



Audit Committee

Friday, September 20, 2019 at 8:00 a.m.

5th Floor Board Room, Water Board Building
735 Randolph Street, Detroit, Michigan 48226
GLWater.org

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
 - A. July 19, 20219 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS

Note: The Audit Committee meeting for Friday, September 20, 2019 was cancelled. This binder has been posted on our website- <https://www.glwater.org/financials/> for reference at the next scheduled meeting.

- A. August Audit Committee Binder (Page 4)
<https://www.glwater.org/wp-content/uploads/2019/08/GLWA-Audit-Committee-Binder-8.16.2019-.pdf>
 - B. Shared Services Update (Page 5)
 - C. Quarterly Investment Report (Page 6)
7. NEW BUSINESS
 - A. PFM Update- Potential Refunding Transactions (Page 35)
 - B. FY 2019 Annual Financial Audit Update (Page 52)
8. REPORTS
 - A. Monthly Financial Report for June 2019 (Page 58)
 - B. Quarterly Debt Report (Page 59)
 - C. CFO Updates (verbal)
9. LOOK AHEAD
 - Next Audit Committee Meetings
 - A. Regular Meeting October 18, 2019 at 8:00 a.m.
10. INFORMATION
11. OTHER MATTERS
12. ADJOURNMENT



Great Lakes Water Authority

735 Randolph Street
Detroit, Michigan 48226
glwater.legistar.com

Meeting Minutes - Draft

Audit Committee

Friday, July 19, 2019

8:00 AM

Water Board Building 5th Floor

1. Call To Order

Chairman Daddow called the meeting to order at 8:00 a.m.

2. Quorum Call

Present: 2 - Chairman Robert Daddow, and Director Gary Brown

Excused: 1 - Director Brian Baker

3. Approval of Agenda

Chairman Daddow requested a Motion to approve the Agenda.

Motion By: Gary Brown

Support: Robert Daddow

Action: Approved

The motion carried by a unanimous vote.

4. Approval of Minutes

A. [2019-281](#) Approval of Minutes of June 21, 2019

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [June 21, 2019 Audit Committee Meeting Minutes.pdf](#)

Chairman Daddow requested a Motion to approve the June 21, 2019 Audit Committee Meeting Minutes.

Motion By: Gary Brown

Support By: Robert Daddow

Action: Approved

The motion carried by a unanimous vote.

5. Public Comment

There were no public comments.

6. Old Business

None

7. New Business

- A. [2019-282](#) Series Ordinance Authorizing the Issuance of Water Supply System Revenue Bonds

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Approval of Series Ordinance- Water Revenue Bonds 7.19.19.pdf](#)
[REVISED- Approval of Series Ordinance- Water Revenue Bonds 7.24.19.pdf](#)
[REVISED- Series Ordinance \(2019 4th Quarter SRF\) 7.24.19 Board Meeting.pdf](#)
[REVISED- Resolution Approving 2019 SRF-23 Ordinance 7.24.19 Board Meeting.docx](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Recommended for Approval to the Board of Directors

Agenda of July 24, 2019

The motion carried by a unanimous vote.

8. Reports

- A. [2019-283](#) Monthly Financial Report for April 2019

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [GLWA Monthly Financial Report April 2019.pdf](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

- B. [2019-284](#) PFM Financial Advisors Presentation: B&C Note History and Recent Transactions; Refinancing and New Money Opportunities in FY 2020

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Audit Committee Communication- PFM Update 7.19.19.pdf](#)
[PFM July 2019 Presentation to Audit Committee - B&C Notes and 2019 Financing Opportunities REVISED 7.16.19PW.pdf](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

C. [2019-285](#) Quarterly Debt Report as of March 31, 2019

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Quarterly Debt Report as of 3.31.2019_updated 7.19.2019.pdf](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

D. CFO Updates (verbal)

Nicolette Bateson, Chief Financial Officer/Treasurer, provided a verbal update on the following topics:

- Strategic Asset Management Plan
- General Retirement System
- 2018 CAFR
- Submittal of the Budget to the GFOA, which has been extended to July 31st
- Draft report from Raftelis on sewer charges methodology

9. Look Ahead

The next Audit Committee Meeting is scheduled for Friday, August 16, 2019 at 8:00 a.m.

10. Information

None

11. Other Matters

Chairman Daddow noted that Oakland County has hired Dave Gajda to assist him with GLWA duties.

12. Adjournment

Chairman Daddow requested a Motion to adjourn.

Motion By: Gary Brown

Support: Robert Daddow

Action: Approved

The motion carried by a unanimous vote.

There being no further business, the meeting was adjourned at 9:37 a.m.



Financial Services Audit Committee Communication

Date: September 20, 2019

To: Great Lakes Water Authority Audit Committee

From: Kim Garland, Reporting & Compliance Manager

Re: August 2019 Audit Committee Binder

Background: The August 2019 Audit Committee meeting was cancelled. An Audit Committee Binder was, however, prepared and posted at www.glwater.org. Following are key topics from the binder prepared and included with the September 2019 Audit Committee package. These items have been carried forward the September 2019 agenda.

- An update related to closing out FY 2018 and FY 2019 Shared Services activity by the end of FY 2020.
- The Quarterly Investment Report which highlights the improvements in GLWA investment earnings over time due to long-term planning and portfolio management. Despite these efforts, the recent economic downturn in interest rates is causing an ongoing review of FY 2020 investment income projections and strategies to lessen the impact.
- The May 2019 Monthly Financial Report Binder which presents positive budget performance for the GLWA regional system and continued reduction of the DWSD local system sewer shortfall for FY 2019.

Proposed Action: Receive and file.



Financial Services Audit Committee Communication

Date: September 20, 2019

To: Great Lakes Water Authority Audit Committee

From: Alicia Haskin, Management Professional – Intergovernmental Relations

Re: August 2019 Audit Committee Shared Services Update

Background: The August 2019 Audit Committee meeting was cancelled. An Audit Committee Binder was, however, prepared and posted at www.glwater.org. The Shared Services update included the following items:

- FY 2017 Payment and Summary of Shared Services Billings and Payments
- FY 2018 True Up Status Update
- Shared Service Terminations and Updated Scope of Service

Moving forward, there will be a Shared Services update at least quarterly.

Proposed Action: Receive and file



Financial Services Audit Committee Communication

Date: September 20, 2019

To: Great Lakes Water Authority Audit Committee

From: Deirdre Henry, Treasury Manager

Re: Quarterly Investment Report through June 30, 2019 (Unaudited)

Background: As stated in section 14 of the Great Lakes Water Authority (GLWA) Investment Policy, quarterly reporting shall be presented to provide a clear picture of the status of the current GLWA investment portfolio. The attached report, prepared and presented by PFM Asset Management LLC, summarizes portfolio information through June 30, 2019 (unaudited).

This report was originally scheduled to be presented at the August 2019 Audit Committee Meeting that was cancelled. The attached report has been updated to reflect the most current economic information.

Analysis: The Quarterly Investment Report complies with the requirements of Public Act 20 of 1948, as amended and the GLWA Investment Policy. GLWA is investing its funds in a diversified portfolio which includes bank deposits, money market funds, a local government investment pool, U.S. Treasuries, Federal Agencies, and commercial paper. All securities in the portfolio are in compliance with the GLWA investment policy. Key metrics are provided below with additional commentary in the attached report.

- Yield to Market at Cost compared to market index:
 - As of June 30, 2019: 2.13% vs 2.09% (3-Month Treasury Index)
 - As of March 31, 2019: 2.37% vs 2.35% (3-Month Treasury Index)
- Portfolio Allocation in Cash/Money Market Securities
 - As of June 30, 2019: 56%
 - As of March 31, 2019: 36%

As GLWA continues to implement process improvements and more clearly define cash flows, the treasury group will work with PFM Asset Management LLC to identify strategies to maximize investment returns while meeting GLWA standards for safety and liquidity.

Proposed Action: Receive and file report.

Great Lakes Water Authority

Investment Performance Report – June 2019



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PORTFOLIO RECAP

- **Safety** – The overall portfolio is diversified amongst cash, bank deposits, U.S. Treasuries, Federal Agencies, commercial paper, SEC-registered money market funds, and a local government investment pool. The total credit profile of the pool is strong with over 97% of the assets invested in bank deposits or securities that are rated within the two highest short and long-term rating classifications as established by S&P.
- **Liquidity** – The Authority has continued to monitor its portfolio with the goal of limiting the allocation to cash and deposit accounts and maximizing the use of money market funds and short-term investments to meet liquidity requirements. At June 30th, 56% of the funds were held in cash and money market accounts to meet the year end debt and pension payments.
- **Return** – The overall yield decreased to 2.13% as of June 30, 2019 versus 2.37% at March 31, 2019. The lower return is a result of the declining interest rate environment. The Authority earned \$22.3 million (unaudited) in investment income for fiscal year 2019 on a book value basis. Based on current market assumptions and the projection that the fiscal year 2020 average investable balances are like fiscal year 2019, we are projecting investment income of approximately \$17.4 million for fiscal year 2020.

AVAILABLE FUNDS (Unaudited)

Type	Financial Institution	Book Value	Market Value	YTM @ Market (as of 6/30/19)
Deposit Account	Comerica	\$8,018,321	\$8,018,321	0.18%
Deposit Account - Retainage	First Independence	\$16,775,614	\$16,775,614	0.05%
Deposit Account – Flint Security Deposit	Chase	\$3,791,272	\$3,791,272	1.30%
Deposit Account	Chase	\$3,570,760	\$3,570,760	1.30%
Trust Money Market Fund	U.S. Bank	\$376,777,805	\$376,777,805	2.25%
Money Market Fund	JP Morgan	\$88,044,312	\$88,044,312	2.19%
Local Government Investment Pool	GovMIC	\$79,871,843	\$79,871,843	2.39%
Managed Funds	PFM	\$457,763,134	\$460,077,600	2.08%
<u>TOTAL</u>		<u>\$1,034,613,061</u>	<u>\$1,036,927,527</u>	<u>2.13%</u>

The accounts at Comerica Bank get an earnings credit to offset bank fees. The funds and earnings in the Retainage account are held on behalf of the contractors and do not belong to GLWA. The funds and earnings in the Flint Security Deposit account are held on behalf of the City of Flint and do not belong to GLWA. Note that market values move inversely to interest rates, and the recent rise in yields has led to the overall market value being less than the book value. In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of 6/30/2019.

Investment Strategy

GLWA INVESTMENT STRATEGY

- The portfolio is in compliance with the Authority's investment policy.
- To date, the Authority has continued to invest its funds in a mixture of short and intermediate-term investments to ensure sufficient liquidity. There was a slight increase in assets maturing overnight at the end of June to cover early July obligations for debt and pension payments.
- The aggregate portfolio was yielding 2.13% at the end of June.*
 - This compares to the 2.09% yield of the Bank of America / Merrill Lynch 3-Month U.S. Treasury Bill Index as of 6/30/2019, which is a comparable market indicator.
- The Authority continues to implement a disciplined investment plan to provide improved safety and diversification and putting every dollar to work.
- For the first quarter of FY 2020, the Authority's investment advisor will continue to actively manage long-term portfolios with full discretion and align short-term balances with expected liabilities, subject to the Authority's investment policy.
- The Authority will continue to work with its investment manager to identify strategies in this declining interest rate environment to maximize future investment income while meeting the objectives of safety and liquidity.
- Assuming that the Authority maintains the same investable balances for FY 2020 and assuming further decreases in interest rates, we conservatively expect to earn approximately \$17.4 million in interest income in FY 2020.

* Current market yield as of June 30, 2019.

Summary Market Overview and Outlook

ECONOMIC HIGHLIGHTS UPDATE

- Bond returns for the first half of the year were strong. Equity returns were even stronger. The recent trend of rising bond prices and rising stock prices in the face of declining economic growth, a weaker outlook for corporate earnings, and rising trade tensions, does not match the usual pattern of market behavior and most investors believe that something will eventually have to give.
- The Federal Reserve held short-term rates unchanged in June at the target range of 2.25% to 2.50% (though a rate cut did occur at the Fed's meeting in July). Fed Chair Jerome Powell acknowledged risks to the Fed's positive outlook that included: ongoing trade disputes, global growth concerns, a messy Brexit, recent declines in business sentiment and investment, and increased risk of falling inflation. Based on the current forecast for effective Fed Funds futures, there is a 79% probability of a 25 basis point rate cut in September. The market is now pricing in three rate cuts by the end of the year.

