4,354,000	19,030,000	27,203,000	10,965,000	24,000	61,576,000
Springwells	15,484,000	14,586,000	13,032,000	15,821,000	8,734,000	67,657,000
Northeast	831,000	1,313,000	1,710,000	1,517,000	95,000	5,466,000
Southwest	2,211,000	3,727,000	1,065,000	5,000	0	7,008,000
Lake Huron	4,335,000	15,054,000	11,880,000	8,606,000	3,783,000	43,658,000
General Water Treatment	9,042,000	4,372,000	4,315,000	4,165,000	3,396,000	25,290,000
Subtotal Production	36,257,000	58,082,000	59,205,000	41,079,000	16,032,000	210,655,000
<u>Water Delivery</u>						
Water Transmission System	6,573,000	28,961,000	32,671,000	57,256,000	85,564,000	211,025,000
Pumping Station & Reservoirs	2,783,000	5,015,000	11,100,000	20,785,000	23,636,000	63,319,000
Subtotal Delivery	9,356,000	33,976,000	43,771,000	78,041,000	109,200,000	274,344,000
General Purpose	17,697,000	15,489,000	18,733,000	15,688,000	22,139,000	89,746,000
Total Water Direct	63,310,000	107,547,000	121,709,000	134,808,000	147,371,000	574,745,000
Centralized Svcs - Water Portion	2,728,000	2,453,000	1,191,000	992,000	1,429,000	8,793,000
GRAND TOTAL	66,038,000	110,000,000	122,900,000	135,800,000	148,800,000	583,538,000

PRELIMINARY

Table 3
Projected Water System Sales and Revenues Under Existing Charges (a)

Line No.		Fiscal Year Ending June 30,				
		<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
		\$	\$	\$	\$	\$
	<u>Wholesale Service Charges</u>					
	<u>Wholesale Customers</u>					
1	Master Metered Customers	296,711,500	297,943,700	297,943,700	297,943,700	297,943,700
2	Dearborn	10,671,100	10,671,100	10,671,100	10,671,100	10,671,100
3	Highland Park	<u>1,385,400</u>	<u>1,385,400</u>	<u>1,385,400</u>	<u>1,385,400</u>	<u>1,385,400</u>
4	Total Wholesale Customers	308,768,000	310,000,200	310,000,200	310,000,200	310,000,200
5	Detroit Retail Customer Class	<u>20,181,600</u>	<u>20,181,600</u>	<u>20,181,600</u>	<u>20,181,600</u>	<u>20,181,600</u>
6	Total Wholesale Service Charges	328,949,600	330,181,800	330,181,800	330,181,800	330,181,800
7	less: Projected Wholesale Bad Debt	<u>(1,385,400)</u>	<u>(1,385,400)</u>	<u>(1,385,400)</u>	<u>(1,385,400)</u>	<u>(1,385,400)</u>
8	Wholesale Service Charge Revenue	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
	<u>Detroit Retail Local Charges</u>					
9	Indirect Retail Service	37,756,900	37,756,900	37,756,900	37,756,900	37,756,900
10	Direct Retail Service	37,556,100	37,556,100	37,556,100	37,556,100	37,556,100
11	Miscellaneous Revenue	<u>2,200,000</u>	<u>2,200,000</u>	<u>2,200,000</u>	<u>2,200,000</u>	<u>2,200,000</u>
12	Subtotal Local Retail Revenue	77,513,000	77,513,000	77,513,000	77,513,000	77,513,000
13	Total Operating Revenue into Trust	405,077,200	406,309,400	406,309,400	406,309,400	406,309,400
14	<i>Total Revenue From Detroit Class</i>	<i>97,694,600</i>	<i>97,694,600</i>	<i>97,694,600</i>	<i>97,694,600</i>	<i>97,694,600</i>
	<i>Revenues are based on projected water sales in thousands of cubic feet (Mcf) of:</i>					
	<u>Wholesale Customers</u>					
15	<i>Master Metered Customers (b)</i>	<i>13,172,640</i>	<i>13,252,400</i>	<i>13,252,400</i>	<i>13,252,400</i>	<i>13,252,400</i>
16	<i>Dearborn (c)</i>	<i>717,300</i>	<i>717,300</i>	<i>717,300</i>	<i>717,300</i>	<i>717,300</i>
17	<i>Highland Park (c)</i>	<u><i>151,300</i></u>	<u><i>151,300</i></u>	<u><i>151,300</i></u>	<u><i>151,300</i></u>	<u><i>151,300</i></u>
18	<i>Total Wholesale Customers</i>	<i>14,041,240</i>	<i>14,121,000</i>	<i>14,121,000</i>	<i>14,121,000</i>	<i>14,121,000</i>
19	<i>Detroit Retail Customer Class (c)</i>	<u><i>4,786,600</i></u>	<u><i>4,786,600</i></u>	<u><i>4,786,600</i></u>	<u><i>4,786,600</i></u>	<u><i>4,786,600</i></u>
20	<i>Total System</i>	<i>18,827,840</i>	<i>18,907,600</i>	<i>18,907,600</i>	<i>18,907,600</i>	<i>18,907,600</i>

(a) Based on application of FY 2019 charges.

(b) Reflects wholesale water sales as measured by master meters.

(c) Reflects proxy for wholesale water sales based on retail meter sales and estimated distribution non revenue water.

Table 4
Projected Operation and Maintenance Expense (and Selected Non-Operating Expenses)

Line No.		Fiscal Year Ended June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	<u>GLWA Regional System</u>					
1	Salaries & Wages	21,106,800	21,740,000	22,390,000	23,060,000	23,750,000
2	Overtime	1,919,400	1,920,000	1,920,000	1,920,000	1,920,000
3	Employee Benefits	7,293,100	7,440,000	7,590,000	7,740,000	7,890,000
4	Subtotal Personnel	30,319,300	31,100,000	31,900,000	32,720,000	33,560,000
5	Personal (Transitional) Service Contracts	3,436,000	3,440,000	3,440,000	3,440,000	3,440,000
6	TOTAL Personnel Costs	33,755,300	34,540,000	35,340,000	36,160,000	37,000,000
7	Contractual/Purchased Services	42,013,000	43,270,000	44,570,000	45,910,000	47,290,000
8	Utilities	29,808,300	29,820,000	29,830,000	29,840,000	29,850,000
9	Chemicals	6,011,500	6,310,000	6,630,000	6,960,000	7,310,000
10	Supplies & Other	13,457,600	13,593,900	13,743,800	13,873,300	13,973,400
11	Subtotal	125,045,700	127,533,900	130,113,800	132,743,300	135,423,400
12	Unallocated Reserve	3,656,800	3,660,000	3,660,000	3,660,000	3,660,000
13	Total Gross Regional O&M Expense	128,702,500	131,193,900	133,773,800	136,403,300	139,083,400
14	less: Shared Services Reimbursement	(7,139,900)	(7,200,000)	(7,300,000)	(7,400,000)	(7,500,000)
15	Net GLWA Regional O&M Expense	121,562,600	123,993,900	126,473,800	129,003,300	131,583,400
16	DWSD Local System O&M	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
17	Combined Total "Normal" O&M	157,046,900	160,120,500	163,284,900	166,511,900	169,803,900
	<u>Operating Pension Obligation (a)</u>					
18	GLWA Regional	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
19	DWSD Local	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
20	Total	10,320,000	10,320,000	10,320,000	10,320,000	10,320,000
21	GRAND TOTAL O&M	167,366,900	170,440,500	173,604,900	176,831,900	180,123,900
	<u>Non-Operating Expense (b)</u>					
22	Non-Operating Portion of Pension Obligation	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
23	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
24	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700

(a) Transferred to Pension Obligation sub-account of the Operation and Maintenance Fund, and treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

(b) **Not** treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

Table 5a
GLWA Regional System Capital Improvement Program Financing

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
2	Major Capital Improvement Program (a)	<u>66,038,000</u>	<u>110,000,000</u>	<u>122,900,000</u>	<u>135,800,000</u>	<u>148,800,000</u>	<u>583,538,000</u>
3	Total Financing Requirements	88,171,400	128,763,000	141,605,300	145,163,300	156,200,800	659,903,800
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	242,939,700	246,767,900	213,166,000	178,150,800	139,278,400	242,939,700 (i)
Construction Bond Funds							
5	Beginning Balance (b)	140,308,100	88,185,100	51,315,100	3,935,100	689,100	140,308,100 (i)
Bond Proceeds							
6	Water System Revenue Bonds (c)	0	0	0	17,600,000	34,600,000	52,200,000
7	Original Issue Premium	TBD	TBD	TBD	TBD	TBD	0
8	Available Debt Service Payment Funds	TBD	TBD	TBD	TBD	TBD	0
9	Available in Debt Service Reserve Fund	TBD	TBD	TBD	TBD	TBD	0
10	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
11	Less: Transfer to DWSD Const. Fund (e)	0	0	0	(16,544,000)	(22,184,000)	(38,728,000)
12	Less: Bond Reserve Requirements (f)	TBD	TBD	TBD	TBD	TBD	0
13	Less: Issuance Expenses	0	0	0	<u>(1,056,000)</u>	<u>(2,076,000)</u>	<u>(3,132,000)</u>
14	Net Bond Proceeds Available	0	0	0	0	10,340,000	10,340,000
15	State Drinking Water Revolving Fund Loan	10,500,000	20,459,000	29,529,000	46,022,000	30,722,000	137,232,000
16	Less: Transfer to DWSD Constr. Fund	<u>(10,500,000)</u>	<u>(4,000,000)</u>	<u>(11,982,000)</u>	0	0	<u>(26,482,000)</u>
17	Net State DWRP Financing for Authority	0	16,459,000	17,547,000	46,022,000	30,722,000	110,750,000
18	Investment Income	<u>743,000</u>	<u>462,000</u>	<u>408,000</u>	<u>252,000</u>	<u>500,000</u>	<u>2,365,000</u>
19	Subtotal - Construction Bond Funds	<u>141,051,100</u>	<u>105,106,100</u>	<u>69,270,100</u>	<u>50,209,100</u>	<u>42,251,100</u>	<u>263,763,100</u>
20	Total Financing Sources Available	383,990,800	351,874,000	282,436,100	228,359,900	181,529,500	506,702,800
Application of Financing Sources							
21	I&E Funds - Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
22	I&E Funds - Specifically Designated I&E Proj	13,172,000	11,209,000	12,565,000	11,280,000	12,007,000	60,233,000
23	I&E Funding of Debt Eligible Projects	0	45,000,000	45,000,000	75,000,000	95,000,000	260,000,000
24	Project Expenditures from Construction Fund	<u>52,866,000</u>	<u>53,791,000</u>	<u>65,335,000</u>	<u>49,520,000</u>	<u>41,793,000</u>	<u>263,305,000</u>
25	Total Financing Sources Applied	88,171,400	128,763,000	141,605,300	145,163,300	156,200,800	659,903,800
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
26	Remaining Beginning Balance (g)	207,634,300	171,795,900	136,895,700	82,507,500	24,870,600	
27	Transfers from Water Receiving Fund	<u>39,133,600</u>	<u>41,370,100</u>	<u>41,255,100</u>	<u>56,770,900</u>	<u>64,655,400</u>	243,185,100
28	Total Improvement & Extension Fund	246,767,900	213,166,000	178,150,800	139,278,400	89,526,000	89,526,000 (j)
29	Construction Bond Funds (h)	<u>88,185,100</u>	<u>51,315,100</u>	<u>3,935,100</u>	<u>689,100</u>	<u>458,100</u>	<u>458,100 (j)</u>
30	Financing Sources Available for Future Req	334,953,000	264,481,100	182,085,900	139,967,500	89,984,100	89,984,100 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) The Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2016 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 21 through 23.

(h) Line 19 minus Line 24.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 5b
DWSD Local System Capital Improvement Program Financing

Line No.	Item	2019 \$	2020 \$	2021 \$	2022 \$	2023 \$	Total \$
Financing Requirements							
1	DWSD Local System CIP (a)	41,375,400	41,375,400	41,375,400	41,375,400	41,375,400	206,877,000
Financing Sources							
<u>DWSD Local System Improvement and Extension Account</u>							
2	Beginning Balance (b)	50,000,000	48,007,000	29,783,600	31,127,100	19,139,600	50,000,000
3	Deposits from Lease Payment (c)	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400	95,270,800
4	Deposits from DWSD Local System Revenues	0	0	0	0	0	0
5	Subtotal - Improvement & Extension Fund	68,694,700	67,159,000	48,928,700	50,266,700	38,279,000	145,270,800
<u>Construction Bond Funds</u>							
6	Beginning Balance (b)	25,000,000	15,011,400	15,161,500	3,663,400	9,959,100	25,000,000
7	Net Bond Proceeds (c)	0	0	0	16,544,000	22,184,000	38,728,000
8	State Drinking Water Revolving Fund Loans	10,500,000	4,000,000	11,982,000	0	0	26,482,000
9	Investment Income	199,100	150,100	93,700	0	0	442,900
10	Subtotal - Construction Bond Funds	35,699,100	19,161,500	27,237,200	20,207,400	32,143,100	90,652,900
11	Total Financing Sources Available	104,393,800	86,320,500	76,165,900	70,474,100	70,422,100	235,923,700
Application of Financing Sources							
12	Project Expenditures from I&E Funds	20,687,700	37,375,400	17,801,600	31,127,100	19,139,600	126,131,400
13	Project Expenditures from Construction Funds	20,687,700	4,000,000	23,573,800	10,248,300	22,235,800	80,745,600
14	Total Financing Sources Applied	41,375,400	41,375,400	41,375,400	41,375,400	41,375,400	206,877,000
Financing Sources Available for Future Requirements							
15	Improvement & Extension Fund (e)	48,007,000	29,783,600	31,127,100	19,139,600	19,139,400	19,139,400
16	Construction Bond Funds (f)	15,011,400	15,161,500	3,663,400	9,959,100	9,907,300	9,907,300
17	Total Financing Sources Available for Future Req'ts	63,018,400	44,945,100	34,790,500	29,098,700	29,046,700	29,046,700

(a) Preliminary pending additional review.

(b) Estimated allocated balance available June 30, 2018.
(applies only to FY 2019).

(c) Total Lease Payment	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000	112,500,000
less: Lease Payment applied to Debt Service	(3,805,300)	(3,348,000)	(3,354,900)	(3,360,400)	(3,360,600)	(17,229,200)
Net Lease Payment transferred to Local I&E Account	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400	95,270,800

(d) Reserved

(e) Line 5 minus Line 12.

(f) Line 10 minus Line 13.

Table 6
Operational Financing Plan - Consolidated GLWA Regional System / DWSD Local System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	402,877,200	404,109,400	404,109,400	404,109,400	404,109,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 3.3%		13,480,100	13,480,100	13,480,100	13,480,100
3	FY 2021: 3.7%			15,334,100	15,334,100	15,334,100
4	FY 2022: 3.7%				15,810,300	15,810,300
5	FY 2023: 3.9%					17,281,500
6	Total Projected Revenue from Water Charges	402,877,200	417,589,500	432,923,600	448,733,900	466,015,400
7	Miscellaneous Operating Revenue	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000
8	Total Operating Revenue	405,077,200	419,789,500	435,123,600	450,933,900	468,215,400
9	Non-Operating Revenue	3,836,600	3,668,800	3,366,600	2,974,900	2,504,400
10	Total Revenue Available	408,913,800	423,458,300	438,490,200	453,908,800	470,719,800
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	121,562,600	123,993,900	126,473,800	129,003,300	131,583,400
12	Transfer to DWSD Local O&M Account	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
13	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
14	Transfer to DWSD Pension O&M Account	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
15	Total O&M Expense	167,366,900	170,440,500	173,604,900	176,831,900	180,123,900
<u>Debt Service - Bond Interest and Redemption Deposits</u>						
Senior Lien Bonds						
16	Outstanding Bonds	119,230,800	123,909,900	126,616,400	127,412,400	131,184,100
17	The 2018 GLWA Bonds	0	0	0	0	0
18	Future Bonds (lien unspecified)	0	0	0	374,000	1,784,200
19	Total Senior Debt Service	119,230,800	123,909,900	126,616,400	127,786,400	132,968,300
Second Lien Bonds						
20	Outstanding Bonds	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
21	The 2018 GLWA Bonds	0	0	0	0	0
22	Total Second Lien Bonds	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
23	Subtotal Debt Service	168,251,200	174,570,500	178,701,400	175,279,300	180,816,500
24	SRF Junior Lien Bonds	2,710,600	4,318,600	12,084,700	12,090,400	12,085,000
25	Total Debt Service	170,961,800	178,889,100	190,786,100	187,369,700	192,901,500
26	Non-Operating Portion of Pension Reimb.	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
27	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
28	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700
29	Transfer to WRAP Fund	2,061,000	2,100,500	2,176,700	2,257,800	2,343,900
30	Transfer to Budget Stabilization Fund	0	0	0	0	0
31	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
32	Lease Payment - Transfer to Detroit Local I&E	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400
<u>Transfers to I&E Fund to Finance Capital Improvements</u>						
33	Transfer to GLWA Regional I&E Account	39,133,600	41,370,100	41,255,100	56,770,900	64,655,400
34	Transfer to DWSD Local I&E Account	0	0	0	0	0
35	Total Transfers to I&E Fund	39,133,600	41,370,100	41,255,100	56,770,900	64,655,400
36	Operating Reserves	0	810,400	826,600	843,200	860,000
37	Total Revenue Requirements	408,913,700	423,458,300	438,490,200	453,908,800	470,719,800
38	Indicated Balance (Deficiency)	100	0	0	0	0
Debt Service Coverage Projections						
39	Senior Lien for Rate Covenant Purposes	203%	204%	209%	217%	219%
40	Second Lien for Rate Covenant Purposes	144%	145%	148%	158%	161%
41	SRF Junior Lien for Rate Covenant Purposes	141%	141%	139%	148%	151%
42	Net Revenues (10) - (15)	241,546,900	253,017,800	264,885,300	277,076,900	290,595,900
43	Net Revenues Available after Debt Service (42)-(25)	70,585,100	74,128,700	74,099,200	89,707,200	97,694,400
44	Applied to MBO Reserve Funds (28,29,30,31)	(12,756,700)	(12,796,200)	(12,872,400)	(12,953,500)	(13,039,600)
45	Applied as Lease Payment to DWSD I&E Acct (32)	(18,694,700)	(19,152,000)	(19,145,100)	(19,139,600)	(19,139,400)
46	Applied to Operating Reserves (37)	0	(810,400)	(826,600)	(843,200)	(860,000)
47	Available for I&E Fund Accounts (43) - (44,45,46)	39,133,700	41,370,100	41,255,100	56,770,900	64,655,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.



Table 6a
Operational Financing Plan - GLWA Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 3.7%		12,191,300	12,191,300	12,191,300	12,191,300
3	FY 2021: 4.1%			14,088,500	14,088,500	14,088,500
4	FY 2022: 4.1%				14,729,400	14,729,400
5	FY 2023: 4.2%					15,381,700
6	Total Projected Revenue from Water Charges	327,564,200	340,987,700	355,076,200	369,805,600	385,187,300
7	Non-Operating Revenue	<u>3,836,600</u>	<u>3,668,800</u>	<u>3,366,600</u>	<u>2,974,900</u>	<u>2,504,400</u>
8	Total Revenue Available	331,400,800	344,656,500	358,442,800	372,780,500	387,691,700
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	121,562,600	123,993,900	126,473,800	129,003,300	131,583,400
10	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
11	Total O&M Expense	127,610,600	130,041,900	132,521,800	135,051,300	137,631,400
12	Debt Service Allocation - Regional System	134,214,600	141,942,500	153,278,800	149,482,900	153,838,100
13	Non-Operating Portion of Pension Reimb.	5,392,800	5,392,800	5,392,800	5,392,800	5,392,800
14	B & C Note Non-Operating Payments	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>
15	Transfer to Pension Obligation Payment Fund	6,268,300	6,268,300	6,268,300	6,268,300	6,268,300
16	Transfer to WRAP Fund	1,673,400	1,723,300	1,792,200	1,863,900	1,938,500
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000
20	Transfer to GLWA Regional I&E Account	39,133,600	41,370,100	41,255,100	56,770,900	64,655,400
21	Operating Reserves	0	810,400	826,600	843,200	860,000
22	Total Revenue Requirements	331,400,500	344,656,500	358,442,800	372,780,500	387,691,700
23	Indicated Balance (Deficiency)	300	0	0	0	0
24	Projected Debt Service Coverage Ratio (Regional)	152%	151%	147%	159%	163%
25	Net Revenues (8) - (11)	203,790,200	214,614,600	225,921,000	237,729,200	250,060,300
26	Net Revenues Available after Debt Service (25)-(12)	69,575,600	72,672,100	72,642,200	88,246,300	96,222,200
27	Applied to MBO Reserve Funds (15,16,17,18)	(7,941,700)	(7,991,600)	(8,060,500)	(8,132,200)	(8,206,800)
28	Applied as Lease Payment to DWSD (19)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)
29	Applied to Operating Reserves (21)	0	(810,400)	(826,600)	(843,200)	(860,000)
30	Available for I&E Fund (26) - (27,28,29)	39,133,900	41,370,100	41,255,100	56,770,900	64,655,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

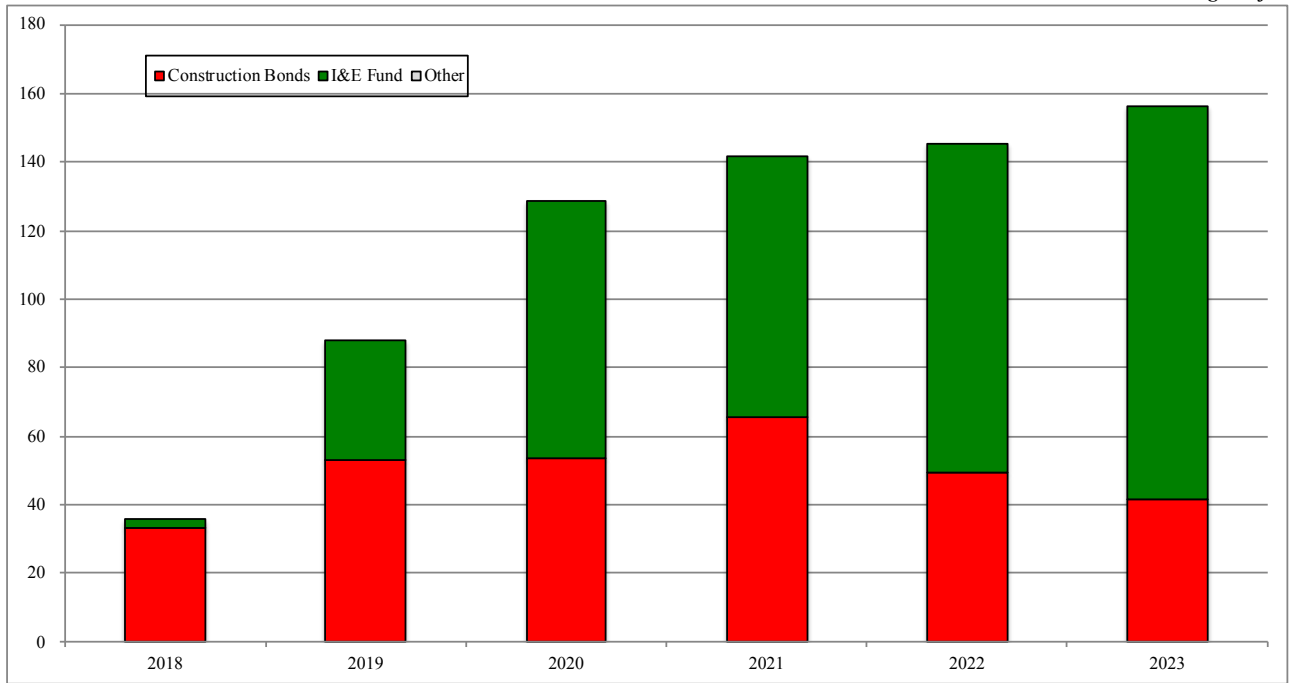
Table 7
Projected Cash and Investment Fund Balances - Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	42,803,500	42,803,500	43,613,900	44,440,500	45,283,700
2	Deposit from Operations	0	810,400	826,600	843,200	860,000
3	Ending Balance	42,803,500	43,613,900	44,440,500	45,283,700	46,143,700
<u>Budget Stabilization Fund</u>						
4	Beginning Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
<u>ER&R Fund</u>						
7	Beginning Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
<u>I&E Fund (a)</u>						
10	Beginning Balance	242,939,700	246,767,900	213,166,000	178,150,800	139,278,400
11	Budgeted Capital Outlay	(22,133,400)	(18,763,000)	(18,705,300)	(9,363,300)	(7,400,800)
12	Capital Expenditures	(13,172,000)	(56,209,000)	(57,565,000)	(86,280,000)	(107,007,000)
13	Subtotal prior to Revenue Transfer	207,634,300	171,795,900	136,895,700	82,507,500	24,870,600
14	Deposits from Revenues (b)	39,133,600	41,370,100	41,255,100	56,770,900	64,655,400
15	Ending Balance	246,767,900	213,166,000	178,150,800	139,278,400	89,526,000
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	315,243,200	319,071,400	286,279,900	252,091,300	214,062,100
17	Net Sources and Uses	3,828,200	(32,791,500)	(34,188,600)	(38,029,200)	(48,892,400)
18	Ending Balance	319,071,400	286,279,900	252,091,300	214,062,100	165,169,700
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	20,969,800	20,969,800	20,969,800	20,969,800	20,969,800
20	Bond Redemption (Average)	56,987,300	59,629,700	63,595,400	62,456,600	64,300,500
21	Construction Fund	88,185,100	51,315,100	3,935,100	689,100	458,100
22	Total Funds	485,213,600	418,194,500	340,591,600	298,177,600	250,898,100
23	Subtotal w/o Construction Funds	397,028,500	366,879,400	336,656,500	297,488,500	250,440,000

(a) Only includes GLWA Regional I&E Account

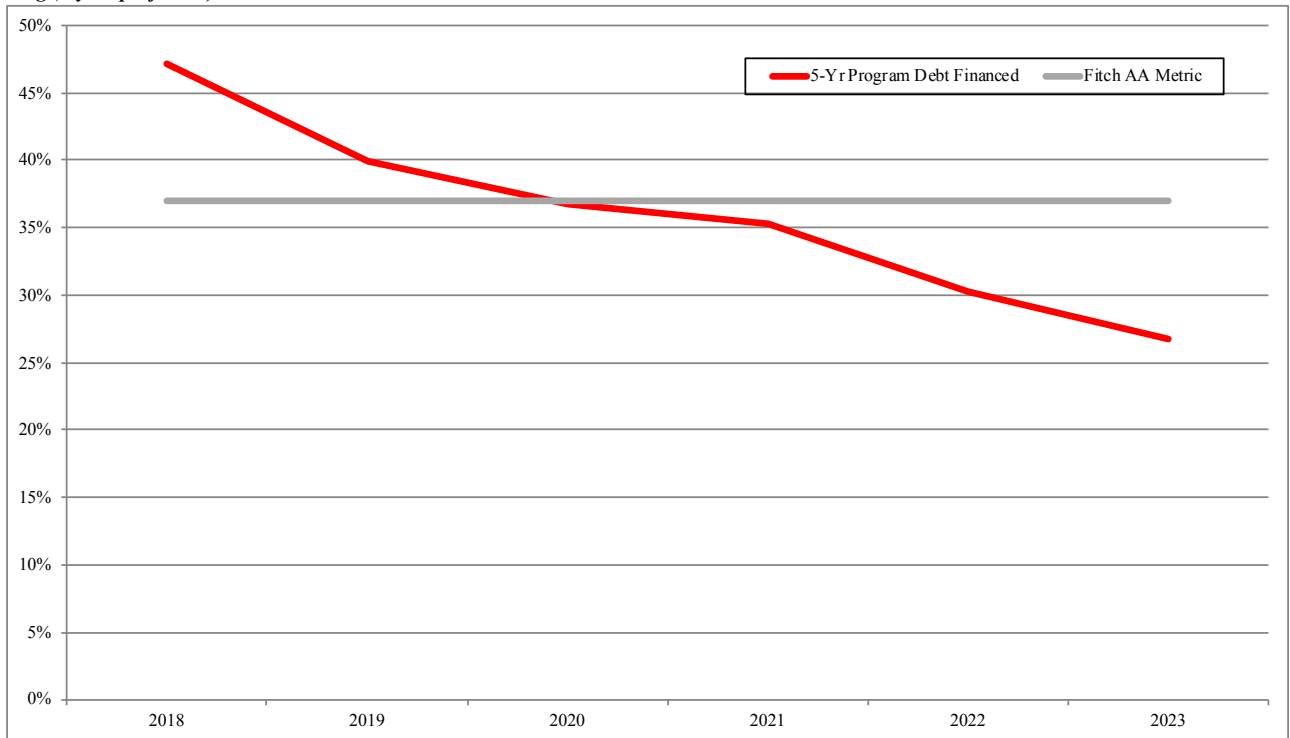
(b) Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

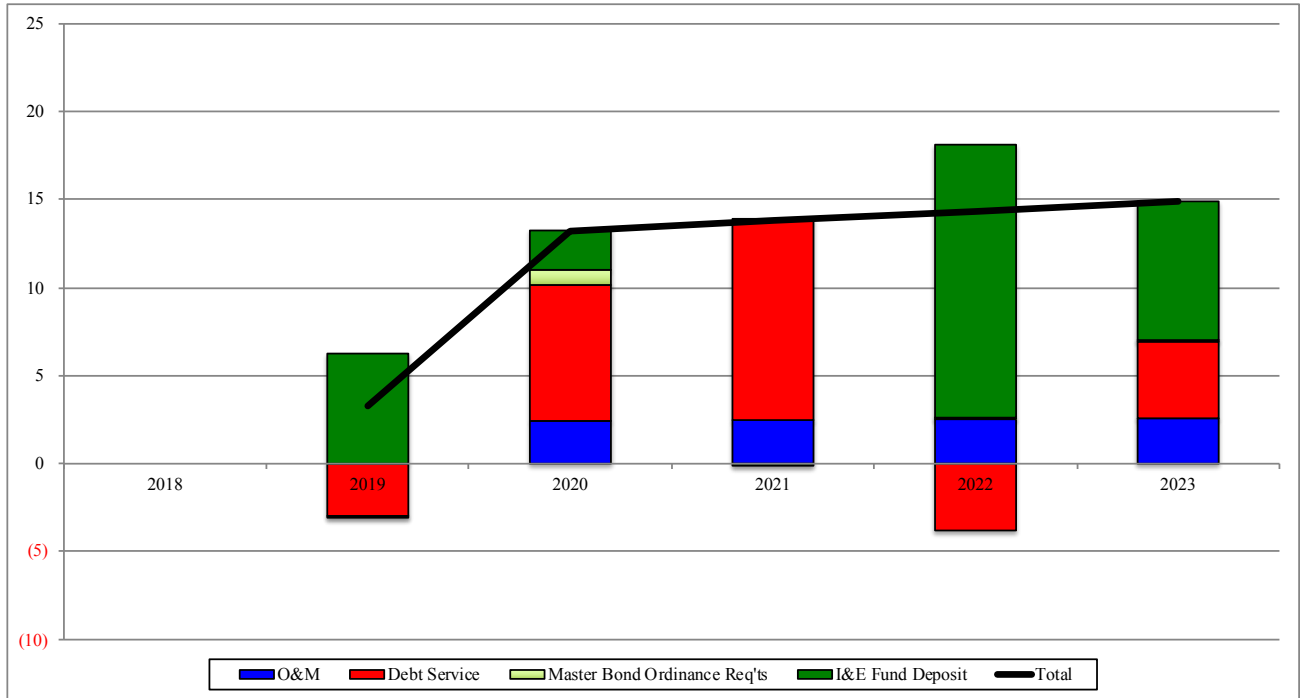


CIP Financing Requirement:	36	88	129	142	145	156
<u>Financing Sources</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Construction Bonds	33	53	54	65	50	42
I&E Fund	3	35	75	76	96	114
Other	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

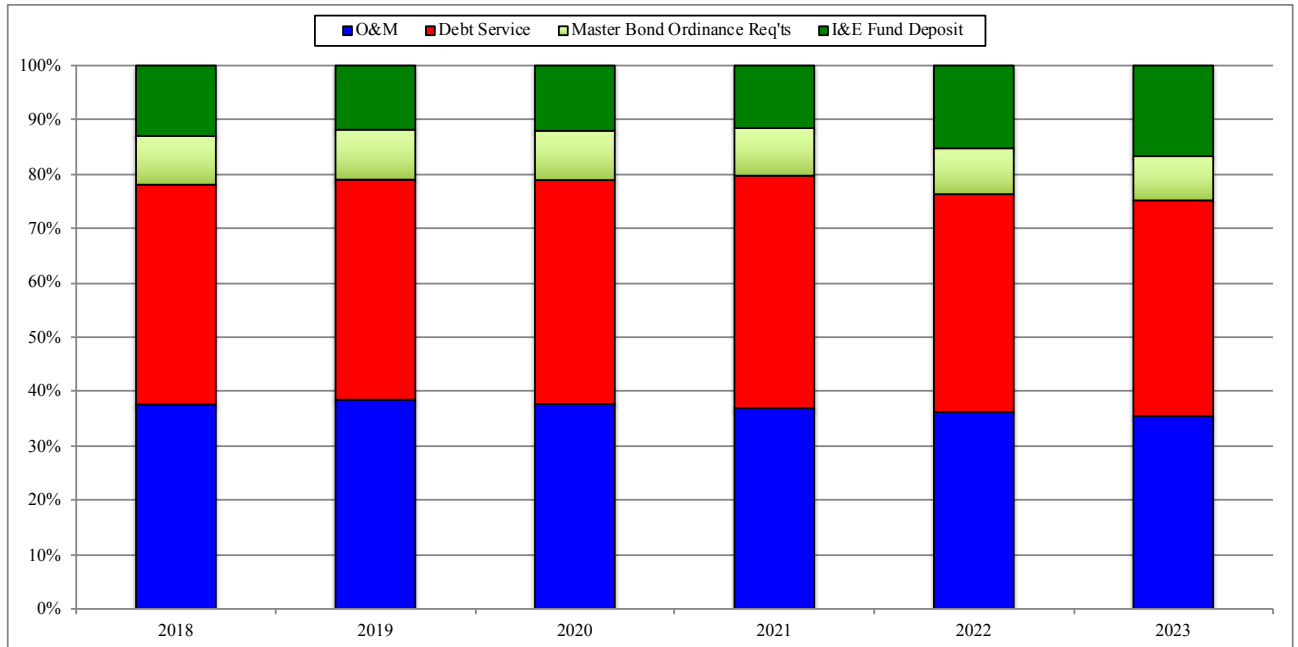


5-Yr Program Debt Finance	47%	40%	37%	35%	30%	27%
Fitch AA Metric	37%	37%	37%	37%	37%	37%

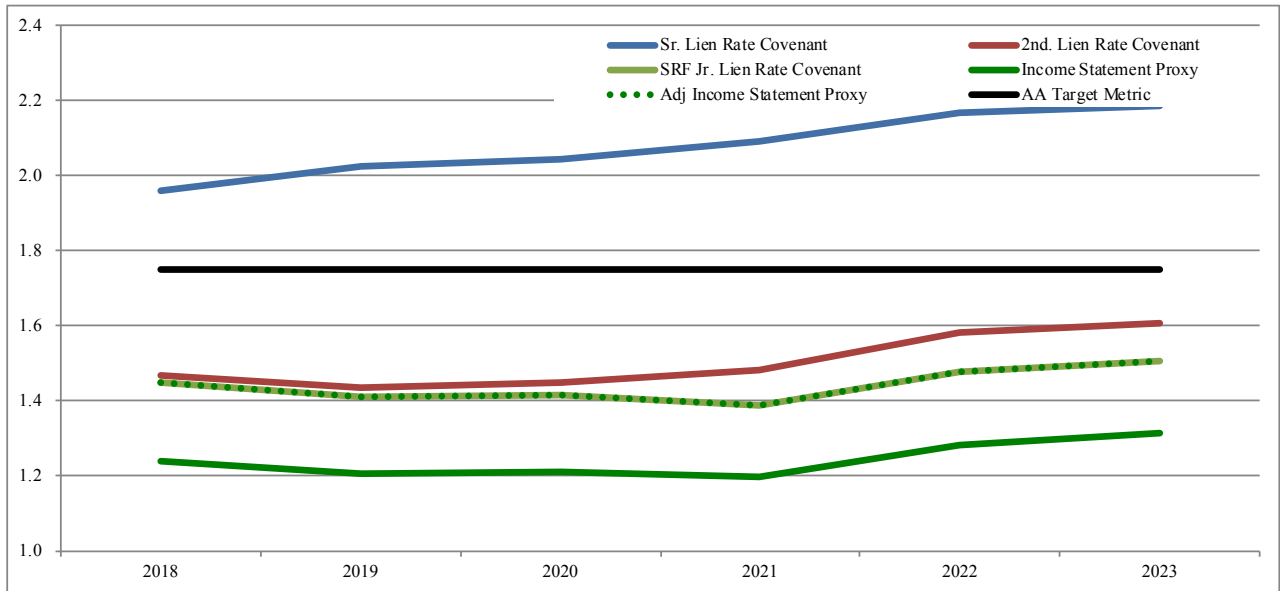


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M		0.0	2.4	2.5	2.5	2.6
Debt Service		(3.0)	7.7	11.3	(3.8)	4.4
Master Bond Ordinance Req'ts		(0.0)	0.9	0.1	0.1	0.1
I&E Fund Deposit		6.3	2.2	(0.1)	15.5	7.9
Total		3.3	13.3	13.8	14.3	14.9

Relative BUDGET

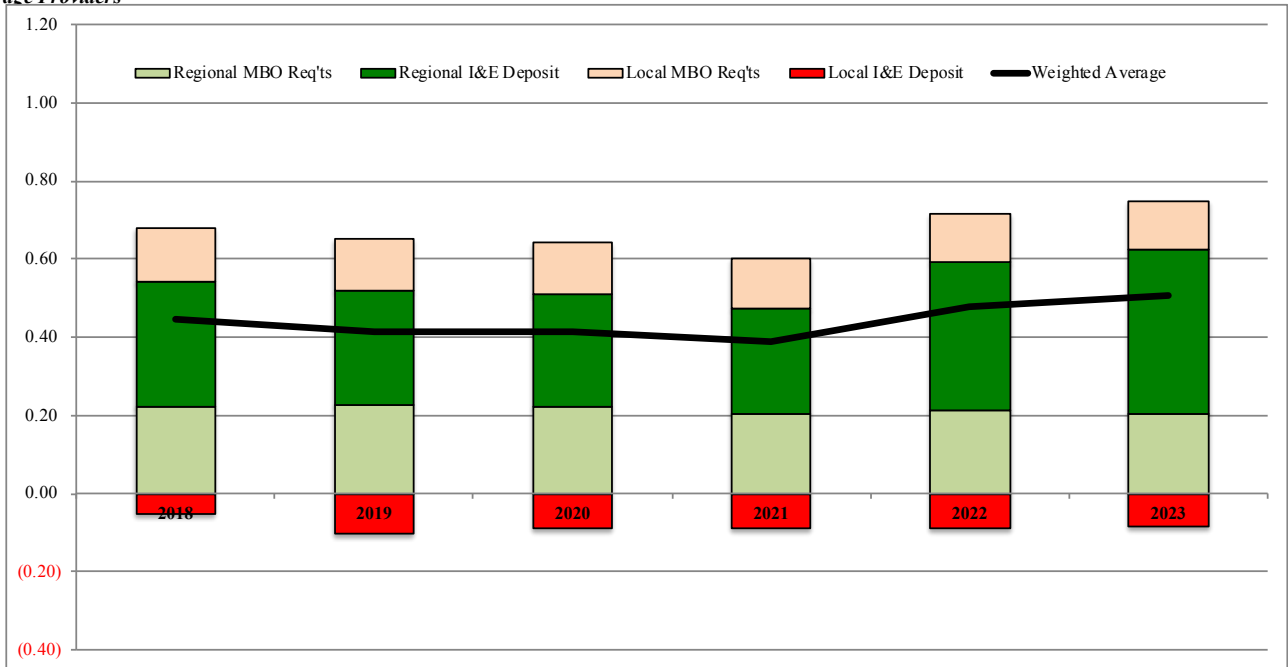


O&M	38%	39%	38%	37%	36%	36%
Debt Service	40%	40%	41%	43%	40%	40%
Master Bond Ordinance Req	9%	9%	9%	9%	8%	8%
I&E Fund Deposit	13%	12%	12%	12%	15%	17%

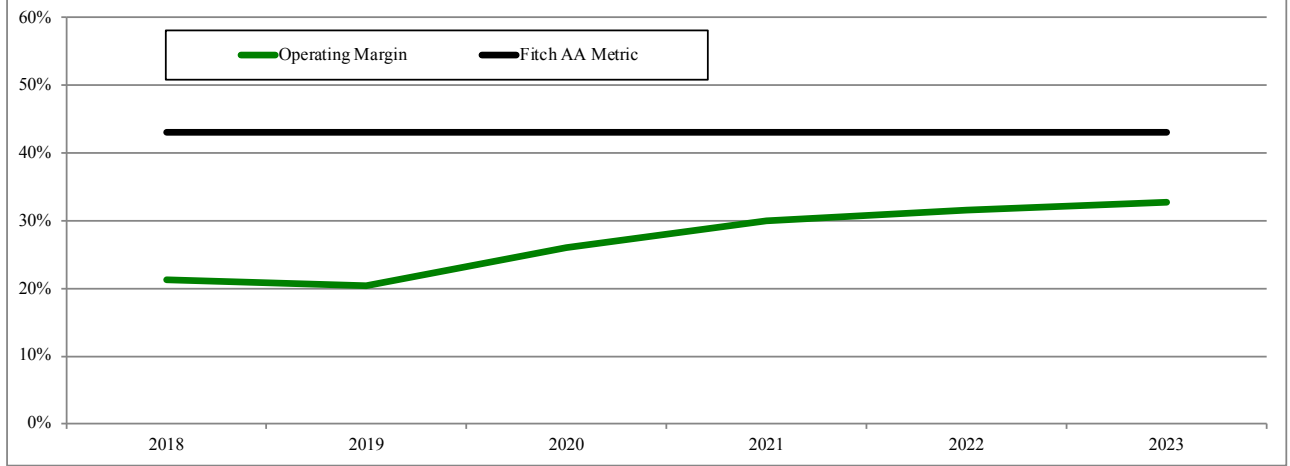


Sr. Lien Rate Covenant	1.96	2.03	2.04	2.09	2.17	2.19
2nd. Lien Rate Covenant	1.47	1.44	1.45	1.48	1.58	1.61
SRF Jr. Lien Rate Covenant	1.45	1.41	1.41	1.39	1.48	1.51
Income Statement Proxy	1.24	1.20	1.21	1.20	1.29	1.31
Adj Income Statement Proxy	1.45	1.41	1.41	1.39	1.48	1.51
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

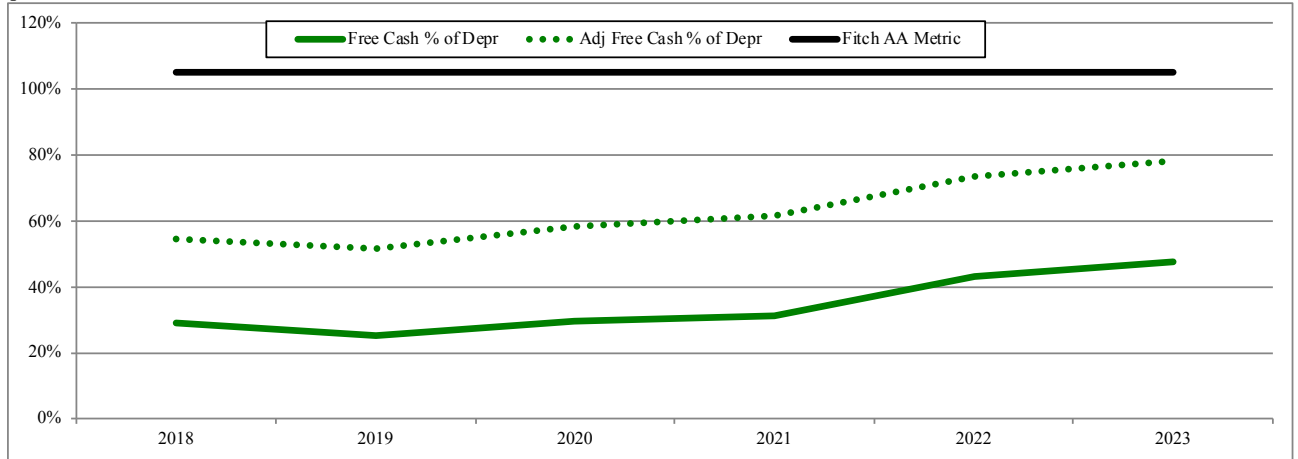


Regional MBO Req'ts	0.22	0.23	0.22	0.20	0.21	0.21
Regional I&E Deposit	0.32	0.29	0.29	0.27	0.38	0.42
Local MBO Req'ts	0.13	0.13	0.13	0.13	0.13	0.12
Local I&E Deposit	(0.05)	(0.10)	(0.09)	(0.09)	(0.09)	(0.09)
Weighted Average	0.45	0.41	0.41	0.39	0.48	0.51
Regional Total	0.54	0.52	0.51	0.47	0.59	0.63
Local Total	0.08	0.03	0.04	0.04	0.04	0.04
Weighted Average	0.45	0.41	0.41	0.39	0.48	0.51



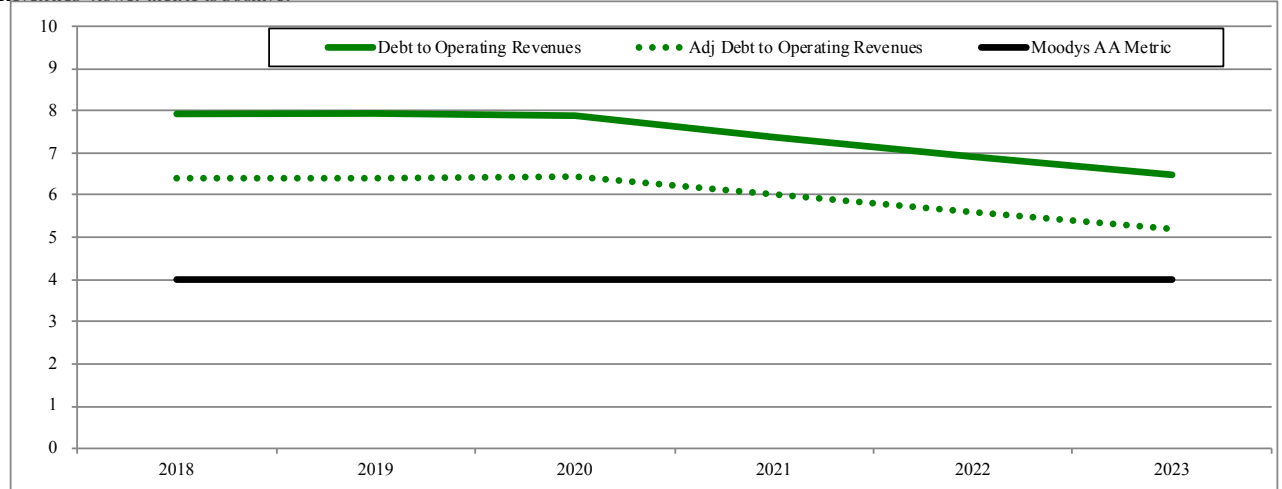
Operating Margin	21%	20%	26%	30%	31%	33%
Fitch AA Metric	43%	43%	43%	43%	43%	43%

Free Cash % of Depr

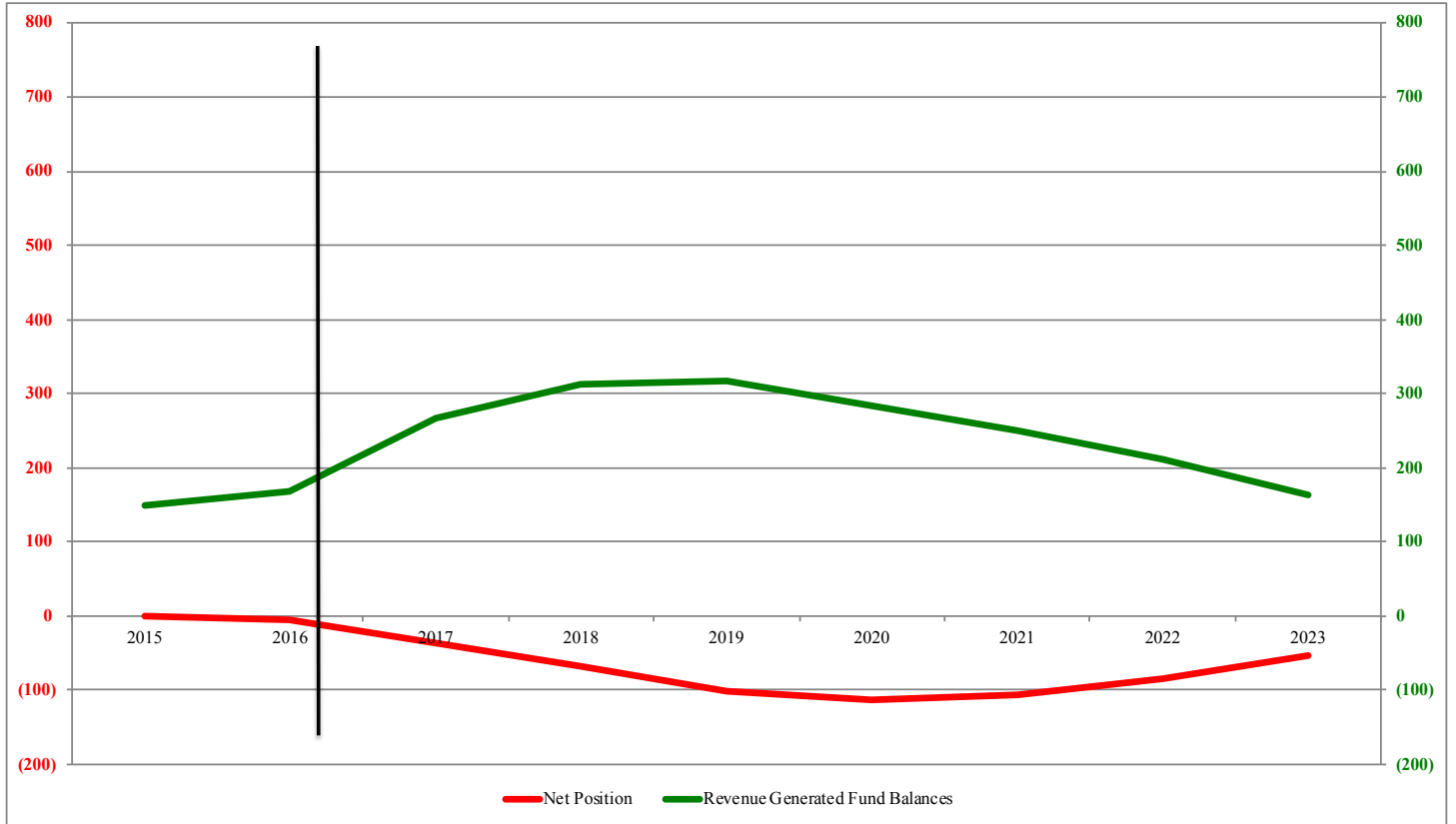


Free Cash % of Depr	29%	25%	30%	31%	43%	48%
Adj Free Cash % of Depr	54%	52%	58%	62%	73%	78%
Fitch AA Metric	105%	105%	105%	105%	105%	105%

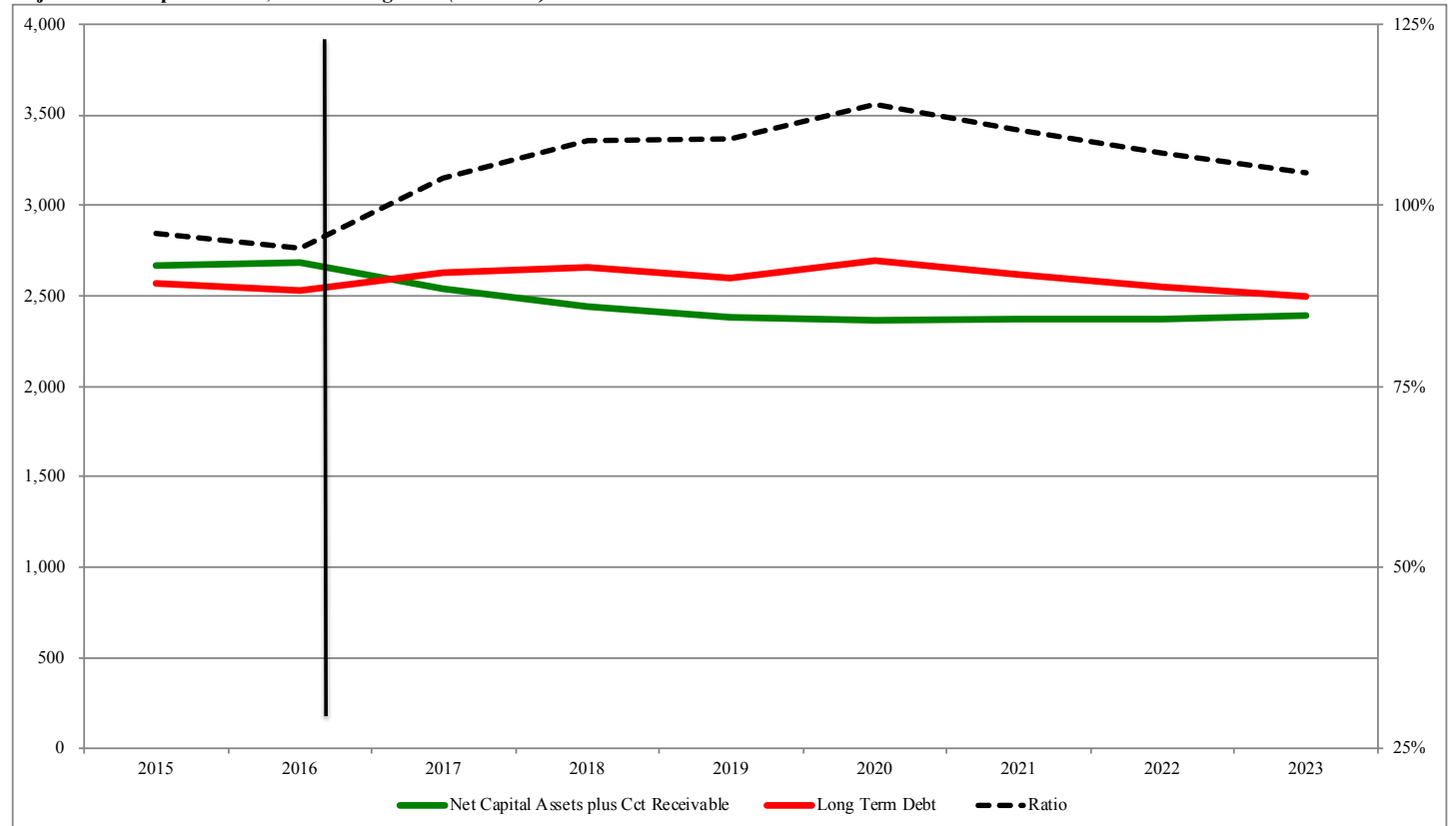
Debt to Operating Revenues (lower metric is positive)



Debt to Operating Revenues	7.9	7.9	7.9	7.4	6.9	6.5
Adj Debt to Operating Reve	6.4	6.4	6.4	6.0	5.6	5.2
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0



Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



Sewer Forecast Exhibits

Scenario 1 - FY 2019 GLWA Mgmt Plan / Modified FY 2020 CIP Estimate

Table 1
Sewer System Wastewater Volumes

<u>Year</u>	Annual Wastewater <u>Treated</u> Mcf	<u>Metered Customer Volume</u>		
		Suburban <u>Wholesale (a)</u> Mcf	Detroit <u>Retail (b)</u> Mcf	<u>Total</u> Mcf
2013	29,489,900	13,287,800	3,088,000	16,375,900
2014	31,174,300	14,330,600	2,954,300	17,284,900
2015	29,770,700	13,862,700	2,687,000	16,549,700
2016	27,966,000	12,940,300	2,753,800	15,694,100
2017	34,008,300	14,103,300	2,566,700	16,670,000

- (a) Primarily metered wastewater volumes, but also includes water sales volumes for some customers whose wastewater is not metered. For 2015 through 2017, reflects volumes measured and monitored, but not billed.
- (b) Reported water sales to retail customers.

Table 2
Regional Sewer System Capital Improvement Program
Projected Expenditure Schedule - Fiscal Years 2019 through 2023

	<i>Fiscal Year Ended June 30,</i>					<u>Total</u>
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	
	\$	\$	\$	\$	\$	\$
<u>Wastewater Resource Recovery Facility</u>						
Primary Treatment	22,028,000	11,270,300	11,385,300	19,833,600	24,117,700	88,634,900
Secondary Treatment & Disinfection	20,637,000	9,195,800	2,845,400	8,332,300	9,863,700	50,874,200
Residuals Management	13,257,000	17,704,000	8,428,800	5,874,600	6,287,700	51,552,100
Industrial Waste Control	4,001,000	7,005,800	895,900	0	0	11,902,700
CSO RTB & SDC	0	0	0	0	0	0
General Purpose	2,553,000	6,317,300	7,076,900	5,832,300	11,540,400	33,319,900
Subtotal WRRF	62,476,000	51,493,200	30,632,300	39,872,800	51,809,500	236,283,800
<u>Wastewater Collection</u>						
Regional Interceptor System	3,107,000	10,158,600	23,163,100	27,508,900	19,202,000	83,139,600
In System Storage	82,000	344,700	1,791,800	813,000	0	3,031,500
Wastewater Lift Stations	13,286,000	13,006,400	5,917,500	10,163,900	15,799,800	58,173,600
Subtotal Collection	16,475,000	23,509,700	30,872,400	38,485,800	35,001,800	144,344,700
Metering	877,000	2,393,900	6,282,200	2,850,300	0	12,403,400
General Purpose	23,185,000	20,974,000	26,745,200	25,326,200	23,799,700	120,030,100
Total Sewer Direct	103,013,000	98,370,800	94,532,100	106,535,100	110,611,000	513,062,000
Centralized Svcs - Sewer Portion	2,170,000	1,929,200	5,767,900	4,364,900	289,000	14,521,000
GRAND TOTAL	105,183,000	100,300,000	100,300,000	110,900,000	110,900,000	527,583,000

Table 3
Summary of Projected Operating Revenue Under Existing Charges (a)

Line No.		Fiscal Year Ending June 30				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	<u>Wholesale Service Charges</u>					
1	Wholesale Customers	273,082,100	273,082,100	273,082,100	273,082,100	273,082,100
2	Industrial Specific Charges	14,123,500	14,123,500	14,123,500	14,123,500	14,123,500
3	Detroit Retail Customer Class	<u>181,159,300</u>	<u>181,159,300</u>	<u>181,159,300</u>	<u>181,159,300</u>	<u>181,159,300</u>
4	Total Wholesale Service Charges	468,364,900	468,364,900	468,364,900	468,364,900	468,364,900
5	less: Projected Wholesale Bad Debt	<u>(2,780,000)</u>	<u>(2,780,000)</u>	<u>(2,780,000)</u>	<u>(2,780,000)</u>	<u>(2,780,000)</u>
6	Wholesale Service Charge Revenue	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
7	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
8	Adj Wholesale Svc Charge Revenue	467,456,400	465,584,900	465,584,900	465,584,900	465,584,900
	<u>Detroit Retail Local Charges</u>					
9	Indirect Retail Service	28,404,100	28,404,100	28,404,100	28,404,100	28,404,100
10	Direct Retail Service	70,477,500	70,477,500	70,477,500	70,477,500	70,477,500
11	Miscellaneous Revenue	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
12	Subtotal Local Retail Revenue	99,381,600	99,381,600	99,381,600	99,381,600	99,381,600
13	Total Operating Revenue into Trust	566,838,000	564,966,500	564,966,500	564,966,500	564,966,500
14	<i>Total Revenue From Detroit Class</i>	<i>280,540,900</i>	<i>280,540,900</i>	<i>280,540,900</i>	<i>280,540,900</i>	<i>280,540,900</i>

(a) Based on application of FY 2019 charges for 2019 through 2023. Net of projected bad debt expense.

Table 4
Projected Operation and Maintenance Expense (and Selected Non-Operating Expenses)

Line No.	<i>Fiscal Year Ended June 30,</i>					
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	
	\$	\$	\$	\$	\$	
<u>GLWA Regional System</u>						
1	Salaries & Wages	32,049,800	33,010,000	34,000,000	35,020,000	36,070,000
2	Overtime	3,961,700	3,960,000	3,960,000	3,960,000	3,960,000
3	Employee Benefits	11,983,000	12,220,000	12,460,000	12,710,000	12,960,000
4	Subtotal Personnel	47,994,500	49,190,000	50,420,000	51,690,000	52,990,000
5	Personal (Transitional) Service Contracts	8,266,400	8,270,000	8,270,000	8,270,000	8,270,000
6	TOTAL Personnel Costs	56,260,900	57,460,000	58,690,000	59,960,000	61,260,000
7	Contractual/Purchased Services	70,478,100	72,590,000	74,770,000	77,010,000	79,320,000
8	Utilities	29,237,500	29,250,000	29,260,000	29,270,000	29,280,000
9	Chemicals	11,467,900	12,040,000	12,640,000	13,270,000	13,930,000
10	Supplies & Other	24,516,200	24,511,000	24,489,000	24,415,000	24,290,500
11	Subtotal	191,960,600	195,851,000	199,849,000	203,925,000	208,080,500
12	Unallocated Reserve	7,048,700	7,050,000	7,050,000	7,050,000	7,050,000
13	Total Gross Regional O&M Expense	199,009,300	202,901,000	206,899,000	210,975,000	215,130,500
14	less: Shared Services Reimbursement	(7,929,900)	(8,000,000)	(8,100,000)	(8,200,000)	(8,300,000)
15	Net GLWA Regional O&M Expense	191,079,400	194,901,000	198,799,000	202,775,000	206,830,500
16	DWSD Local System O&M	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
17	Combined Total "Normal" O&M	259,200,900	264,478,200	269,712,300	275,052,600	280,498,000
<u>Operating Pension Obligation (a)</u>						
18	GLWA Regional	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
19	DWSD Local	2,856,000	2,856,000	2,856,000	2,856,000	2,856,000
20	Total	13,680,000	13,680,000	13,680,000	13,680,000	13,680,000
21	GRAND TOTAL O&M	272,880,900	278,158,200	283,392,300	288,732,600	294,178,000
<u>Non-Operating Expense (b)</u>						
22	Non-Operating Portion of Pension Obligation	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
23	B & C Note Non-Operating Payments	2,489,500	2,489,500	2,489,400	2,489,400	2,489,500
24	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500

(a) Transferred to Pension Obligation sub-account of the Operation and Maintenance Fund, and treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

(b) **Not** treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

Table 5a
GLWA Regional System Capital Improvement Program Financing

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
2	Major Capital Improvement Program (a)	<u>105,183,000</u>	<u>100,300,000</u>	<u>100,300,000</u>	<u>110,900,000</u>	<u>110,900,000</u>	<u>527,583,000</u>
3	Total Financing Requirements	111,140,000	105,110,900	104,731,800	125,947,000	115,171,200	562,100,900
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	96,762,200	96,521,600	90,495,600	88,792,400	91,468,300	96,762,200 (i)
Construction Bond Funds							
5	Beginning Balance (b)	99,814,100	45,653,900	49,936,300	49,594,500	50,004,200	99,814,100 (i)
Bond Proceeds							
6	Sewer System Revenue Bonds (c)	97,000,000	57,000,000	56,000,000	80,000,000	50,000,000	340,000,000
7	Original Issue Premium	TBD	TBD	TBD	TBD	TBD	0
8	Available Debt Service Payment Funds	TBD	TBD	TBD	TBD	TBD	0
9	Available in Debt Service Reserve Fund	TBD	TBD	TBD	TBD	TBD	0
10	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
11	Less: Transfer to DWSD Const. Fund (e)	(91,000,000)	0	0	0	0	(91,000,000)
12	Less: Bond Reserve Requirements (f)	TBD	TBD	TBD	TBD	TBD	0
13	Less: Issuance Expenses	<u>(6,000,000)</u>	<u>(3,420,000)</u>	<u>(3,360,000)</u>	<u>(4,800,000)</u>	<u>(3,000,000)</u>	<u>(20,580,000)</u>
14	Net Bond Proceeds Available	0	53,580,000	52,640,000	75,200,000	47,000,000	228,420,000
15	State Clean Water Revolving Fund Loans	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
16	Less: Transfer to DWSD Constr. Fund	0	0	0	0	0	0
17	Net State CWRP Financing for Authority	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
18	Investment Income	<u>513,800</u>	<u>59,400</u>	<u>166,200</u>	<u>70,700</u>	<u>256,900</u>	<u>1,067,000</u>
19	Subtotal - Construction Bond Funds	<u>142,524,900</u>	<u>129,354,300</u>	<u>116,235,500</u>	<u>135,052,200</u>	<u>98,864,100</u>	<u>426,842,100</u>
20	Total Financing Sources Available	239,287,100	225,875,900	206,731,100	223,844,600	190,332,400	523,604,300
Application of Financing Sources							
21	I&E Funds - Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
22	I&E Funds - Specifically Designated I&E Proj	8,312,000	10,882,000	13,659,000	10,852,000	12,280,000	55,985,000
23	I&E Funding of Debt Eligible Projects	0	10,000,000	20,000,000	15,000,000	50,000,000	95,000,000
24	Project Expenditures from Construction Fund	<u>96,871,000</u>	<u>79,418,000</u>	<u>66,641,000</u>	<u>85,048,000</u>	<u>48,620,000</u>	<u>376,598,000</u>
25	Total Financing Sources Applied	111,140,000	105,110,900	104,731,800	125,947,000	115,171,200	562,100,900
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
26	Remaining Beginning Balance (g)	82,493,200	70,828,700	52,404,800	47,893,400	24,917,100	
27	Transfers from Sewer Receiving Fund	<u>14,028,400</u>	<u>19,666,900</u>	<u>36,387,600</u>	<u>43,574,900</u>	<u>64,180,100</u>	177,837,900
28	Total Improvement & Extension Fund	96,521,600	90,495,600	88,792,400	91,468,300	89,097,200	89,097,200 (j)
29	Construction Bond Funds (h)	<u>45,653,900</u>	<u>49,936,300</u>	<u>49,594,500</u>	<u>50,004,200</u>	<u>50,244,100</u>	<u>50,244,100 (j)</u>
30	Financing Sources Available for Future Req	142,175,500	140,431,900	138,386,900	141,472,500	139,341,300	139,341,300 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) The Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2016 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 21 through 23.

(h) Line 19 minus Line 24.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 5b
DWSD Local System Capital Improvement Program Financing

Line No.	Item	2019	2020	2021	2022	2023	Total
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	DWSD Local System CIP (a)	37,143,000	37,143,000	37,143,000	37,143,000	37,143,000	185,715,000
Financing Sources							
<u>DWSD Local System Improvement and Extension Account</u>							
2	Beginning Balance (b)	15,000,000	20,903,600	21,719,000	21,719,000	21,719,000	15,000,000
3	Deposits from Lease Payment (c)	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000	111,351,100
4	Deposits from DWSD Local System Revenues	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
5	Subtotal - Improvement & Extension Fund	39,475,100	42,622,600	43,438,000	43,438,000	43,438,000	126,351,100
<u>Construction Bond Funds</u>							
6	Beginning Balance (b)	0	72,428,500	56,832,200	41,899,400	26,817,300	0
7	Net Bond Proceeds (c)	91,000,000	0	0	0	0	91,000,000
8	State Clean Water Revolving Fund Loans	0	0	0	0	0	0
9	Investment Income	<u>0</u>	<u>643,100</u>	<u>491,200</u>	<u>341,900</u>	<u>191,100</u>	<u>1,667,300</u>
10	Subtotal - Construction Bond Funds	<u>91,000,000</u>	<u>73,071,600</u>	<u>57,323,400</u>	<u>42,241,300</u>	<u>27,008,400</u>	<u>92,667,300</u>
11	Total Financing Sources Available	130,475,100	115,694,200	100,761,400	85,679,300	70,446,400	219,018,400
Application of Financing Sources							
12	Project Expenditures from I&E Funds	18,571,500	20,903,600	21,719,000	21,719,000	21,719,000	104,632,100
13	Project Expenditures from Construction Funds	<u>18,571,500</u>	<u>16,239,400</u>	<u>15,424,000</u>	<u>15,424,000</u>	<u>15,424,000</u>	<u>81,082,900</u>
14	Total Financing Sources Applied	37,143,000	37,143,000	37,143,000	37,143,000	37,143,000	185,715,000
Financing Sources Available for Future Requirements							
15	Improvement & Extension Fund (e)	20,903,600	21,719,000	21,719,000	21,719,000	21,719,000	21,719,000
16	Construction Bond Funds (f)	<u>72,428,500</u>	<u>56,832,200</u>	<u>41,899,400</u>	<u>26,817,300</u>	<u>11,584,400</u>	<u>11,584,400</u>
17	Total Financing Sources Available for Future Req'ts	93,332,100	78,551,200	63,618,400	48,536,300	33,303,400	33,303,400

(a) Preliminary pending additional review.

(b) Estimated allocated balance available June 30, 2018.

(applies only to FY 2019).

(c) Total Lease Payment	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	137,500,000
less: Lease Payment applied to Debt Service	<u>(3,024,900)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(26,148,900)</u>
Net Lease Payment transferred to Local I&E Account	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000	21,719,000	111,351,100

(d) Reserved

(e) Line 5 minus Line 12.

(f) Line 10 minus Line 13.

Table 6
Operational Financing Plan - Consolidated GLWA Regional System / DWSD Local System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	Revenue (a)					
1	Operating Revenue Under Existing Charges	564,466,500	564,466,500	564,466,500	564,466,500	564,466,500
	<u>Projected Revenue from Adjustments</u>					
2	FY 2020: 4.0%		22,757,900	22,757,900	22,757,900	22,757,900
3	FY 2021: 3.6%			20,963,500	20,963,500	20,963,500
4	FY 2022: 3.6%				21,715,000	21,715,000
5	FY 2023: 3.6%					22,586,900
6	Total Projected Revenue from Sewer Charges	564,466,500	587,224,400	608,187,900	629,902,900	652,489,800
7	Miscellaneous Operating Revenue (b)	<u>2,371,500</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
8	Total Operating Revenue	566,838,000	587,724,400	608,687,900	630,402,900	652,989,800
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,555,800</u>	<u>3,547,800</u>	<u>3,618,000</u>	<u>3,595,700</u>
10	Total Revenue Available	571,408,900	591,280,200	612,235,700	634,020,900	656,585,500
	Revenue Requirements					
11	Transfer to GLWA Regional O&M Account	191,079,400	194,901,000	198,799,000	202,775,000	206,830,500
12	Transfer to DWSD Local O&M Account	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
13	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
14	Transfer to DWSD Pension O&M Account	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>
15	Total O&M Expense	272,880,900	278,158,200	283,392,300	288,732,600	294,178,000
	<u>Debt Service - Bond Interest and Redemption Deposits</u>					
	Senior Lien Bonds					
16	Outstanding Bonds (c)	147,013,100	146,598,900	132,509,100	144,220,000	151,243,100
17	The 2018 GLWA Bonds	0	0	0	0	0
18	Future Bonds (lien unspecified)	<u>1,593,900</u>	<u>6,992,300</u>	<u>10,368,100</u>	<u>14,215,600</u>	<u>18,346,000</u>
19	Total Senior Debt Service	148,607,000	153,591,200	142,877,200	158,435,600	169,589,100
	Second Lien Bonds					
20	Outstanding Bonds	43,922,600	45,878,900	54,642,100	48,104,300	38,785,500
21	The 2018 GLWA Bonds	0	0	0	0	0
22	Total Second Lien Bonds	<u>43,922,600</u>	<u>45,878,900</u>	<u>54,642,100</u>	<u>48,104,300</u>	<u>38,785,500</u>
23	Subtotal Debt Service	192,529,600	199,470,100	197,519,300	206,539,900	208,374,600
24	SRF Junior Lien Bonds	<u>49,936,400</u>	<u>53,313,400</u>	<u>54,080,700</u>	<u>54,109,900</u>	<u>48,636,600</u>
25	Total Debt Service	242,466,000	252,783,500	251,600,000	260,649,800	257,011,200
26	Non-Operating Portion of Pension Reimb.	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
27	B & C Note Non-Operating Payments	<u>2,489,500</u>	<u>2,489,500</u>	<u>2,489,400</u>	<u>2,489,400</u>	<u>2,489,500</u>
28	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500
29	Transfer to WRAP Fund	<u>2,871,000</u>	<u>2,991,400</u>	<u>3,150,300</u>	<u>3,332,100</u>	<u>3,458,100</u>
30	Transfer to Budget Stabilization Fund	0	0	0	0	0
31	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
32	Lease Payment - Transfer to Detroit Local I&E	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000
	<u>Transfers to I&E Fund to Finance Capital Improvements</u>					
33	Transfer to GLWA Regional I&E Account	14,028,400	19,666,900	36,387,600	43,574,900	64,180,100
34	Transfer to DWSD Local I&E Account	0	0	0	0	0
35	Total Transfers to I&E Fund	14,028,400	19,666,900	36,387,600	43,574,900	64,180,100
36	Operating Reserves	0	1,273,900	1,299,300	1,325,300	1,351,800
37	Total Revenue Requirements	571,408,900	591,280,400	612,235,900	634,021,100	656,585,700
38	Indicated Balance (Deficiency)	0	(200)	(200)	(200)	(200)
	Debt Service Coverage Projections					
39	Senior Lien for Rate Covenant Purposes	200%	204%	230%	218%	214%
40	Second Lien for Rate Covenant Purposes	154%	157%	166%	167%	174%
41	SRF Junior Lien for Rate Covenant Purposes	122%	124%	131%	132%	141%
42	<i>Net Revenues (10) - (15)</i>	<i>298,528,000</i>	<i>313,122,000</i>	<i>328,843,400</i>	<i>345,288,300</i>	<i>362,407,500</i>
43	<i>Net Revenues Available after Debt Service (42)-(25)</i>	<i>56,062,000</i>	<i>60,338,500</i>	<i>77,243,400</i>	<i>84,638,500</i>	<i>105,396,300</i>
44	<i>Applied to MBO Reserve Funds (28,29,30,31)</i>	<i>(17,558,500)</i>	<i>(17,678,900)</i>	<i>(17,837,700)</i>	<i>(18,019,500)</i>	<i>(18,145,600)</i>
45	<i>Applied as Lease Payment to DWSD I&E Acct (32)</i>	<i>(24,475,100)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>
46	<i>Applied to Operating Reserves (37)</i>	<i>0</i>	<i>(1,273,900)</i>	<i>(1,299,300)</i>	<i>(1,325,300)</i>	<i>(1,351,800)</i>
47	<i>Available for I&E Fund Accounts (43) - (44,45,46)</i>	<i>14,028,400</i>	<i>19,666,700</i>	<i>36,387,400</i>	<i>43,574,700</i>	<i>64,179,900</i>

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Includes Wholesale Bad Debt True Up Revenue for FY 2019.

(c) Includes remaining Senior Lien SRF Bonds.