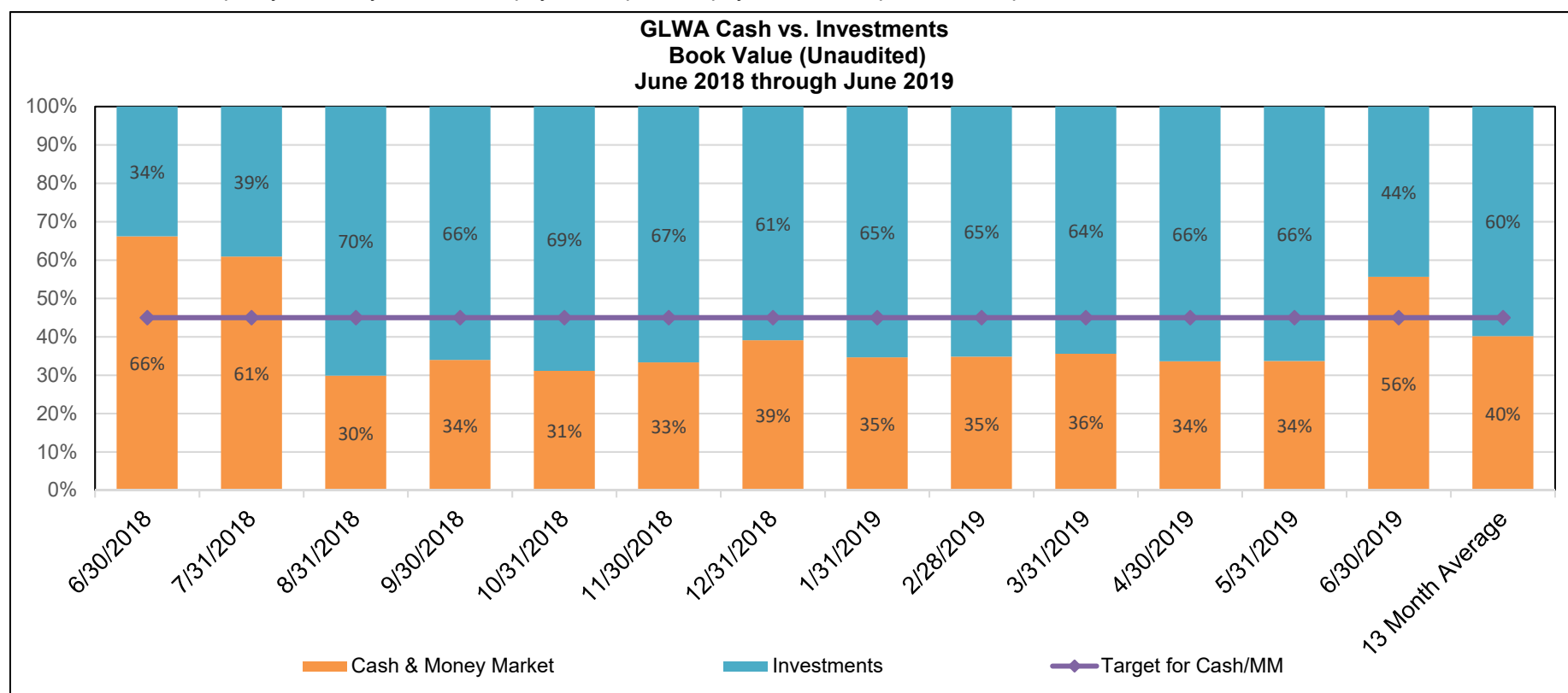
ECONOMIC IMPACT ON PORTFOLIO

- In light of rising uncertainties, Fed Chair Powell recently stated that the Fed will “act as appropriate to sustain the expansion.” The market now widely expects two or three Fed rate cuts in the second half of 2019, with the first cut already taking place at the end of July.
- U.S. Treasury yields declined across the entire curve in June, with maturities under a year falling more (down 20 to 25 basis points) than those between one and 10 years (down 10 to 15 basis points). Short-term yields are closely tied to the expected near-term cuts in the Fed Funds rate. As a result, the spread between 10-year and 3-month Treasury securities shifted modestly, but the yield curve remains inverted out to 10 years.
- Expected rate cuts by the Fed have pushed money market yields lower and the sector has also been impacted by narrowing credit spreads that have depressed relative yields in credit-backed instruments. The best value today is in very short maturities, but this is not without risk as actual Fed action will immediately affect these maturities.
- In light of the Fed's current stance on monetary policy and the general outlook that yields are more likely to fall over the near term, a neutral duration strategy will help reduce interest risk in the event yields continue to fall.

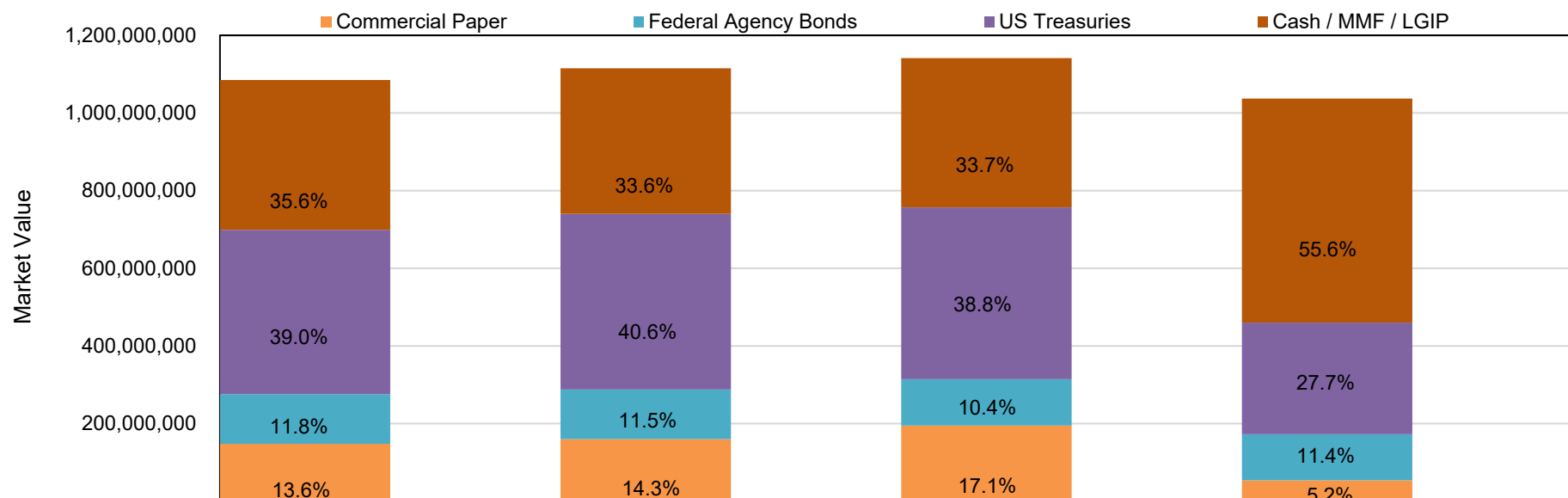
Portfolio Mix

Cash / Money Market vs. Investments

- The Authority's liquidity requirements fluctuate each month based on operational requirements, capital funding, and debt payments. Based on a review of historical activity and refinement of cash flow projections, the Authority has set an average target of 45% cash/money market accounts and 55% investments for the portfolio holdings. The 13-month average at June of 2019 is close to the target.
- The chart below compares the monthly allocation of the portfolio holdings to the 13-month average and the target. The allocation between cash and investments will vary each month based on liquidity requirements, and the slight increase in the cash/money market holdings for June of 2019 is related to increased liquidity to meet year end debt payments, pension payments, and operational requirements.



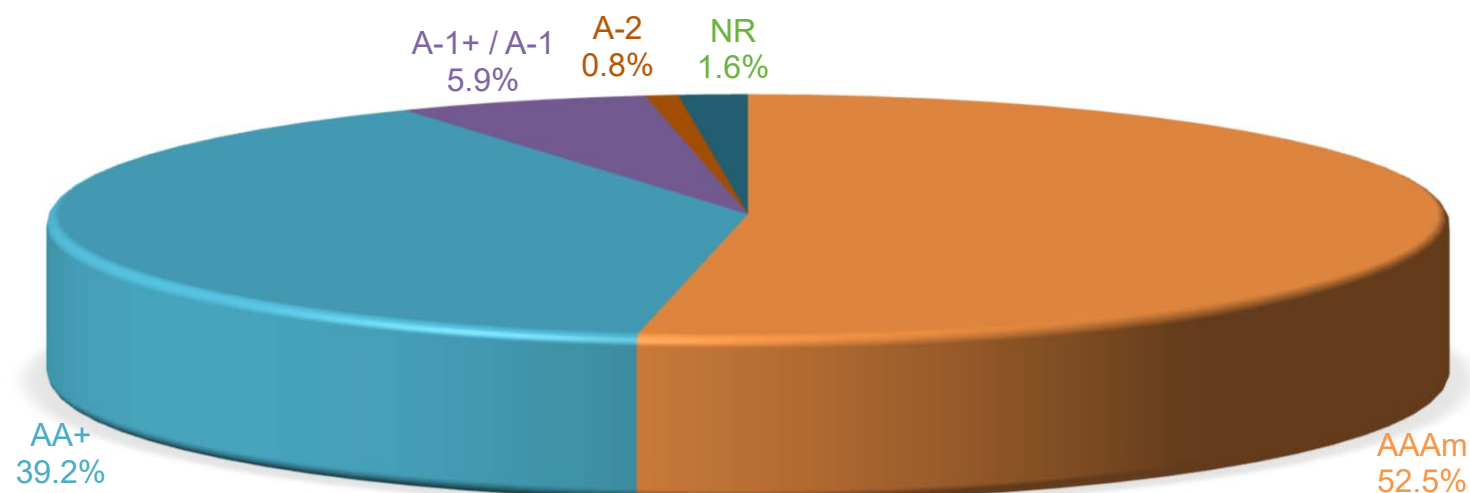
Investments – By Security Type



Security Type	March		April		May		June	
	Market Value	Asset Allocation	Market Value	Asset Allocation	Market Value	Asset Allocation	Market Value	Asset Allocation
Commercial Paper	147,599,028	13.6%	159,704,250	14.3%	194,975,092	17.1%	53,840,560	5.2%
Federal Agencies	127,908,615	11.8%	127,950,401	11.5%	119,242,423	10.4%	118,656,693	11.4%
U.S. Treasuries	423,421,144	39.0%	452,327,928	40.6%	442,321,266	38.8%	287,580,347	27.7%
Cash / MMF / LGIP	385,775,971	35.6%	375,057,975	33.6%	384,615,228	33.7%	576,849,927	55.6%
Total	1,084,704,758	100.0%	1,115,040,555	100.0%	1,141,154,009	100.0%	1,036,927,527	100.0%