Table 6a
Operational Financing Plan - GLWA Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
Projected Revenue from Adjustments						
2	FY 2020: 4.3%		19,821,400	19,821,400	19,821,400	19,821,400
3	FY 2021: 4.0%			19,566,400	19,566,400	19,566,400
4	FY 2022: 4.0%				20,270,600	20,270,600
5	FY 2023: 4.0%					21,176,700
6	Total Projected Revenue from Sewer Charges	465,584,900	485,406,300	504,972,700	525,243,300	546,420,000
7	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
8	Total Operating Revenue	467,456,400	485,406,300	504,972,700	525,243,300	546,420,000
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,555,800</u>	<u>3,547,800</u>	<u>3,618,000</u>	<u>3,595,700</u>
10	Total Revenue Available	472,027,300	488,962,100	508,520,500	528,861,300	550,015,700
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	191,079,400	194,901,000	198,799,000	202,775,000	206,830,500
12	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
13	Total O&M Expense	201,903,400	205,725,000	209,623,000	213,599,000	217,654,500
14	Debt Service Allocation - Regional System	214,600,700	220,730,900	219,547,500	228,597,300	224,958,800
15	Non-Operating Portion of Pension Reimb.	9,651,400	9,651,400	9,651,400	9,651,400	9,651,400
16	B & C Note Non-Operating Payments	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>
17	Transfer to Pension Obligation Payment Fund	11,620,700	11,620,700	11,620,700	11,620,700	11,620,700
18	Transfer to WRAP Fund	2,374,100	2,444,800	2,542,600	2,644,300	2,750,100
19	Transfer to Budget Stabilization Fund	0	0	0	0	0
20	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
21	Lease Payment to DWSD Local System	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
22	Transfer to GLWA Regional I&E Account	14,028,400	19,666,900	36,387,600	43,574,900	64,180,100
23	Operating Reserves	0	1,273,900	1,299,300	1,325,300	1,351,800
24	Total Revenue Requirements	472,027,300	488,962,200	508,520,700	528,861,500	550,016,000
25	Indicated Balance (Deficiency)	0	(100)	(200)	(200)	(300)
26	Projected Debt Service Coverage Ratio (Regional)	126%	128%	136%	138%	148%
27	<i>Net Revenues (10) - (13)</i>	270,123,900	283,237,100	298,897,500	315,262,300	332,361,200
28	<i>Net Revenues Available after Debt Service (27)-(14)</i>	55,523,200	62,506,200	79,350,000	86,665,000	107,402,400
29	<i>Applied to MBO Reserve Funds (17,18,19,20)</i>	(13,994,800)	(14,065,500)	(14,163,300)	(14,265,000)	(14,370,800)
30	<i>Applied as Lease Payment to DWSD (21)</i>	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)
31	<i>Applied to Operating Reserves (23)</i>	0	(1,273,900)	(1,299,300)	(1,325,300)	(1,351,800)
32	<i>Available for I&E Fund (28) - (29,30,31)</i>	14,028,400	19,666,800	36,387,400	43,574,700	64,179,800

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

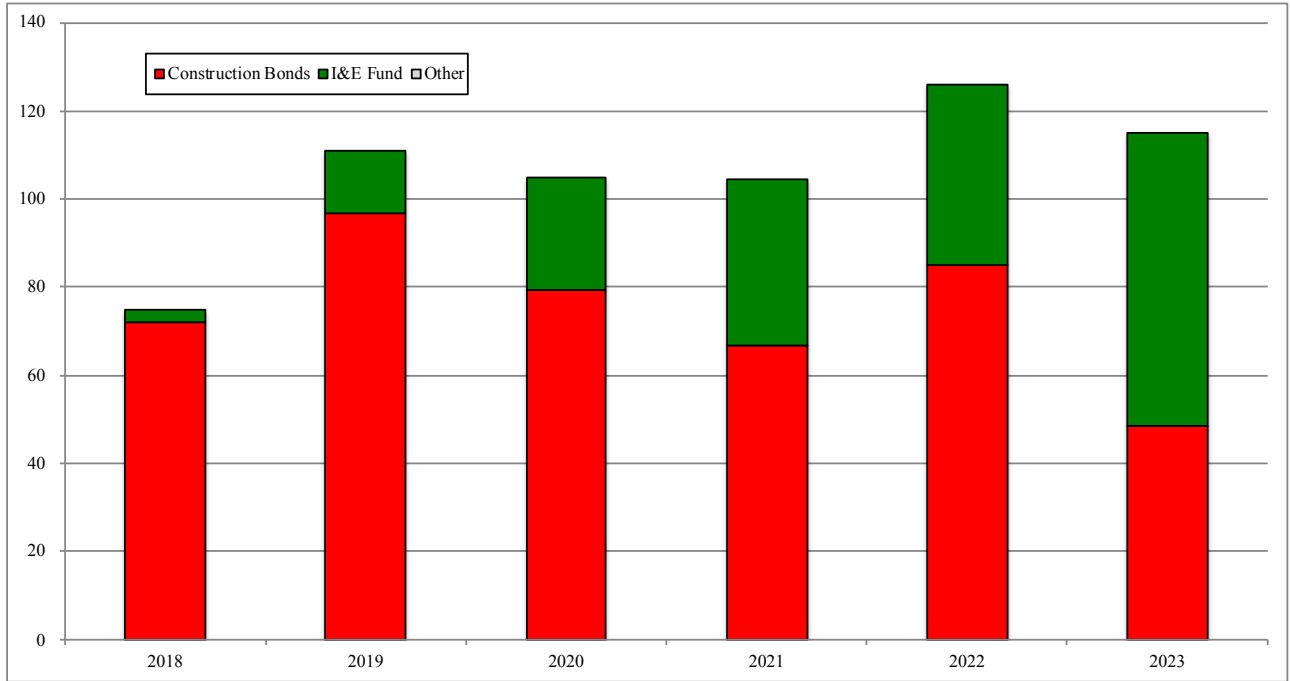
Table 7
Projected Cash and Investment Fund Balances - Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	67,301,100	67,301,100	68,575,000	69,874,300	71,199,600
2	Deposit from Operations	0	1,273,900	1,299,300	1,325,300	1,351,800
3	Ending Balance	67,301,100	68,575,000	69,874,300	71,199,600	72,551,400
<u>Budget Stabilization Fund</u>						
4	Beginning Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
<u>ER&R Fund</u>						
7	Beginning Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
<u>I&E Fund (a)</u>						
10	Beginning Balance	96,762,200	94,650,300	88,624,300	86,921,100	89,597,000
11	Budgeted Capital Outlay	(5,957,000)	(4,810,900)	(4,431,800)	(15,047,000)	(4,271,200)
12	Capital Expenditures	(8,312,000)	(20,882,000)	(33,659,000)	(25,852,000)	(62,280,000)
13	Subtotal prior to Revenue Transfer	82,493,200	68,957,400	50,533,500	46,022,100	23,045,800
14	Deposits from Revenues (b)	12,157,100	19,666,900	36,387,600	43,574,900	64,180,100
15	Ending Balance	94,650,300	88,624,300	86,921,100	89,597,000	87,225,900
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	213,563,300	211,451,400	206,699,300	206,295,400	210,296,600
17	Net Sources and Uses	(2,111,900)	(4,752,100)	(403,900)	4,001,200	(1,019,300)
18	Ending Balance	211,451,400	206,699,300	206,295,400	210,296,600	209,277,300
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	64,621,500	64,621,500	64,621,500	64,621,500	64,621,500
20	Bond Redemption (Average)	80,822,000	84,261,100	83,866,700	86,883,300	85,670,400
21	Construction Fund	45,653,900	49,936,300	49,594,500	50,004,200	50,244,100
22	Total Funds	402,548,800	405,518,200	404,378,100	411,805,600	409,813,300
23	Subtotal w/o Construction Funds	356,894,900	355,581,900	354,783,600	361,801,400	359,569,200

(a) Only includes GLWA Regional I&E Account

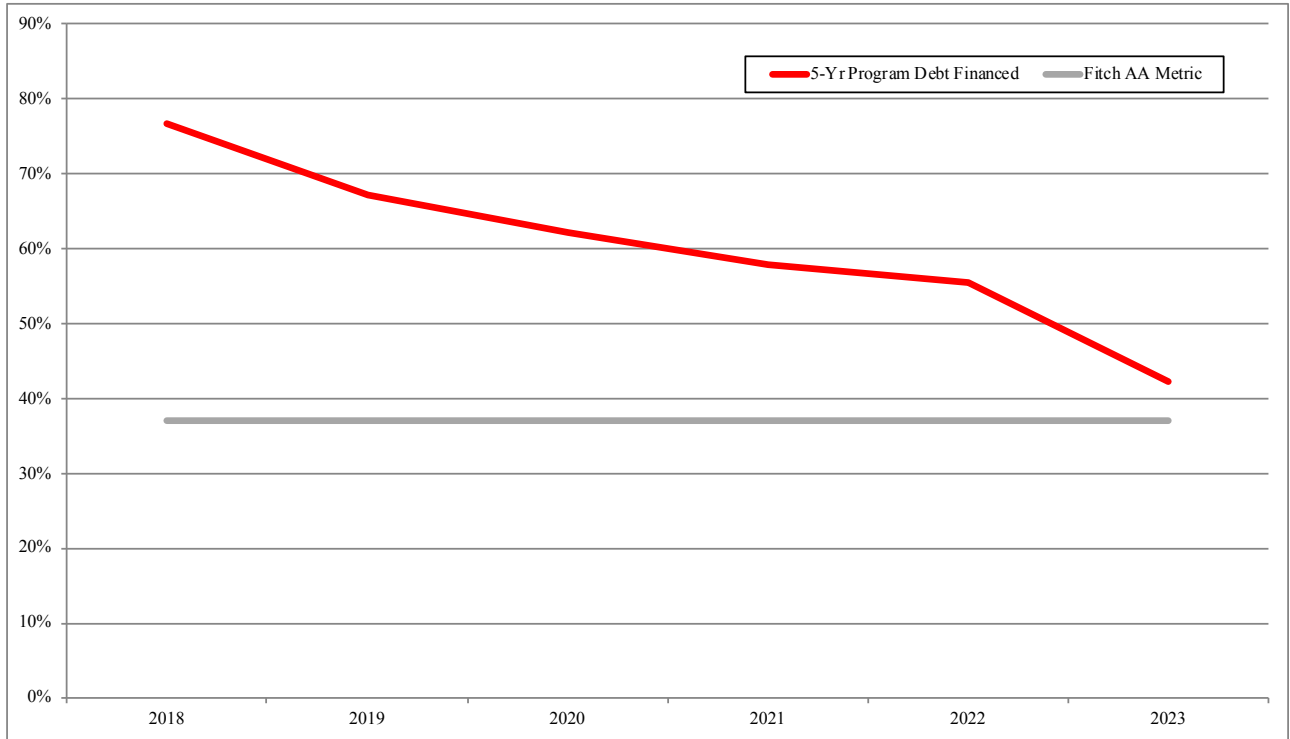
(b) Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

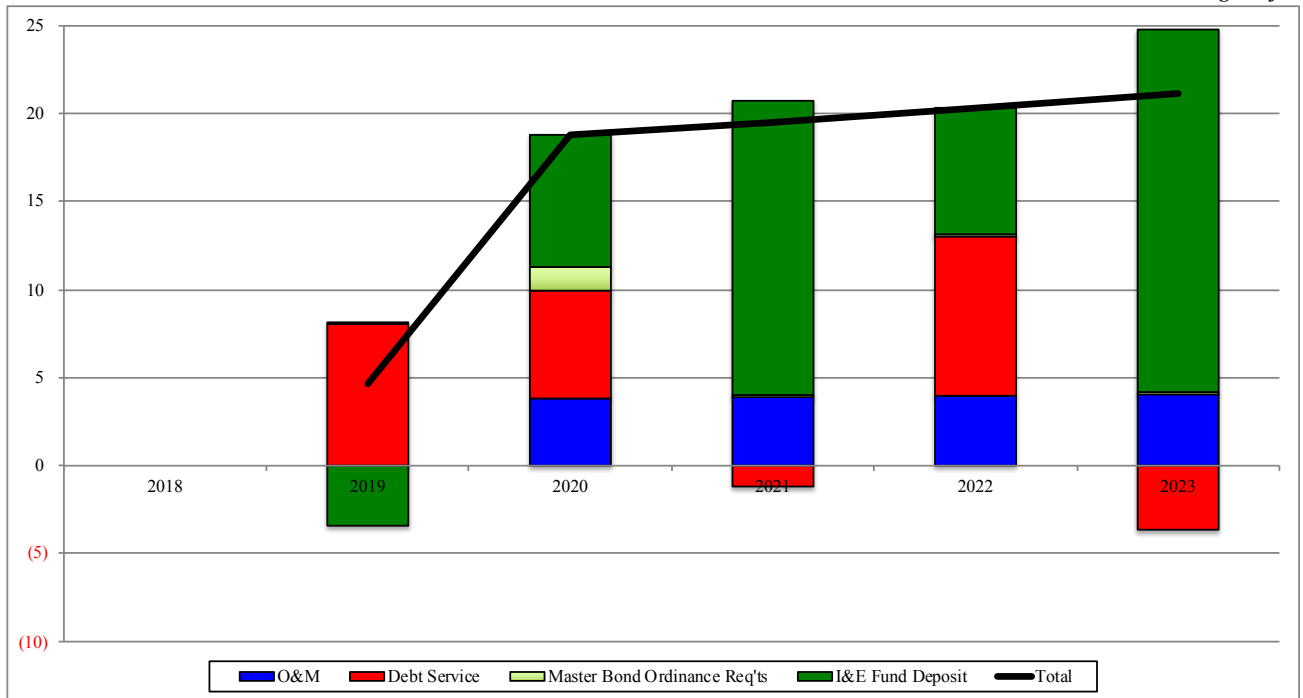


CIP Financing Requirement:	75	111	105	105	126	115
<u>Financing Sources</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Construction Bonds	72	97	79	67	85	49
I&E Fund	3	14	26	38	41	67
Other	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

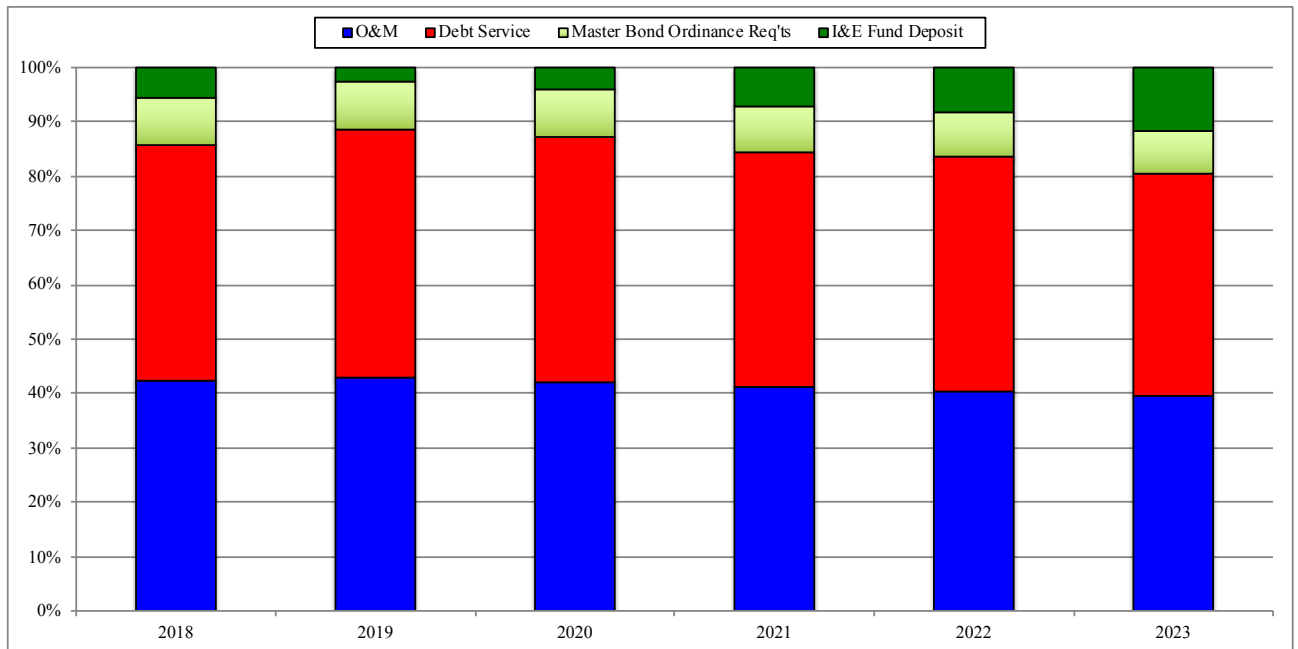


5-Yr Program Debt Finance	77%	67%	62%	58%	55%	42%
Fitch AA Metric	37%	37%	37%	37%	37%	37%

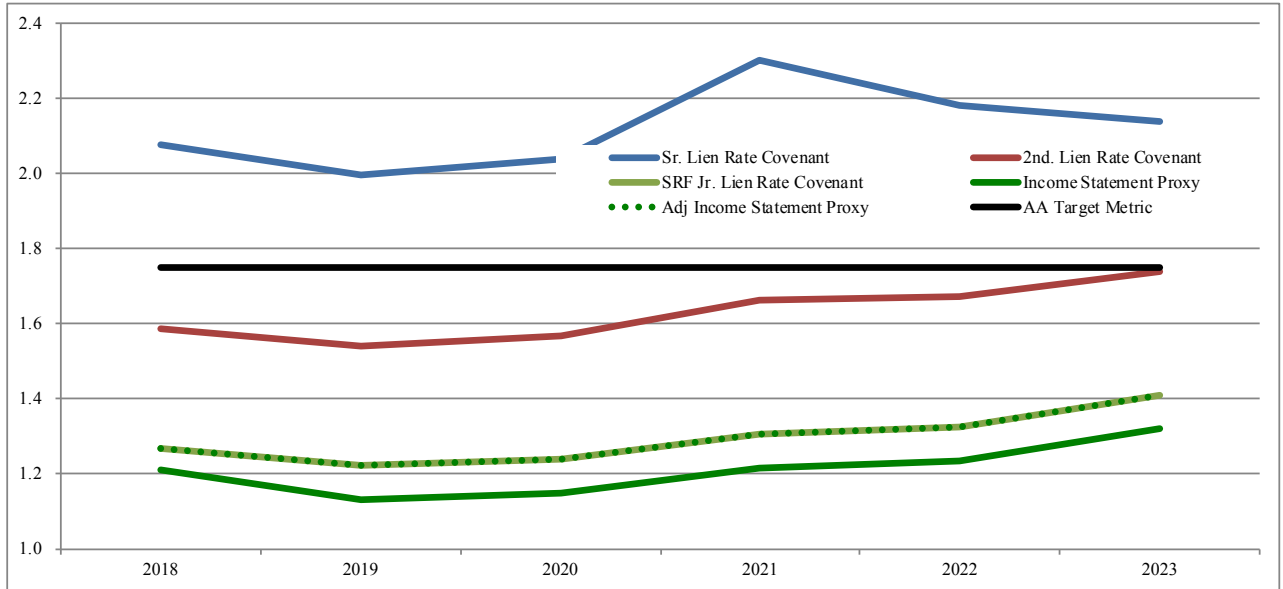


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M		0.0	3.8	3.9	4.0	4.1
Debt Service		8.0	6.1	(1.2)	9.0	(3.6)
Master Bond Ordinance Req'ts		0.0	1.3	0.1	0.1	0.1
I&E Fund Deposit		(3.4)	7.5	16.7	7.2	20.6
Total		4.7	18.8	19.6	20.3	21.2

Relative BUDGET

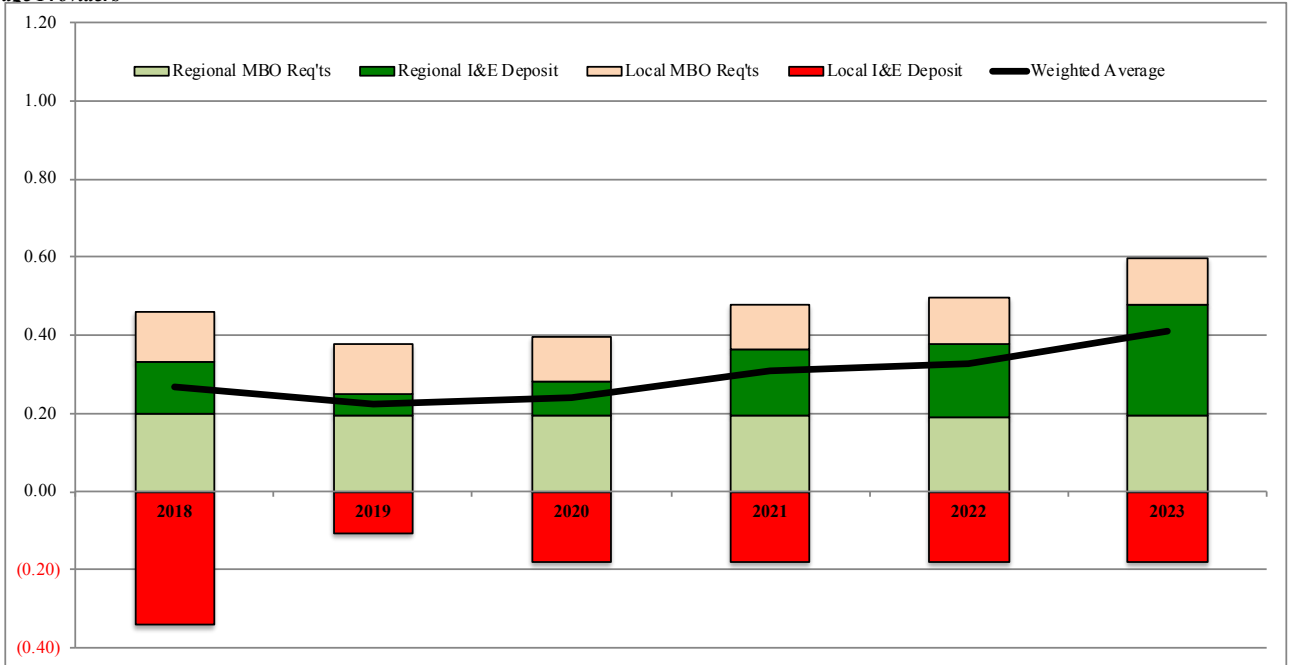


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M	42%	43%	42%	41%	40%	40%
Debt Service	43%	46%	45%	43%	43%	41%
Master Bond Ordinance Req	9%	9%	9%	8%	8%	8%
I&E Fund Deposit	6%	3%	4%	7%	8%	12%

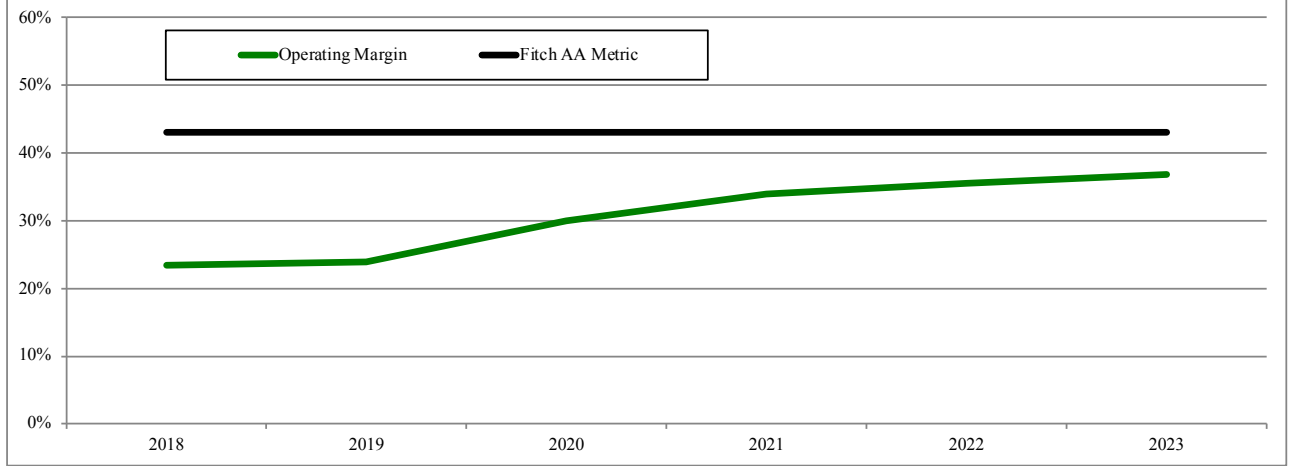


Sr. Lien Rate Covenant	2.08	2.00	2.04	2.30	2.18	2.14
2nd. Lien Rate Covenant	1.59	1.54	1.57	1.66	1.67	1.74
SRF Jr. Lien Rate Covenant	1.27	1.22	1.24	1.31	1.32	1.41
Income Statement Proxy	1.21	1.13	1.15	1.22	1.24	1.32
Adj Income Statement Proxy	1.27	1.22	1.24	1.31	1.32	1.41
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

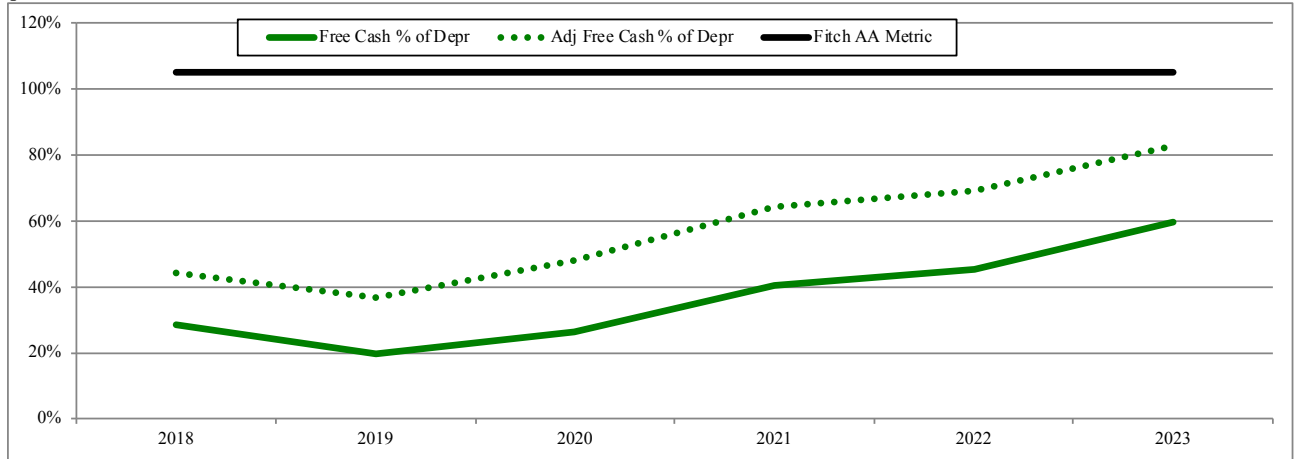


Regional MBO Req'ts	0.20	0.19	0.19	0.20	0.19	0.19
Regional I&E Deposit	0.13	0.06	0.09	0.17	0.19	0.29
Local MBO Req'ts	0.13	0.13	0.11	0.11	0.12	0.12
Local I&E Deposit	(0.34)	(0.11)	(0.18)	(0.18)	(0.18)	(0.18)
Weighted Average	0.27	0.22	0.24	0.31	0.32	0.41
Regional Total	0.33	0.25	0.28	0.36	0.38	0.48
Local Total	(0.21)	0.02	(0.07)	(0.07)	(0.06)	(0.06)
Weighted Average	0.27	0.22	0.24	0.31	0.32	0.41



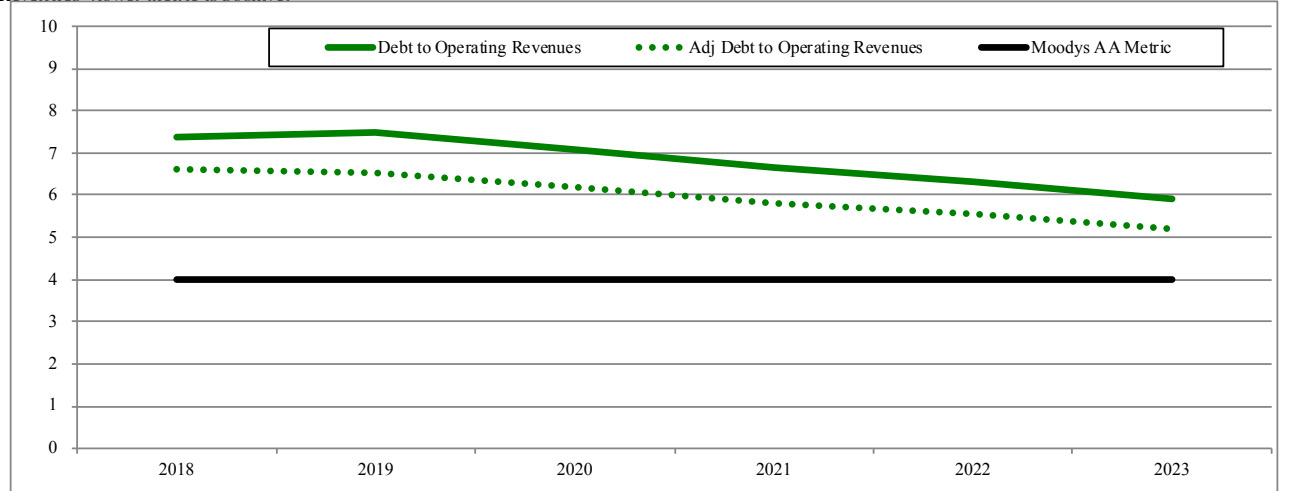
Operating Margin	23%	24%	30%	34%	35%	37%
Fitch AA Metric	43%	43%	43%	43%	43%	43%

Free Cash % of Depr

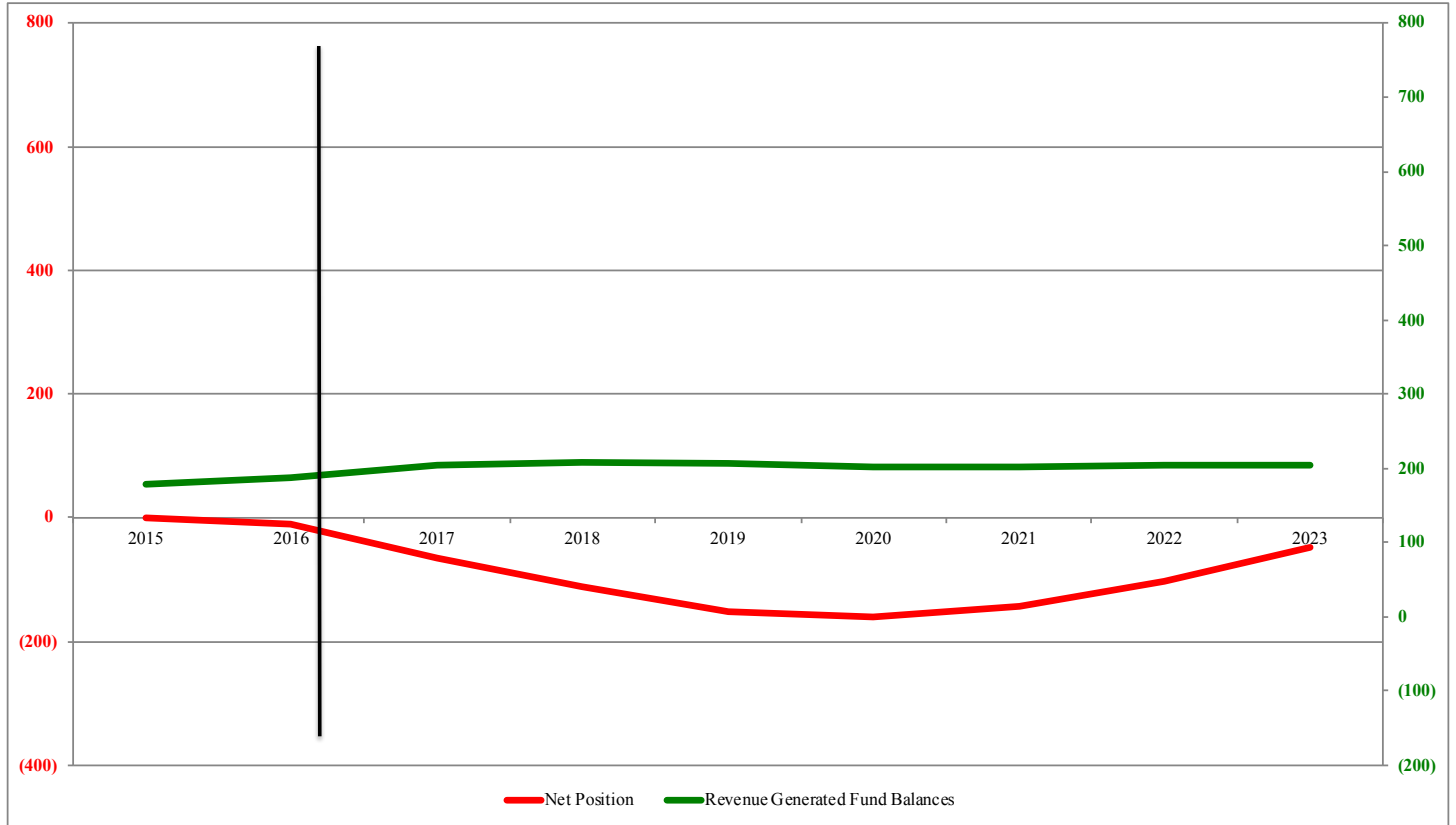


Free Cash % of Depr	29%	20%	26%	40%	45%	60%
Adj Free Cash % of Depr	44%	37%	48%	64%	69%	83%
Fitch AA Metric	105%	105%	105%	105%	105%	105%

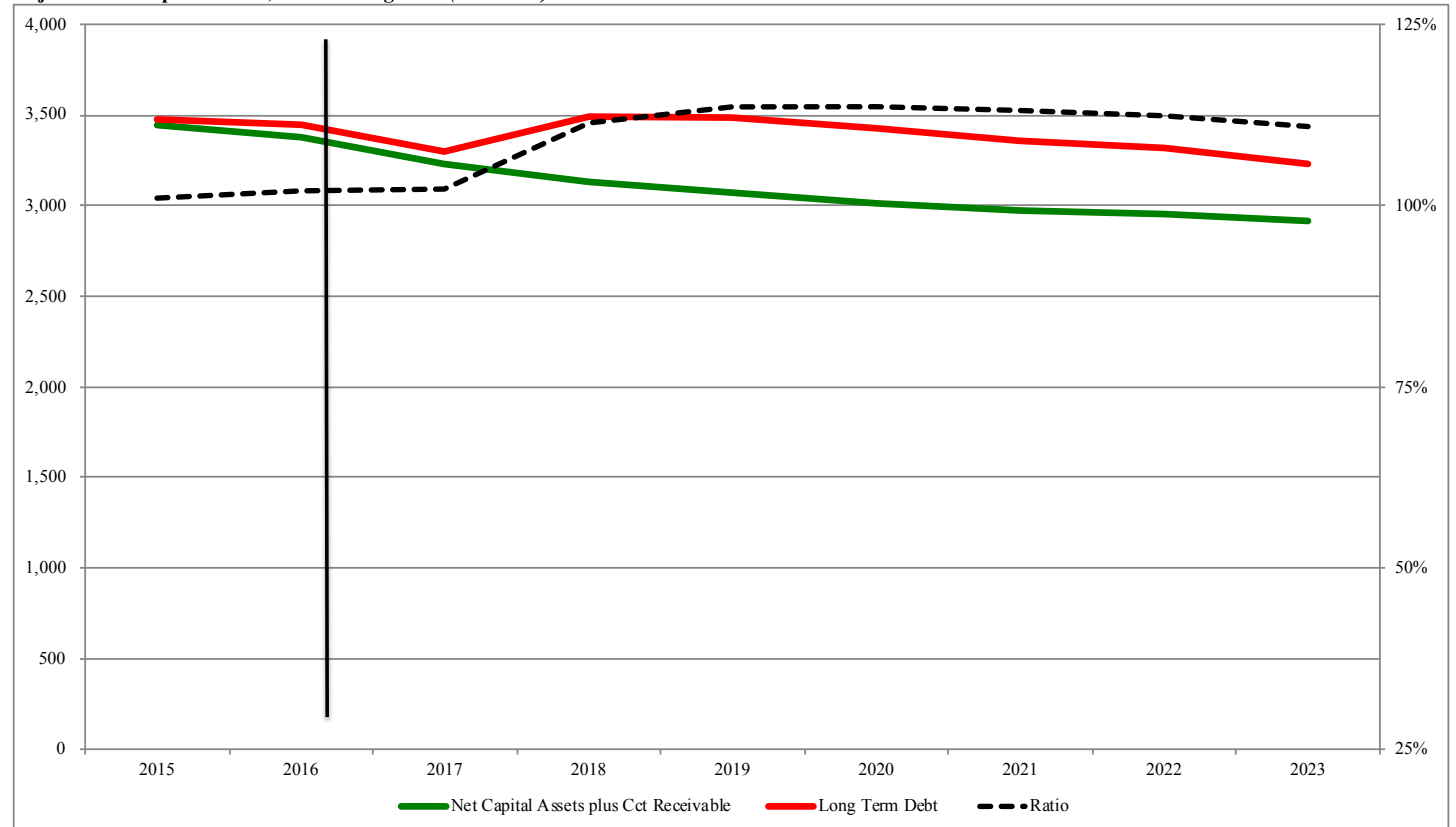
Debt to Operating Revenues (lower metric is positive)



Debt to Operating Revenues	7.4	7.5	7.1	6.7	6.3	5.9
Adj Debt to Operating Reve	6.6	6.5	6.2	5.8	5.5	5.2
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0



Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



Water Forecast Exhibits

Scenario 2 - Rev Req't Increases 4%, CIP Funding 80%, O&M Funding 95%

Table 2
Regional Water System Capital Improvement Program
Projected Expenditure Schedule - Fiscal Years 2019 through 2023

	<i>Fiscal Year Ending June 30,</i>					<u>Total</u>
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	
	\$	\$	\$	\$	\$	\$
<u>Water Production</u>						
Water Works Park	3,483,000	15,224,000	21,762,000	8,772,000	19,000	49,260,000
Springwells	12,387,000	11,669,000	10,425,000	12,657,000	6,987,000	54,125,000
Northeast	665,000	1,050,000	1,368,000	1,214,000	76,000	4,373,000
Southwest	1,769,000	2,981,000	852,000	4,000	0	5,606,000
Lake Huron	3,468,000	12,043,000	9,504,000	6,885,000	3,027,000	34,927,000
General Water Treatment	7,234,000	3,497,000	3,452,000	3,332,000	2,717,000	20,232,000
Subtotal Production	29,006,000	46,464,000	47,363,000	32,864,000	12,826,000	168,523,000
<u>Water Delivery</u>						
Water Transmission System	5,258,000	23,169,000	26,137,000	45,805,000	68,451,000	168,820,000
Pumping Station & Reservoirs	2,226,000	4,012,000	8,880,000	16,628,000	18,909,000	50,655,000
Subtotal Delivery	7,484,000	27,181,000	35,017,000	62,433,000	87,360,000	219,475,000
General Purpose	14,158,400	12,393,000	14,987,000	12,550,000	17,711,000	71,799,400
Total Water Direct	50,648,400	86,038,000	97,367,000	107,847,000	117,897,000	459,797,400
Centralized Svcs - Water Portion	2,182,000	1,962,000	953,000	793,000	1,143,000	7,033,000
GRAND TOTAL	52,830,400	88,000,000	98,320,000	108,640,000	119,040,000	466,830,400

Table 4
Projected Operation and Maintenance Expense (and Selected Non-Operating Expenses)

Line No.		Fiscal Year Ended June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	<u>GLWA Regional System</u>					
1	Salaries & Wages	20,051,500	20,650,000	21,270,000	21,910,000	22,570,000
2	Overtime	1,823,400	1,820,000	1,820,000	1,820,000	1,820,000
3	Employee Benefits	6,928,400	7,070,000	7,210,000	7,350,000	7,500,000
4	Subtotal Personnel	28,803,300	29,540,000	30,300,000	31,080,000	31,890,000
5	Personal (Transitional) Service Contracts	3,264,200	3,260,000	3,260,000	3,260,000	3,260,000
6	TOTAL Personnel Costs	32,067,500	32,800,000	33,560,000	34,340,000	35,150,000
7	Contractual/Purchased Services	39,912,400	41,110,000	42,340,000	43,610,000	44,920,000
8	Utilities	28,317,900	28,330,000	28,340,000	28,350,000	28,360,000
9	Chemicals	5,710,900	6,000,000	6,300,000	6,620,000	6,950,000
10	Supplies & Other	12,784,700	12,984,200	13,140,100	13,263,100	13,354,200
11	Subtotal	118,793,400	121,224,200	123,680,100	126,183,100	128,734,200
12	Unallocated Reserve	3,474,000	3,470,000	3,470,000	3,470,000	3,470,000
13	Total Gross Regional O&M Expense	122,267,400	124,694,200	127,150,100	129,653,100	132,204,200
14	less: Shared Services Reimbursement	(6,782,900)	(6,900,000)	(7,000,000)	(7,100,000)	(7,200,000)
15	Net GLWA Regional O&M Expense	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
16	DWSD Local System O&M	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
17	Combined Total "Normal" O&M	150,968,800	153,920,800	156,961,200	160,061,700	163,224,700
	<u>Operating Pension Obligation (a)</u>					
18	GLWA Regional	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
19	DWSD Local	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
20	Total	10,320,000	10,320,000	10,320,000	10,320,000	10,320,000
21	GRAND TOTAL O&M	161,288,800	164,240,800	167,281,200	170,381,700	173,544,700
	<u>Non-Operating Expense (b)</u>					
22	Non-Operating Portion of Pension Obligation	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
23	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
24	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700

(a) Transferred to Pension Obligation sub-account of the Operation and Maintenance Fund, and treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

(b) **Not** treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

Table 5a
GLWA Regional System Capital Improvement Program Financing

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
2	Major Capital Improvement Program (a)	<u>52,830,400</u>	<u>88,000,000</u>	<u>98,320,000</u>	<u>108,640,000</u>	<u>119,040,000</u>	<u>466,830,400</u>
3	Total Financing Requirements	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	242,939,700	254,872,000	262,510,300	258,860,100	251,480,100	242,939,700 (i)
Construction Bond Funds							
5	Beginning Balance (b)	140,308,100	101,392,700	51,522,700	3,722,700	2,636,700	140,308,100 (i)
Bond Proceeds							
6	Water System Revenue Bonds (c)	0	0	0	17,600,000	23,600,000	41,200,000
7	Original Issue Premium	TBD	TBD	TBD	TBD	TBD	0
8	Available Debt Service Payment Funds	TBD	TBD	TBD	TBD	TBD	0
9	Available in Debt Service Reserve Fund	TBD	TBD	TBD	TBD	TBD	0
10	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
11	Less: Transfer to DWSD Const. Fund (e)	0	0	0	(16,544,000)	(22,184,000)	(38,728,000)
12	Less: Bond Reserve Requirements (f)	TBD	TBD	TBD	TBD	TBD	0
13	Less: Issuance Expenses	0	0	0	<u>(1,056,000)</u>	<u>(1,416,000)</u>	<u>(2,472,000)</u>
14	Net Bond Proceeds Available	0	0	0	0	0	0
15	State Drinking Water Revolving Fund Loan	10,500,000	20,459,000	29,529,000	46,022,000	30,722,000	137,232,000
16	Less: Transfer to DWSD Constr. Fund	<u>(10,500,000)</u>	<u>(4,000,000)</u>	<u>(11,982,000)</u>	0	0	<u>(26,482,000)</u>
17	Net State DWRP Financing for Authority	0	16,459,000	17,547,000	46,022,000	30,722,000	110,750,000
18	Investment Income	<u>743,000</u>	<u>462,000</u>	<u>408,000</u>	<u>252,000</u>	<u>500,000</u>	<u>2,365,000</u>
19	Subtotal - Construction Bond Funds	<u>141,051,100</u>	<u>118,313,700</u>	<u>69,477,700</u>	<u>49,996,700</u>	<u>33,858,700</u>	<u>253,423,100</u>
20	Total Financing Sources Available	383,990,800	373,185,700	331,988,000	308,856,800	285,338,800	496,362,800
Application of Financing Sources							
21	I&E Funds - Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
22	I&E Funds - Specifically Designated I&E Proj	13,172,000	11,209,000	12,565,000	11,280,000	12,007,000	60,233,000
23	I&E Funding of Debt Eligible Projects	0	10,000,000	20,000,000	50,000,000	75,000,000	155,000,000
24	Project Expenditures from Construction Fund	<u>39,658,400</u>	<u>66,791,000</u>	<u>65,755,000</u>	<u>47,360,000</u>	<u>32,033,000</u>	<u>251,597,400</u>
25	Total Financing Sources Applied	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
26	Remaining Beginning Balance (g)	207,634,300	214,900,000	211,240,000	188,216,800	157,072,300	
27	Transfers from Water Receiving Fund	<u>47,237,700</u>	<u>47,610,300</u>	<u>47,620,100</u>	<u>63,263,300</u>	<u>71,511,400</u>	277,242,800
28	Total Improvement & Extension Fund	254,872,000	262,510,300	258,860,100	251,480,100	228,583,700	228,583,700 (j)
29	Construction Bond Funds (h)	<u>101,392,700</u>	<u>51,522,700</u>	<u>3,722,700</u>	<u>2,636,700</u>	<u>1,825,700</u>	<u>1,825,700 (j)</u>
30	Financing Sources Available for Future Requirements	356,264,700	314,033,000	262,582,800	254,116,800	230,409,400	230,409,400 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) The Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2016 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 21 through 23.

(h) Line 19 minus Line 24.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 5b
DWSD Local System Capital Improvement Program Financing

Line No.	Item	2019 \$	2020 \$	2021 \$	2022 \$	2023 \$	Total \$
Financing Requirements							
1	DWSD Local System CIP (a)	41,375,400	41,375,400	41,375,400	41,375,400	41,375,400	206,877,000
Financing Sources							
<u>DWSD Local System Improvement and Extension Account</u>							
2	Beginning Balance (b)	50,000,000	48,007,000	29,783,600	31,127,100	19,139,600	50,000,000
3	Deposits from Lease Payment (c)	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400	95,270,800
4	Deposits from DWSD Local System Revenues	0	0	0	0	0	0
5	Subtotal - Improvement & Extension Fund	68,694,700	67,159,000	48,928,700	50,266,700	38,279,000	145,270,800
<u>Construction Bond Funds</u>							
6	Beginning Balance (b)	25,000,000	15,011,400	15,161,500	3,663,400	9,959,100	25,000,000
7	Net Bond Proceeds (c)	0	0	0	16,544,000	22,184,000	38,728,000
8	State Drinking Water Revolving Fund Loans	10,500,000	4,000,000	11,982,000	0	0	26,482,000
9	Investment Income	199,100	150,100	93,700	0	0	442,900
10	Subtotal - Construction Bond Funds	35,699,100	19,161,500	27,237,200	20,207,400	32,143,100	90,652,900
11	Total Financing Sources Available	104,393,800	86,320,500	76,165,900	70,474,100	70,422,100	235,923,700
Application of Financing Sources							
12	Project Expenditures from I&E Funds	20,687,700	37,375,400	17,801,600	31,127,100	19,139,600	126,131,400
13	Project Expenditures from Construction Funds	20,687,700	4,000,000	23,573,800	10,248,300	22,235,800	80,745,600
14	Total Financing Sources Applied	41,375,400	41,375,400	41,375,400	41,375,400	41,375,400	206,877,000
Financing Sources Available for Future Requirements							
15	Improvement & Extension Fund (e)	48,007,000	29,783,600	31,127,100	19,139,600	19,139,400	19,139,400
16	Construction Bond Funds (f)	15,011,400	15,161,500	3,663,400	9,959,100	9,907,300	9,907,300
17	Total Financing Sources Available for Future Req'ts	63,018,400	44,945,100	34,790,500	29,098,700	29,046,700	29,046,700

(a) Preliminary pending additional review.

(b) Estimated allocated balance available June 30, 2018.
(applies only to FY 2019).

(c) Total Lease Payment	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000	112,500,000
less: Lease Payment applied to Debt Service	(3,805,300)	(3,348,000)	(3,354,900)	(3,360,400)	(3,360,600)	(17,229,200)
Net Lease Payment transferred to Local I&E Account	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400	95,270,800

(d) Reserved

(e) Line 5 minus Line 12.

(f) Line 10 minus Line 13.

Table 6
Operational Financing Plan - Consolidated GLWA Regional System / DWSD Local System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	Revenue (a)					
1	Operating Revenue Under Existing Charges	402,877,200	404,109,400	404,109,400	404,109,400	404,109,400
	<u>Projected Revenue from Adjustments</u>					
2	FY 2020: 3.2%		13,007,300	13,007,300	13,007,300	13,007,300
3	FY 2021: 3.6%			15,020,900	15,020,900	15,020,900
4	FY 2022: 3.6%				15,495,800	15,495,800
5	FY 2023: 3.8%					17,014,100
6	Total Projected Revenue from Water Charges	402,877,200	417,116,700	432,137,600	447,633,400	464,647,500
7	Miscellaneous Operating Revenue	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000
8	Total Operating Revenue	405,077,200	419,316,700	434,337,600	449,833,400	466,847,500
9	Non-Operating Revenue	3,836,600	4,141,600	4,152,600	4,075,400	3,872,300
10	Total Revenue Available	408,913,800	423,458,300	438,490,200	453,908,800	470,719,800
	Revenue Requirements					
11	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
12	Transfer to DWSD Local O&M Account	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
13	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
14	Transfer to DWSD Pension O&M Account	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
15	Total O&M Expense	161,288,800	164,240,800	167,281,200	170,381,700	173,544,700
	<u>Debt Service - Bond Interest and Redemption Deposits</u>					
	Senior Lien Bonds					
16	Outstanding Bonds	119,230,800	123,909,900	126,616,400	127,412,400	131,184,100
17	The 2018 GLWA Bonds	0	0	0	0	0
18	Future Bonds (lien unspecified)	0	0	0	374,000	1,550,400
19	Total Senior Debt Service	119,230,800	123,909,900	126,616,400	127,786,400	132,734,500
	Second Lien Bonds					
20	Outstanding Bonds	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
21	The 2018 GLWA Bonds	0	0	0	0	0
22	Total Second Lien Bonds	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
23	Subtotal Debt Service	168,251,200	174,570,500	178,701,400	175,279,300	180,582,700
24	SRF Junior Lien Bonds	2,710,600	4,318,600	12,084,700	12,090,400	12,085,000
25	Total Debt Service	170,961,800	178,889,100	190,786,100	187,369,700	192,667,700
26	Non-Operating Portion of Pension Reimb.	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
27	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
28	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700
29	Transfer to WRAP Fund	2,061,000	2,100,500	2,176,700	2,257,800	2,343,900
30	Transfer to Budget Stabilization Fund	0	0	0	0	0
31	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
32	Lease Payment - Transfer to Detroit Local I&E	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400
	<u>Transfers to I&E Fund to Finance Capital Improvements</u>					
33	Transfer to GLWA Regional I&E Account	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
34	Transfer to DWSD Local I&E Account	0	0	0	0	0
35	Total Transfers to I&E Fund	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
36	Operating Reserves	(2,026,000)	769,900	785,300	801,000	817,000
37	Total Revenue Requirements	408,913,700	423,458,300	438,490,200	453,908,800	470,719,800
38	Indicated Balance (Deficiency)	100	0	0	0	0
	Debt Service Coverage Projections					
39	Senior Lien for Rate Covenant Purposes	208%	209%	214%	222%	224%
40	Second Lien for Rate Covenant Purposes	147%	148%	152%	162%	165%
41	SRF Junior Lien for Rate Covenant Purposes	145%	145%	142%	151%	154%
42	Net Revenues (10) - (15)	247,625,000	259,217,500	271,209,000	283,527,100	297,175,100
43	Net Revenues Available after Debt Service (42)-(25)	76,663,200	80,328,400	80,422,900	96,157,400	104,507,400
44	Applied to MBO Reserve Funds (28,29,30,31)	(12,756,700)	(12,796,200)	(12,872,400)	(12,953,500)	(13,039,600)
45	Applied as Lease Payment to DWSD I&E Acct (32)	(18,694,700)	(19,152,000)	(19,145,100)	(19,139,600)	(19,139,400)
46	Applied to Operating Reserves (37)	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
47	Available for I&E Fund Accounts (43) - (44,45,46)	47,237,800	47,610,300	47,620,100	63,263,300	71,511,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

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Table 6a
Operational Financing Plan - GLWA Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 3.6%		11,718,500	11,718,500	11,718,500	11,718,500
3	FY 2021: 4.0%			13,775,300	13,775,300	13,775,300
4	FY 2022: 4.1%				14,414,900	14,414,900
5	FY 2023: 4.1%					15,114,300
6	Total Projected Revenue from Water Charges	327,564,200	340,514,900	354,290,200	368,705,100	383,819,400
7	Non-Operating Revenue	<u>3,836,600</u>	<u>4,141,600</u>	<u>4,152,600</u>	<u>4,075,400</u>	<u>3,872,300</u>
8	Total Revenue Available	331,400,800	344,656,500	358,442,800	372,780,500	387,691,700
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
10	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
11	Total O&M Expense	121,532,500	123,842,200	126,198,100	128,601,100	131,052,200
12	Debt Service Allocation - Regional System	134,214,600	141,942,500	153,278,800	149,482,900	153,604,300
13	Non-Operating Portion of Pension Reimb.	5,392,800	5,392,800	5,392,800	5,392,800	5,392,800
14	B & C Note Non-Operating Payments	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>
15	Transfer to Pension Obligation Payment Fund	6,268,300	6,268,300	6,268,300	6,268,300	6,268,300
16	Transfer to WRAP Fund	1,673,400	1,723,300	1,792,200	1,863,900	1,938,500
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000
20	Transfer to GLWA Regional I&E Account	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
21	Operating Reserves	(2,026,000)	769,900	785,300	801,000	817,000
22	Total Revenue Requirements	331,400,500	344,656,500	358,442,800	372,780,500	387,691,700
23	Indicated Balance (Deficiency)	300	0	0	0	0
24	Projected Debt Service Coverage Ratio (Regional)	156%	156%	152%	163%	167%
25	Net Revenues (8) - (11)	209,868,300	220,814,300	232,244,700	244,179,400	256,639,500
26	Net Revenues Available after Debt Service (25)-(12)	75,653,700	78,871,800	78,965,900	94,696,500	103,035,200
27	Applied to MBO Reserve Funds (15,16,17,18)	(7,941,700)	(7,991,600)	(8,060,500)	(8,132,200)	(8,206,800)
28	Applied as Lease Payment to DWSD (19)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)
29	Applied to Operating Reserves (21)	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
30	Available for I&E Fund (26) - (27,28,29)	47,238,000	47,610,300	47,620,100	63,263,300	71,511,400

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

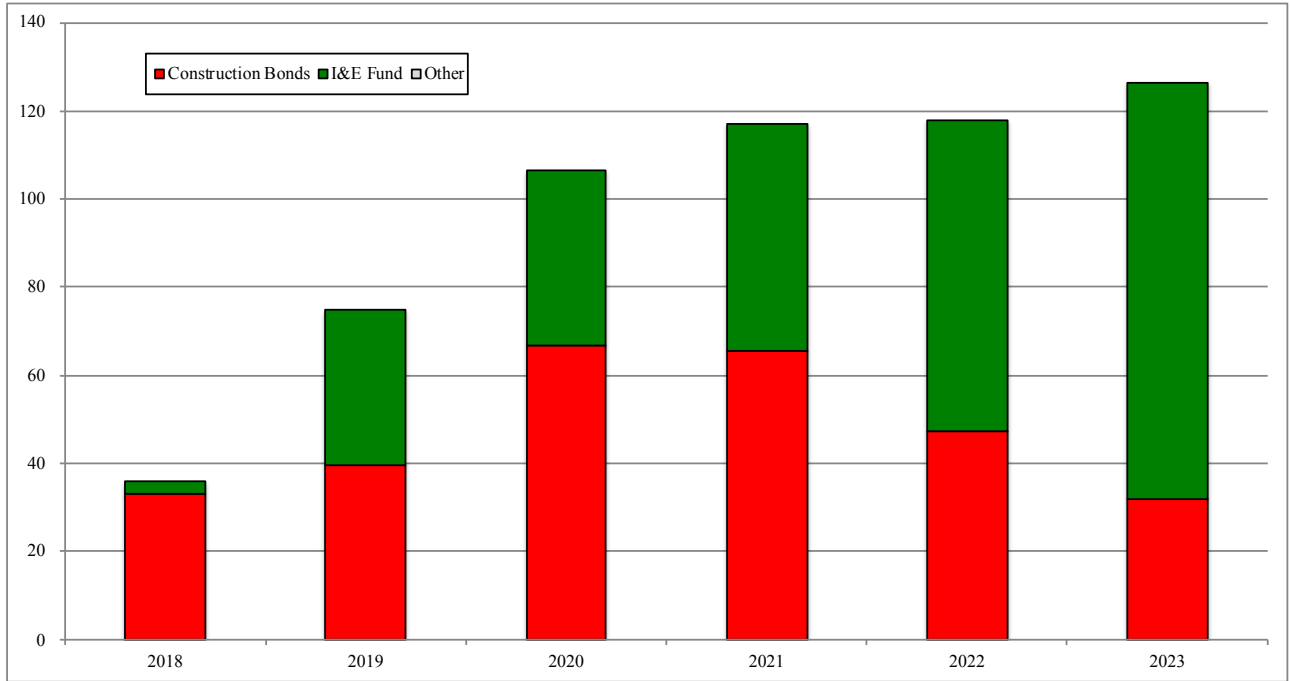
Table 7
Projected Cash and Investment Fund Balances - Regional System

Line No.	Item	<i>Fiscal Year Ending June 30,</i>				
		<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
		\$	\$	\$	\$	\$
	<u>Operating Fund</u>					
1	Beginning Balance	42,803,500	40,777,500	41,547,400	42,332,700	43,133,700
2	Deposit from Operations	(2,026,000)	769,900	785,300	801,000	817,000
3	Ending Balance	40,777,500	41,547,400	42,332,700	43,133,700	43,950,700
	<u>Budget Stabilization Fund</u>					
4	Beginning Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
	<u>ER&R Fund</u>					
7	Beginning Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
	<u>I&E Fund (a)</u>					
10	Beginning Balance	242,939,700	254,872,000	262,510,300	258,860,100	251,480,100
11	Budgeted Capital Outlay	(22,133,400)	(18,763,000)	(18,705,300)	(9,363,300)	(7,400,800)
12	Capital Expenditures	(13,172,000)	(21,209,000)	(32,565,000)	(61,280,000)	(87,007,000)
13	Subtotal prior to Revenue Transfer	207,634,300	214,900,000	211,240,000	188,216,800	157,072,300
14	Deposits from Revenues (b)	47,237,700	47,610,300	47,620,100	63,263,300	71,511,400
15	Ending Balance	254,872,000	262,510,300	258,860,100	251,480,100	228,583,700
	<u>Total Revenue Generated Funds (c)</u>					
16	Beginning Balance	315,243,200	325,149,500	333,557,700	330,692,800	324,113,800
17	Net Sources and Uses	9,906,300	8,408,200	(2,864,900)	(6,579,000)	(22,079,400)
18	Ending Balance	325,149,500	333,557,700	330,692,800	324,113,800	302,034,400
	<u>Other Funds</u>					
19	Bond Reserve (excludes Surety)	20,969,800	20,969,800	20,969,800	20,969,800	20,969,800
20	Bond Redemption (Average)	56,987,300	59,629,700	63,595,400	62,456,600	64,222,600
21	Construction Fund	101,392,700	51,522,700	3,722,700	2,636,700	1,825,700
22	Total Funds	504,499,300	465,679,900	418,980,700	410,176,900	389,052,500
23	Subtotal w/o Construction Funds	403,106,600	414,157,200	415,258,000	407,540,200	387,226,800

(a) Only includes GLWA Regional I&E Account

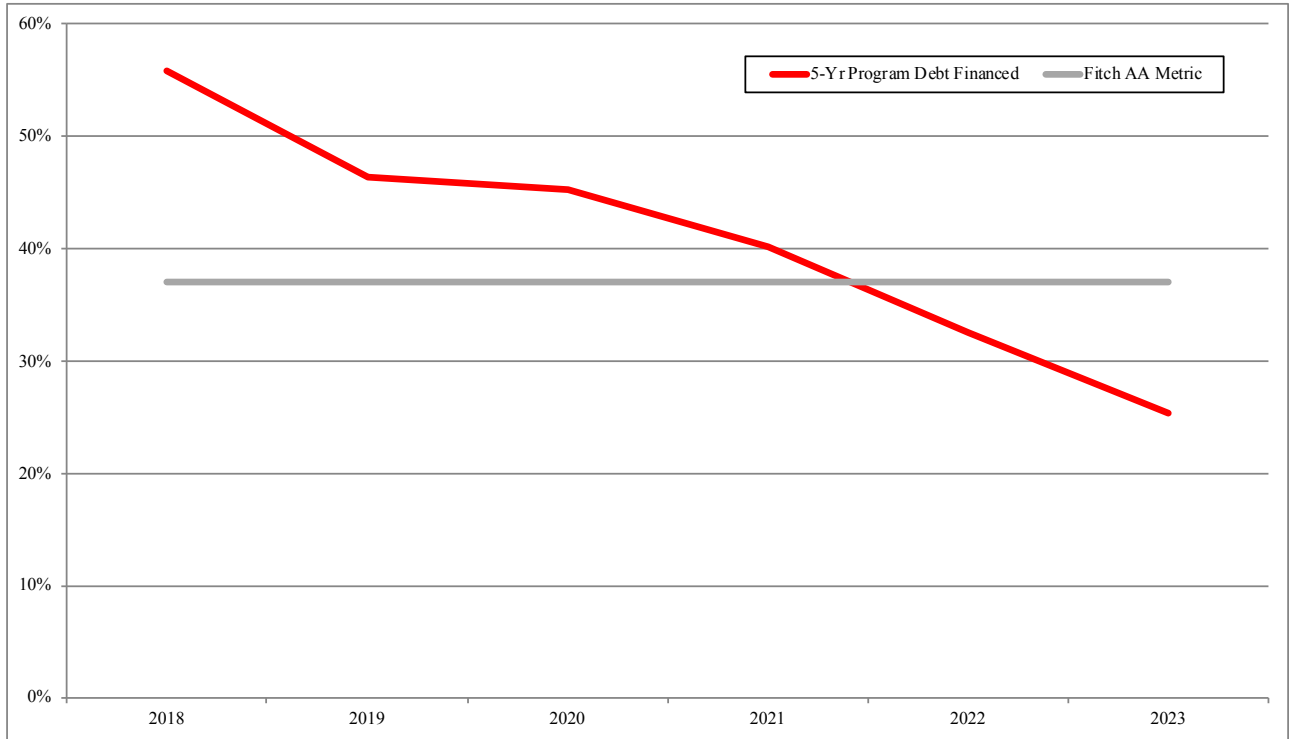
(b) Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

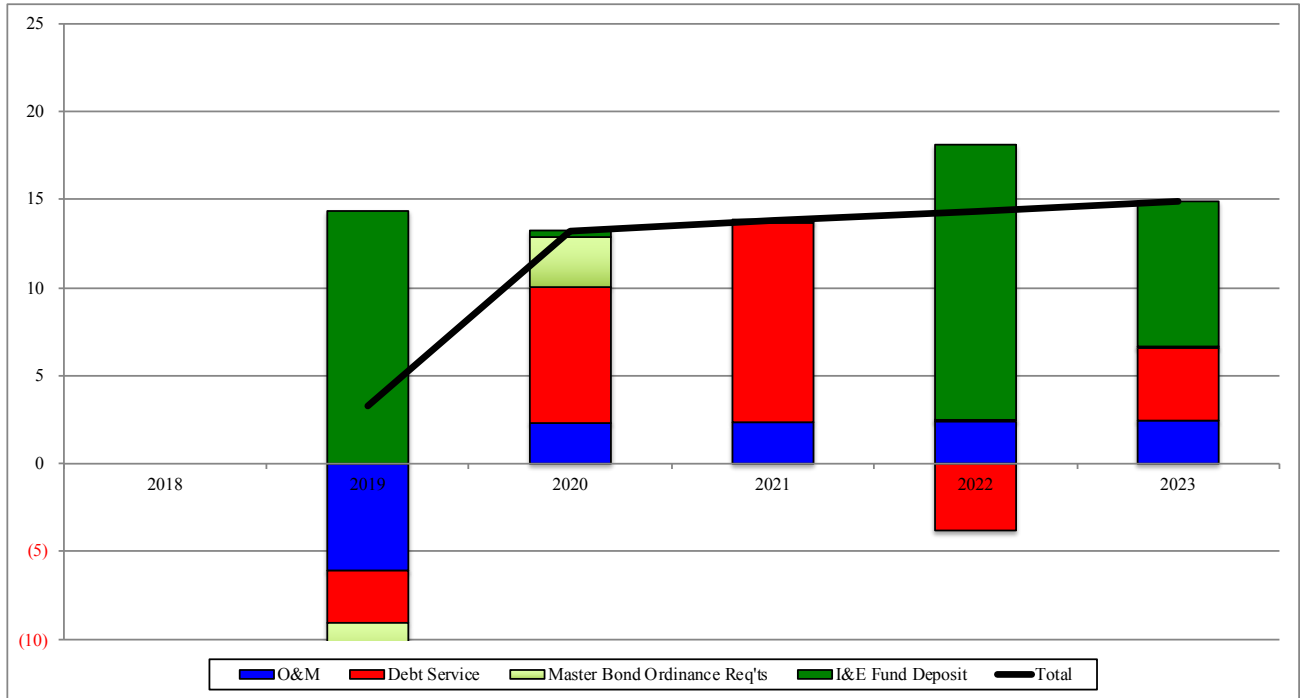


CIP Financing Requirement:	36	75	107	117	118	126
<u>Financing Sources</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Construction Bonds	33	40	67	66	47	32
I&E Fund	3	35	40	51	71	94
Other	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

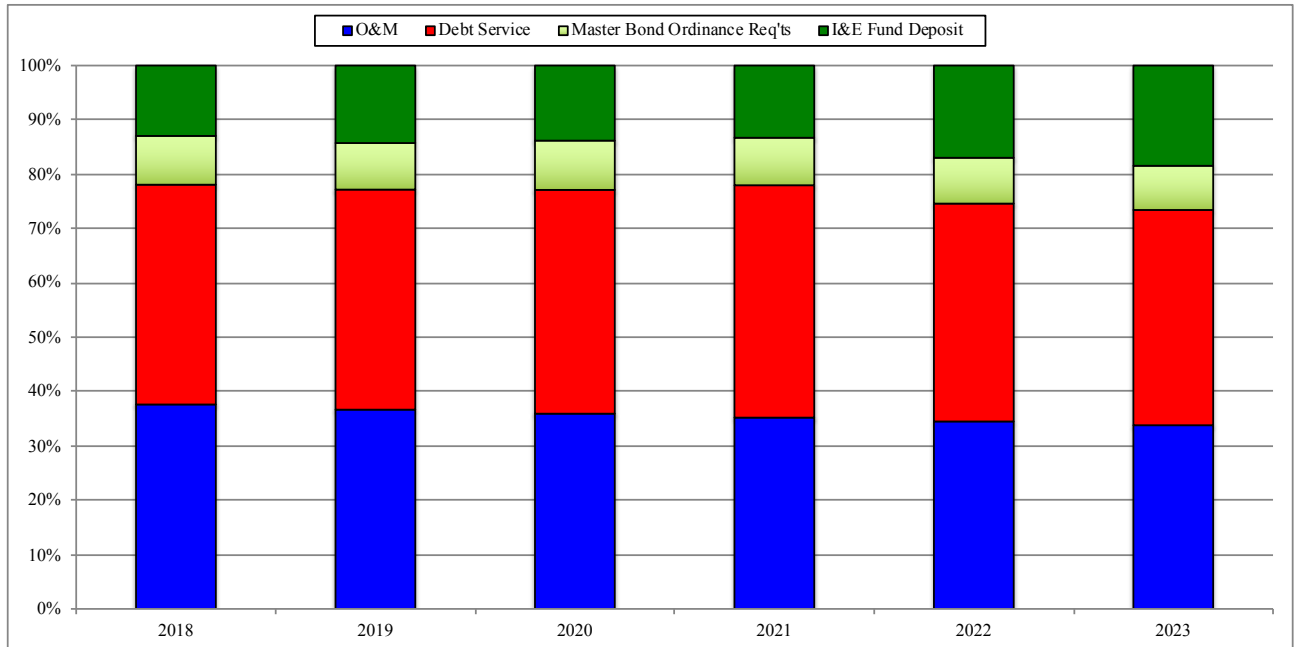


5-Yr Program Debt Finance	56%	46%	45%	40%	32%	25%
Fitch AA Metric	37%	37%	37%	37%	37%	37%

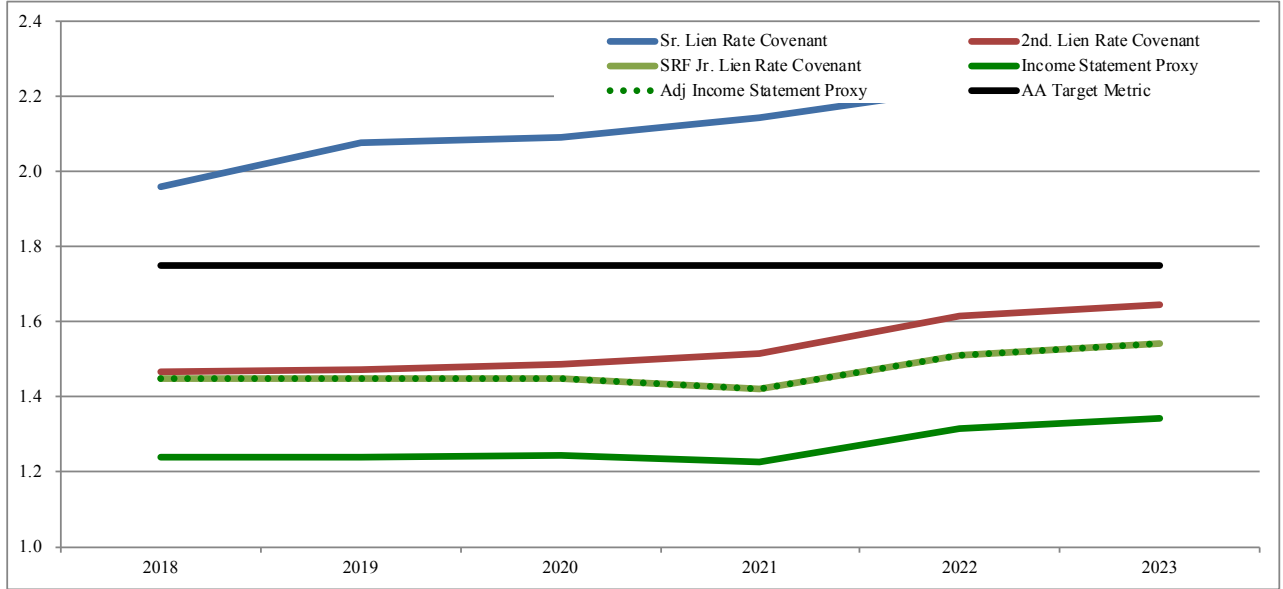


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M		(6.1)	2.3	2.4	2.4	2.5
Debt Service		(3.0)	7.7	11.3	(3.8)	4.1
Master Bond Ordinance Req'ts		(2.0)	2.8	0.1	0.1	0.1
I&E Fund Deposit		14.4	0.4	0.0	15.6	8.2
Total		3.3	13.3	13.8	14.3	14.9

Relative BUDGET

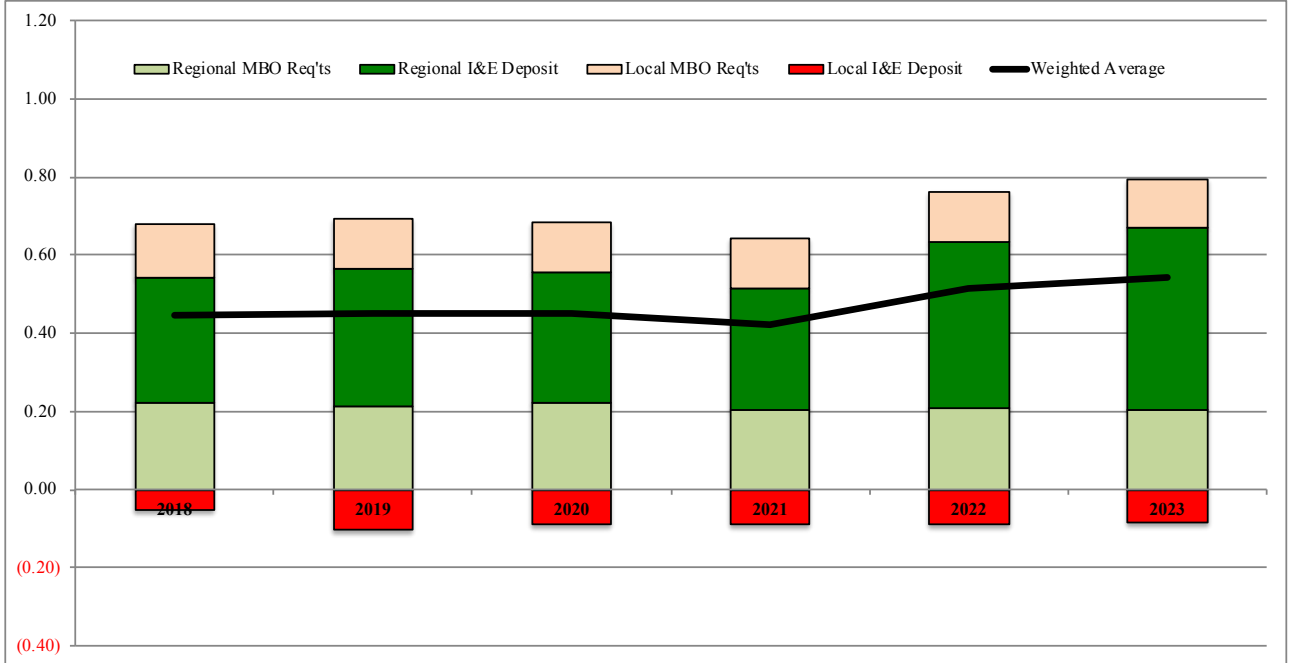


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M	38%	37%	36%	35%	34%	34%
Debt Service	40%	40%	41%	43%	40%	40%
Master Bond Ordinance Req	9%	9%	9%	9%	8%	8%
I&E Fund Deposit	13%	14%	14%	13%	17%	18%

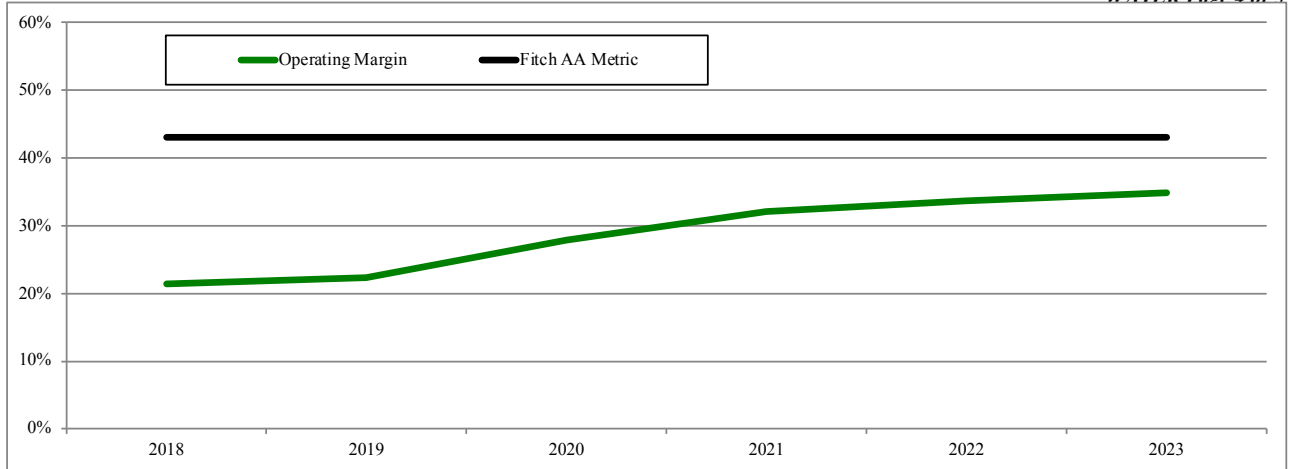


Sr. Lien Rate Covenant	1.96	2.08	2.09	2.14	2.22	2.24
2nd. Lien Rate Covenant	1.47	1.47	1.48	1.52	1.62	1.65
SRF Jr. Lien Rate Covenant	1.45	1.45	1.45	1.42	1.51	1.54
Income Statement Proxy	1.24	1.24	1.25	1.23	1.31	1.34
Adj Income Statement Proxy	1.45	1.45	1.45	1.42	1.51	1.54
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

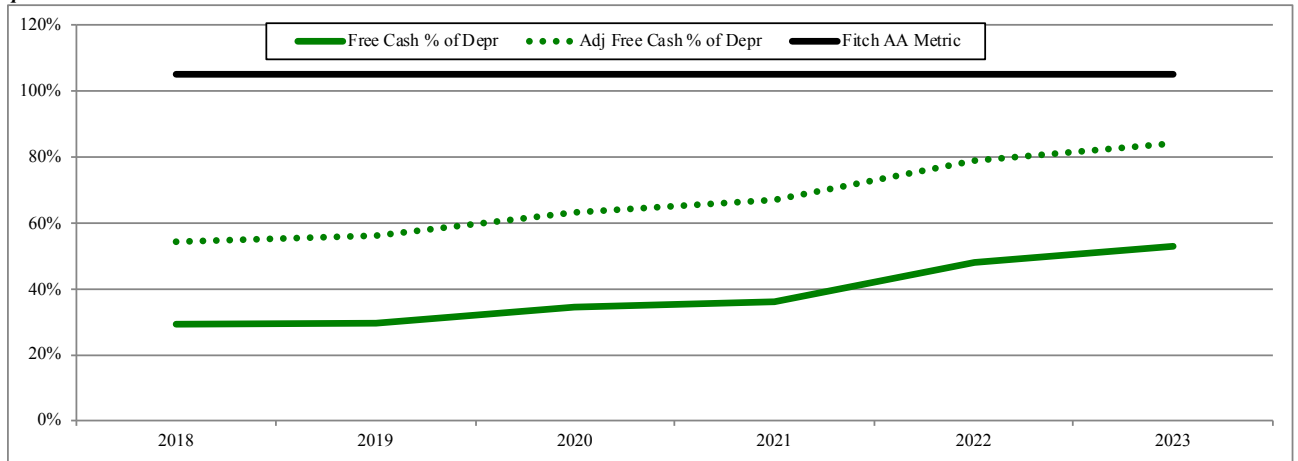


Regional MBO Req'ts	0.22	0.21	0.22	0.20	0.21	0.21
Regional I&E Deposit	0.32	0.35	0.34	0.31	0.42	0.47
Local MBO Req'ts	0.13	0.13	0.13	0.13	0.13	0.12
Local I&E Deposit	(0.05)	(0.10)	(0.09)	(0.09)	(0.09)	(0.09)
Weighted Average	0.45	0.45	0.45	0.42	0.51	0.54
Regional Total	0.54	0.56	0.56	0.52	0.63	0.67
Local Total	0.08	0.03	0.04	0.04	0.04	0.04
Weighted Average	0.45	0.45	0.45	0.42	0.51	0.54



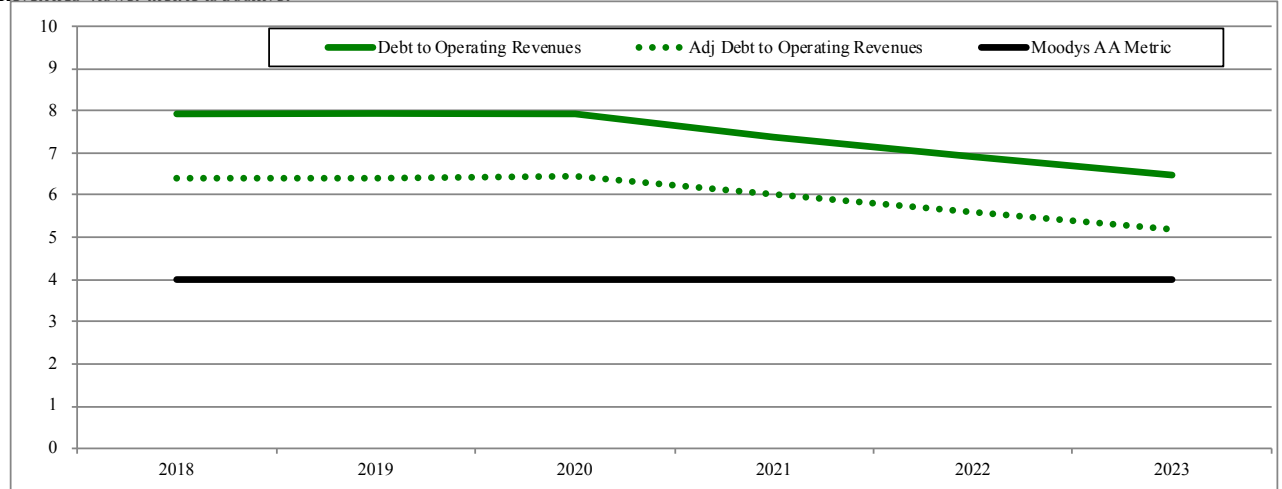
Operating Margin	21%	22%	28%	32%	34%	35%
Fitch AA Metric	43%	43%	43%	43%	43%	43%