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

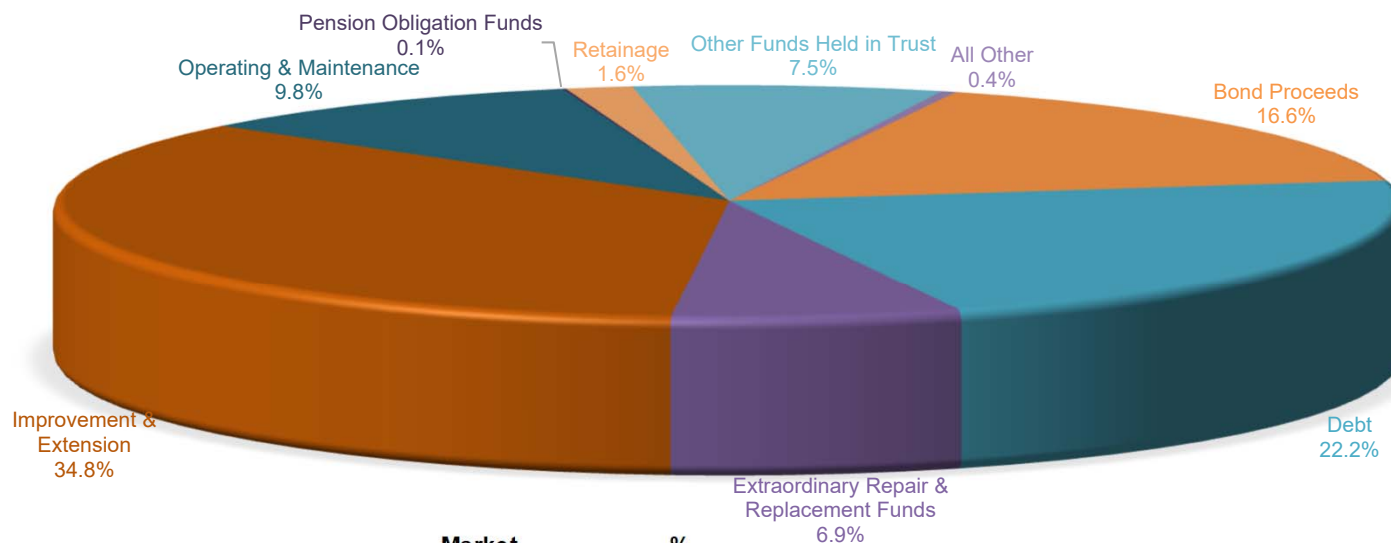
Investments – By Credit Quality



Credit Quality	Market Value	Asset Allocation
Ratings		
AAAm	544,693,960	52.5%
AA+	406,237,040	39.2%
A-1 + / A-1	61,202,592	5.9%
A-2	8,018,321	0.773%
NR	16,775,614	1.6%
Totals	1,036,927,527	100.0%

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

Investments – By Account Purpose



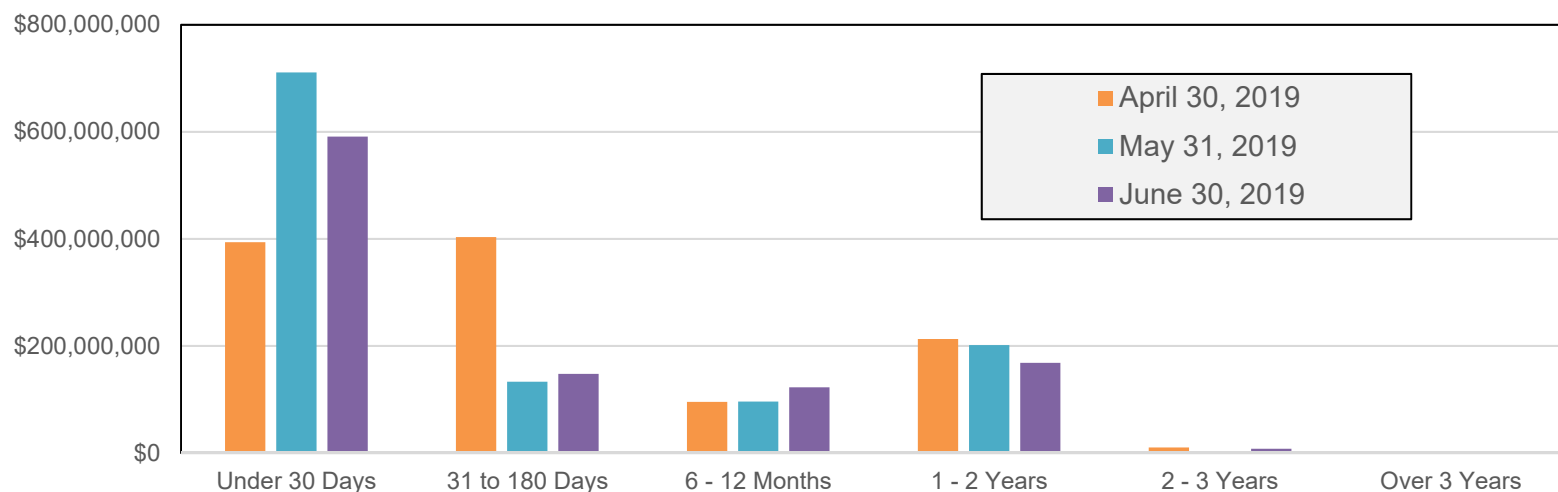
Account Purpose	Market Value	% Allocation
Bond Proceeds	\$ 172,551,711	16.6%
Debt	\$ 230,628,409	22.2%
Extraordinary Repair & Replacement Funds	\$ 72,010,058	6.9%
Improvement & Extension	\$ 360,919,031	34.8%
Operating & Maintenance	\$ 101,160,446	9.8%
Pension Obligation Funds	\$ 1,014,020	0.1%
Retainage	\$ 16,775,614	1.6%
Other Funds Held in Trust	\$ 78,076,968	7.5%
All Other	\$ 3,791,272	0.4%
Total	\$ 1,036,927,527	100.0%

Other Funds Held in Trust	Market Value	% Allocation
Budget Stabilization Funds	\$ 7,535,368	9.7%
Receiving Funds	\$ 60,943,601	78.1%
WRAP Funds	\$ 9,597,999	12.3%
Total	\$ 78,076,968	100.0%

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019. "All Other" funds includes the Flint Security Deposit account which is held on behalf of the City of Flint and do not belong to GLWA.

Investments – By Maturity

Maturity Distribution	April 30, 2019		%	May 31, 2019		%	June 30, 2019		%
Under 30 Days	\$	393,636,428	35.3%	\$	710,855,323	62.3%	\$	590,941,220	57.0%
31 to 180 Days		403,207,806	36.2%		133,118,715	11.7%		147,569,900	14.2%
6 - 12 Months		95,276,612	8.5%		95,795,839	8.4%		122,599,994	11.8%
1 - 2 Years		212,766,554	19.1%		201,384,132	17.6%		168,184,200	16.2%
2 - 3 Years		10,153,154	0.9%		-	0.0%		7,632,213	0.7%
Over 3 Years		-	0.0%		-	0.0%		-	0.0%
Totals	\$	1,115,040,555	100.0%	\$	1,141,154,009	100.0%	\$	1,036,927,527	100.0%



In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

Investment Accounts – Yield at Cost & Market

	As of June 30, 2019		As of March 31, 2019	
	YTM @ Cost	YTM @ Market	YTM @ Cost	YTM @ Market
Bank Deposits				
Comerica	0.18%	0.18%	0.25%	0.25%
First Independence	0.05%	0.05%	0.05%	0.05%
Flint Deposit Account	1.30%	1.30%	1.32%	1.32%
JP Morgan Chase	1.30%	1.30%	1.32%	1.32%
Sub-Total Bank Deposits	0.37%	0.37%	0.69%	0.69%
Money Market Funds / LGIPs				
GovMIC	2.39%	2.39%	2.49%	2.49%
U.S. Bank - First American MMF	2.25%	2.25%	2.31%	2.31%
JP Morgan Securities - Blackrock MMF	2.29%	2.29%	2.19%	2.19%
Sub-Total MMF / LGIPs	2.28%	2.28%	2.33%	2.33%
Investment Portfolios				
Sewage SR Debt Serv 5403	0.00%	0.00%	2.73%	2.59%
Sewage SR Res 5400	1.58%	1.96%	1.51%	2.45%
Sew 2nd Debt Serv 5403	0.00%	0.00%	2.70%	2.60%
Sewage 2nd Res 5481	2.12%	2.04%	1.88%	2.44%
Sew SRF Debt Serv 5410	2.62%	2.39%	2.70%	2.68%
Sewage ER & R	2.60%	1.95%	2.64%	2.38%
Sewer Improvement & Extension	2.64%	1.99%	2.56%	2.43%
Sewer Pension Obligation	0.00%	0.00%	2.48%	2.45%
Sewer Wrap Fund	2.42%	3.30%	2.54%	3.83%
Sewer Budget Stabilization Fund	2.66%	1.94%	2.66%	2.37%
Sewer Bond Fund	1.93%	2.24%	1.66%	2.44%
Sewer O&M Pension Sub Account	0.00%	0.00%	2.47%	2.45%
Water SR Debt Ser 5503	0.00%	0.00%	2.73%	2.62%
Water SR Reserve 5500	2.71%	1.96%	2.49%	2.45%
Water 2nd Debt Serv 5503	0.00%	0.00%	2.68%	2.58%
Water 2nd Res 5581	0.00%	0.00%	2.15%	2.49%
Water SRF Debt Serv 5575	2.64%	2.41%	2.74%	2.67%
Water ER & R	2.56%	1.94%	2.63%	2.39%
Water Improvement & Extension	2.65%	1.99%	2.63%	2.40%
Water Pension Obligation	0.00%	0.00%	2.48%	2.45%
Water Wrap Fund	2.39%	3.35%	2.54%	4.45%
Water Budget Stabilization Fund	2.66%	1.94%	2.66%	2.37%
Water Bond Fund	2.06%	2.15%	1.86%	2.44%
Water O&M Pension Sub Account	0.00%	0.00%	2.47%	2.45%
Sub-Total Investment Portfolios	2.45%	2.08%	2.42%	2.48%
Grand Total	2.30%	2.13%	2.34%	2.37%

The accounts at Comerica Bank get an earnings credit to offset bank fees. The earnings in the accounts at First Independence Bank is credited to the contractors and not the Authority. The funds in the Flint Security Deposit account are held on behalf of the City of Flint and the earnings do not belong to GLWA. YTM @ Cost is the expected return, based on the original cost, the annual interest receipts, maturity value and the time period from purchase date to maturity, stated as a percentage, on an annualized basis. YTM @ Market is the rate of return, based on the current market value, the annual interest receipts, maturity value and time period remaining until maturity, stated as a percentage, on an annualized basis.

Demonstration of Yield to Maturity vs Duration

- The comparison agencies included in the list below were selected based on type and/or other non-performance based criteria to show a broad range of water entities/utilities. This peer group list does not represent an endorsement of any of the public agencies or their services. The types of funds (e.g., bond proceeds, debt service, etc.) and duration of the overall portfolios listed below as well as the various differences in permitted investments and allowable credit capacity in state statutes (i.e., the ability or non-ability to invest in long-term corporate credit) will have a direct impact on the corresponding yields at market.
- The overall yield of the Authority's aggregate portfolio compares favorably to those of other short-term market indices (i.e., the S&P LGIP index and the 3-month U.S. Treasury index).
- The Authority does not have a potential for a longer duration portfolio when compared to other similar water entities/utilities as the Authority's covenants limits and restricts its ability in managing assets to a longer-term strategy.

As of June 30, 2019

	Market Value	YTM @ Market	Effective Duration	Weighted Average Maturity
GLWA				
Great Lakes Water Authority	\$1,036,927,527	2.13%	0.36 Years	136 Days
Short/Intermediate-Term Indices				
S&P Rated Government Investment Pool Index		2.28%	0.08 Years	30 Days
BoA / ML 3-Month Treasury Index		2.09%	0.16 Years	90 Days
BoA / ML 6-Month Treasury Index		2.12%	0.41 Years	180 Days
BoA / ML 1-Year Treasury Index		2.01%	0.90 Years	365 Days
BoA / ML 1-3 Year Treasury Index		1.80%	1.81 Years	661 Days
BoA / ML 1-5 Year Treasury Index		1.78%	2.56 Years	934 Days
Peer Analysis (Water Entities / Utilities)				
Alameda County Water District, CA	\$136,022,926	1.92%	2.54 Years	973 Days
Coachella Valley Water District, CA	\$451,437,152	2.01%	1.81 Years	808 Days
District of Columbia Water & Sewer Authority, DC	\$202,129,146	2.01%	1.10 Years	421 Days
DuPage Water Commission, IL	\$142,452,407	1.96%	2.26 Years	1,202 Days
Fairfax County Water Authority, VA	\$185,299,589	1.96%	1.92 Years	759 Days
San Bernardino Valley Municipal Water District, CA	\$353,429,641	1.98%	1.81 Years	688 Days
Truckee Meadows Water Authority, NV	\$111,289,599	1.93%	1.75 Years	666 Days

The BoA / ML indexes are unmanaged indexes tracking on-the-run Treasuries. These indexes are produced and maintained by Bank of America / Merrill Lynch & Co. Yield to maturity is the rate of return, based on the current market value, the annual interest receipts, maturity value and time period remaining until maturity, stated as a percentage, on an annualized basis.