Free Cash % of Depr

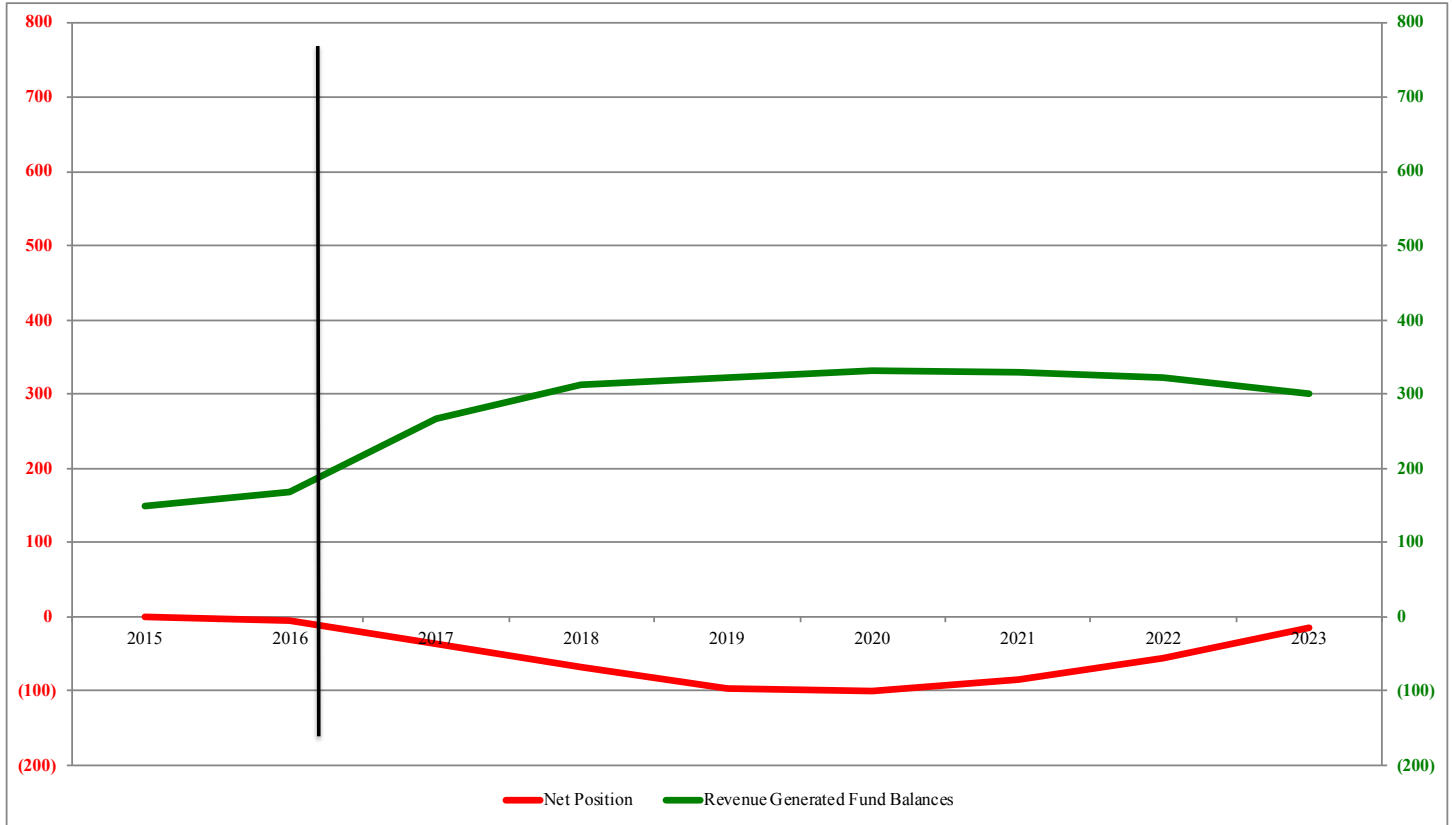


Free Cash % of Depr	29%	30%	34%	36%	48%	53%
Adj Free Cash % of Depr	54%	56%	63%	67%	79%	84%
Fitch AA Metric	105%	105%	105%	105%	105%	105%

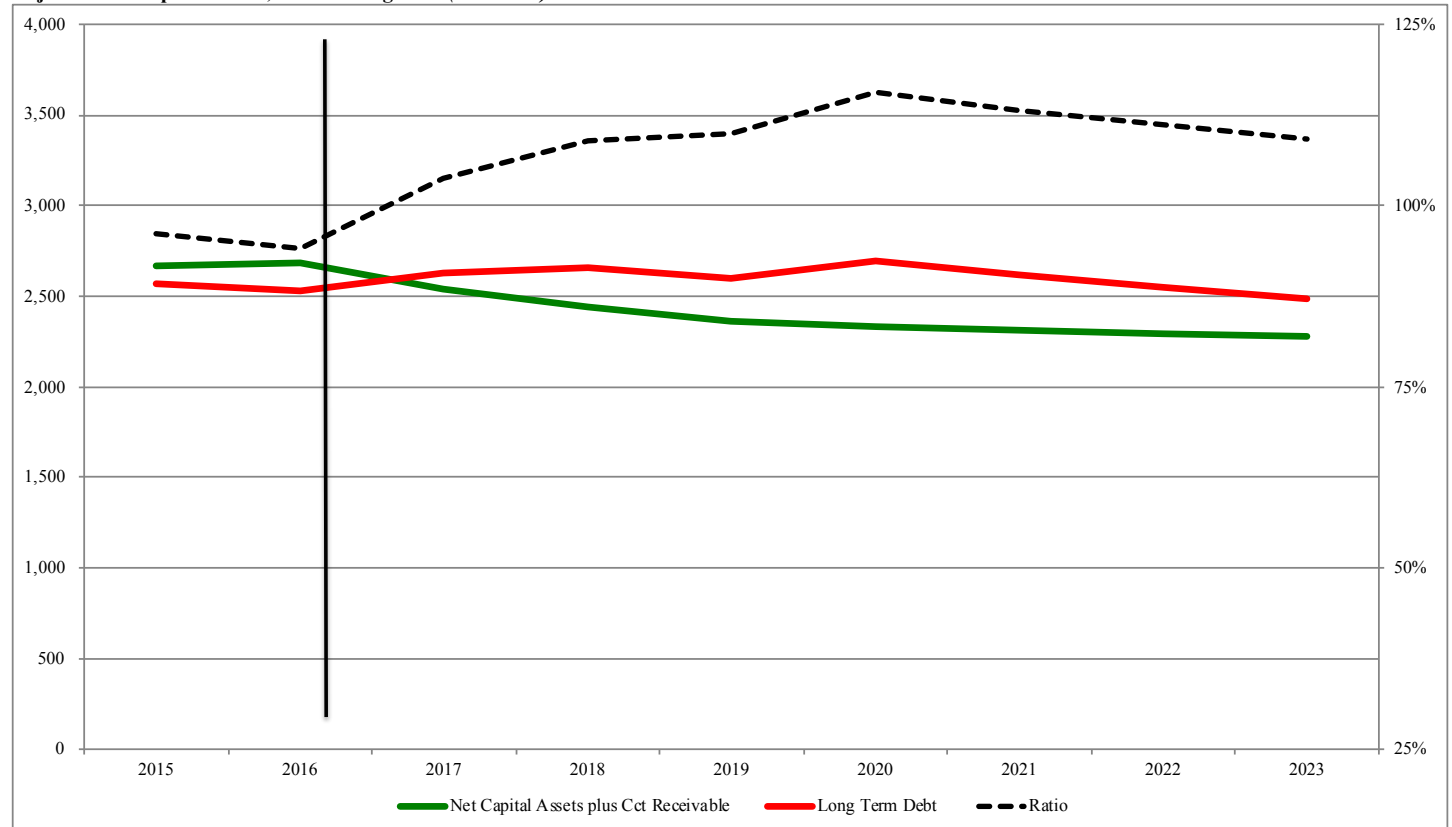
Debt to Operating Revenues (lower metric is positive)



Debt to Operating Revenues	7.9	7.9	7.9	7.4	6.9	6.5
Adj Debt to Operating Reve	6.4	6.4	6.4	6.0	5.6	5.2
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0



Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



Sewer Forecast Exhibits

Scenario 2 - Rev Req't Increases 4%, CIP Funding 80%, O&M Funding 95%

Table 2
Regional Sewer System Capital Improvement Program
Projected Expenditure Schedule - Fiscal Years 2019 through 2023

	<i>Fiscal Year Ended June 30,</i>					<u>Total</u>
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	
	\$	\$	\$	\$	\$	\$
<u>Wastewater Resource Recovery Facility</u>						
Primary Treatment	17,622,400	9,016,200	9,108,300	15,866,900	19,294,200	70,908,000
Secondary Treatment & Disinfection	16,509,600	7,356,600	2,276,400	6,665,800	7,890,900	40,699,300
Residuals Management	10,605,600	14,163,200	6,743,000	4,699,700	5,030,100	41,241,600
Industrial Waste Control	3,200,800	5,604,600	716,700	0	0	9,522,100
CSO RTB & SDC	0	0	0	0	0	0
General Purpose	2,042,400	5,053,800	5,661,500	4,665,900	9,232,300	26,655,900
Subtotal WRRF	49,980,800	41,194,400	24,505,900	31,898,300	41,447,500	189,026,900
<u>Wastewater Collection</u>						
Regional Interceptor System	2,485,600	8,126,900	18,530,500	22,007,200	15,361,600	66,511,800
In System Storage	65,600	275,800	1,433,500	650,400	0	2,425,300
Wastewater Lift Stations	10,628,800	10,405,100	4,734,000	8,131,100	12,639,800	46,538,800
Subtotal Collection	13,180,000	18,807,800	24,698,000	30,788,700	28,001,400	115,475,900
Metering	701,600	1,915,100	5,025,800	2,280,300	0	9,922,800
General Purpose	18,548,000	16,779,300	21,396,000	20,260,800	19,039,900	96,024,000
Total Sewer Direct	82,410,400	78,696,600	75,625,700	85,228,100	88,488,800	410,449,600
Centralized Svcs - Sewer Portion	1,736,000	1,543,400	4,614,300	3,491,900	231,200	11,616,800
GRAND TOTAL	84,146,400	80,240,000	80,240,000	88,720,000	88,720,000	422,066,400

Table 4
Projected Operation and Maintenance Expense (and Selected Non-Operating Expenses)

Line No.	Fiscal Year Ended June 30,					
	2019	2020	2021	2022	2023	
	\$	\$	\$	\$	\$	
<u>GLWA Regional System</u>						
1	Salaries & Wages	30,447,300	31,360,000	32,300,000	33,270,000	34,270,000
2	Overtime	3,763,600	3,760,000	3,760,000	3,760,000	3,760,000
3	Employee Benefits	11,383,800	11,610,000	11,840,000	12,080,000	12,320,000
4	Subtotal Personnel	45,594,700	46,730,000	47,900,000	49,110,000	50,350,000
5	Personal (Transitional) Service Contracts	7,853,100	7,850,000	7,850,000	7,850,000	7,850,000
6	TOTAL Personnel Costs	53,447,800	54,580,000	55,750,000	56,960,000	58,200,000
7	Contractual/Purchased Services	66,954,200	68,960,000	71,030,000	73,160,000	75,350,000
8	Utilities	27,775,600	27,790,000	27,800,000	27,810,000	27,820,000
9	Chemicals	10,894,500	11,440,000	12,010,000	12,610,000	13,240,000
10	Supplies & Other	23,290,400	23,286,000	23,269,100	23,196,300	23,079,000
11	Subtotal	182,362,500	186,056,000	189,859,100	193,736,300	197,689,000
12	Unallocated Reserve	6,696,300	6,700,000	6,700,000	6,700,000	6,700,000
13	Total Gross Regional O&M Expense	189,058,800	192,756,000	196,559,100	200,436,300	204,389,000
14	less: Shared Services Reimbursement	(7,533,400)	(7,600,000)	(7,700,000)	(7,800,000)	(7,900,000)
15	Net GLWA Regional O&M Expense	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
16	DWSD Local System O&M	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
17	Combined Total "Normal" O&M	249,646,900	254,733,200	259,772,400	264,913,900	270,156,500
<u>Operating Pension Obligation (a)</u>						
18	GLWA Regional	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
19	DWSD Local	2,856,000	2,856,000	2,856,000	2,856,000	2,856,000
20	Total	13,680,000	13,680,000	13,680,000	13,680,000	13,680,000
21	GRAND TOTAL O&M	263,326,900	268,413,200	273,452,400	278,593,900	283,836,500
<u>Non-Operating Expense (b)</u>						
22	Non-Operating Portion of Pension Obligation	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
23	B & C Note Non-Operating Payments	2,489,500	2,489,500	2,489,400	2,489,400	2,489,500
24	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500

(a) Transferred to Pension Obligation sub-account of the Operation and Maintenance Fund, and treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

(b) **Not** treated as Operation and Maintenance Expense for purposes of Net Revenue determination.

Table 5a
GLWA Regional System Capital Improvement Program Financing

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
2	Major Capital Improvement Program (a)	<u>84,146,400</u>	<u>80,240,000</u>	<u>80,240,000</u>	<u>88,720,000</u>	<u>88,720,000</u>	<u>422,066,400</u>
3	Total Financing Requirements	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	96,762,200	106,075,600	91,069,600	78,958,300	89,317,400	96,762,200 (i)
Construction Bond Funds							
5	Beginning Balance (b)	99,814,100	66,795,700	57,969,900	50,353,700	50,211,900	99,814,100 (i)
Bond Proceeds							
6	Sewer System Revenue Bonds (c)	97,000,000	0	0	45,000,000	5,000,000	147,000,000
7	Original Issue Premium	TBD	TBD	TBD	TBD	TBD	0
8	Available Debt Service Payment Funds	TBD	TBD	TBD	TBD	TBD	0
9	Available in Debt Service Reserve Fund	TBD	TBD	TBD	TBD	TBD	0
10	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
11	Less: Transfer to DWSD Const. Fund (e)	(91,000,000)	0	0	0	0	(91,000,000)
12	Less: Bond Reserve Requirements (f)	TBD	TBD	TBD	TBD	TBD	0
13	Less: Issuance Expenses	<u>(6,000,000)</u>	<u>0</u>	<u>0</u>	<u>(2,700,000)</u>	<u>(300,000)</u>	<u>(9,000,000)</u>
14	Net Bond Proceeds Available	0	0	0	42,300,000	4,700,000	47,000,000
15	State Clean Water Revolving Fund Loans	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
16	Less: Transfer to DWSD Constr. Fund	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
17	Net State CWRP Financing for Authority	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
18	Investment Income	<u>619,000</u>	<u>471,200</u>	<u>471,800</u>	<u>239,200</u>	<u>469,900</u>	<u>2,271,100</u>
19	Subtotal - Construction Bond Funds	<u>142,630,100</u>	<u>97,327,900</u>	<u>71,934,700</u>	<u>103,079,900</u>	<u>56,984,800</u>	<u>246,626,200</u>
20	Total Financing Sources Available	239,392,300	203,403,500	163,004,300	182,038,200	146,302,200	343,388,400
Application of Financing Sources							
21	I&E Funds - Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
22	I&E Funds - Specifically Designated I&E Prc	8,312,000	10,882,000	13,659,000	10,852,000	12,280,000	55,985,000
23	I&E Funding of Debt Eligible Projects	0	30,000,000	45,000,000	25,000,000	70,000,000	170,000,000
24	Project Expenditures from Construction Fund	<u>75,834,400</u>	<u>39,358,000</u>	<u>21,581,000</u>	<u>52,868,000</u>	<u>6,440,000</u>	<u>196,081,400</u>
25	Total Financing Sources Applied	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
26	Remaining Beginning Balance (g)	82,493,200	60,382,700	27,978,800	28,059,300	2,766,200	
27	Transfers from Sewer Receiving Fund	<u>23,582,400</u>	<u>30,686,900</u>	<u>50,979,500</u>	<u>61,258,100</u>	<u>84,366,000</u>	250,872,900
28	Total Improvement & Extension Fund	106,075,600	91,069,600	78,958,300	89,317,400	87,132,200	87,132,200 (j)
29	Construction Bond Funds (h)	<u>66,795,700</u>	<u>57,969,900</u>	<u>50,353,700</u>	<u>50,211,900</u>	<u>50,544,800</u>	<u>50,544,800 (j)</u>
30	Financing Sources Available for Future Req	172,871,300	149,039,500	129,312,000	139,529,300	137,677,000	137,677,000 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) The Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2016 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 21 through 23.

(h) Line 19 minus Line 24.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 5b
DWSD Local System Capital Improvement Program Financing

Line No.	Item	2019	2020	2021	2022	2023	Total
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	DWSD Local System CIP (a)	37,143,000	37,143,000	37,143,000	37,143,000	37,143,000	185,715,000
Financing Sources							
<u>DWSD Local System Improvement and Extension Account</u>							
2	Beginning Balance (b)	15,000,000	20,903,600	21,719,000	21,719,000	21,719,000	15,000,000
3	Deposits from Lease Payment (c)	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000	111,351,100
4	Deposits from DWSD Local System Revenues	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
5	Subtotal - Improvement & Extension Fund	39,475,100	42,622,600	43,438,000	43,438,000	43,438,000	126,351,100
<u>Construction Bond Funds</u>							
6	Beginning Balance (b)	0	72,428,500	56,832,200	41,899,400	26,817,300	0
7	Net Bond Proceeds (c)	91,000,000	0	0	0	0	91,000,000
8	State Clean Water Revolving Fund Loans	0	0	0	0	0	0
9	Investment Income	<u>0</u>	<u>643,100</u>	<u>491,200</u>	<u>341,900</u>	<u>191,100</u>	<u>1,667,300</u>
10	Subtotal - Construction Bond Funds	<u>91,000,000</u>	<u>73,071,600</u>	<u>57,323,400</u>	<u>42,241,300</u>	<u>27,008,400</u>	<u>92,667,300</u>
11	Total Financing Sources Available	130,475,100	115,694,200	100,761,400	85,679,300	70,446,400	219,018,400
Application of Financing Sources							
12	Project Expenditures from I&E Funds	18,571,500	20,903,600	21,719,000	21,719,000	21,719,000	104,632,100
13	Project Expenditures from Construction Funds	<u>18,571,500</u>	<u>16,239,400</u>	<u>15,424,000</u>	<u>15,424,000</u>	<u>15,424,000</u>	<u>81,082,900</u>
14	Total Financing Sources Applied	37,143,000	37,143,000	37,143,000	37,143,000	37,143,000	185,715,000
Financing Sources Available for Future Requirements							
15	Improvement & Extension Fund (e)	20,903,600	21,719,000	21,719,000	21,719,000	21,719,000	21,719,000
16	Construction Bond Funds (f)	<u>72,428,500</u>	<u>56,832,200</u>	<u>41,899,400</u>	<u>26,817,300</u>	<u>11,584,400</u>	<u>11,584,400</u>
17	Total Financing Sources Available for Future Req'ts	93,332,100	78,551,200	63,618,400	48,536,300	33,303,400	33,303,400

(a) Preliminary pending additional review.

(b) Estimated allocated balance available June 30, 2018.

(applies only to FY 2019).

(c) Total Lease Payment	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	137,500,000
less: Lease Payment applied to Debt Service	<u>(3,024,900)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(26,148,900)</u>
Net Lease Payment transferred to Local I&E Account	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000	21,719,000	111,351,100

(d) Reserved

(e) Line 5 minus Line 12.

(f) Line 10 minus Line 13.

Table 6
Operational Financing Plan - Consolidated GLWA Regional System / DWSD Local System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	Revenue (a)					
1	Operating Revenue Under Existing Charges	564,466,500	564,466,500	564,466,500	564,466,500	564,466,500
	<u>Projected Revenue from Adjustments</u>					
2	FY 2020: 4.0%		22,756,800	22,756,800	22,756,800	22,756,800
3	FY 2021: 3.6%			21,079,500	21,079,500	21,079,500
4	FY 2022: 3.6%				21,648,500	21,648,500
5	FY 2023: 3.6%					22,593,400
6	Total Projected Revenue from Sewer Charges	564,466,500	587,223,300	608,302,800	629,951,300	652,544,700
7	Miscellaneous Operating Revenue (b)	<u>2,371,500</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
8	Total Operating Revenue	566,838,000	587,723,300	608,802,800	630,451,300	653,044,700
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,556,900</u>	<u>3,432,900</u>	<u>3,569,600</u>	<u>3,540,800</u>
10	Total Revenue Available	571,408,900	591,280,200	612,235,700	634,020,900	656,585,500
	Revenue Requirements					
11	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
12	Transfer to DWSD Local O&M Account	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
13	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
14	Transfer to DWSD Pension O&M Account	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>
15	Total O&M Expense	263,326,900	268,413,200	273,452,400	278,593,900	283,836,500
	<u>Debt Service - Bond Interest and Redemption Deposits</u>					
	Senior Lien Bonds					
16	Outstanding Bonds (c)	147,013,100	146,598,900	132,509,100	144,220,000	151,243,100
17	The 2018 GLWA Bonds	0	0	0	0	0
18	Future Bonds (lien unspecified)	<u>1,593,900</u>	<u>5,781,000</u>	<u>5,781,000</u>	<u>6,737,300</u>	<u>8,569,200</u>
19	Total Senior Debt Service	148,607,000	152,379,900	138,290,100	150,957,300	159,812,300
	Second Lien Bonds					
20	Outstanding Bonds	43,922,600	45,878,900	54,642,100	48,104,300	38,785,500
21	The 2018 GLWA Bonds	0	0	0	0	0
22	Total Second Lien Bonds	<u>43,922,600</u>	<u>45,878,900</u>	<u>54,642,100</u>	<u>48,104,300</u>	<u>38,785,500</u>
23	Subtotal Debt Service	192,529,600	198,258,800	192,932,200	199,061,600	198,597,800
24	SRF Junior Lien Bonds	<u>49,936,400</u>	<u>53,313,400</u>	<u>54,080,700</u>	<u>54,109,900</u>	<u>48,636,600</u>
25	Total Debt Service	242,466,000	251,572,200	247,012,900	253,171,500	247,234,400
26	Non-Operating Portion of Pension Reimb.	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
27	B & C Note Non-Operating Payments	<u>2,489,500</u>	<u>2,489,500</u>	<u>2,489,400</u>	<u>2,489,400</u>	<u>2,489,500</u>
28	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500
29	Transfer to WRAP Fund	<u>2,871,000</u>	<u>2,991,400</u>	<u>3,150,300</u>	<u>3,332,100</u>	<u>3,458,100</u>
30	Transfer to Budget Stabilization Fund	0	0	0	0	0
31	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
32	Lease Payment - Transfer to Detroit Local I&E	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000
	<u>Transfers to I&E Fund to Finance Capital Improvements</u>					
33	Transfer to GLWA Regional I&E Account	23,582,400	30,686,900	50,979,500	61,258,100	84,366,000
34	Transfer to DWSD Local I&E Account	0	0	0	0	0
35	Total Transfers to I&E Fund	23,582,400	30,686,900	50,979,500	61,258,100	84,366,000
36	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
37	Total Revenue Requirements	571,408,900	591,280,400	612,235,900	634,021,100	656,585,700
38	Indicated Balance (Deficiency)	0	(200)	(200)	(200)	(200)
	Debt Service Coverage Projections					
39	Senior Lien for Rate Covenant Purposes	206%	212%	245%	235%	233%
40	Second Lien for Rate Covenant Purposes	159%	163%	176%	179%	188%
41	SRF Junior Lien for Rate Covenant Purposes	126%	128%	137%	140%	151%
42	<i>Net Revenues (10) - (15)</i>	<i>308,082,000</i>	<i>322,867,000</i>	<i>338,783,300</i>	<i>355,427,000</i>	<i>372,749,000</i>
43	<i>Net Revenues Available after Debt Service (42)-(25)</i>	<i>65,616,000</i>	<i>71,294,800</i>	<i>91,770,400</i>	<i>102,255,500</i>	<i>125,514,600</i>
44	<i>Applied to MBO Reserve Funds (28,29,30,31)</i>	<i>(17,558,500)</i>	<i>(17,678,900)</i>	<i>(17,837,700)</i>	<i>(18,019,500)</i>	<i>(18,145,600)</i>
45	<i>Applied as Lease Payment to DWSD I&E Acct (32)</i>	<i>(24,475,100)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>
46	<i>Applied to Operating Reserves (37)</i>	<i>0</i>	<i>(1,210,200)</i>	<i>(1,234,400)</i>	<i>(1,259,100)</i>	<i>(1,284,200)</i>
47	<i>Available for I&E Fund Accounts (43) - (44,45,46)</i>	<i>23,582,400</i>	<i>30,686,700</i>	<i>50,979,300</i>	<i>61,257,900</i>	<i>84,365,800</i>

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Includes Wholesale Bad Debt True Up Revenue for FY 2019.

(c) Includes remaining Senior Lien SRF Bonds.

Table 6a
Operational Financing Plan - GLWA Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
Projected Revenue from Adjustments						
2	FY 2020: 4.3%		19,820,300	19,820,300	19,820,300	19,820,300
3	FY 2021: 4.1%			19,682,400	19,682,400	19,682,400
4	FY 2022: 4.0%				20,204,100	20,204,100
5	FY 2023: 4.0%					21,183,200
6	Total Projected Revenue from Sewer Charges	465,584,900	485,405,200	505,087,600	525,291,700	546,474,900
7	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
8	Total Operating Revenue	467,456,400	485,405,200	505,087,600	525,291,700	546,474,900
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,556,900</u>	<u>3,432,900</u>	<u>3,569,600</u>	<u>3,540,800</u>
10	Total Revenue Available	472,027,300	488,962,100	508,520,500	528,861,300	550,015,700
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
12	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
13	Total O&M Expense	192,349,400	195,980,000	199,683,100	203,460,300	207,313,000
14	Debt Service Allocation - Regional System	214,600,700	219,519,600	214,960,400	221,119,000	215,182,000
15	Non-Operating Portion of Pension Reimb.	9,651,400	9,651,400	9,651,400	9,651,400	9,651,400
16	B & C Note Non-Operating Payments	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>
17	Transfer to Pension Obligation Payment Fund	11,620,700	11,620,700	11,620,700	11,620,700	11,620,700
18	Transfer to WRAP Fund	2,374,100	2,444,800	2,542,600	2,644,300	2,750,100
19	Transfer to Budget Stabilization Fund	0	0	0	0	0
20	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
21	Lease Payment to DWSD Local System	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
22	Transfer to GLWA Regional I&E Account	23,582,400	30,686,900	50,979,500	61,258,100	84,366,000
23	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
24	Total Revenue Requirements	472,027,300	488,962,200	508,520,700	528,861,500	550,016,000
25	Indicated Balance (Deficiency)	0	(100)	(200)	(200)	(300)
26	Projected Debt Service Coverage Ratio (Regional)	130%	133%	144%	147%	159%
27	<i>Net Revenues (10) - (13)</i>	279,677,900	292,982,100	308,837,400	325,401,000	342,702,700
28	<i>Net Revenues Available after Debt Service (27)-(14)</i>	65,077,200	73,462,500	93,877,000	104,282,000	127,520,700
29	<i>Applied to MBO Reserve Funds (17,18,19,20)</i>	(13,994,800)	(14,065,500)	(14,163,300)	(14,265,000)	(14,370,800)
30	<i>Applied as Lease Payment to DWSD (21)</i>	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)
31	<i>Applied to Operating Reserves (23)</i>	0	(1,210,200)	(1,234,400)	(1,259,100)	(1,284,200)
32	<i>Available for I&E Fund (28) - (29,30,31)</i>	23,582,400	30,686,800	50,979,300	61,257,900	84,365,700

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

Table 7
Projected Cash and Investment Fund Balances - Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	67,301,100	67,301,100	68,511,300	69,745,700	71,004,800
2	Deposit from Operations	0	1,210,200	1,234,400	1,259,100	1,284,200
3	Ending Balance	67,301,100	68,511,300	69,745,700	71,004,800	72,289,000
<u>Budget Stabilization Fund</u>						
4	Beginning Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
<u>ER&R Fund</u>						
7	Beginning Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
<u>I&E Fund (a)</u>						
10	Beginning Balance	96,762,200	104,204,300	89,198,300	77,087,000	87,446,100
11	Budgeted Capital Outlay	(5,957,000)	(4,810,900)	(4,431,800)	(15,047,000)	(4,271,200)
12	Capital Expenditures	(8,312,000)	(40,882,000)	(58,659,000)	(35,852,000)	(82,280,000)
13	Subtotal prior to Revenue Transfer	82,493,200	58,511,400	26,107,500	26,188,000	894,900
14	Deposits from Revenues (b)	21,711,100	30,686,900	50,979,500	61,258,100	84,366,000
15	Ending Balance	104,204,300	89,198,300	77,087,000	87,446,100	85,260,900
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	213,563,300	221,005,400	207,209,600	196,332,700	207,950,900
17	Net Sources and Uses	7,442,100	(13,795,800)	(10,876,900)	11,618,200	(901,000)
18	Ending Balance	221,005,400	207,209,600	196,332,700	207,950,900	207,049,900
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	64,621,500	64,621,500	64,621,500	64,621,500	64,621,500
20	Bond Redemption (Average)	80,822,000	83,857,400	82,337,600	84,390,500	82,411,500
21	Construction Fund	66,795,700	57,969,900	50,353,700	50,211,900	50,544,800
22	Total Funds	433,244,600	413,658,400	393,645,500	407,174,800	404,627,700
23	Subtotal w/o Construction Funds	366,448,900	355,688,500	343,291,800	356,962,900	354,082,900

(a) Only includes GLWA Regional I&E Account

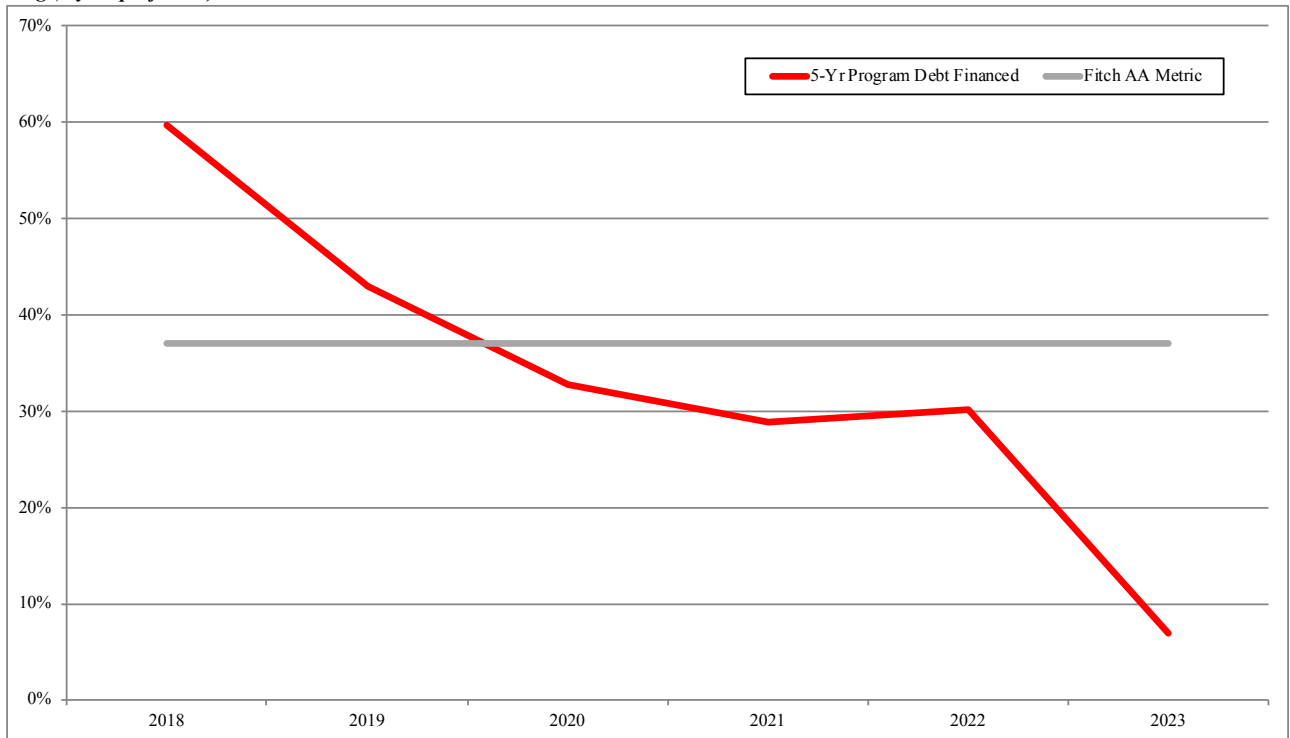
(b) Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

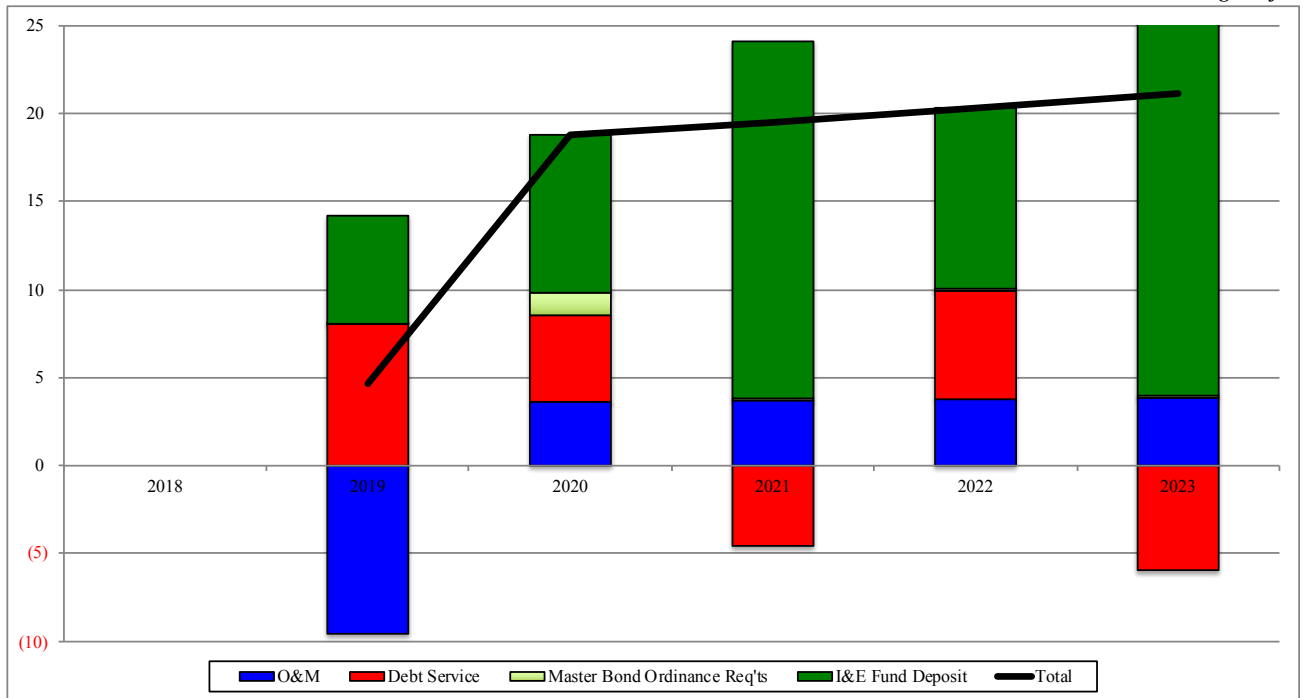


CIP Financing Requirement:	75	90	85	85	104	93
<u>Financing Sources</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Construction Bonds	72	76	39	22	53	6
I&E Fund	3	14	46	63	51	87
Other	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

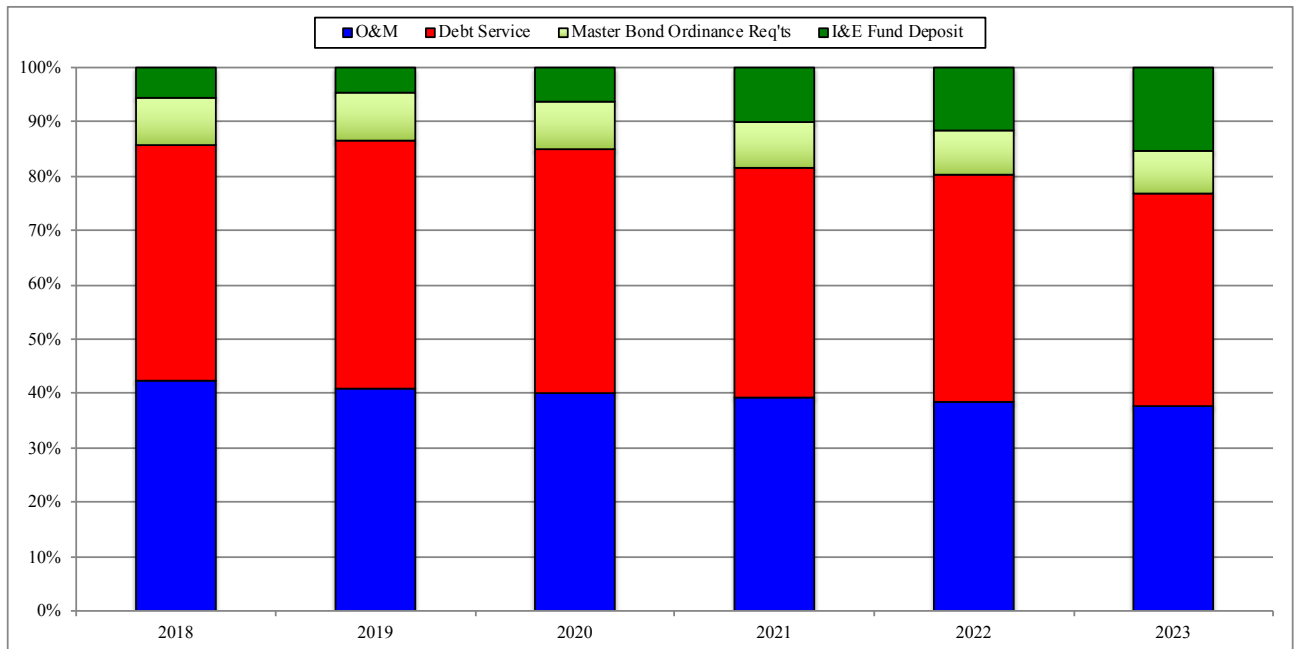


5-Yr Program Debt Finance	60%	43%	33%	29%	30%	7%
<i>Fitch AA Metric</i>	<i>37%</i>	<i>37%</i>	<i>37%</i>	<i>37%</i>	<i>37%</i>	<i>37%</i>

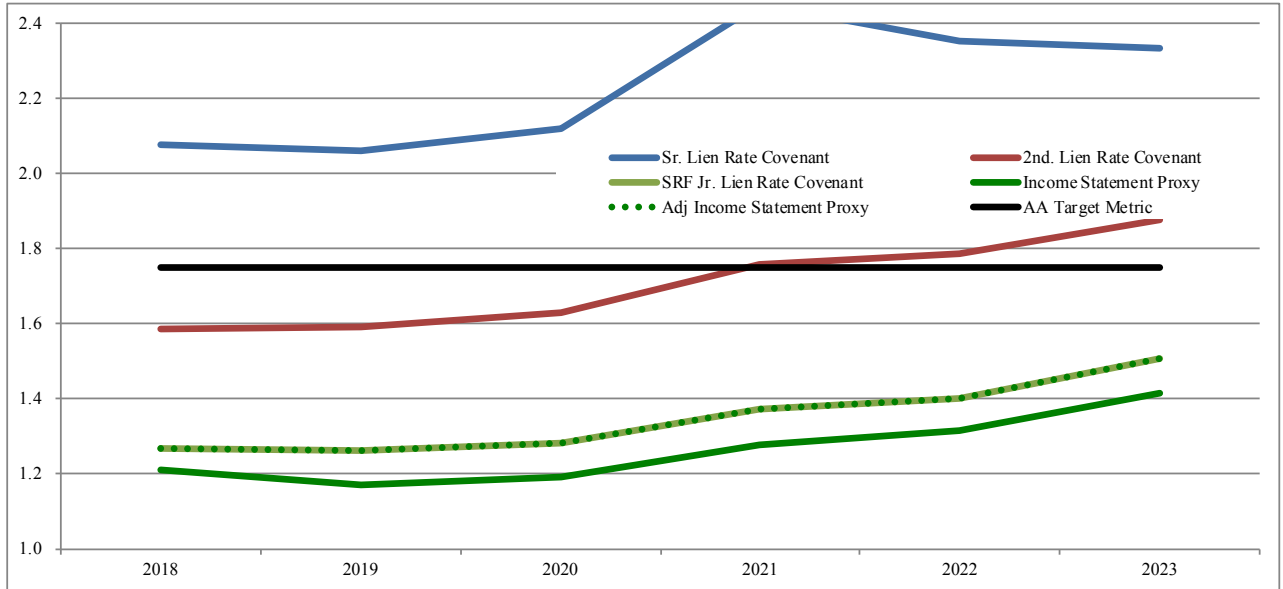


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M		(9.6)	3.6	3.7	3.8	3.9
Debt Service		8.0	4.9	(4.6)	6.2	(5.9)
Master Bond Ordinance Req'ts		0.0	1.3	0.1	0.1	0.1
I&E Fund Deposit		6.1	9.0	20.3	10.3	23.1
Total		4.7	18.8	19.6	20.3	21.2

Relative BUDGET

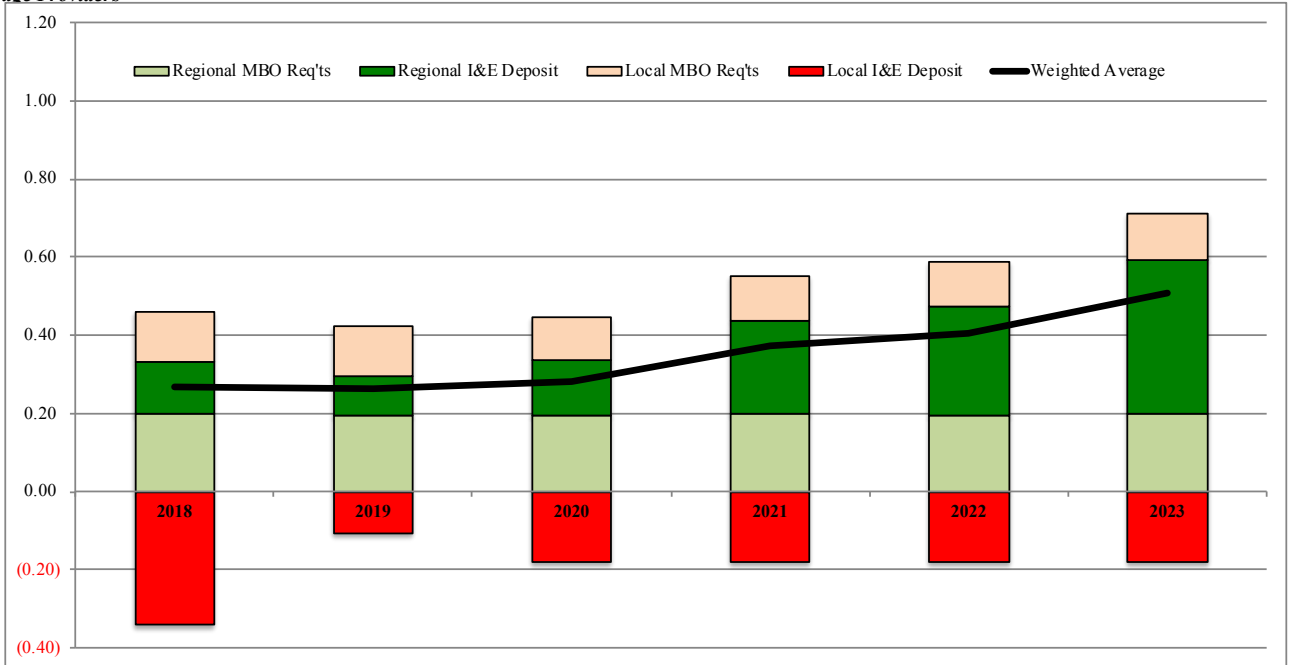


O&M	42%	41%	40%	39%	38%	38%
Debt Service	43%	46%	45%	42%	42%	39%
Master Bond Ordinance Req	9%	9%	9%	8%	8%	8%
I&E Fund Deposit	6%	5%	6%	10%	12%	15%

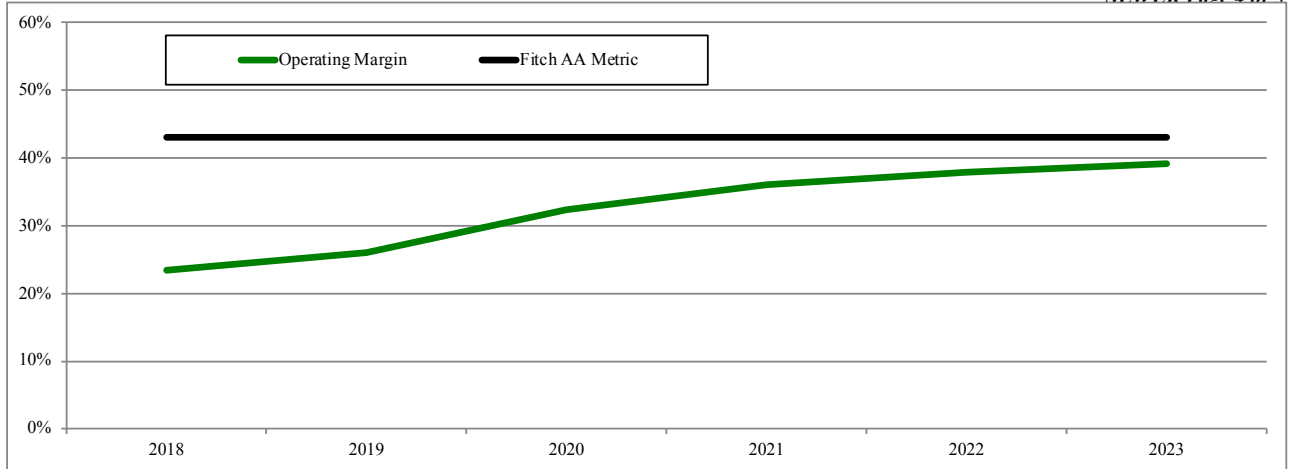


Sr. Lien Rate Covenant	2.08	2.06	2.12	2.45	2.35	2.33
2nd. Lien Rate Covenant	1.59	1.59	1.63	1.76	1.79	1.88
SRF Jr. Lien Rate Covenant	1.27	1.26	1.28	1.37	1.40	1.51
Income Statement Proxy	1.21	1.17	1.19	1.28	1.31	1.42
Adj Income Statement Proxy	1.27	1.26	1.28	1.37	1.40	1.51
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

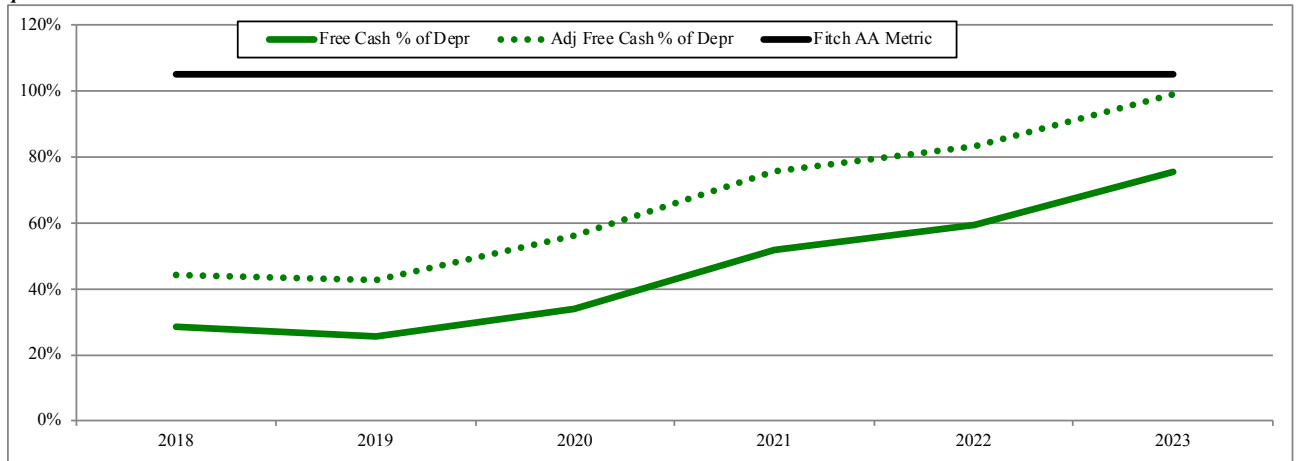


Regional MBO Req'ts	0.20	0.19	0.19	0.20	0.19	0.20
Regional I&E Deposit	0.13	0.10	0.14	0.24	0.28	0.39
Local MBO Req'ts	0.13	0.13	0.11	0.11	0.12	0.12
Local I&E Deposit	(0.34)	(0.11)	(0.18)	(0.18)	(0.18)	(0.18)
Weighted Average	0.27	0.26	0.28	0.37	0.40	0.51
Regional Total	0.33	0.29	0.33	0.44	0.47	0.59
Local Total	(0.21)	0.02	(0.07)	(0.07)	(0.06)	(0.06)
Weighted Average	0.27	0.26	0.28	0.37	0.40	0.51



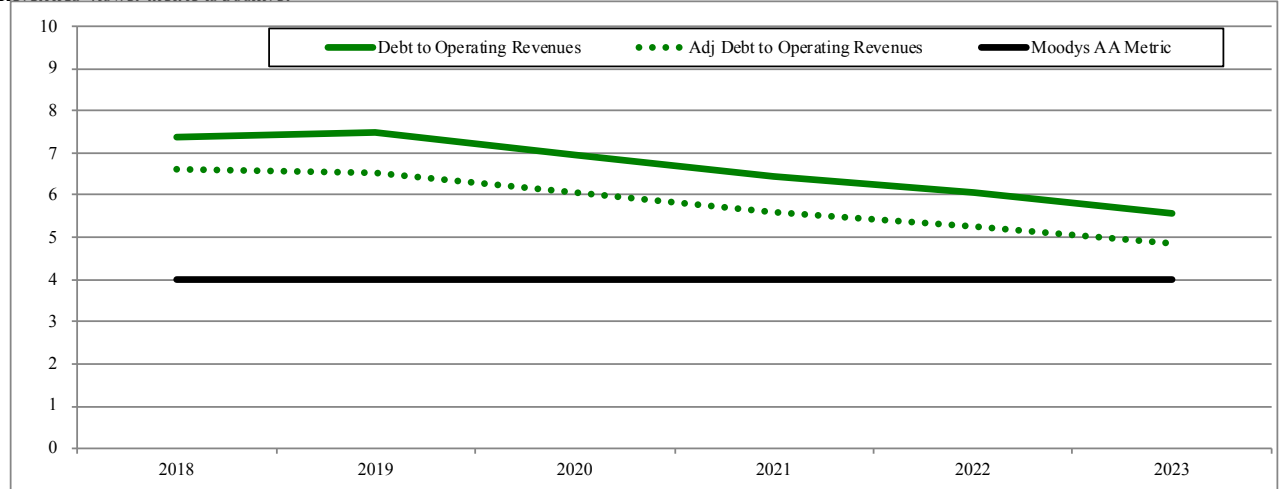
Operating Margin	23%	26%	32%	36%	38%	39%
Fitch AA Metric	43%	43%	43%	43%	43%	43%

Free Cash % of Depr

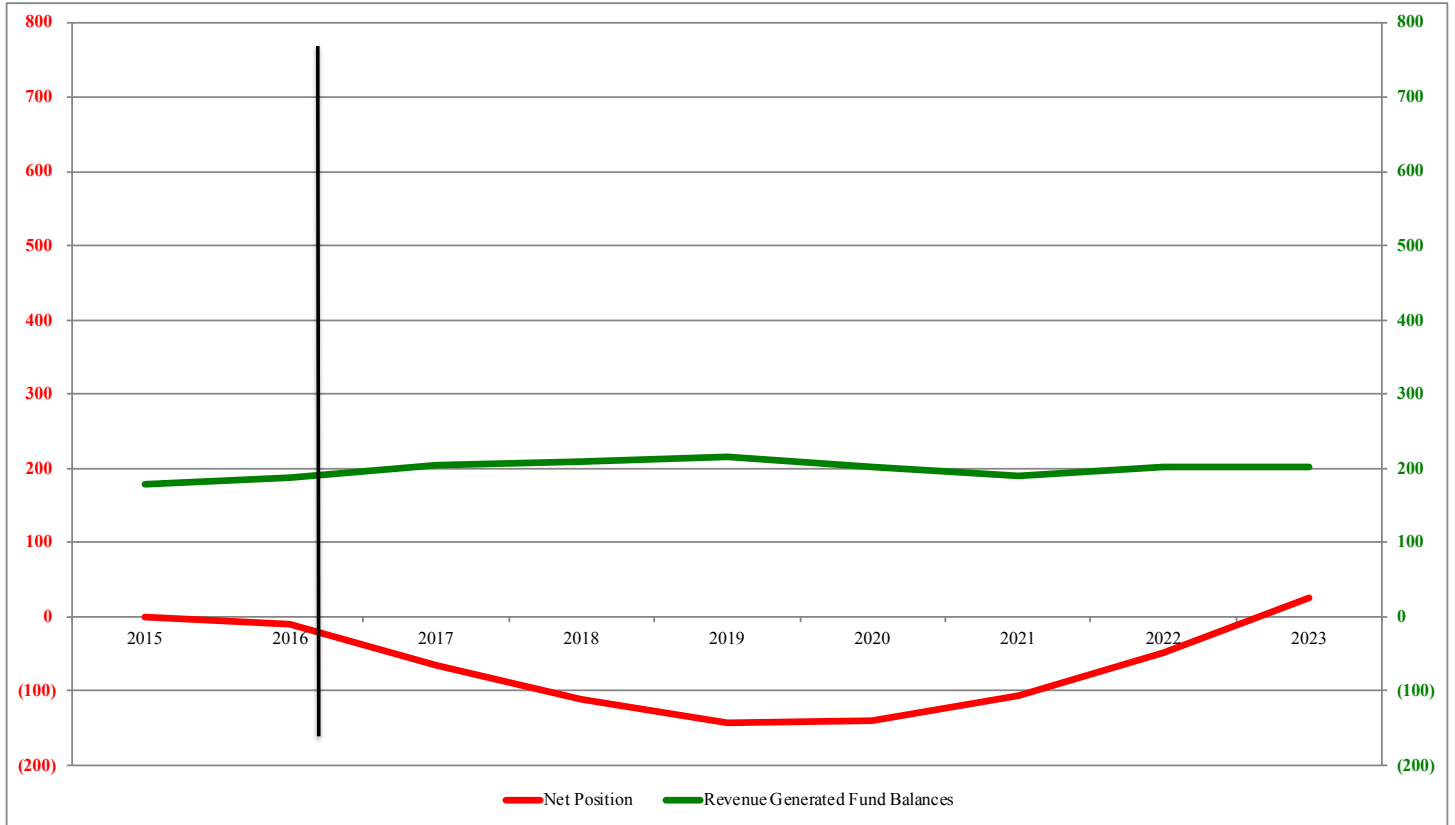


Free Cash % of Depr	29%	26%	34%	52%	59%	75%
Adj Free Cash % of Depr	44%	43%	56%	76%	83%	99%
Fitch AA Metric	105%	105%	105%	105%	105%	105%

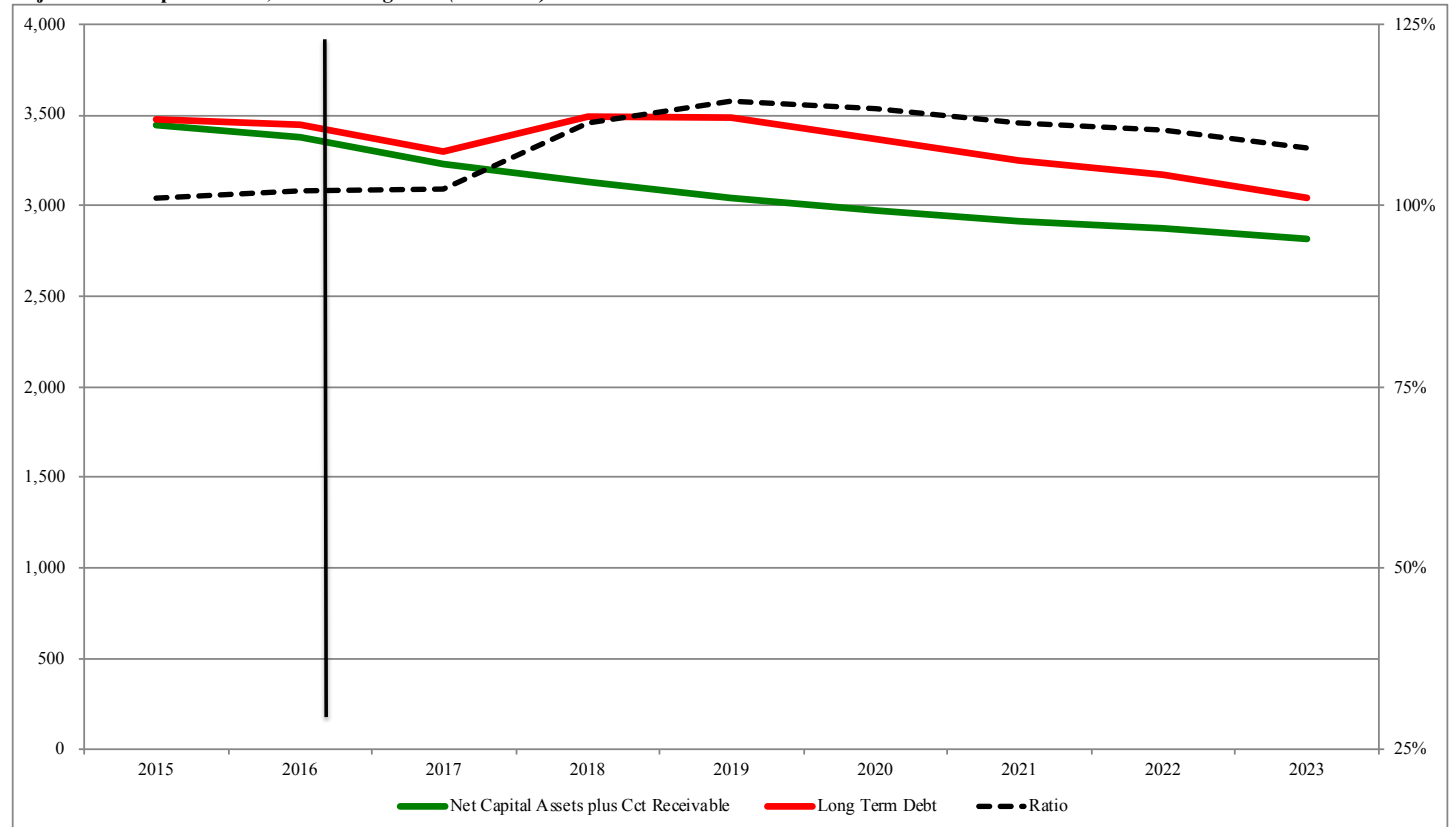
Debt to Operating Revenues (lower metric is positive)



Debt to Operating Revenues	7.4	7.5	6.9	6.4	6.0	5.6
Adj Debt to Operating Reve	6.6	6.5	6.1	5.6	5.3	4.9
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0



Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



Water Forecast Exhibits

Scenario 3 - Rev Req't Increases 2%, CIP Funding 80%, O&M Funding 95%

Table 5a
GLWA Regional System Capital Improvement Program Financing

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
2	Major Capital Improvement Program (a)	<u>52,830,400</u>	<u>88,000,000</u>	<u>98,320,000</u>	<u>108,640,000</u>	<u>119,040,000</u>	<u>466,830,400</u>
3	Total Financing Requirements	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	242,939,700	254,872,000	255,915,500	238,679,900	210,309,800	242,939,700 (i)
Construction Bond Funds							
5	Beginning Balance (b)	140,308,100	101,392,700	51,522,700	3,722,700	2,636,700	140,308,100 (i)
Bond Proceeds							
6	Water System Revenue Bonds (c)	0	0	0	17,600,000	23,600,000	41,200,000
7	Original Issue Premium	TBD	TBD	TBD	TBD	TBD	0
8	Available Debt Service Payment Funds	TBD	TBD	TBD	TBD	TBD	0
9	Available in Debt Service Reserve Fund	TBD	TBD	TBD	TBD	TBD	0
10	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
11	Less: Transfer to DWSD Const. Fund (e)	0	0	0	(16,544,000)	(22,184,000)	(38,728,000)
12	Less: Bond Reserve Requirements (f)	TBD	TBD	TBD	TBD	TBD	0
13	Less: Issuance Expenses	0	0	0	<u>(1,056,000)</u>	<u>(1,416,000)</u>	<u>(2,472,000)</u>
14	Net Bond Proceeds Available	0	0	0	0	0	0
15	State Drinking Water Revolving Fund Loan	10,500,000	20,459,000	29,529,000	46,022,000	30,722,000	137,232,000
16	Less: Transfer to DWSD Constr. Fund	<u>(10,500,000)</u>	<u>(4,000,000)</u>	<u>(11,982,000)</u>	0	0	<u>(26,482,000)</u>
17	Net State DWRP Financing for Authority	0	16,459,000	17,547,000	46,022,000	30,722,000	110,750,000
18	Investment Income	<u>743,000</u>	<u>462,000</u>	<u>408,000</u>	<u>252,000</u>	<u>500,000</u>	<u>2,365,000</u>
19	Subtotal - Construction Bond Funds	<u>141,051,100</u>	<u>118,313,700</u>	<u>69,477,700</u>	<u>49,996,700</u>	<u>33,858,700</u>	<u>253,423,100</u>
20	Total Financing Sources Available	383,990,800	373,185,700	325,393,200	288,676,600	244,168,500	496,362,800
Application of Financing Sources							
21	I&E Funds - Budgeted Capital Outlay	22,133,400	18,763,000	18,705,300	9,363,300	7,400,800	76,365,800
22	I&E Funds - Specifically Designated I&E Proj	13,172,000	11,209,000	12,565,000	11,280,000	12,007,000	60,233,000
23	I&E Funding of Debt Eligible Projects	0	10,000,000	20,000,000	50,000,000	75,000,000	155,000,000
24	Project Expenditures from Construction Fund	<u>39,658,400</u>	<u>66,791,000</u>	<u>65,755,000</u>	<u>47,360,000</u>	<u>32,033,000</u>	<u>251,597,400</u>
25	Total Financing Sources Applied	74,963,800	106,763,000	117,025,300	118,003,300	126,440,800	543,196,200
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
26	Remaining Beginning Balance (g)	207,634,300	214,900,000	204,645,200	168,036,600	115,902,000	
27	Transfers from Water Receiving Fund	<u>47,237,700</u>	<u>41,015,500</u>	<u>34,034,700</u>	<u>42,273,200</u>	<u>42,683,200</u>	207,244,300
28	Total Improvement & Extension Fund	254,872,000	255,915,500	238,679,900	210,309,800	158,585,200	158,585,200 (j)
29	Construction Bond Funds (h)	<u>101,392,700</u>	<u>51,522,700</u>	<u>3,722,700</u>	<u>2,636,700</u>	<u>1,825,700</u>	<u>1,825,700 (j)</u>
30	Financing Sources Available for Future Requirements	356,264,700	307,438,200	242,402,600	212,946,500	160,410,900	160,410,900 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) The Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2016 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 21 through 23.

(h) Line 19 minus Line 24.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 5b
DWSD Local System Capital Improvement Program Financing

Line No.	Item	2019 \$	2020 \$	2021 \$	2022 \$	2023 \$	Total \$
Financing Requirements							
1	DWSD Local System CIP (a)	41,375,400	41,375,400	41,375,400	41,375,400	41,375,400	206,877,000
Financing Sources							
<u>DWSD Local System Improvement and Extension Account</u>							
2	Beginning Balance (b)	50,000,000	48,007,000	29,783,600	31,127,100	19,139,600	50,000,000
3	Deposits from Lease Payment (c)	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400	95,270,800
4	Deposits from DWSD Local System Revenues	0	0	0	0	0	0
5	Subtotal - Improvement & Extension Fund	68,694,700	67,159,000	48,928,700	50,266,700	38,279,000	145,270,800
<u>Construction Bond Funds</u>							
6	Beginning Balance (b)	25,000,000	15,011,400	15,161,500	3,663,400	9,959,100	25,000,000
7	Net Bond Proceeds (c)	0	0	0	16,544,000	22,184,000	38,728,000
8	State Drinking Water Revolving Fund Loans	10,500,000	4,000,000	11,982,000	0	0	26,482,000
9	Investment Income	199,100	150,100	93,700	0	0	442,900
10	Subtotal - Construction Bond Funds	35,699,100	19,161,500	27,237,200	20,207,400	32,143,100	90,652,900
11	Total Financing Sources Available	104,393,800	86,320,500	76,165,900	70,474,100	70,422,100	235,923,700
Application of Financing Sources							
12	Project Expenditures from I&E Funds	20,687,700	37,375,400	17,801,600	31,127,100	19,139,600	126,131,400
13	Project Expenditures from Construction Funds	20,687,700	4,000,000	23,573,800	10,248,300	22,235,800	80,745,600
14	Total Financing Sources Applied	41,375,400	41,375,400	41,375,400	41,375,400	41,375,400	206,877,000
Financing Sources Available for Future Requirements							
15	Improvement & Extension Fund (e)	48,007,000	29,783,600	31,127,100	19,139,600	19,139,400	19,139,400
16	Construction Bond Funds (f)	15,011,400	15,161,500	3,663,400	9,959,100	9,907,300	9,907,300
17	Total Financing Sources Available for Future Req'ts	63,018,400	44,945,100	34,790,500	29,098,700	29,046,700	29,046,700

(a) Preliminary pending additional review.

(b) Estimated allocated balance available June 30, 2018.
(applies only to FY 2019).

(c) Total Lease Payment	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000	112,500,000
less: Lease Payment applied to Debt Service	(3,805,300)	(3,348,000)	(3,354,900)	(3,360,400)	(3,360,600)	(17,229,200)
Net Lease Payment transferred to Local I&E Account	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400	95,270,800

(d) Reserved

(e) Line 5 minus Line 12.

(f) Line 10 minus Line 13.

Table 6
Operational Financing Plan - Consolidated GLWA Regional System / DWS Local System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	402,877,200	404,109,400	404,109,400	404,109,400	404,109,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 1.6%		6,445,300	6,445,300	6,445,300	6,445,300
3	FY 2021: 2.0%			8,131,000	8,131,000	8,131,000
4	FY 2022: 2.0%				8,263,800	8,263,800
5	FY 2023: 2.2%					9,424,900
6	Total Projected Revenue from Water Charges	402,877,200	410,554,700	418,685,700	426,949,500	436,374,400
7	Miscellaneous Operating Revenue	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000
8	Total Operating Revenue	405,077,200	412,754,700	420,885,700	429,149,500	438,574,400
9	Non-Operating Revenue	3,836,600	4,075,600	3,950,800	3,663,700	3,172,300
10	Total Revenue Available	408,913,800	416,830,300	424,836,500	432,813,200	441,746,700
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
12	Transfer to DWS Local O&M Account	35,484,300	36,126,600	36,811,100	37,508,600	38,220,500
13	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
14	Transfer to DWS Pension O&M Account	4,272,000	4,272,000	4,272,000	4,272,000	4,272,000
15	Total O&M Expense	161,288,800	164,240,800	167,281,200	170,381,700	173,544,700
<u>Debt Service - Bond Interest and Redemption Deposits</u>						
Senior Lien Bonds						
16	Outstanding Bonds	119,230,800	123,909,900	126,616,400	127,412,400	131,184,100
17	The 2018 GLWA Bonds	0	0	0	0	0
18	Future Bonds (lien unspecified)	0	0	0	374,000	1,550,400
19	Total Senior Debt Service	119,230,800	123,909,900	126,616,400	127,786,400	132,734,500
Second Lien Bonds						
20	Outstanding Bonds	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
21	The 2018 GLWA Bonds	0	0	0	0	0
22	Total Second Lien Bonds	49,020,400	50,660,600	52,085,000	47,492,900	47,848,200
23	Subtotal Debt Service	168,251,200	174,570,500	178,701,400	175,279,300	180,582,700
24	SRF Junior Lien Bonds	2,710,600	4,318,600	12,084,700	12,090,400	12,085,000
25	Total Debt Service	170,961,800	178,889,100	190,786,100	187,369,700	192,667,700
26	Non-Operating Portion of Pension Reimb.	9,202,000	9,202,000	9,202,000	9,202,000	9,202,000
27	B & C Note Non-Operating Payments	1,493,700	1,493,700	1,493,700	1,493,700	1,493,700
28	Transfer to Pension Obligation Payment Fund	10,695,700	10,695,700	10,695,700	10,695,700	10,695,700
29	Transfer to WRAP Fund	2,061,000	2,067,300	2,108,400	2,152,300	2,199,000
30	Transfer to Budget Stabilization Fund	0	0	0	0	0
31	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
32	Lease Payment - Transfer to Detroit Local I&E	18,694,700	19,152,000	19,145,100	19,139,600	19,139,400
<u>Transfers to I&E Fund to Finance Capital Improvements</u>						
33	Transfer to GLWA Regional I&E Account	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
34	Transfer to DWS Local I&E Account	0	0	0	0	0
35	Total Transfers to I&E Fund	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
36	Operating Reserves	(2,026,000)	769,900	785,300	801,000	817,000
37	Total Revenue Requirements	408,913,700	416,830,300	424,836,500	432,813,200	441,746,700
38	Indicated Balance (Deficiency)	100	0	0	0	0
Debt Service Coverage Projections						
39	Senior Lien for Rate Covenant Purposes	208%	204%	203%	205%	202%
40	Second Lien for Rate Covenant Purposes	147%	145%	144%	150%	149%
41	SRF Junior Lien for Rate Covenant Purposes	145%	141%	135%	140%	139%
42	Net Revenues (10) - (15)	247,625,000	252,589,500	257,555,300	262,431,500	268,202,000
43	Net Revenues Available after Debt Service (42)-(25)	76,663,200	73,700,400	66,769,200	75,061,800	75,534,300
44	Applied to MBO Reserve Funds (28,29,30,31)	(12,756,700)	(12,763,000)	(12,804,100)	(12,848,000)	(12,894,700)
45	Applied as Lease Payment to DWS I&E Acct (32)	(18,694,700)	(19,152,000)	(19,145,100)	(19,139,600)	(19,139,400)
46	Applied to Operating Reserves (37)	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
47	Available for I&E Fund Accounts (43) - (44,45,46)	47,237,800	41,015,500	34,034,700	42,273,200	42,683,200

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

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Table 6a
Operational Financing Plan - GLWA Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	327,564,200	328,796,400	328,796,400	328,796,400	328,796,400
<u>Projected Revenue from Adjustments</u>						
2	FY 2020: 1.6%		5,156,500	5,156,500	5,156,500	5,156,500
3	FY 2021: 2.1%			6,885,400	6,885,400	6,885,400
4	FY 2022: 2.1%				7,182,900	7,182,900
5	FY 2023: 2.2%					7,525,100
6	Total Projected Revenue from Water Charges	327,564,200	333,952,900	340,838,300	348,021,200	355,546,300
7	Non-Operating Revenue	<u>3,836,600</u>	<u>4,075,600</u>	<u>3,950,800</u>	<u>3,663,700</u>	<u>3,172,300</u>
8	Total Revenue Available	331,400,800	338,028,500	344,789,100	351,684,900	358,718,600
Revenue Requirements						
9	Transfer to GLWA Regional O&M Account	115,484,500	117,794,200	120,150,100	122,553,100	125,004,200
10	Transfer to GLWA Pension O&M Account	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000
11	Total O&M Expense	121,532,500	123,842,200	126,198,100	128,601,100	131,052,200
12	Debt Service Allocation - Regional System	134,214,600	141,942,500	153,278,800	149,482,900	153,604,300
13	Non-Operating Portion of Pension Reimb.	5,392,800	5,392,800	5,392,800	5,392,800	5,392,800
14	B & C Note Non-Operating Payments	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>	<u>875,500</u>
15	Transfer to Pension Obligation Payment Fund	6,268,300	6,268,300	6,268,300	6,268,300	6,268,300
16	Transfer to WRAP Fund	1,673,400	1,690,100	1,723,900	1,758,400	1,793,600
17	Transfer to Budget Stabilization Fund	0	0	0	0	0
18	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
19	Lease Payment to DWSD Local System	22,500,000	22,500,000	22,500,000	22,500,000	22,500,000
20	Transfer to GLWA Regional I&E Account	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
21	Operating Reserves	(2,026,000)	769,900	785,300	801,000	817,000
22	Total Revenue Requirements	331,400,500	338,028,500	344,789,100	351,684,900	358,718,600
23	Indicated Balance (Deficiency)	300	0	0	0	0
24	Projected Debt Service Coverage Ratio (Regional)	156%	151%	143%	149%	148%
25	<i>Net Revenues (8) - (11)</i>	209,868,300	214,186,300	218,591,000	223,083,800	227,666,400
26	<i>Net Revenues Available after Debt Service (25)-(12)</i>	75,653,700	72,243,800	65,312,200	73,600,900	74,062,100
27	<i>Applied to MBO Reserve Funds (15,16,17,18)</i>	(7,941,700)	(7,958,400)	(7,992,200)	(8,026,700)	(8,061,900)
28	<i>Applied as Lease Payment to DWSD (19)</i>	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)	(22,500,000)
29	<i>Applied to Operating Reserves (21)</i>	2,026,000	(769,900)	(785,300)	(801,000)	(817,000)
30	<i>Available for I&E Fund (26) - (27,28,29)</i>	47,238,000	41,015,500	34,034,700	42,273,200	42,683,200

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

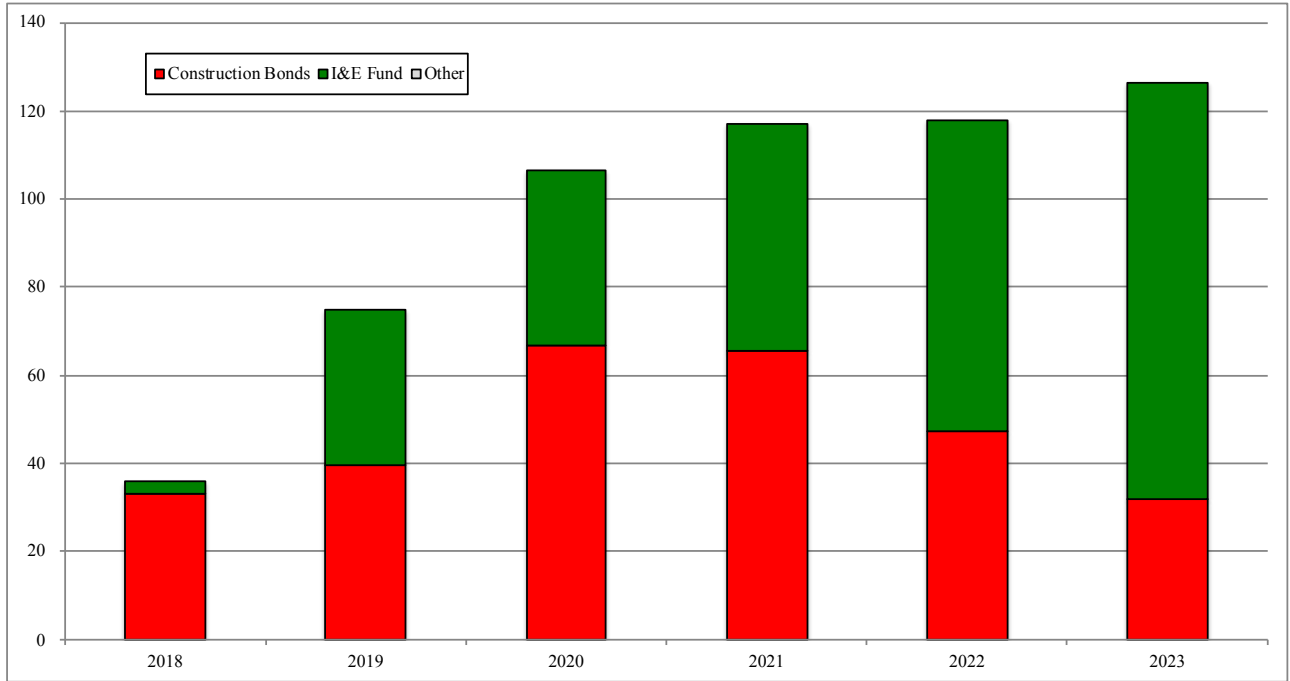
Table 7
Projected Cash and Investment Fund Balances - Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	42,803,500	40,777,500	41,547,400	42,332,700	43,133,700
2	Deposit from Operations	(2,026,000)	769,900	785,300	801,000	817,000
3	Ending Balance	40,777,500	41,547,400	42,332,700	43,133,700	43,950,700
<u>Budget Stabilization Fund</u>						
4	Beginning Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
<u>ER&R Fund</u>						
7	Beginning Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
<u>I&E Fund (a)</u>						
10	Beginning Balance	242,939,700	254,872,000	255,915,500	238,679,900	210,309,800
11	Budgeted Capital Outlay	(22,133,400)	(18,763,000)	(18,705,300)	(9,363,300)	(7,400,800)
12	Capital Expenditures	(13,172,000)	(21,209,000)	(32,565,000)	(61,280,000)	(87,007,000)
13	Subtotal prior to Revenue Transfer	207,634,300	214,900,000	204,645,200	168,036,600	115,902,000
14	Deposits from Revenues (b)	47,237,700	41,015,500	34,034,700	42,273,200	42,683,200
15	Ending Balance	254,872,000	255,915,500	238,679,900	210,309,800	158,585,200
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	315,243,200	325,149,500	326,962,900	310,512,600	282,943,500
17	Net Sources and Uses	9,906,300	1,813,400	(16,450,300)	(27,569,100)	(50,907,600)
18	Ending Balance	325,149,500	326,962,900	310,512,600	282,943,500	232,035,900
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	20,969,800	20,969,800	20,969,800	20,969,800	20,969,800
20	Bond Redemption (Average)	56,987,300	59,629,700	63,595,400	62,456,600	64,222,600
21	Construction Fund	101,392,700	51,522,700	3,722,700	2,636,700	1,825,700
22	Total Funds	504,499,300	459,085,100	398,800,500	369,006,600	319,054,000
23	Subtotal w/o Construction Funds	403,106,600	407,562,400	395,077,800	366,369,900	317,228,300