Monthly Investment Income (Book Value)

FY 2019 INVESTMENT INCOME BY MONTH (Unaudited)

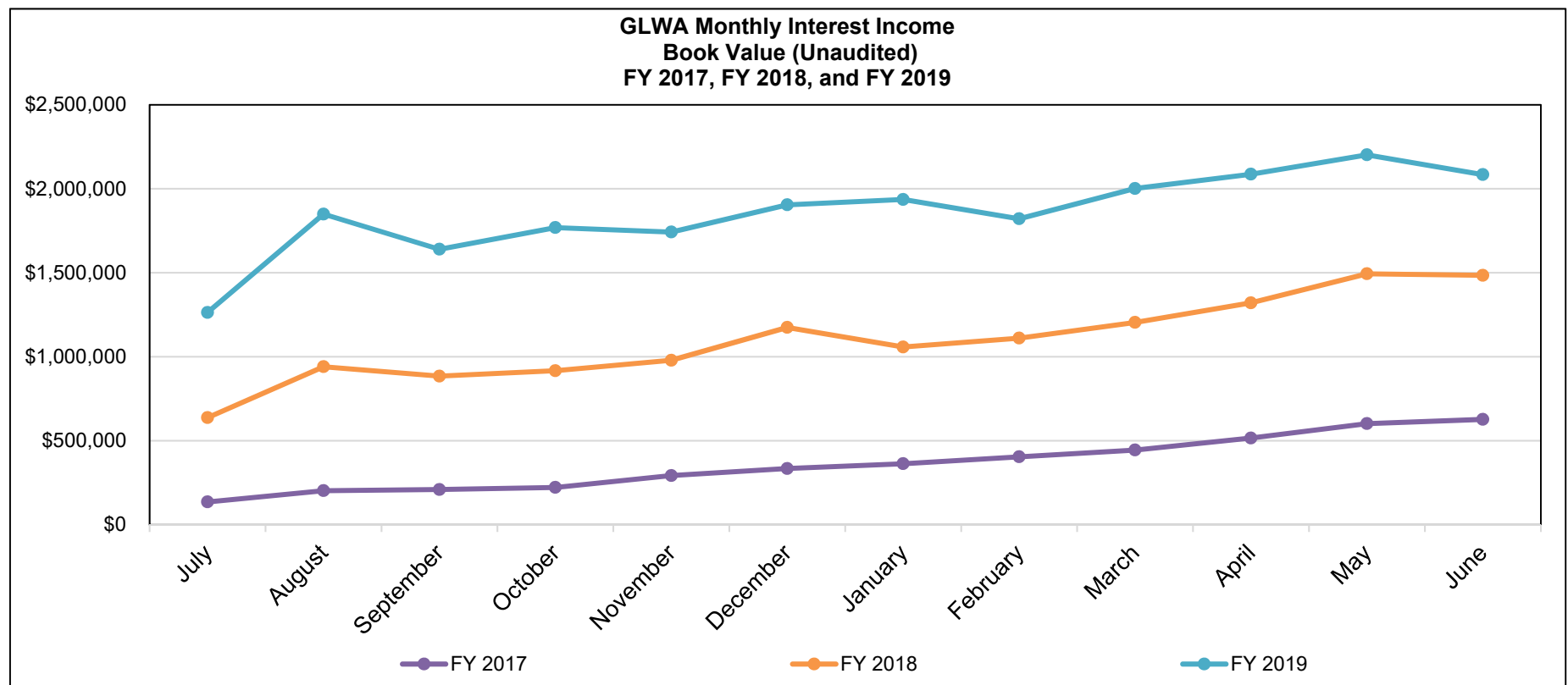
Month	Interest Earned During Period	Realized Gain / Loss	Investment Income
July 2018	\$1,264,010.74	\$0.00	\$1,264,010.74
August 2018	\$1,849,353.45	\$0.00	\$1,849,353.45
September 2018	\$1,638,462.50	\$1,631.65	\$1,640,094.15
October 2018	\$1,769,202.57	\$0.00	\$1,769,202.57
November 2018	\$1,742,251.26	\$0.00	\$1,742,251.26
December 2018	\$1,904,361.36	\$0.00	\$1,904,361.36
January 2019	\$1,890,671.19	\$45,694.26	\$1,936,365.45
February 2019	\$1,828,469.60	(\$6,953.05)*	\$1,821,516.55
March 2019	\$2,001,791.03	\$0.00	\$2,001,791.03
April 2019	\$2,086,870.95	\$0.00	\$2,086,870.95
May 2019	\$2,202,061.36	\$0.00	\$2,202,061.36
June 2019	\$2,084,504.72	\$0.00	\$2,084,504.72
<u>FY 2019 Y-T-D</u>	<u>\$22,262,010.73</u>	<u>\$40,372.86</u>	<u>\$22,302,383.59</u>

* The Authority generally does not realize losses on its investments, however, in February, an adjustment to the cash flow forecast resulted in the sale of investments to meet liquidity requirements. As GLWA continues to refine cash flows, they will work closely with their investment advisor to align investment maturities with cash flow requirements.

These figures are based upon actual interest earned and posted to the Authority's various accounts via book value and does not include any earnings credit rate tied to the Authority's bank deposits.

Year over Year Investment Income

- The Authority has earned \$22,302,384 in investment income for fiscal year 2019 on a book value basis compared to \$13,207,619 for fiscal year 2018.
- Projected investment income for fiscal year 2020 is \$17.4 million as the market is pricing in expectations for at least two more projected interest rate cuts by the Fed during fiscal year 2020.



Appendix I: Portfolio Holdings

Portfolio Holdings As of June 30, 2019

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
Short-Term Bank Deposits / MMF / LGIP									
COMERICA BANK		\$ 8,018,321	7/1/2019	6/30/2019	0.18%	\$ 8,018,321	1	\$ -	\$ 8,018,321
FIRST INDEPENDENCE BANK		16,775,614	7/1/2019	6/30/2019	0.05%	16,775,614	1	-	16,775,614
FLINT DEPOSIT ACCOUNT		3,791,272	7/1/2019	6/30/2019	1.30%	3,791,272	1	-	3,791,272
JP MORGAN CHASE		3,570,760	7/1/2019	6/30/2019	1.30%	3,570,760	1	-	3,570,760
GoMIC		79,871,843	7/1/2019	6/30/2019	2.39%	79,871,843	1	-	79,871,843
U.S. BANK - FIRST AMERICAN MMF		376,777,805	7/1/2019	6/30/2019	2.25%	376,777,805	1	-	376,777,805
JP MORGAN SECURITIES - BLACKROCK MMF		88,044,312	7/1/2019	6/30/2019	2.29%	88,044,312	1	-	88,044,312
Commercial Paper									
Toyota Motor Credit 0 7/1/2019	89233HU10	\$ 995,000	7/1/2019	5/10/2019	2.41%	\$ 991,551	1	\$ -	\$ 995,000
Toyota Motor Credit 0 7/1/2019	89233HU10	1,145,000	7/1/2019	5/10/2019	2.41%	1,141,031	1	-	1,145,000
Natixis NY 0 9/3/2019	63873KW37	1,000,000	9/3/2019	5/10/2019	2.55%	991,848	65	-	995,950
Natixis NY 0 9/3/2019	63873KW37	1,000,000	9/3/2019	5/10/2019	2.55%	991,848	65	-	995,950
JPMorgan Securities 0 9/23/2019	46640QWP2	216,000	9/23/2019	1/4/2019	2.97%	211,425	85	-	214,851
MUFG Bank NY 0 9/23/2019	62479MWP4	213,000	9/23/2019	2/6/2019	2.73%	209,369	85	-	211,867
MUFG Bank NY 0 9/23/2019	62479MWP4	396,000	9/23/2019	3/27/2019	2.61%	390,892	85	-	393,893
MUFG Bank NY 0 9/23/2019	62479MWP4	210,000	9/23/2019	4/4/2019	2.62%	207,401	85	-	208,883
MUFG Bank NY 0 9/23/2019	62479MWP4	211,000	9/23/2019	5/10/2019	2.58%	208,967	85	-	209,877
Toyota Motor Credit 0 9/23/2019	89233HWP5	230,000	9/23/2019	6/7/2019	2.34%	228,399	85	-	228,776
JPMorgan Securities 0 9/23/2019	46640QWP2	4,872,000	9/23/2019	1/4/2019	2.97%	4,768,819	85	-	4,846,081
MUFG Bank NY 0 9/23/2019	62479MWP4	8,855,000	9/23/2019	3/27/2019	2.61%	8,740,771	85	-	8,807,891
MUFG Bank NY 0 9/23/2019	62479MWP4	4,866,000	9/23/2019	4/4/2019	2.62%	4,805,786	85	-	4,840,113
MUFG Bank NY 0 9/23/2019	62479MWP4	4,970,000	9/23/2019	5/10/2019	2.58%	4,922,122	85	-	4,943,560
Natixis NY 0 9/23/2019	63873KWP8	5,000,000	9/23/2019	3/27/2019	2.61%	4,935,500	85	-	4,973,400
Toyota Motor Credit 0 9/23/2019	89233HWP5	5,000,000	9/23/2019	6/7/2019	2.34%	4,965,200	85	-	4,973,400
BNP Paribas 0 10/1/2019	09659CX11	1,000,000	10/1/2019	5/10/2019	2.52%	990,040	93	-	994,300
NATIXIS NY 0 11/7/2019	63873KY76	2,500,000	11/7/2019	6/14/2019	2.28%	2,477,086	130	-	2,479,100
NATIXIS NY 0 11/7/2019	63873KY76	2,750,000	11/7/2019	6/14/2019	2.28%	2,724,795	130	-	2,727,010
JPMorgan Securities 0 12/16/2019	46640QZG9	4,000,000	12/16/2019	6/14/2019	2.30%	3,953,339	169	-	3,956,872
JPMorgan Securities 0 12/16/2019	46640QZG9	4,750,000	12/16/2019	6/14/2019	2.30%	4,694,590	169	-	4,698,786

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

Portfolio Holdings As of June 30, 2019

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
Federal Agencies									
FHLMC 0.875 7/19/2019	3137EAE81	\$ 5,230,000	7/19/2019	7/26/2017	1.41%	\$ 5,176,079	19	\$ 20,466	\$ 5,225,769
FHLMC 0.875 7/19/2019	3137EAE81	6,720,000	7/19/2019	8/31/2017	1.36%	6,659,386	19	26,297	6,714,564
FHLMC 1.375 8/15/2019	3137EAEH8	5,215,000	8/15/2019	7/26/2017	1.45%	5,206,917	46	26,890	5,209,441
FNMA 1 8/28/2019	3135G0P49	6,715,000	8/28/2019	8/31/2017	1.39%	6,664,100	59	22,756	6,702,255
FNMA 1.75 9/12/2019	3135G0ZG1	4,705,000	9/12/2019	7/26/2017	1.45%	4,734,171	74	24,701	4,700,154
FHLB 1 9/26/2019	3130A9EP2	7,550,000	9/26/2019	8/31/2017	1.39%	7,490,053	88	19,714	7,528,090
FHLMC 1.25 10/2/2019	3137EADM8	5,045,000	10/2/2019	12/28/2017	1.93%	4,985,469	94	15,415	5,032,766
FHLB 2.125 2/11/2020	3130ADN32	3,750,000	2/11/2020	6/28/2018	2.52%	3,726,750	226	30,768	3,751,556
FHLMC 2.5 4/23/2020	3137EAE7	3,750,000	4/23/2020	6/28/2018	2.56%	3,746,288	298	17,448	3,766,414
FHLB 2.625 5/28/2020	3130AECJ7	3,750,000	5/28/2020	6/28/2018	2.57%	3,753,825	333	8,750	3,769,898
FHLMC 2.375 2/16/2021	3137EAE89	3,500,000	2/16/2021	8/8/2018	2.79%	3,465,210	597	30,941	3,530,310
FHLMC 2.375 2/16/2021	3137EAE89	20,000,000	2/16/2021	8/8/2018	2.79%	19,801,200	597	176,806	20,173,200
FHLMC 2.375 2/16/2021	3137EAE89	250,000	2/16/2021	8/9/2018	2.78%	247,563	597	2,210	252,165
FHLMC 2.375 2/16/2021	3137EAE89	685,000	2/16/2021	8/9/2018	2.78%	678,321	597	6,056	690,932
FNMA 2.5 4/13/2021	3135G0U27	3,500,000	4/13/2021	8/8/2018	2.82%	3,471,685	653	18,715	3,540,845
FNMA 2.5 4/13/2021	3135G0U27	20,000,000	4/13/2021	8/8/2018	2.82%	19,838,200	653	106,944	20,233,400
FNMA 2.5 4/13/2021	3135G0U27	250,000	4/13/2021	8/9/2018	2.81%	247,985	653	1,337	252,918
FNMA 2.5 4/13/2021	3135G0U27	3,400,000	4/13/2021	8/8/2018	2.81%	3,372,698	653	18,181	3,439,678
FNMA 2.5 4/13/2021	3135G0U27	685,000	4/13/2021	8/9/2018	2.81%	679,479	653	3,663	692,994
FNMA 2.5 4/13/2021	3135G0U27	5,750,000	4/13/2021	8/8/2018	2.81%	5,703,828	653	30,747	5,817,103
FHLB 1.875 7/7/2021	3130AGLD5	3,715,000	7/7/2021	6/10/2019	1.96%	3,708,982	738	4,450	3,718,529
FHLB 1.875 7/7/2021	3130AGLD5	3,910,000	7/7/2021	6/10/2019	1.96%	3,903,666	738	4,684	3,913,715