(a) Only includes GLWA Regional I&E Account

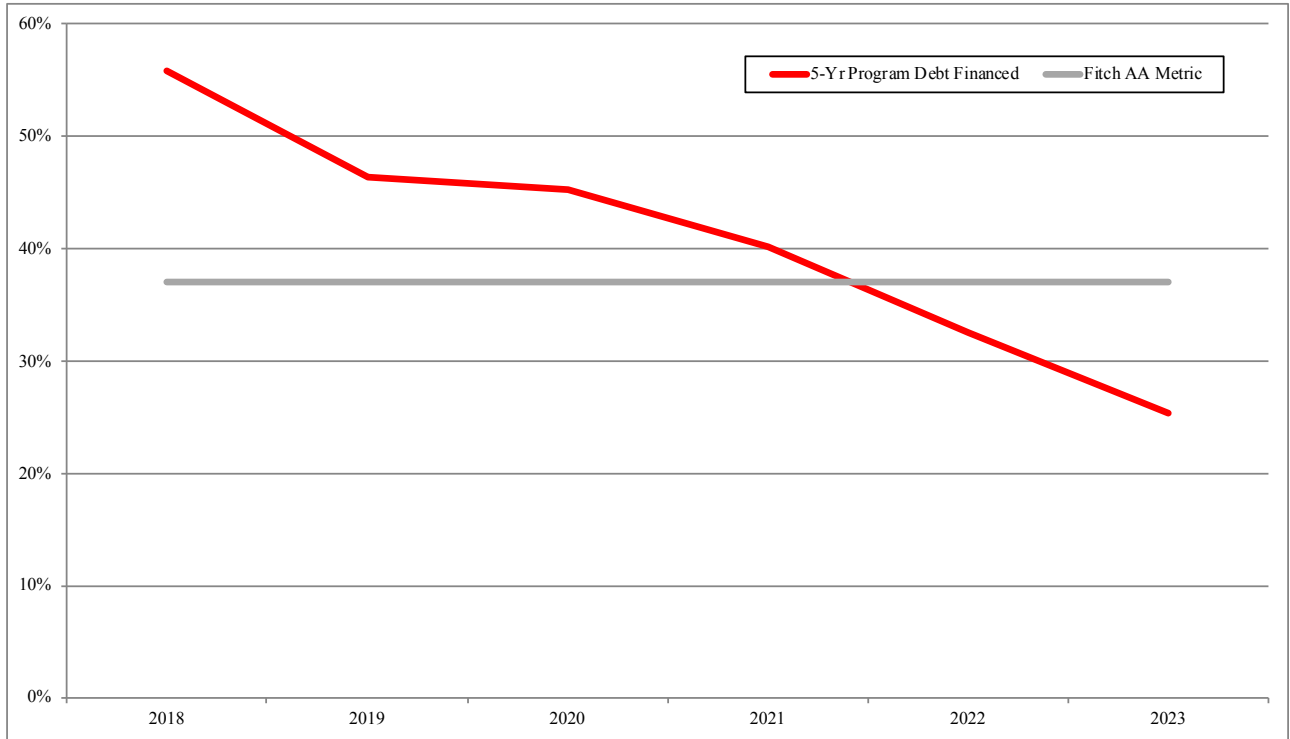
(b) Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

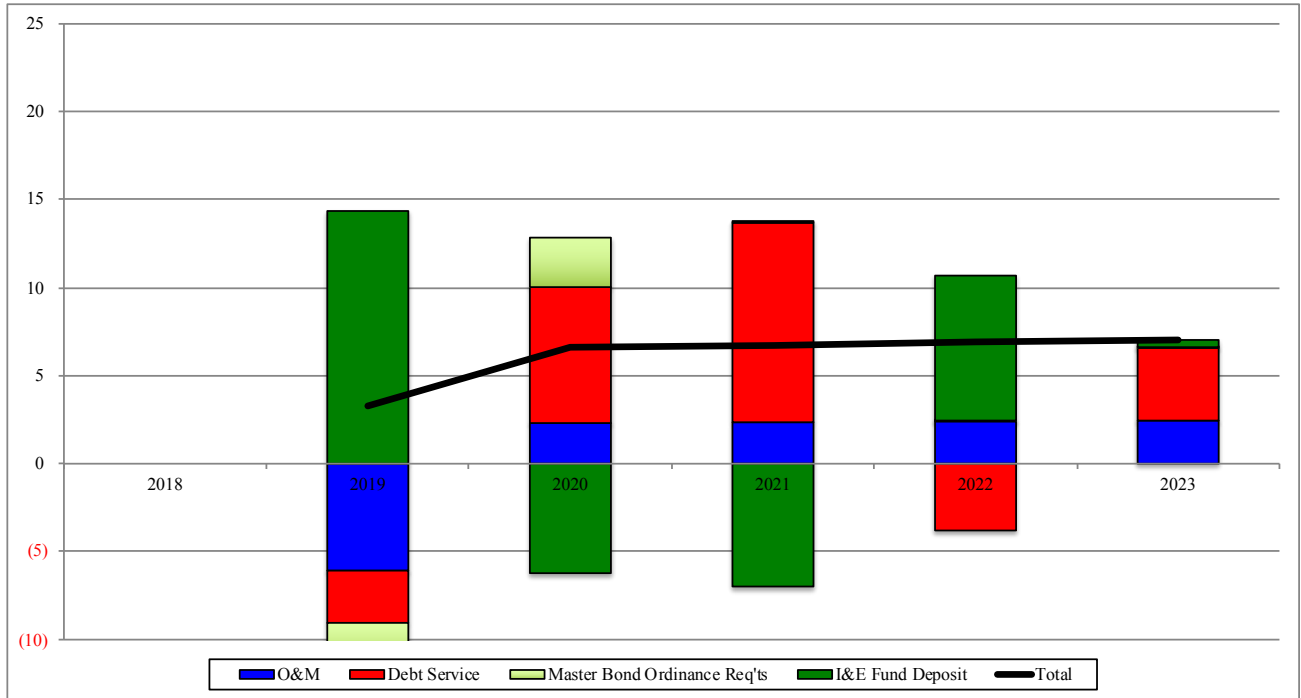


CIP Financing Requirement:	36	75	107	117	118	126
<u>Financing Sources</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Construction Bonds	33	40	67	66	47	32
I&E Fund	3	35	40	51	71	94
Other	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

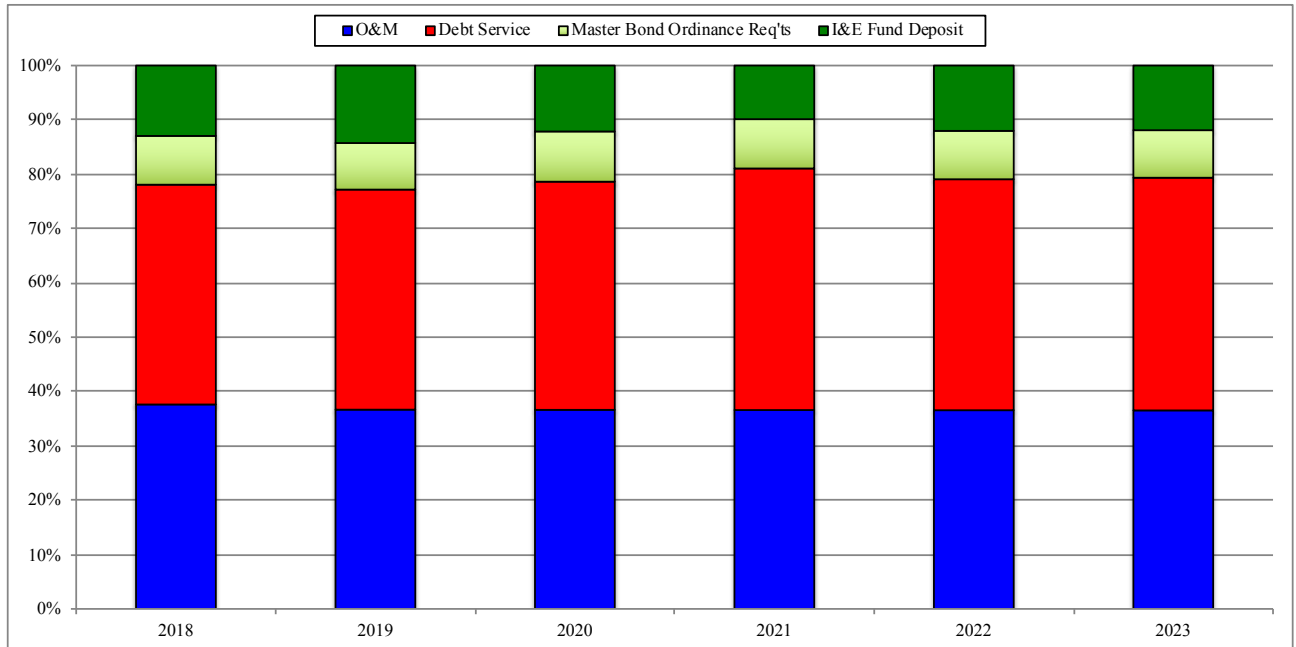


5-Yr Program Debt Finance	56%	46%	45%	40%	32%	25%
Fitch AA Metric	37%	37%	37%	37%	37%	37%

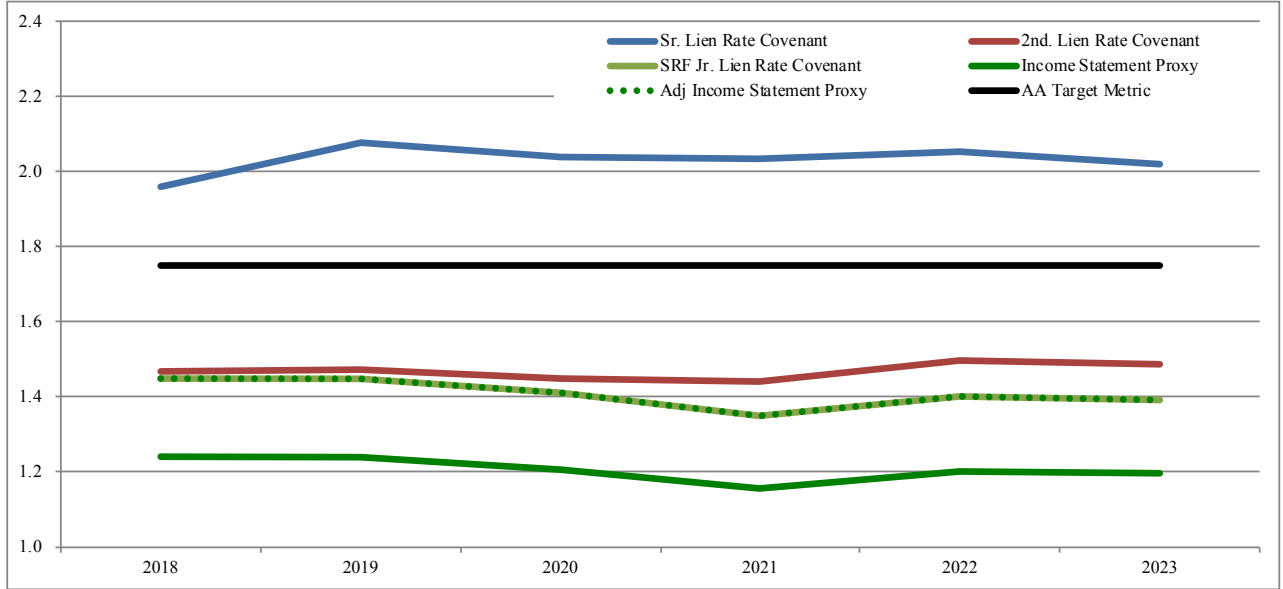


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M		(6.1)	2.3	2.4	2.4	2.5
Debt Service		(3.0)	7.7	11.3	(3.8)	4.1
Master Bond Ordinance Req'ts		(2.0)	2.8	0.0	0.1	0.1
I&E Fund Deposit		14.4	(6.2)	(7.0)	8.2	0.4
Total		3.3	6.6	6.8	6.9	7.0

Relative BUDGET

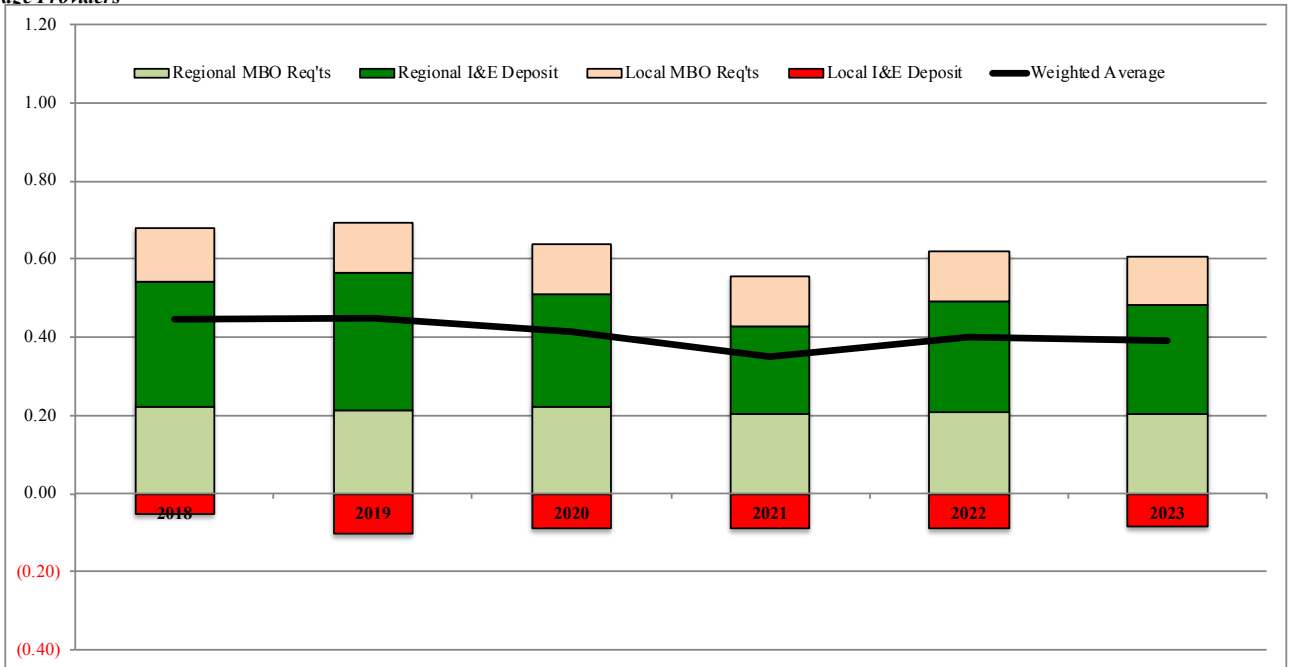


O&M	38%	37%	37%	37%	37%	37%
Debt Service	40%	40%	42%	44%	43%	43%
Master Bond Ordinance Req	9%	9%	9%	9%	9%	9%
I&E Fund Deposit	13%	14%	12%	10%	12%	12%

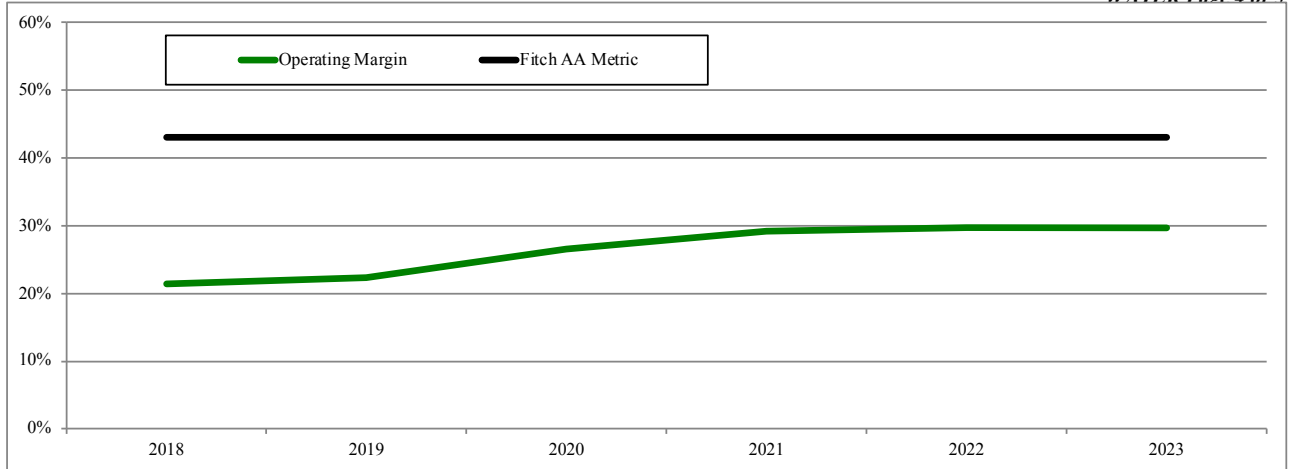


Sr. Lien Rate Covenant	1.96	2.08	2.04	2.03	2.05	2.02
2nd. Lien Rate Covenant	1.47	1.47	1.45	1.44	1.50	1.49
SRF Jr. Lien Rate Covenant	1.45	1.45	1.41	1.35	1.40	1.39
Income Statement Proxy	1.24	1.24	1.21	1.16	1.20	1.20
Adj Income Statement Proxy	1.45	1.45	1.41	1.35	1.40	1.39
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

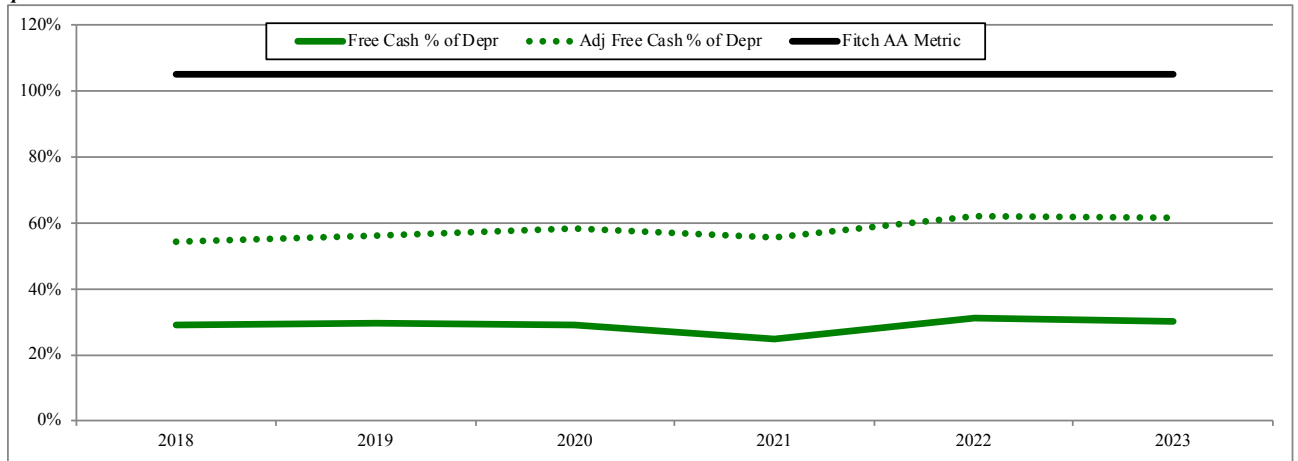


Regional MBO Req'ts	0.22	0.21	0.22	0.20	0.21	0.20
Regional I&E Deposit	0.32	0.35	0.29	0.22	0.28	0.28
Local MBO Req'ts	0.13	0.13	0.13	0.13	0.13	0.12
Local I&E Deposit	(0.05)	(0.10)	(0.09)	(0.09)	(0.09)	(0.09)
Weighted Average	0.45	0.45	0.41	0.35	0.40	0.39
Regional Total	0.54	0.56	0.51	0.43	0.49	0.48
Local Total	0.08	0.03	0.04	0.04	0.04	0.04
Weighted Average	0.45	0.45	0.41	0.35	0.40	0.39



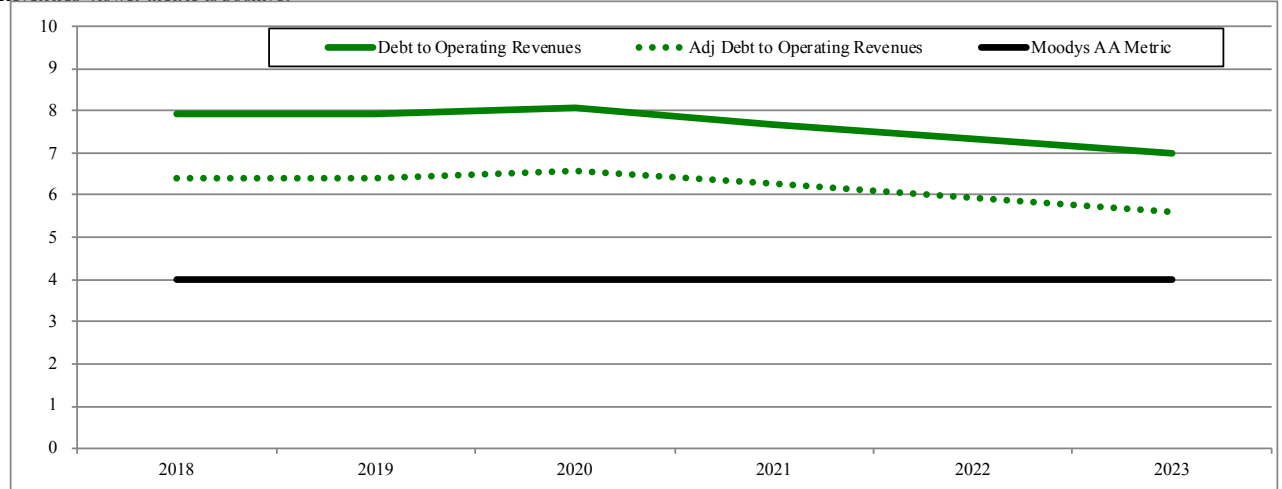
Operating Margin	21%	22%	26%	29%	30%	30%
Fitch AA Metric	43%	43%	43%	43%	43%	43%

Free Cash % of Depr

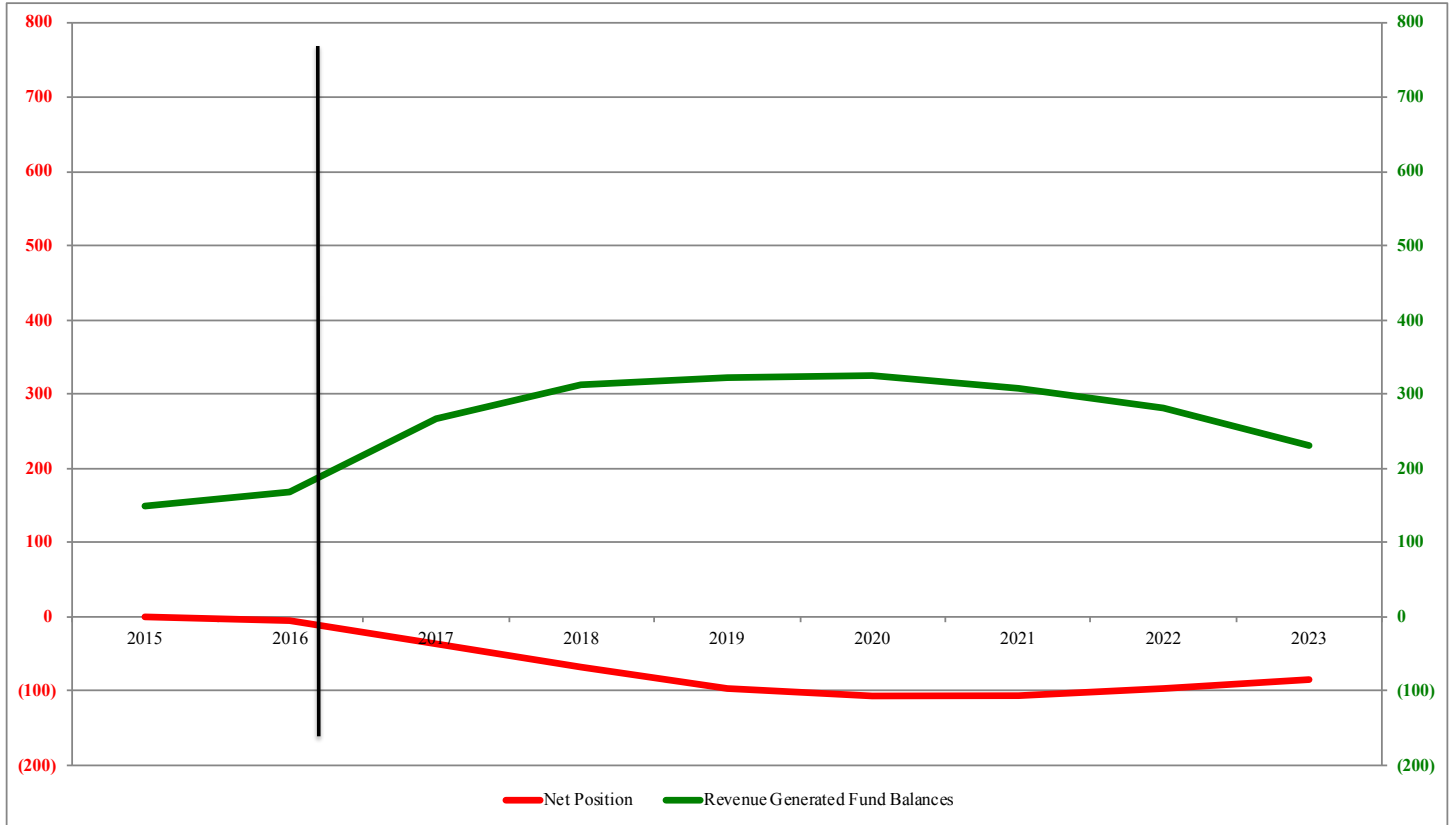


Free Cash % of Depr	29%	30%	29%	25%	31%	30%
Adj Free Cash % of Depr	54%	56%	58%	56%	62%	61%
Fitch AA Metric	105%	105%	105%	105%	105%	105%

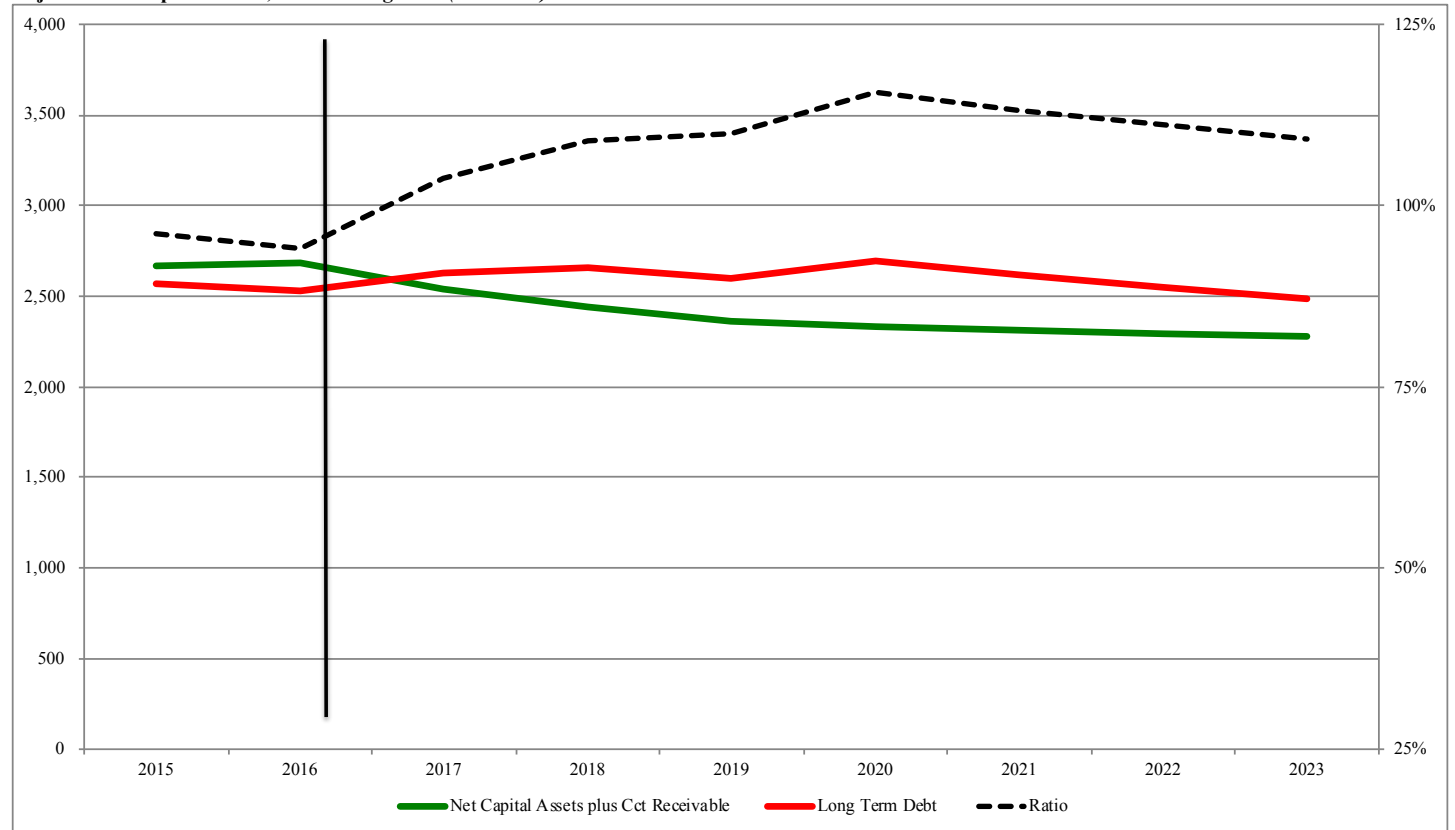
Debt to Operating Revenues (lower metric is positive)



Debt to Operating Revenues	7.9	7.9	8.1	7.7	7.3	7.0
Adj Debt to Operating Reve	6.4	6.4	6.6	6.3	5.9	5.6
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0



Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



Sewer Forecast Exhibits

Scenario 3 - Rev Req't Increases 2%, CIP Funding 80%, O&M Funding 95%

Table 5a
GLWA Regional System Capital Improvement Program Financing

Line No.	Item	Fiscal Year Ending June 30,					Total
		2019	2020	2021	2022	2023	
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
2	Major Capital Improvement Program (a)	<u>84,146,400</u>	<u>80,240,000</u>	<u>80,240,000</u>	<u>88,720,000</u>	<u>88,720,000</u>	<u>422,066,400</u>
3	Total Financing Requirements	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources							
4	Balance in Improvement and Extension Fund (b)	96,762,200	106,075,600	86,713,500	89,414,800	91,880,100	96,762,200 (i)
Construction Bond Funds							
5	Beginning Balance (b)	99,814,100	66,795,700	52,944,900	50,523,400	49,698,300	99,814,100 (i)
Bond Proceeds							
6	Sewer System Revenue Bonds (c)	97,000,000	0	43,000,000	71,000,000	53,000,000	264,000,000
7	Original Issue Premium	TBD	TBD	TBD	TBD	TBD	0
8	Available Debt Service Payment Funds	TBD	TBD	TBD	TBD	TBD	0
9	Available in Debt Service Reserve Fund	TBD	TBD	TBD	TBD	TBD	0
10	Less: Defeasance Requirements (d)	TBD	TBD	TBD	TBD	TBD	0
11	Less: Transfer to DWSD Const. Fund (e)	(91,000,000)	0	0	0	0	(91,000,000)
12	Less: Bond Reserve Requirements (f)	TBD	TBD	TBD	TBD	TBD	0
13	Less: Issuance Expenses	<u>(6,000,000)</u>	<u>0</u>	<u>(2,580,000)</u>	<u>(4,260,000)</u>	<u>(3,180,000)</u>	<u>(16,020,000)</u>
14	Net Bond Proceeds Available	0	0	40,420,000	66,740,000	49,820,000	156,980,000
15	State Clean Water Revolving Fund Loans	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
16	Less: Transfer to DWSD Constr. Fund	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
17	Net State CWRP Financing for Authority	42,197,000	30,061,000	13,493,000	10,187,000	1,603,000	97,541,000
18	Investment Income	<u>619,000</u>	<u>446,200</u>	<u>246,500</u>	<u>115,900</u>	<u>239,800</u>	<u>1,667,400</u>
19	Subtotal - Construction Bond Funds	<u>142,630,100</u>	<u>97,302,900</u>	<u>107,104,400</u>	<u>127,566,300</u>	<u>101,361,100</u>	<u>356,002,500</u>
20	Total Financing Sources Available	239,392,300	203,378,500	193,817,900	216,981,100	193,241,200	452,764,700
Application of Financing Sources							
21	I&E Funds - Budgeted Capital Outlay	5,957,000	4,810,900	4,431,800	15,047,000	4,271,200	34,517,900
22	I&E Funds - Specifically Designated I&E Proj	8,312,000	10,882,000	13,659,000	10,852,000	12,280,000	55,985,000
23	I&E Funding of Debt Eligible Projects	0	25,000,000	10,000,000	0	25,000,000	60,000,000
24	Project Expenditures from Construction Fund	<u>75,834,400</u>	<u>44,358,000</u>	<u>56,581,000</u>	<u>77,868,000</u>	<u>51,440,000</u>	<u>306,081,400</u>
25	Total Financing Sources Applied	90,103,400	85,050,900	84,671,800	103,767,000	92,991,200	456,584,300
Financing Sources Available for Future Requirements							
Improvement & Extension Funds							
26	Remaining Beginning Balance (g)	82,493,200	65,382,700	58,622,700	63,515,800	50,328,900	
27	Transfers from Sewer Receiving Fund	<u>23,582,400</u>	<u>21,330,800</u>	<u>30,792,100</u>	<u>28,364,300</u>	<u>38,335,200</u>	142,404,800
28	Total Improvement & Extension Fund	106,075,600	86,713,500	89,414,800	91,880,100	88,664,100	88,664,100 (j)
29	Construction Bond Funds (h)	<u>66,795,700</u>	<u>52,944,900</u>	<u>50,523,400</u>	<u>49,698,300</u>	<u>49,921,100</u>	<u>49,921,100</u> (j)
30	Financing Sources Available for Future Req	172,871,300	139,658,400	139,938,200	141,578,400	138,585,200	138,585,200 (j)

(a) From Table 2.

(b) Estimated balance available June 30, 2018 (applies only to Fiscal Year 2019).

(c) The Series 2018 Bonds (for Fiscal Year 2019) and projected additional future bonds.

(d) Amounts required to defease the 2018 Refunded Bonds.

(e) Includes amounts from the Series 2016 Bonds to provide funding to the DWSD CIP for 2019 and 2020. Assumes that additional DWSD CIP financing will be required from additional future bonds.

(f) Assumes amounts will be required from future bond proceeds to fund debt service reserve fund.

(g) Line 4 minus Lines 21 through 23.

(h) Line 19 minus Line 24.

(i) Total column reflects estimated balance available June 30, 2018.

(j) Total column reflects estimated balance available June 30, 2023.

Table 5b
DWSD Local System Capital Improvement Program Financing

Line No.	Item	2019	2020	2021	2022	2023	Total
		\$	\$	\$	\$	\$	\$
Financing Requirements							
1	DWSD Local System CIP (a)	37,143,000	37,143,000	37,143,000	37,143,000	37,143,000	185,715,000
Financing Sources							
<u>DWSD Local System Improvement and Extension Account</u>							
2	Beginning Balance (b)	15,000,000	20,903,600	21,719,000	21,719,000	21,719,000	15,000,000
3	Deposits from Lease Payment (c)	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000	111,351,100
4	Deposits from DWSD Local System Revenues	0	0	0	0	0	0
5	Subtotal - Improvement & Extension Fund	39,475,100	42,622,600	43,438,000	43,438,000	43,438,000	126,351,100
<u>Construction Bond Funds</u>							
6	Beginning Balance (b)	0	72,428,500	56,832,200	41,899,400	26,817,300	0
7	Net Bond Proceeds (c)	91,000,000	0	0	0	0	91,000,000
8	State Clean Water Revolving Fund Loans	0	0	0	0	0	0
9	Investment Income	0	643,100	491,200	341,900	191,100	1,667,300
10	Subtotal - Construction Bond Funds	91,000,000	73,071,600	57,323,400	42,241,300	27,008,400	92,667,300
11	Total Financing Sources Available	130,475,100	115,694,200	100,761,400	85,679,300	70,446,400	219,018,400
Application of Financing Sources							
12	Project Expenditures from I&E Funds	18,571,500	20,903,600	21,719,000	21,719,000	21,719,000	104,632,100
13	Project Expenditures from Construction Funds	18,571,500	16,239,400	15,424,000	15,424,000	15,424,000	81,082,900
14	Total Financing Sources Applied	37,143,000	37,143,000	37,143,000	37,143,000	37,143,000	185,715,000
Financing Sources Available for Future Requirements							
15	Improvement & Extension Fund (e)	20,903,600	21,719,000	21,719,000	21,719,000	21,719,000	21,719,000
16	Construction Bond Funds (f)	72,428,500	56,832,200	41,899,400	26,817,300	11,584,400	11,584,400
17	Total Financing Sources Available for Future Req'ts	93,332,100	78,551,200	63,618,400	48,536,300	33,303,400	33,303,400

(a) Preliminary pending additional review.

(b) Estimated allocated balance available June 30, 2018.

(applies only to FY 2019).

(c) Total Lease Payment	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	137,500,000
less: Lease Payment applied to Debt Service	<u>(3,024,900)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(5,781,000)</u>	<u>(26,148,900)</u>
Net Lease Payment transferred to Local I&E Account	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000	21,719,000	111,351,100

(d) Reserved

(e) Line 5 minus Line 12.

(f) Line 10 minus Line 13.

Table 6
Operational Financing Plan - Consolidated GLWA Regional System / DWSD Local System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
	Revenue (a)					
1	Operating Revenue Under Existing Charges	564,466,500	564,466,500	564,466,500	564,466,500	564,466,500
	<u>Projected Revenue from Adjustments</u>					
2	FY 2020: 2.4%		13,397,300	13,397,300	13,397,300	13,397,300
3	FY 2021: 1.9%			10,961,000	10,961,000	10,961,000
4	FY 2022: 1.9%				11,162,300	11,162,300
5	FY 2023: 1.9%					11,421,100
6	Total Projected Revenue from Sewer Charges	564,466,500	577,863,800	588,824,800	599,987,100	611,408,200
7	Miscellaneous Operating Revenue (b)	<u>2,371,500</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>
8	Total Operating Revenue	566,838,000	578,363,800	589,324,800	600,487,100	611,908,200
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,513,300</u>	<u>3,540,500</u>	<u>3,605,600</u>	<u>3,573,300</u>
10	Total Revenue Available	571,408,900	581,877,100	592,865,300	604,092,700	615,481,500
	Revenue Requirements					
11	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
12	Transfer to DWSD Local O&M Account	68,121,500	69,577,200	70,913,300	72,277,600	73,667,500
13	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
14	Transfer to DWSD Pension O&M Account	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>	<u>2,856,000</u>
15	Total O&M Expense	263,326,900	268,413,200	273,452,400	278,593,900	283,836,500
	<u>Debt Service - Bond Interest and Redemption Deposits</u>					
	Senior Lien Bonds					
16	Outstanding Bonds (c)	147,013,100	146,598,900	132,509,100	144,220,000	151,243,100
17	The 2018 GLWA Bonds	0	0	0	0	0
18	Future Bonds (lien unspecified)	<u>1,593,900</u>	<u>5,781,000</u>	<u>6,694,800</u>	<u>9,852,500</u>	<u>13,701,500</u>
19	Total Senior Debt Service	148,607,000	152,379,900	139,203,900	154,072,500	164,944,600
	Second Lien Bonds					
20	Outstanding Bonds	43,922,600	45,878,900	54,642,100	48,104,300	38,785,500
21	The 2018 GLWA Bonds	0	0	0	0	0
22	Total Second Lien Bonds	<u>43,922,600</u>	<u>45,878,900</u>	<u>54,642,100</u>	<u>48,104,300</u>	<u>38,785,500</u>
23	Subtotal Debt Service	192,529,600	198,258,800	193,846,000	202,176,800	203,730,100
24	SRF Junior Lien Bonds	<u>49,936,400</u>	<u>53,313,400</u>	<u>54,080,700</u>	<u>54,109,900</u>	<u>48,636,600</u>
25	Total Debt Service	242,466,000	251,572,200	247,926,700	256,286,700	252,366,700
26	Non-Operating Portion of Pension Reimb.	12,198,000	12,198,000	12,198,000	12,198,000	12,198,000
27	B & C Note Non-Operating Payments	<u>2,489,500</u>	<u>2,489,500</u>	<u>2,489,400</u>	<u>2,489,400</u>	<u>2,489,500</u>
28	Transfer to Pension Obligation Payment Fund	14,687,500	14,687,500	14,687,400	14,687,400	14,687,500
29	Transfer to WRAP Fund	<u>2,871,000</u>	<u>2,944,400</u>	<u>3,053,500</u>	<u>3,182,500</u>	<u>3,252,600</u>
30	Transfer to Budget Stabilization Fund	0	0	0	0	0
31	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
32	Lease Payment - Transfer to Detroit Local I&E	24,475,100	21,719,000	21,719,000	21,719,000	21,719,000
	<u>Transfers to I&E Fund to Finance Capital Improvements</u>					
33	Transfer to GLWA Regional I&E Account	23,582,400	21,330,800	30,792,100	28,364,300	38,335,200
34	Transfer to DWSD Local I&E Account	0	0	0	0	0
35	Total Transfers to I&E Fund	<u>23,582,400</u>	<u>21,330,800</u>	<u>30,792,100</u>	<u>28,364,300</u>	<u>38,335,200</u>
36	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
37	Total Revenue Requirements	571,408,900	581,877,300	592,865,500	604,092,900	615,481,700
38	Indicated Balance (Deficiency)	0	(200)	(200)	(200)	(200)
	Debt Service Coverage Projections					
39	Senior Lien for Rate Covenant Purposes	206%	206%	229%	211%	201%
40	Second Lien for Rate Covenant Purposes	159%	158%	165%	161%	163%
41	SRF Junior Lien for Rate Covenant Purposes	126%	125%	129%	127%	131%
42	<i>Net Revenues (10) - (15)</i>	<i>308,082,000</i>	<i>313,463,900</i>	<i>319,412,900</i>	<i>325,498,800</i>	<i>331,645,000</i>
43	<i>Net Revenues Available after Debt Service (42)-(25)</i>	<i>65,616,000</i>	<i>61,891,700</i>	<i>71,486,200</i>	<i>69,212,100</i>	<i>79,278,300</i>
44	<i>Applied to MBO Reserve Funds (28,29,30,31)</i>	<i>(17,558,500)</i>	<i>(17,631,900)</i>	<i>(17,740,900)</i>	<i>(17,869,900)</i>	<i>(17,940,100)</i>
45	<i>Applied as Lease Payment to DWSD I&E Acct (32)</i>	<i>(24,475,100)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>	<i>(21,719,000)</i>
46	<i>Applied to Operating Reserves (37)</i>	<i>0</i>	<i>(1,210,200)</i>	<i>(1,234,400)</i>	<i>(1,259,100)</i>	<i>(1,284,200)</i>
47	<i>Available for I&E Fund Accounts (43) - (44,45,46)</i>	<i>23,582,400</i>	<i>21,330,600</i>	<i>30,791,900</i>	<i>28,364,100</i>	<i>38,335,000</i>

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

(b) Includes Wholesale Bad Debt True Up Revenue for FY 2019.

(c) Includes remaining Senior Lien SRF Bonds.

Table 6a
Operational Financing Plan - GLWA Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
Revenue (a)						
1	Operating Revenue Under Existing Charges	465,584,900	465,584,900	465,584,900	465,584,900	465,584,900
Projected Revenue from Adjustments						
2	FY 2020: 2.2%		10,460,800	10,460,800	10,460,800	10,460,800
3	FY 2021: 2.0%			9,563,900	9,563,900	9,563,900
4	FY 2022: 2.0%				9,717,900	9,717,900
5	FY 2023: 2.0%					10,010,900
6	Total Projected Revenue from Sewer Charges	465,584,900	476,045,700	485,609,600	495,327,500	505,338,400
7	Wholesale Bad Debt True Up Revenue	<u>1,871,500</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
8	Total Operating Revenue	467,456,400	476,045,700	485,609,600	495,327,500	505,338,400
9	Non-Operating Revenue	<u>4,570,900</u>	<u>3,513,300</u>	<u>3,540,500</u>	<u>3,605,600</u>	<u>3,573,300</u>
10	Total Revenue Available	472,027,300	479,559,000	489,150,100	498,933,100	508,911,700
Revenue Requirements						
11	Transfer to GLWA Regional O&M Account	181,525,400	185,156,000	188,859,100	192,636,300	196,489,000
12	Transfer to GLWA Pension O&M Account	10,824,000	10,824,000	10,824,000	10,824,000	10,824,000
13	Total O&M Expense	192,349,400	195,980,000	199,683,100	203,460,300	207,313,000
14	Debt Service Allocation - Regional System	214,600,700	219,519,600	215,874,200	224,234,200	220,314,300
15	Non-Operating Portion of Pension Reimb.	9,651,400	9,651,400	9,651,400	9,651,400	9,651,400
16	B & C Note Non-Operating Payments	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>	<u>1,969,300</u>
17	Transfer to Pension Obligation Payment Fund	11,620,700	11,620,700	11,620,700	11,620,700	11,620,700
18	Transfer to WRAP Fund	2,374,100	2,397,800	2,445,800	2,494,700	2,544,600
19	Transfer to Budget Stabilization Fund	0	0	0	0	0
20	Transfer to Extra. Repair and Repl. Fund	0	0	0	0	0
21	Lease Payment to DWSD Local System	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000
22	Transfer to GLWA Regional I&E Account	23,582,400	21,330,800	30,792,100	28,364,300	38,335,200
23	Operating Reserves	0	1,210,200	1,234,400	1,259,100	1,284,200
24	Total Revenue Requirements	472,027,300	479,559,100	489,150,300	498,933,300	508,912,000
25	Indicated Balance (Deficiency)	0	(100)	(200)	(200)	(300)
26	Projected Debt Service Coverage Ratio (Regional)	130%	129%	134%	132%	137%
27	<i>Net Revenues (10) - (13)</i>	279,677,900	283,579,000	289,467,000	295,472,800	301,598,700
28	<i>Net Revenues Available after Debt Service (27)-(14)</i>	65,077,200	64,059,400	73,592,800	71,238,600	81,284,400
29	<i>Applied to MBO Reserve Funds (17,18,19,20)</i>	(13,994,800)	(14,018,500)	(14,066,500)	(14,115,400)	(14,165,300)
30	<i>Applied as Lease Payment to DWSD (21)</i>	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)	(27,500,000)
31	<i>Applied to Operating Reserves (23)</i>	0	(1,210,200)	(1,234,400)	(1,259,100)	(1,284,200)
32	<i>Available for I&E Fund (28) - (29,30,31)</i>	23,582,400	21,330,700	30,791,900	28,364,100	38,334,900

(a) From Table 3. Based on application of FY 2019 charges for 2019 through 2023.

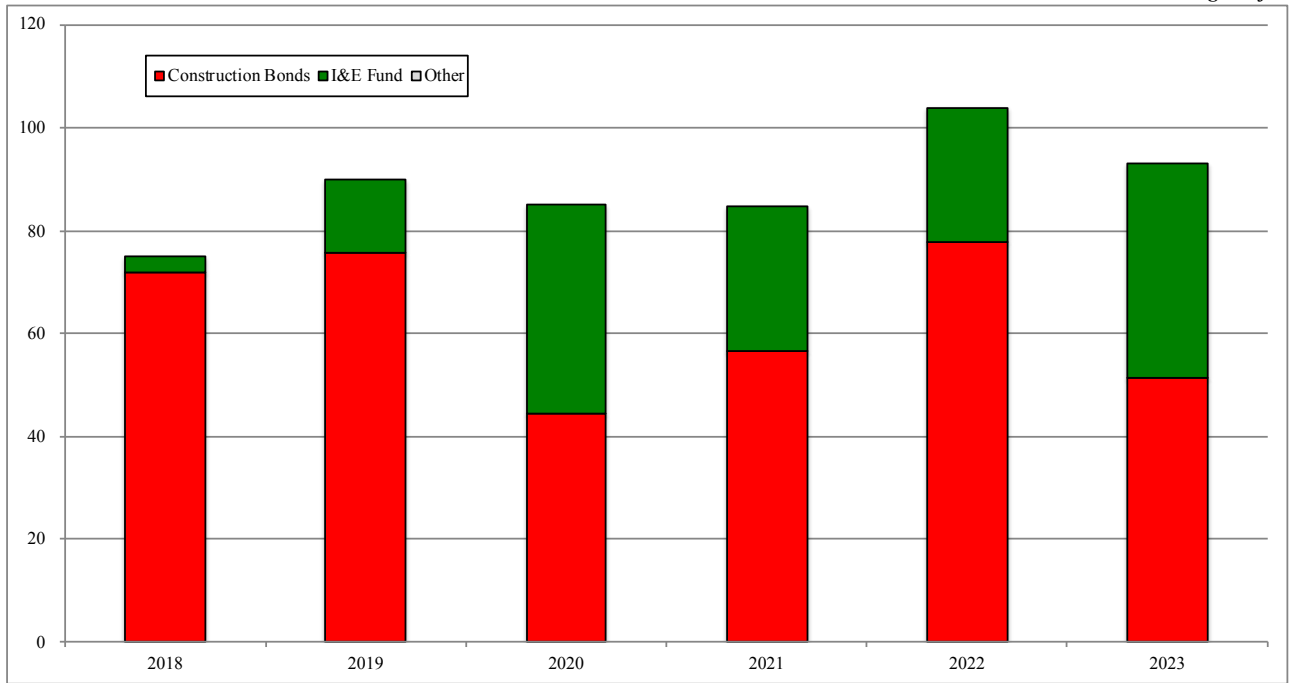
Table 7
Projected Cash and Investment Fund Balances - Regional System

Line No.	Item	Fiscal Year Ending June 30,				
		2019	2020	2021	2022	2023
		\$	\$	\$	\$	\$
<u>Operating Fund</u>						
1	Beginning Balance	67,301,100	67,301,100	68,511,300	69,745,700	71,004,800
2	Deposit from Operations	0	1,210,200	1,234,400	1,259,100	1,284,200
3	Ending Balance	67,301,100	68,511,300	69,745,700	71,004,800	72,289,000
<u>Budget Stabilization Fund</u>						
4	Beginning Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
5	Deposits / (Withdrawals)	0	0	0	0	0
6	Ending Balance	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
<u>ER&R Fund</u>						
7	Beginning Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
8	Transfers In	0	0	0	0	0
9	Ending Balance	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
<u>I&E Fund (a)</u>						
10	Beginning Balance	96,762,200	104,204,300	84,842,200	87,543,500	90,008,800
11	Budgeted Capital Outlay	(5,957,000)	(4,810,900)	(4,431,800)	(15,047,000)	(4,271,200)
12	Capital Expenditures	(8,312,000)	(35,882,000)	(23,659,000)	(10,852,000)	(37,280,000)
13	Subtotal prior to Revenue Transfer	82,493,200	63,511,400	56,751,400	61,644,500	48,457,600
14	Deposits from Revenues (b)	21,711,100	21,330,800	30,792,100	28,364,300	38,335,200
15	Ending Balance	104,204,300	84,842,200	87,543,500	90,008,800	86,792,800
<u>Total Revenue Generated Funds (c)</u>						
16	Beginning Balance	213,563,300	221,005,400	202,853,500	206,789,200	210,513,600
17	Net Sources and Uses	7,442,100	(18,151,900)	3,935,700	3,724,400	(1,931,800)
18	Ending Balance	221,005,400	202,853,500	206,789,200	210,513,600	208,581,800
<u>Other Funds</u>						
19	Bond Reserve (excludes Surety)	64,621,500	64,621,500	64,621,500	64,621,500	64,621,500
20	Bond Redemption (Average)	80,822,000	83,857,400	82,642,200	85,428,900	84,122,300
21	Construction Fund	66,795,700	52,944,900	50,523,400	49,698,300	49,921,100
22	Total Funds	433,244,600	404,277,300	404,576,300	410,262,300	407,246,700
23	Subtotal w/o Construction Funds	366,448,900	351,332,400	354,052,900	360,564,000	357,325,600

(a) Only includes GLWA Regional I&E Account

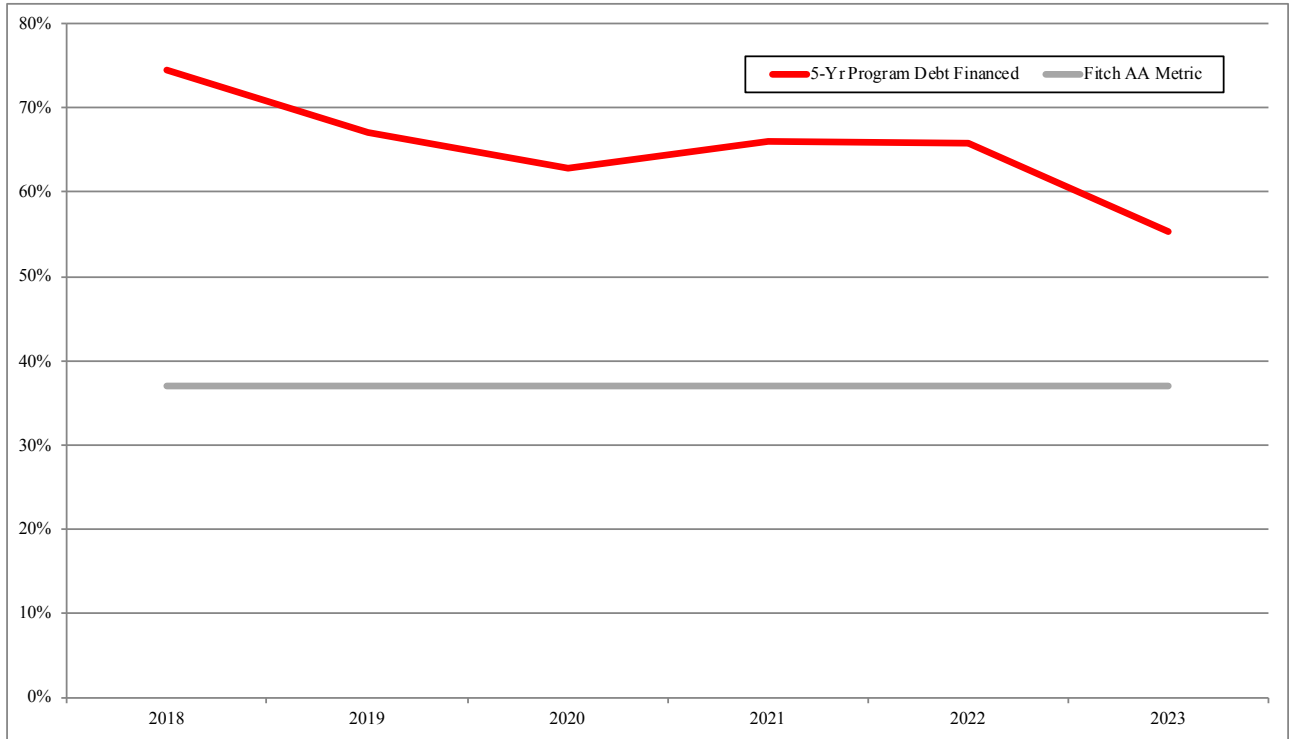
(b) Does not include Lease Payment transferred to DWSD Local I&E Account.

(c) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

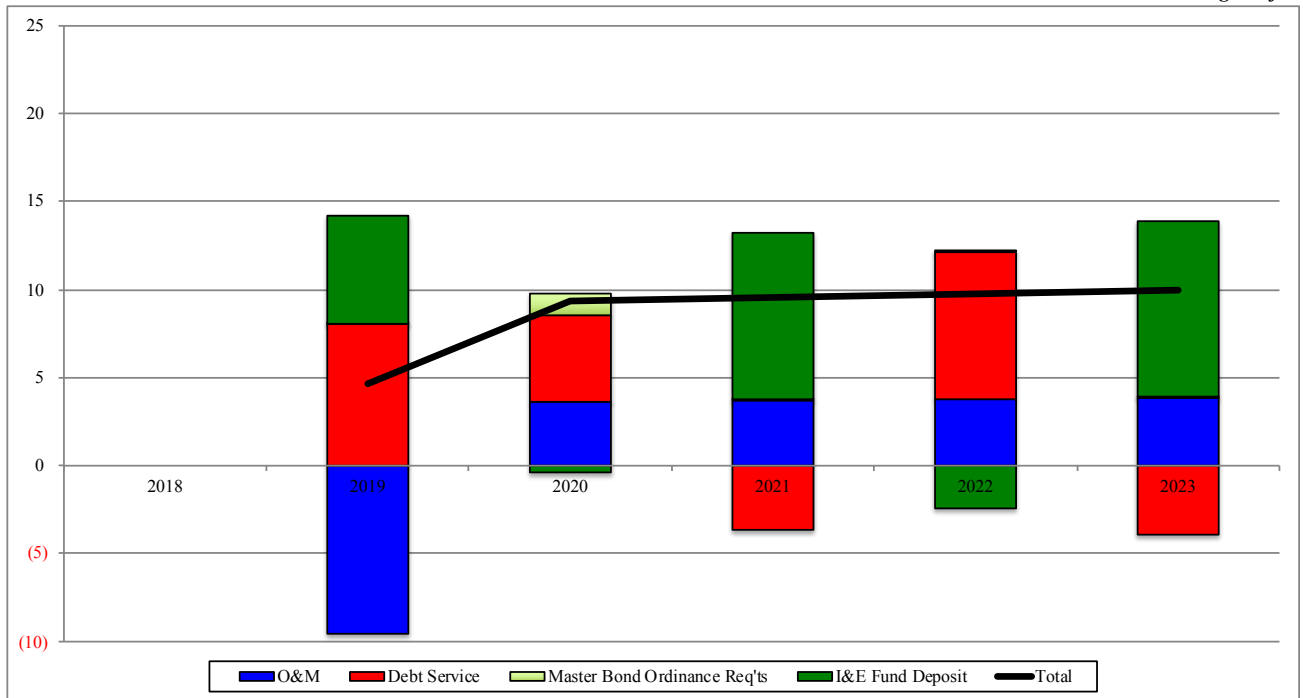


CIP Financing Requirement:	75	90	85	85	104	93
<u>Financing Sources</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Construction Bonds	72	76	44	57	78	51
I&E Fund	3	14	41	28	26	42
Other	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

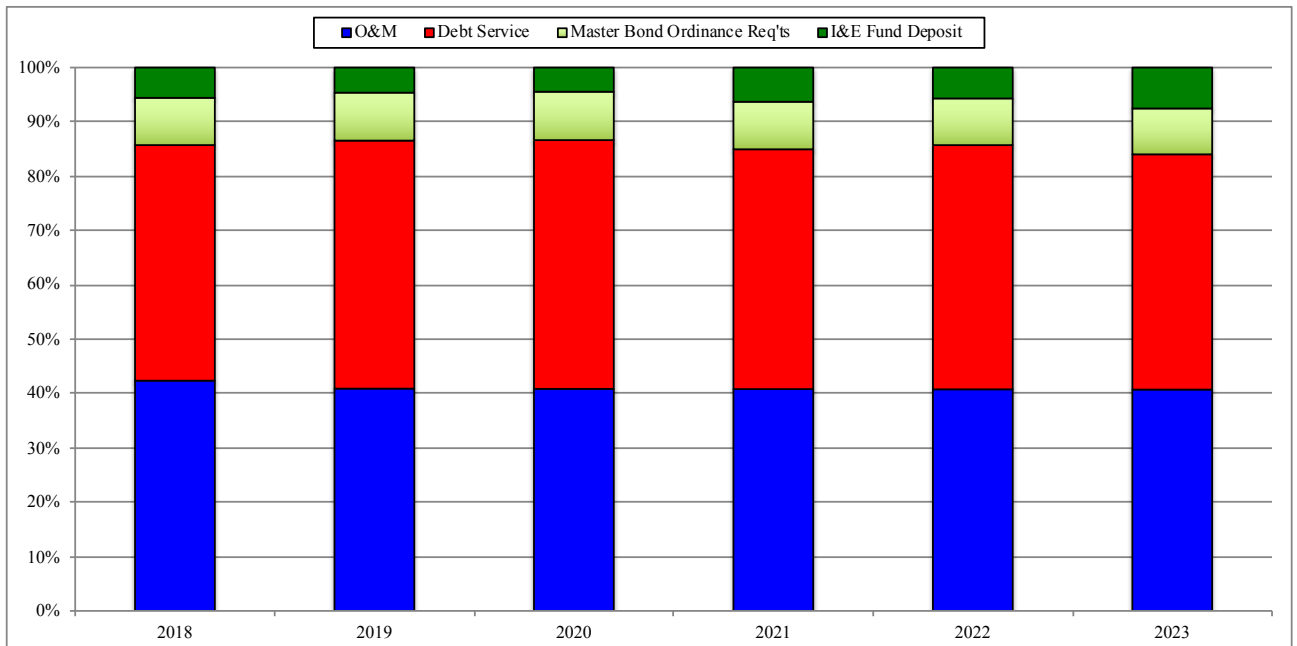


5-Yr Program Debt Finance	74%	67%	63%	66%	66%	55%
Fitch AA Metric	37%	37%	37%	37%	37%	37%

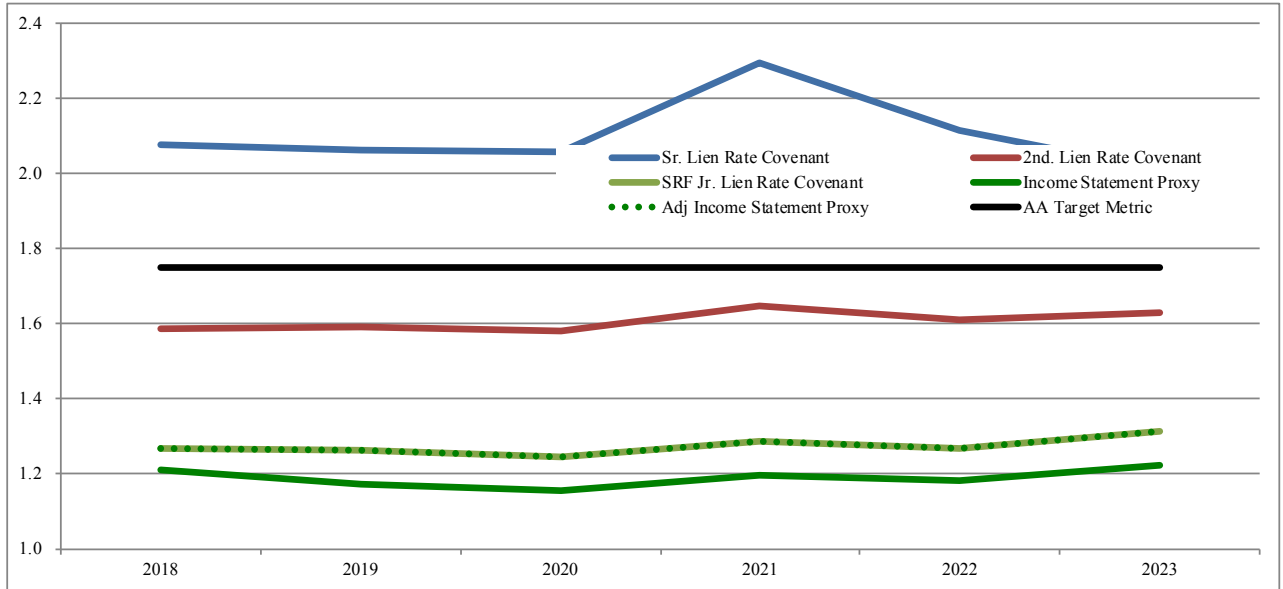


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M		(9.6)	3.6	3.7	3.8	3.9
Debt Service		8.0	4.9	(3.6)	8.4	(3.9)
Master Bond Ordinance Req'ts		0.0	1.2	0.1	0.1	0.1
I&E Fund Deposit		6.1	(0.4)	9.5	(2.4)	10.0
Total		4.7	9.4	9.6	9.8	10.0

Relative BUDGET

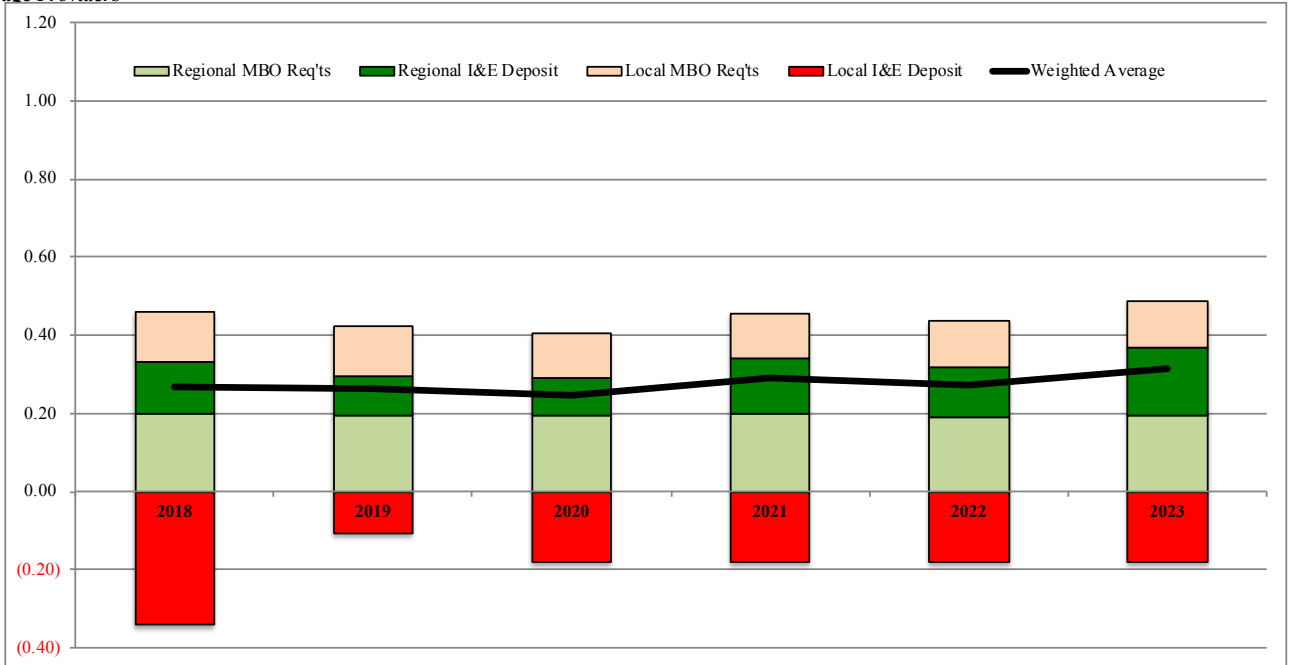


	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
O&M	42%	41%	41%	41%	41%	41%
Debt Service	43%	46%	46%	44%	45%	43%
Master Bond Ordinance Req	9%	9%	9%	9%	9%	8%
I&E Fund Deposit	6%	5%	4%	6%	6%	8%

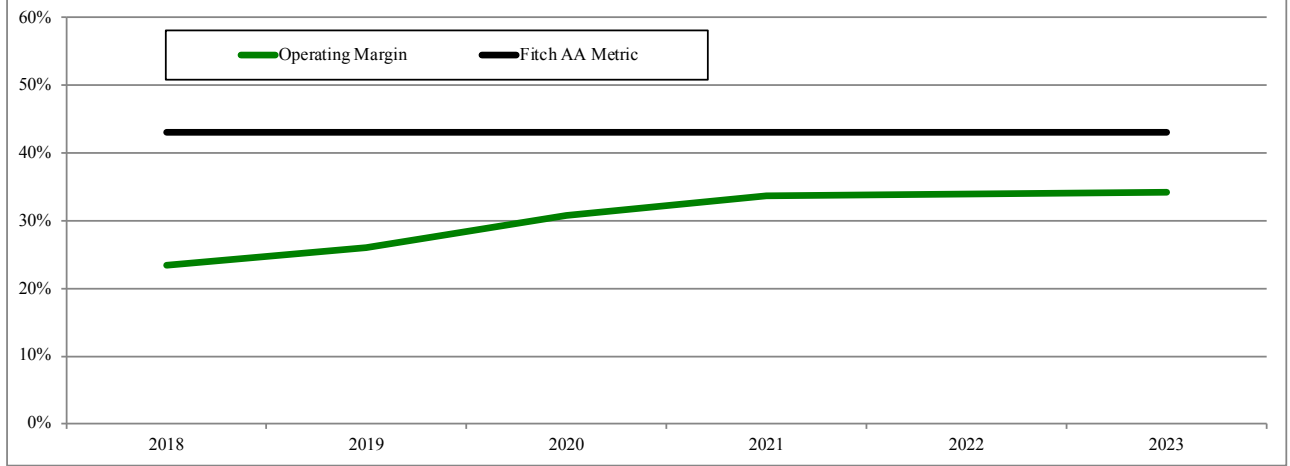


Sr. Lien Rate Covenant	2.08	2.06	2.06	2.29	2.11	2.01
2nd. Lien Rate Covenant	1.59	1.59	1.58	1.65	1.61	1.63
SRF Jr. Lien Rate Covenant	1.27	1.26	1.25	1.29	1.27	1.31
Income Statement Proxy	1.21	1.17	1.16	1.20	1.18	1.22
Adj Income Statement Proxy	1.27	1.26	1.25	1.29	1.27	1.31
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

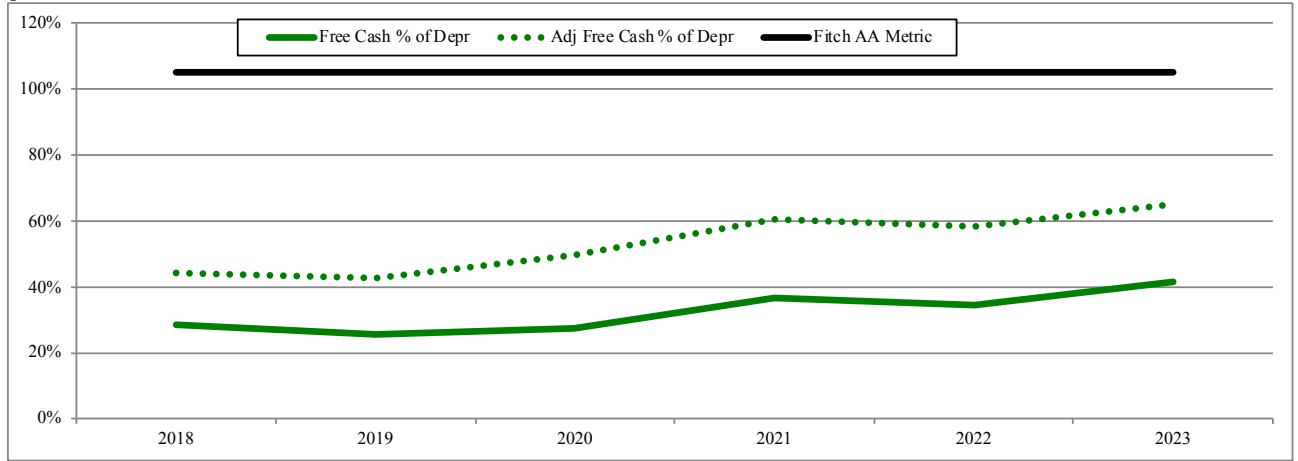


Regional MBO Req'ts	0.20	0.19	0.19	0.20	0.19	0.19
Regional I&E Deposit	0.13	0.10	0.10	0.14	0.13	0.17
Local MBO Req'ts	0.13	0.13	0.11	0.11	0.12	0.12
Local I&E Deposit	(0.34)	(0.11)	(0.18)	(0.18)	(0.18)	(0.18)
Weighted Average	0.27	0.26	0.25	0.29	0.27	0.31
Regional Total	0.33	0.29	0.29	0.34	0.32	0.37
Local Total	(0.21)	0.02	(0.07)	(0.07)	(0.06)	(0.06)
Weighted Average	0.27	0.26	0.25	0.29	0.27	0.31



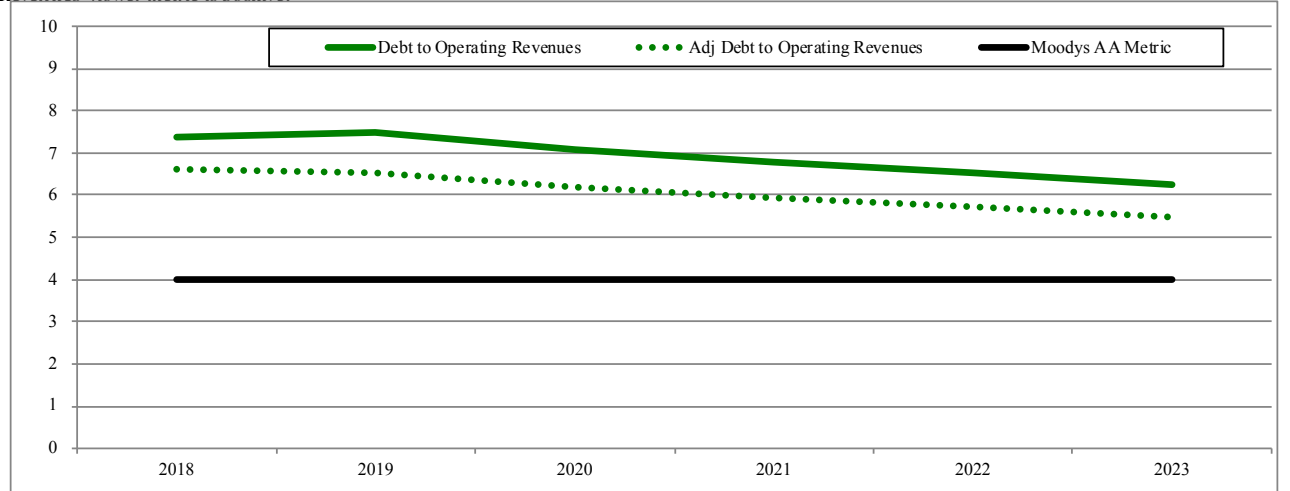
Operating Margin	23%	26%	31%	34%	34%	34%
Fitch AA Metric	43%	43%	43%	43%	43%	43%

Free Cash % of Depr

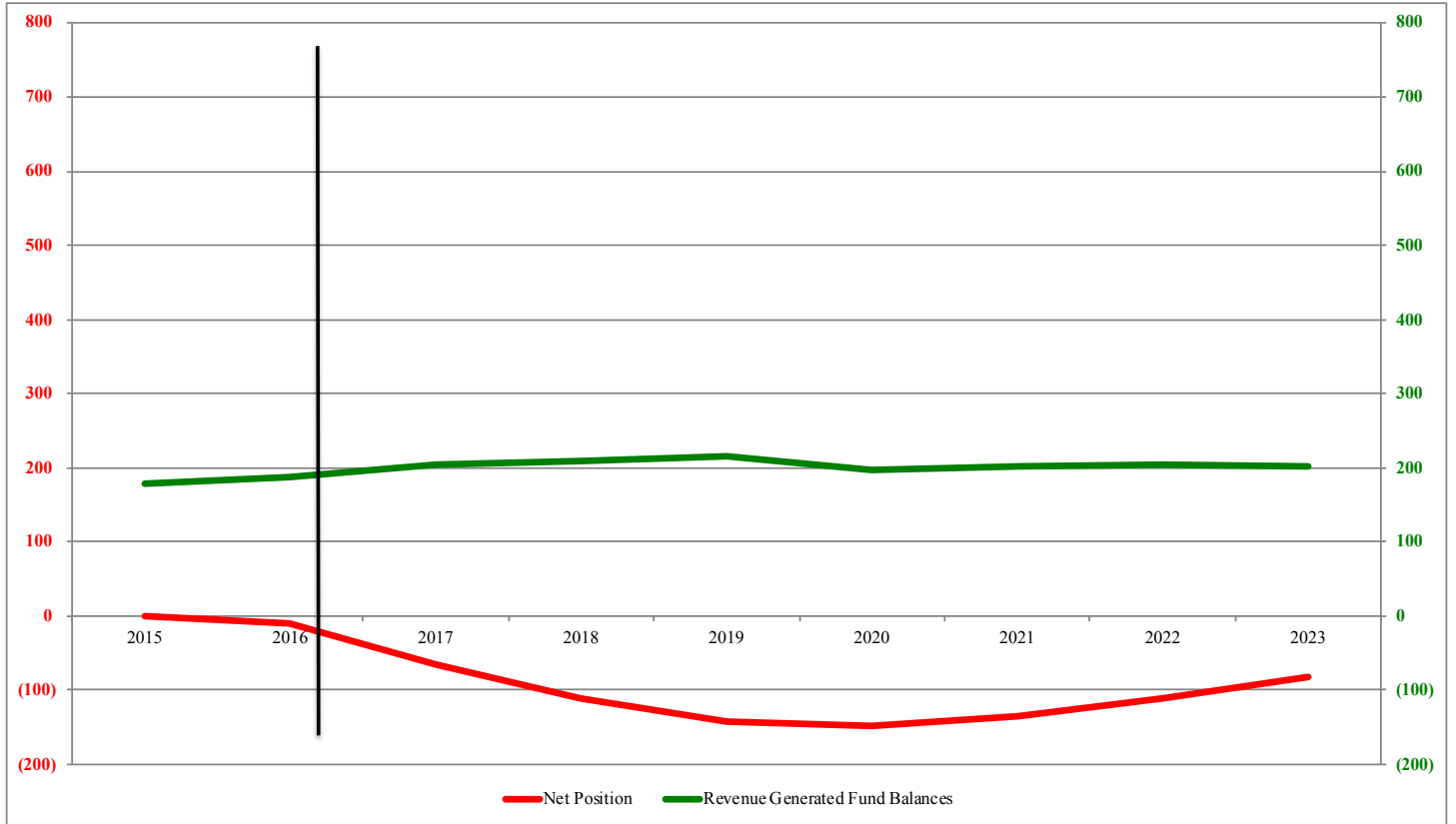


Free Cash % of Depr	29%	26%	27%	36%	34%	41%
Adj Free Cash % of Depr	44%	43%	50%	60%	58%	65%
Fitch AA Metric	105%	105%	105%	105%	105%	105%

Debt to Operating Revenues (lower metric is positive)



Debt to Operating Revenues	7.4	7.5	7.1	6.8	6.5	6.2
Adj Debt to Operating Reve	6.6	6.5	6.2	5.9	5.7	5.5
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0



Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio