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

Portfolio Holdings As of June 30, 2019

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
U.S. Treasuries									
T-Note 0.875 7/31/2019	912828TH3	\$ 1,000,000	7/31/2019	5/10/2019	2.40%	\$ 996,563	31	\$ 3,626	\$ 998,860
T-Note 0.875 7/31/2019	912828TH3	1,000,000	7/31/2019	5/10/2019	2.40%	996,563	31	3,626	998,860
T-Note 1.625 8/31/2019	912828D80	3,500,000	8/31/2019	8/8/2018	2.51%	3,467,734	62	18,855	3,496,150
T-Note 1.625 8/31/2019	912828D80	20,000,000	8/31/2019	8/8/2018	2.51%	19,815,625	62	107,745	19,978,000
T-Note 1.625 8/31/2019	912828D80	250,000	8/31/2019	8/9/2018	2.50%	247,715	62	1,347	249,725
T-Note 1.625 8/31/2019	912828D80	3,400,000	8/31/2019	8/8/2018	2.51%	3,368,656	62	18,317	3,396,260
T-Note 1.625 8/31/2019	912828D80	685,000	8/31/2019	8/9/2018	2.50%	678,739	62	3,690	684,247
T-Note 1.625 8/31/2019	912828D80	5,750,000	8/31/2019	8/8/2018	2.51%	5,696,992	62	30,977	5,743,675
T-Note 1 9/30/2019	912828TR1	1,150,000	9/30/2019	6/10/2019	2.24%	1,145,643	92	2,859	1,146,723
T-Note 1.25 10/31/2019	912828TV2	1,275,000	10/31/2019	2/7/2019	2.54%	1,263,196	123	2,642	1,271,213
T-Note 1.5 10/31/2019	912828F62-2	2,000,000	10/31/2019	8/8/2018	2.56%	1,974,453	123	4,973	1,995,860
T-Note 1.5 10/31/2019	912828F62-1	3,405,000	10/31/2019	6/28/2018	2.43%	3,363,635	123	8,466	3,397,952
T-Note 1.25 10/31/2019	912828TV2	11,275,000	10/31/2019	2/7/2019	2.53%	11,171,499	123	23,362	11,241,513
T-Note 1.5 10/31/2019	912828F62-2	4,000,000	10/31/2019	8/8/2018	2.56%	3,948,906	123	9,946	3,991,720
T-Note 1.5 10/31/2019	912828F62-2	1,000,000	10/31/2019	6/10/2019	2.22%	997,227	123	2,486	997,930
T-Note 1.75 11/30/2019	9128283H1	3,350,000	11/30/2019	6/28/2018	2.44%	3,317,809	153	4,805	3,344,767
T-Note 1.75 11/30/2019	9128283H1	3,780,000	11/30/2019	6/28/2018	2.44%	3,743,677	153	5,422	3,774,096
T-Note 1.875 12/31/2019	9128283N8	3,300,000	12/31/2019	6/28/2018	2.46%	3,271,770	184	-	3,297,294
T-Note 1.875 12/31/2019	9128283N8	3,750,000	12/31/2019	6/28/2018	2.46%	3,717,920	184	-	3,746,925
T-Note 1.125 12/31/2019	912828UF5	10,925,000	12/31/2019	1/4/2019	2.57%	10,771,794	184	-	10,872,123
T-Note 2 1/31/2020	912828S7	3,750,000	1/31/2020	6/28/2018	2.46%	3,723,047	215	31,077	3,748,830
T-Note 2.25 2/29/2020	9128283Y4	3,500,000	2/29/2020	8/8/2018	2.63%	3,479,902	244	26,107	3,504,515
T-Note 2.25 2/29/2020	9128283Y4	20,000,000	2/29/2020	8/8/2018	2.63%	19,885,156	244	149,185	20,025,800
T-Note 2.25 2/29/2020	9128283Y4	250,000	2/29/2020	8/9/2018	2.62%	248,594	244	1,865	250,323
T-Note 2.25 2/29/2020	9128283Y4	3,400,000	2/29/2020	8/8/2018	2.63%	3,380,477	244	25,361	3,404,386
T-Note 2.25 2/29/2020	9128283Y4	685,000	2/29/2020	8/9/2018	2.62%	681,147	244	5,110	685,884
T-Note 2.25 2/29/2020	9128283Y4	5,750,000	2/29/2020	8/8/2018	2.63%	5,716,982	244	42,891	5,757,418
T-Note 2.25 3/31/2020	9128284C1	3,725,000	3/31/2020	6/28/2018	2.49%	3,709,431	275	20,839	3,731,258
T-Note 2.375 4/30/2020	9128284J6	3,500,000	4/30/2020	4/30/2019	2.40%	3,499,043	305	13,779	3,510,255

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

Portfolio Holdings As of June 30, 2019

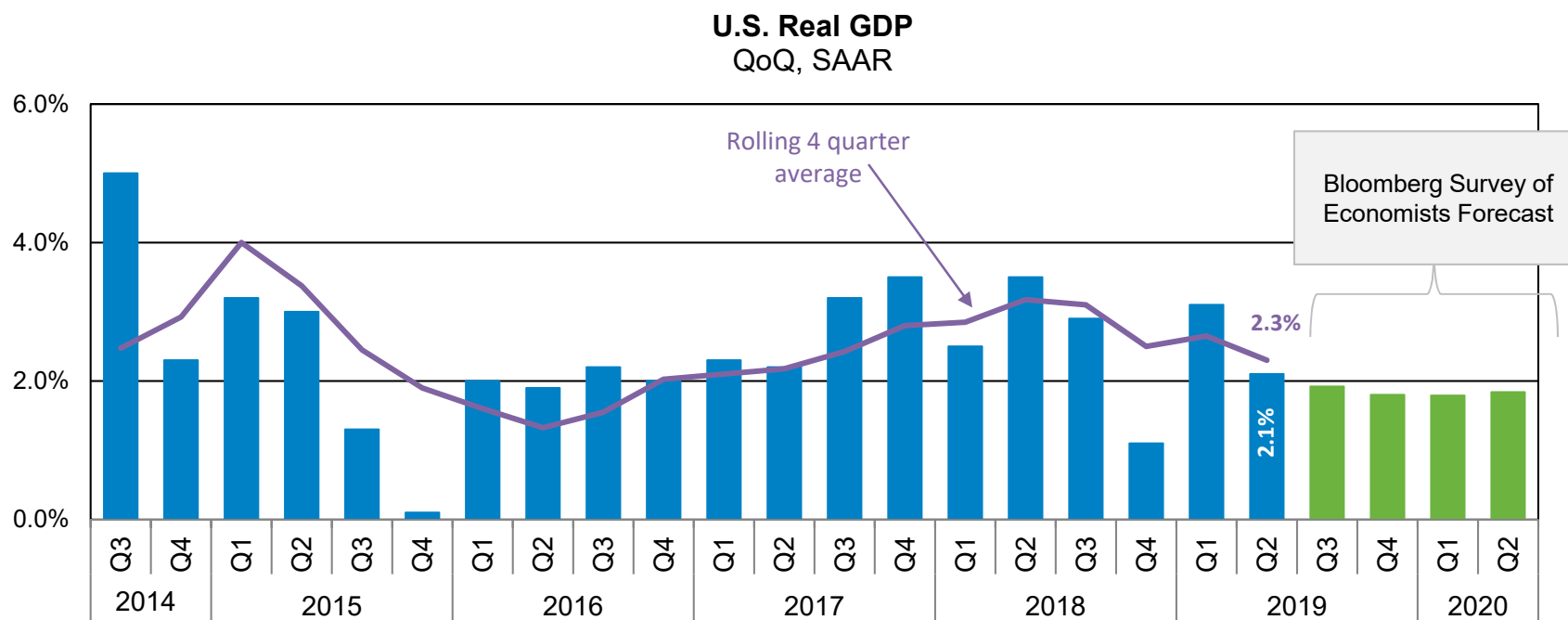
DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
U.S. Treasuries									
T-Note 2.375 4/30/2020	9128284J6	15,000,000	4/30/2020	4/30/2019	2.40%	14,996,484	305	59,052	15,043,950
T-Note 2.5 5/31/2020	9128284Q0	3,500,000	5/31/2020	8/8/2018	2.66%	3,489,883	336	7,172	3,515,435
T-Note 2.5 5/31/2020	9128284Q0	20,000,000	5/31/2020	8/8/2018	2.66%	19,942,188	336	40,984	20,088,200
T-Note 2.5 5/31/2020	9128284Q0	250,000	5/31/2020	8/9/2018	2.66%	249,297	336	512	251,103
T-Note 2.5 5/31/2020	9128284Q0	3,400,000	5/31/2020	8/8/2018	2.66%	3,390,172	336	6,967	3,414,994
T-Note 2.5 5/31/2020	9128284Q0	685,000	5/31/2020	8/9/2018	2.66%	683,073	336	1,404	688,021
T-Note 2.5 5/31/2020	9128284Q0	5,750,000	5/31/2020	8/8/2018	2.66%	5,733,379	336	11,783	5,775,358
T-Note 1.875 6/30/2020	912828VJ6-1	3,750,000	6/30/2020	6/28/2018	2.52%	3,703,271	366	-	3,746,779
T-Note 1.875 6/30/2020	912828VJ6-2	2,900,000	6/30/2020	7/3/2018	2.54%	2,862,730	366	-	2,897,506
T-Note 1.875 6/30/2020	912828VJ6-2	4,600,000	6/30/2020	10/30/2018	2.81%	4,530,102	366	-	4,596,044
T-Note 1.625 6/30/2020	912828XH8	9,705,000	6/30/2020	10/11/2017	1.61%	9,709,928	366	-	9,673,168
T-Note 1.625 6/30/2020	912828XH8	4,565,000	6/30/2020	2/27/2017	1.54%	4,578,374	366	-	4,550,027
T-Note 1.625 6/30/2020	912828XH8	6,560,000	6/30/2020	10/11/2017	1.61%	6,563,331	366	-	6,538,483
T-Note 2.125 8/31/2020	912828VV9	3,500,000	8/31/2020	8/8/2018	2.69%	3,460,762	428	24,657	3,508,190
T-Note 2.125 8/31/2020	912828VV9	20,000,000	8/31/2020	8/8/2018	2.69%	19,775,781	428	140,897	20,046,800
T-Note 2.125 8/31/2020	912828VV9	250,000	8/31/2020	8/9/2018	2.69%	247,188	428	1,761	250,585
T-Note 2.125 8/31/2020	912828VV9	3,400,000	8/31/2020	8/8/2018	2.69%	3,361,883	428	23,952	3,407,956
T-Note 2.125 8/31/2020	912828VV9	685,000	8/31/2020	8/9/2018	2.69%	677,294	428	4,826	686,603
T-Note 2.125 8/31/2020	912828VV9	5,750,000	8/31/2020	8/8/2018	2.69%	5,685,537	428	40,508	5,763,455
T-Note 2 11/30/2020	912828A42	3,500,000	11/30/2020	8/8/2018	2.72%	3,444,082	519	5,738	3,507,245
T-Note 2 11/30/2020	912828A42	20,000,000	11/30/2020	8/8/2018	2.72%	19,680,469	519	32,787	20,041,400
T-Note 2 11/30/2020	912828A42	250,000	11/30/2020	8/9/2018	2.72%	246,006	519	410	250,518
T-Note 2 11/30/2020	912828A42	3,400,000	11/30/2020	9/17/2018	2.81%	3,341,828	519	5,574	3,407,038
T-Note 2 11/30/2020	912828A42	685,000	11/30/2020	8/9/2018	2.72%	674,056	519	1,123	686,418
T-Note 2 11/30/2020	912828A42	5,750,000	11/30/2020	9/17/2018	2.81%	5,651,621	519	9,426	5,761,903
T-Note 2.625 5/15/2021	9128284P2	245,000	5/15/2021	2/7/2019	2.49%	245,708	685	804	248,780
T-Note 2.625 5/15/2021	9128284P2	3,455,000	5/15/2021	2/7/2019	2.49%	3,464,852	685	11,337	3,508,311
T-Note 2.625 5/15/2021	9128284P2	700,000	5/15/2021	2/7/2019	2.49%	702,023	685	2,297	710,801
T-Note 2.625 5/15/2021	9128284P2	5,685,000	5/15/2021	2/7/2019	2.49%	5,701,211	685	11,783	5,772,720

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of June 30, 2019.

Appendix II: Economic Update

Economic Growth Declines in Second Quarter

- U.S. economic activity experienced moderate growth during the second quarter of 2019
 - The first estimate of U.S. GDP growth for the second quarter was 2.1%, which is more than the 1.8% expected, but still a fall from the first quarter's growth of 3.1%
- Growth is projected to steadily decline in the remaining quarters of 2019 and into 2020; estimated projections decreased slightly from last month's estimates
 - The main causes for this expected decrease in future growth include ongoing trade tensions, Brexit, and U.S. sanctions on Iran

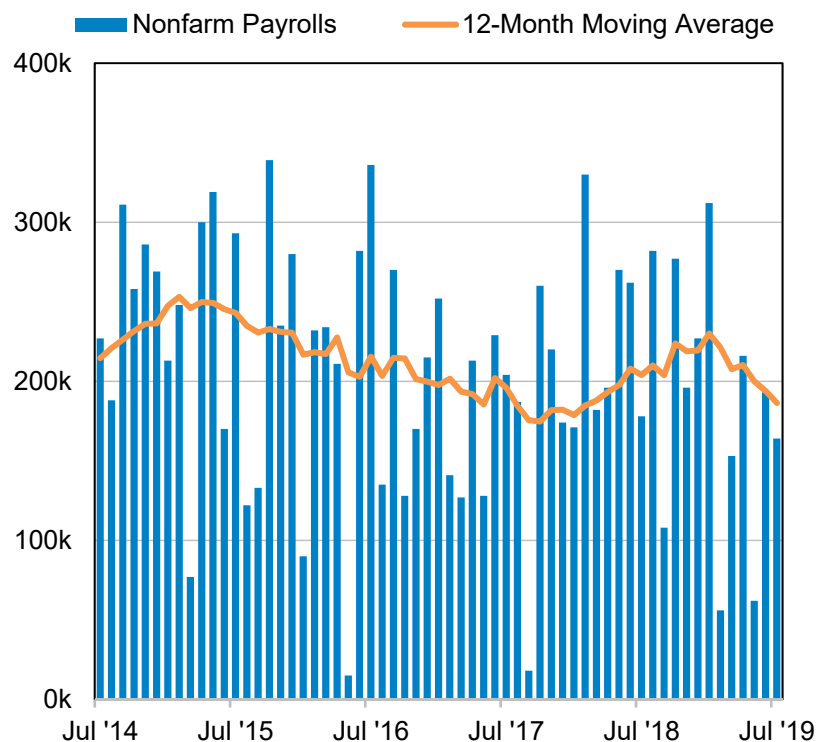


Source: Bloomberg, as of July 31, 2019. SAAR is seasonally adjusted annualized rate. Purple denotes rolling four-quarter averages.

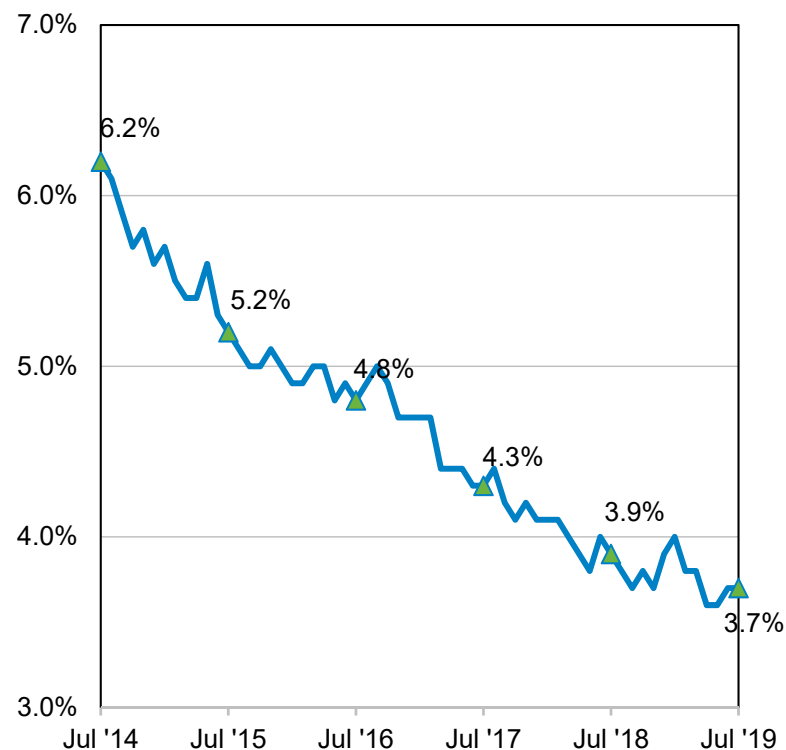
Labor Market Experiences Additional Job Growth

- The U.S. economy added 164,000 jobs in July, marking the 106th consecutive month of positive job gains for the country
- The unemployment remained steady at 3.7% at the close of July

Monthly Change in Nonfarm Payrolls



Unemployment Rate

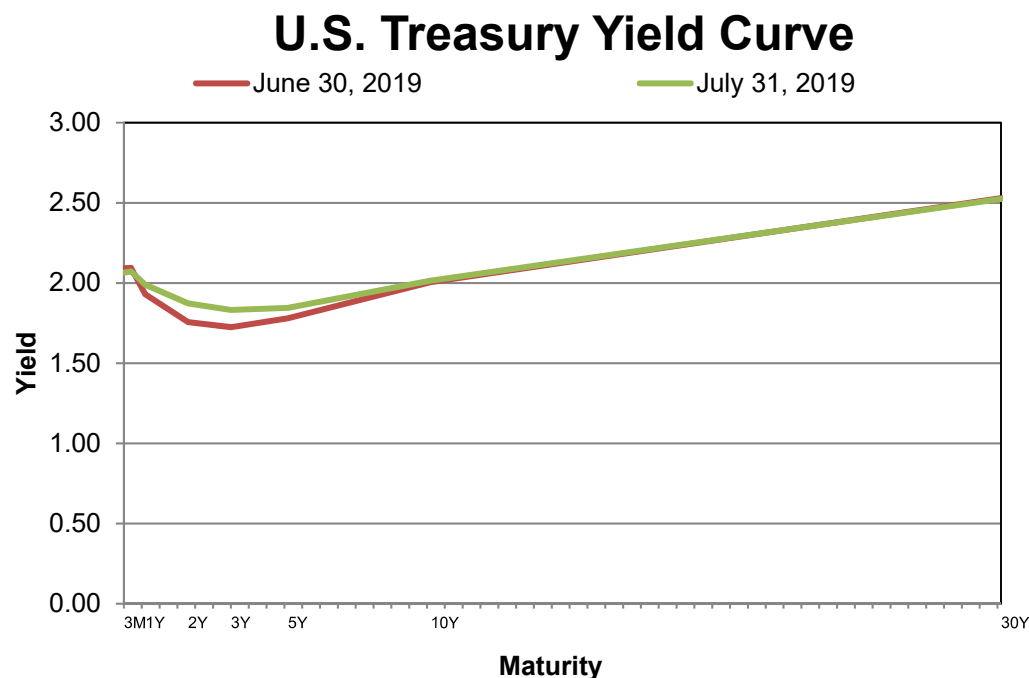


Source: Bloomberg, as of July 31, 2019.

U.S. Treasury Yield Curve

- The U.S. Treasury yield curve continues to exhibit an inversion, though it is becoming less pronounced
- 3 and 6-month Treasury notes are providing considerably higher yields than those of intermediate-term notes up to 10 years as of July 31st, 2019, causing the abnormal curvature at the shorter end of the curve

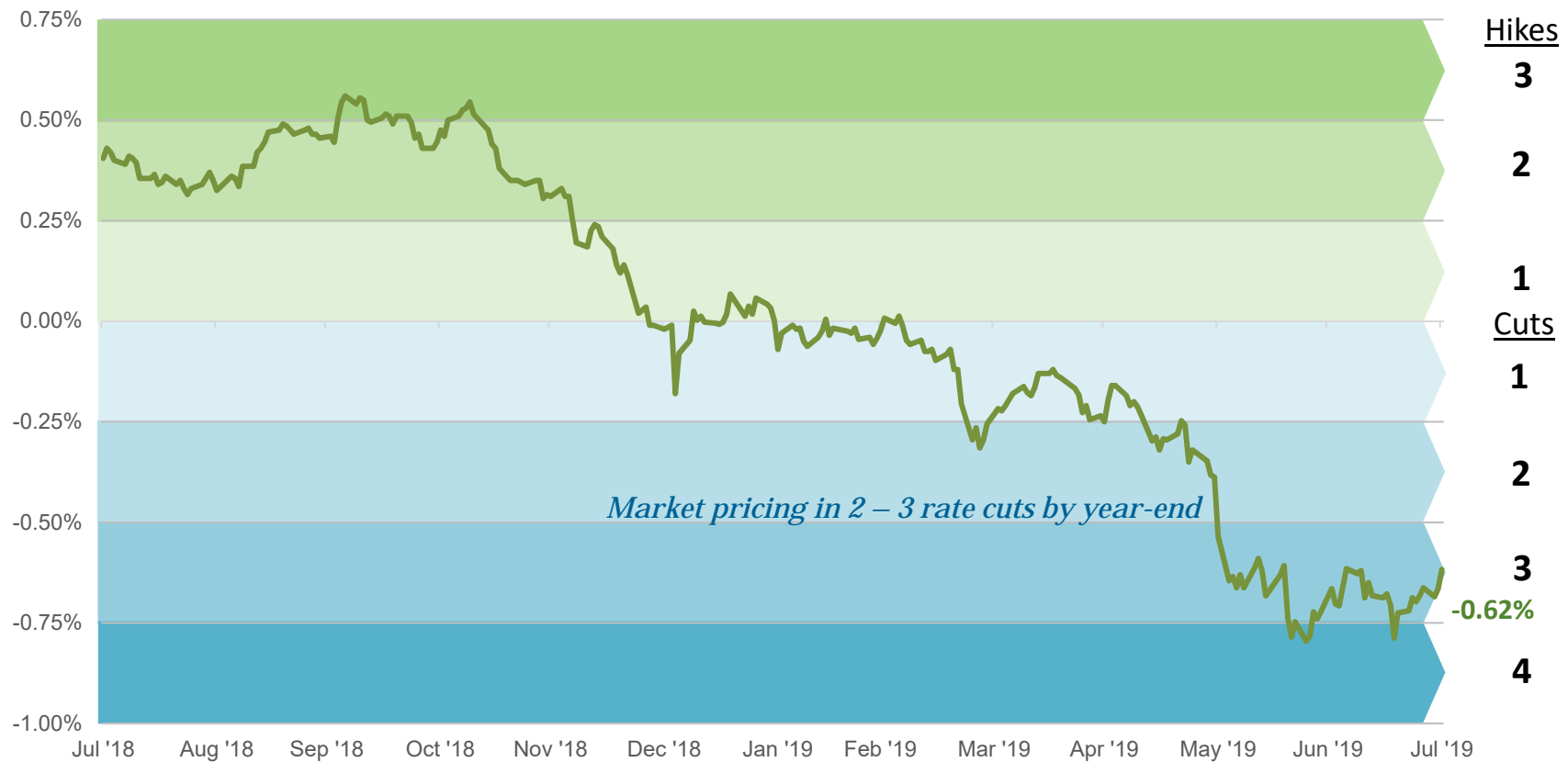
	<u>6/30/2019</u>	<u>7/31/2019</u>	<u>Change</u>
3 month	2.09%	2.07%	-0.03%
6 month	2.10%	2.07%	-0.02%
1 year	1.93%	1.99%	0.06%
2 year	1.76%	1.87%	0.12%
3 year	1.72%	1.83%	0.11%
5 year	1.78%	1.85%	0.07%
10 year	2.01%	2.02%	0.01%
30 year	2.53%	2.53%	-0.01%



Source: Bloomberg, as of July 31, 2019.

The Market Expects Additional Rate Cuts by Year End

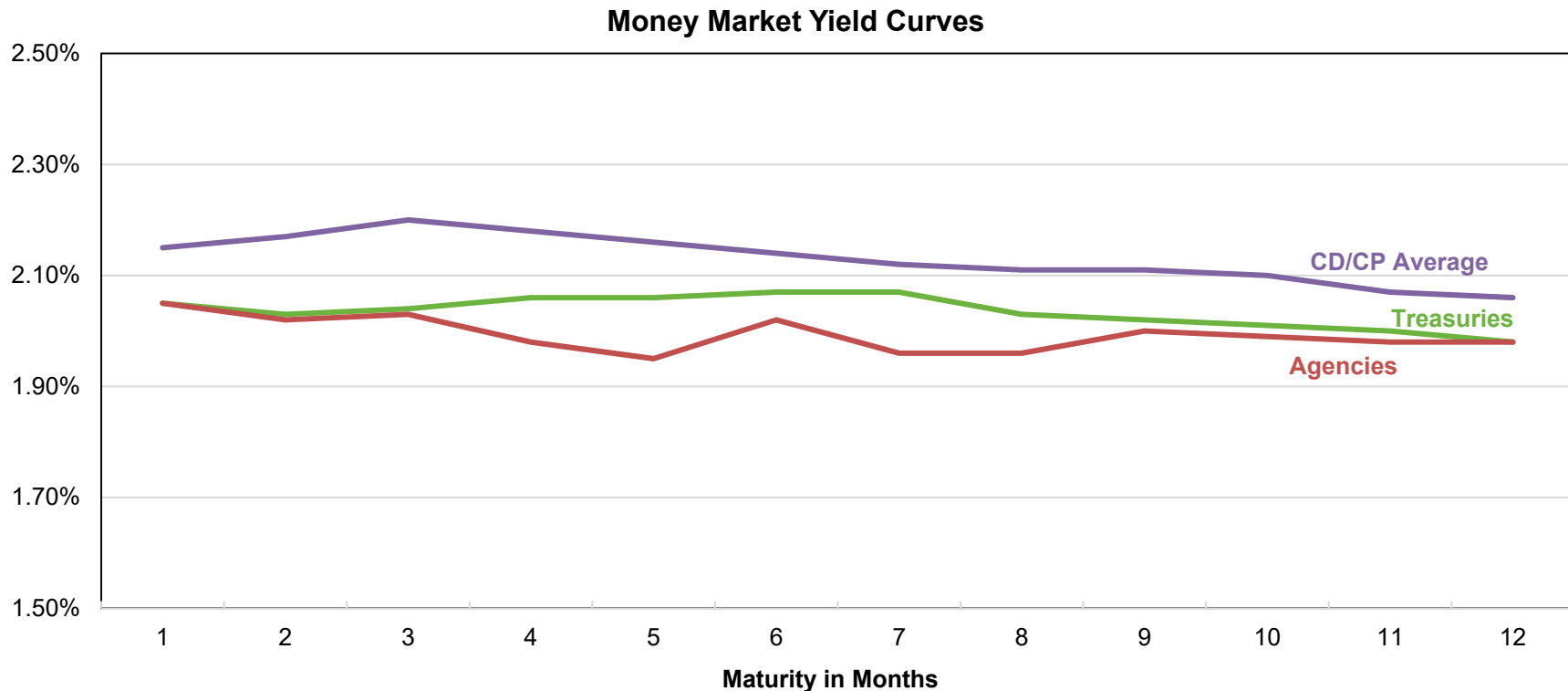
2019 Rate Moves Priced into the Futures Market



Source: Bloomberg, as of July 31, 2019.

Current Short-Term Interest Rate Environment

- Commercial paper and bank certificate of deposit (CP / CD) yield spreads remained historically narrow in July
- U.S. Treasuries continue to be relatively attractive versus Agency discount notes, especially in the 3 – 11 month maturity range



Source: Bloomberg, PFMAM Trading Desk, as of 7/31/19. Not a specific recommendation.

Fixed Income

Market Overview and Outlook

FIXED INCOME MARKET – ECONOMIC HIGHLIGHTS

- The second quarter of calendar year 2019 saw plunging interest rates, surging equity prices, mixed economic data, and increasing global growth concerns
 - While few economists expect the decade-long U.S. expansion to end soon, the Federal Reserve's cautionary tone set the stage for rate cuts in the second half of the year
- Economic conditions were characterized by the following:
 - U.S. GDP grew by 3.1% in the first quarter, up from 2.2% in the fourth quarter; growth was driven by an unexpected improvement in net exports and outsized growth in inventories, factors not likely to be sustained
 - Strong job growth, with a low unemployment rate of 3.7%
 - Inflation continued to be tame; the Fed's preferred inflation gauge, the core personal consumption expenditure ("PCE") price index, excluding food and energy prices, also rose by 1.6% over the past year, below the Fed's target of 2.0%
 - Increased downside risks, including a slowdown in manufacturing, weaker business investments, and protracted trade wars
 - At its June meeting, the Federal Open Market Committee ("FOMC") maintained the overnight Fed Funds rate at a target range of 2.25% – 2.50%, but acknowledged soft business investment, declining market-based inflation measures, and increased uncertainty to the outlook; Fed Chair Jerome Powell all but assured a first preemptive rate cut will occur at the Fed's next meeting on July 31st
 - The S&P 500 index returned 4.3% for the quarter and is now up by 17.3% for the year
- U.S. Treasury yields fell for a third consecutive quarter, with maturities greater than one year falling by 40 to 50 basis points, while the yield curve still remains inverted between the 3-month and 10-year areas

Fixed Income

Market Overview and Outlook

FIXED INCOME MARKET – ECONOMIC HIGHLIGHTS

- Interest rates plummeted in the second quarter, with yields on intermediate-term maturity (2 – 5 year) Treasuries falling by about 50 basis points (0.50%) to the lowest levels since late 2017
 - Rates fell in response to slowing global growth expectations, weakness in manufacturing triggered by renewed trade disputes, muted inflation, and expectations for multiple Fed rate cuts in the second half of the year
 - Much of the yield curve remains inverted, with longer-term yields lower than short-term yields
- Somewhat counterintuitively, credit-sensitive assets performed strongly during the quarter as yield spreads on commercial paper narrowed and U.S. equity markets reached new all-time highs
 - Our sector allocation strategy continued to favor broad diversification, generally including the widest range of permitted investments; maintaining durations (despite the inverted yield curve) was vitally important during the quarter as the sharp drop in yields drove strong market value returns across most fixed-income sectors, and as a result, longer duration strategies outperformed shorter ones by a wide margin
 - Federal Agencies continued to be de-emphasized as their yield spreads remained near historic highs; these levels have mainly been driven by a lack of new supply
 - Short-term commercial paper yield spreads narrowed during the quarter, reducing their attractiveness; by quarter-end, the money market yield curve was also inverted
- The outlook for some of the major investment-grade fixed-income sectors are as follows:
 - Federal Agency spreads are very tight, and they are expected to remain so; therefore, Treasuries and other sectors are favored over Agencies
 - Money market investors now face both inverted U.S. Treasury and credit yield curves, and historically tight spreads have also reduced the range of high-quality, short-term credit issues that offer adequate incremental income to warrant purchase; careful maturity selection around Fed meeting expectations will be an important consideration going forward

Disclosure

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Financial Services Audit Committee Communication

Date: September 20, 2019

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: PFM Financial Advisors Update Audit Committee Update on Potential Refunding Transactions

Background: PFM Financial Advisors has prepared an update to the refunding analysis that was provided to the GLWA Audit Committee at its meeting on July 19, 2019. Since that presentation, interest rates on municipal debt have dropped to historic low levels. Although GLWA does not have any currently callable water or sewer bonds, PFM has prepared a refunding analysis assuming a taxable, advanced refunding approach and a tax-exempt, forward delivery approach.

Since the lead time to complete a refunding transaction may take three to five months, GLWA would need to begin the process now in order to be in a position to execute a transaction if the market conditions remain favorable.

Budget Impact: The proposed FY 2020 water and sewer budgets do not include the potential impacts of any refunding bond issues. To the extent bond refunding is recommended by PFM and approved by the GLWA Board of Directors, the FY 2020 debt service budgets would be amended accordingly, based on actual results.

Proposed Action: Receive and file.



Update to Audit Committee on Potential Refunding Transactions

September 20, 2019

PFM Financial Advisors LLC

555 Briarwood Circle
Suite 333
Ann Arbor, MI 48108

734.994.9710
pfm.com



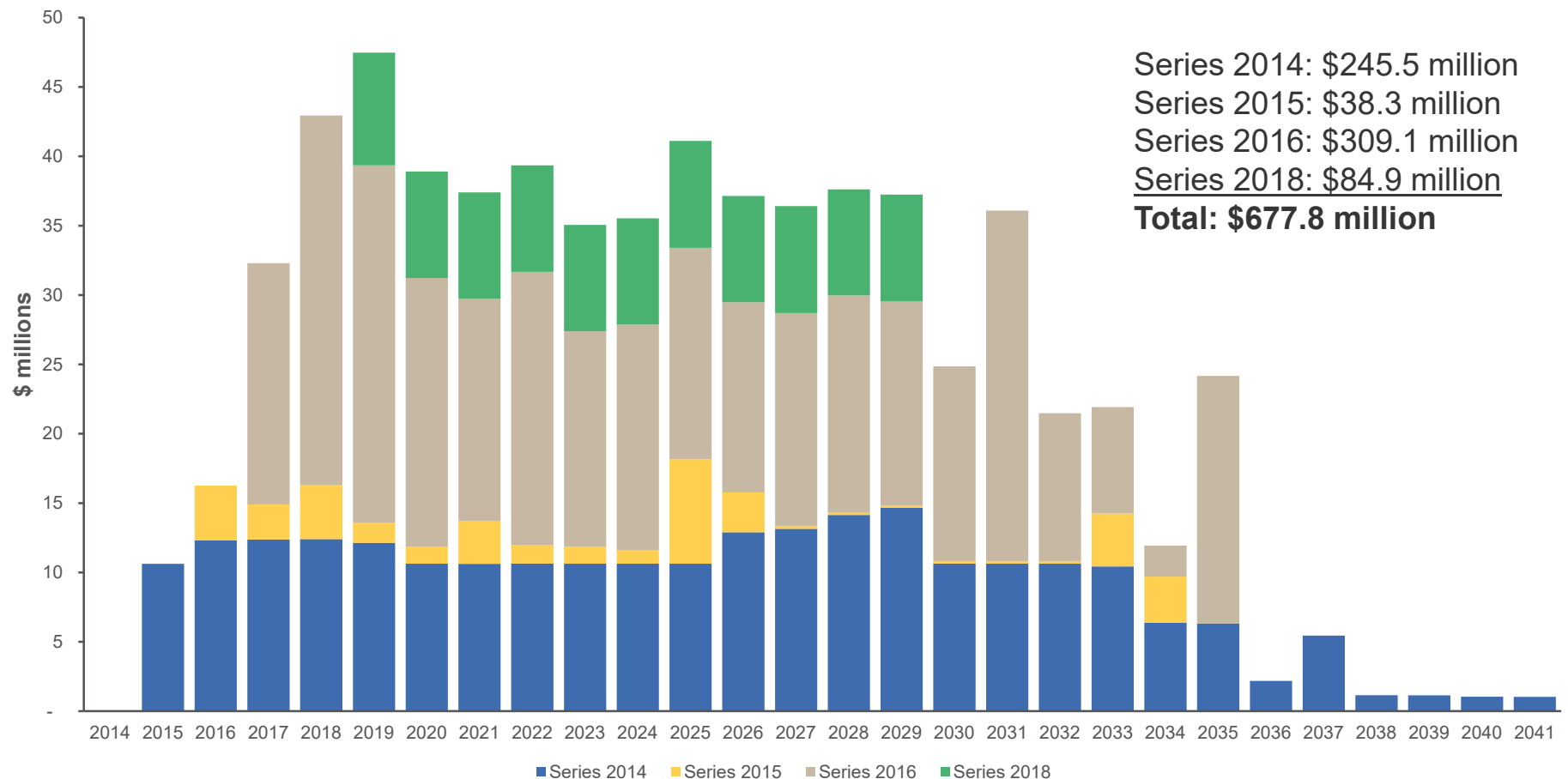
Summary and Recommendation

- While tax-exempt advance refundings are no longer allowable under current tax law, historically low interest rates have created an opportunity to attain significant savings on a taxable basis for a large universe of bonds
- PFM now recommends strong consideration of pursuing a taxable advance refunding of potentially \$300 million water and \$600 million sewer bonds
 - Market volatility continues but interest rates have moved to historic lows, creating substantial additional value for GLWA
 - Passage of time now also brings tax-exempt forward delivery bonds into viable consideration
 - GLWA should consider portfolio approach to manage significant tradeoffs that exist between taxable advance refundings (or forward delivery tax-exempt refunding) now versus tax-exempt current refundings later
- Among water and sewer credits, GLWA can consider up to \$450 million of forward delivery bonds and up to \$1 billion of taxable advance refunding bonds
 - Water system has viable candidates for \$375 million of either tax-exempt forward delivery bonds or taxable advance refunding bonds
 - Sewer system has viable candidates for \$85 million of tax-exempt forward delivery bonds and \$590 million of taxable advance refunding bonds
- Given lead time of 3-5 months to prepare bond offering, beginning preparations now will give GLWA most flexibility to execute when advantageous / as meeting Board-adopted policies



History of Debt Service Savings Achieved Since 2014

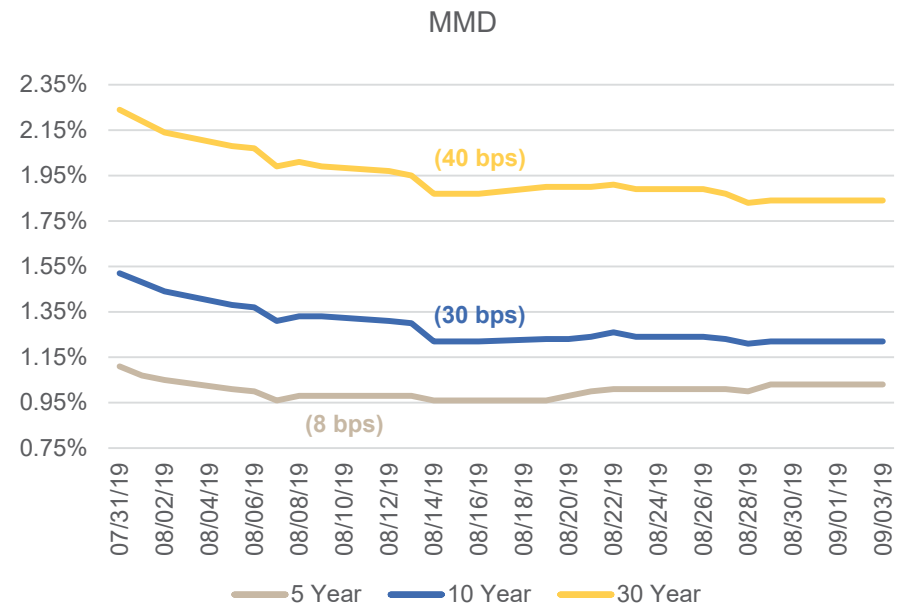
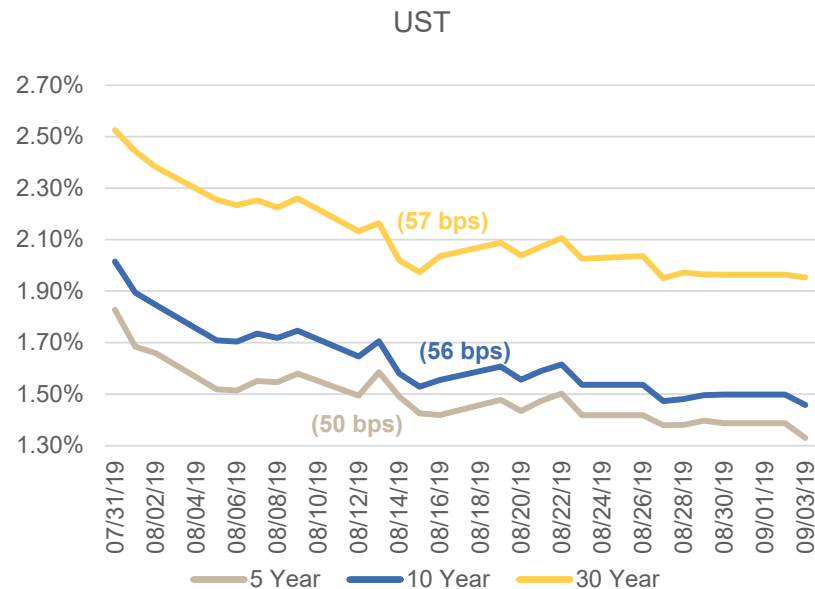
Through the leadership of the Authority's management team, the financing team has been able to achieve nearly \$678 million of cash flow debt service savings for the systems since the tender and refunding transaction in 2014





Significant Market Movements – July 31 to September 4

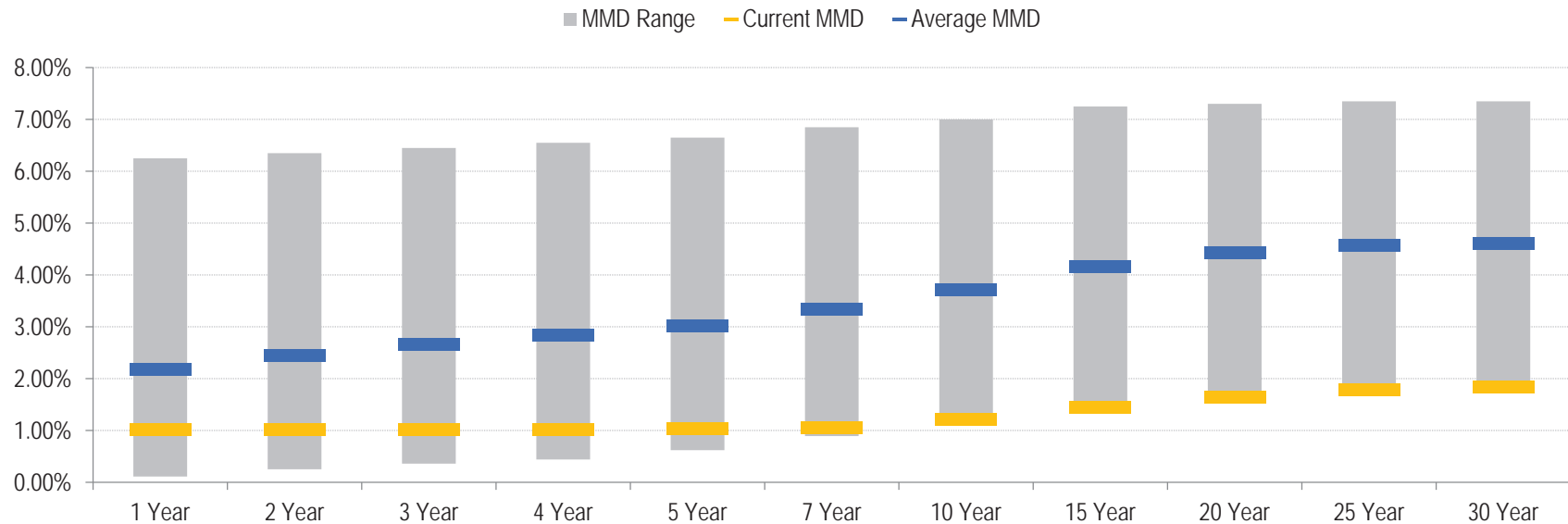
- Significant decline in rates kicked off by the cut in the federal funds rate at the July FOMC meeting and accelerated by the trade situation between the U.S. and China
- Tensions surrounding trade war with China continue to drive market
- Recent poor Chinese and German economic data have fanned fears of a global slowdown
- The 30yr UST and MMD maturities have both reached and set new historic lows in the past month
- The federal funds futures market currently prices a 100% chance of a rate decrease at the September FOMC meeting
- MMD has underperformed Treasuries in the past month with significant decreases in treasuries echoed by more modest declines in MMD





AAA MMD Position Since Inception

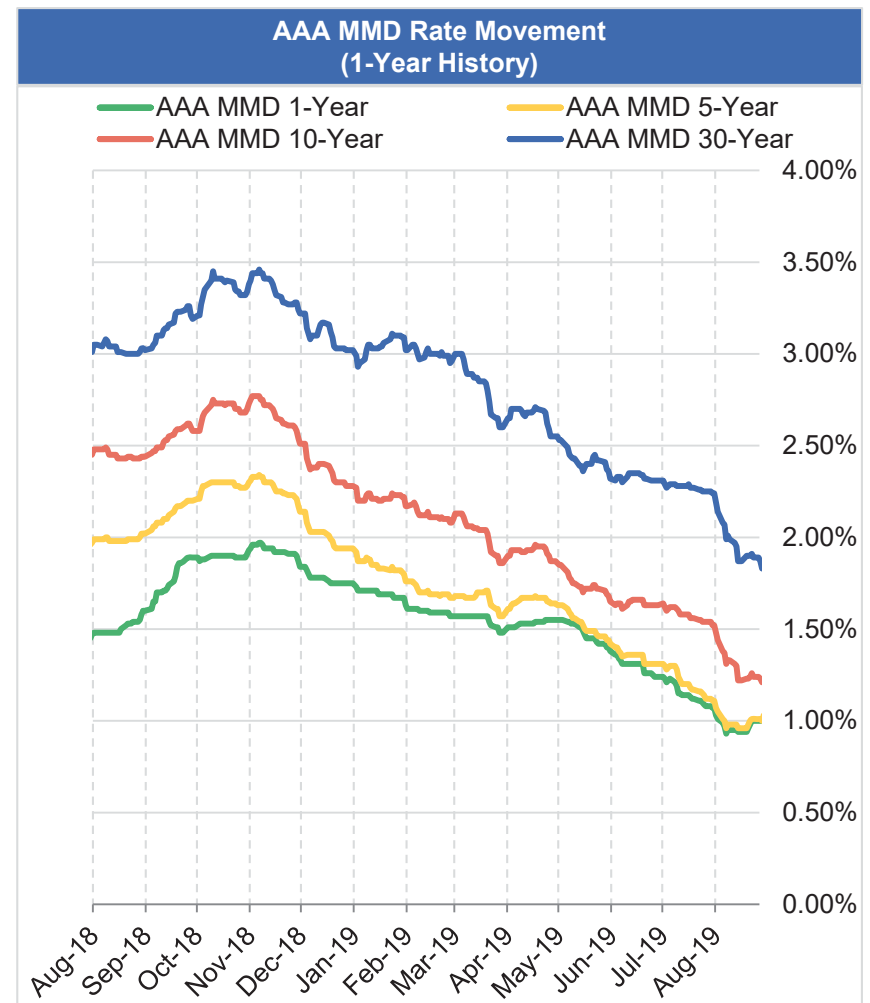
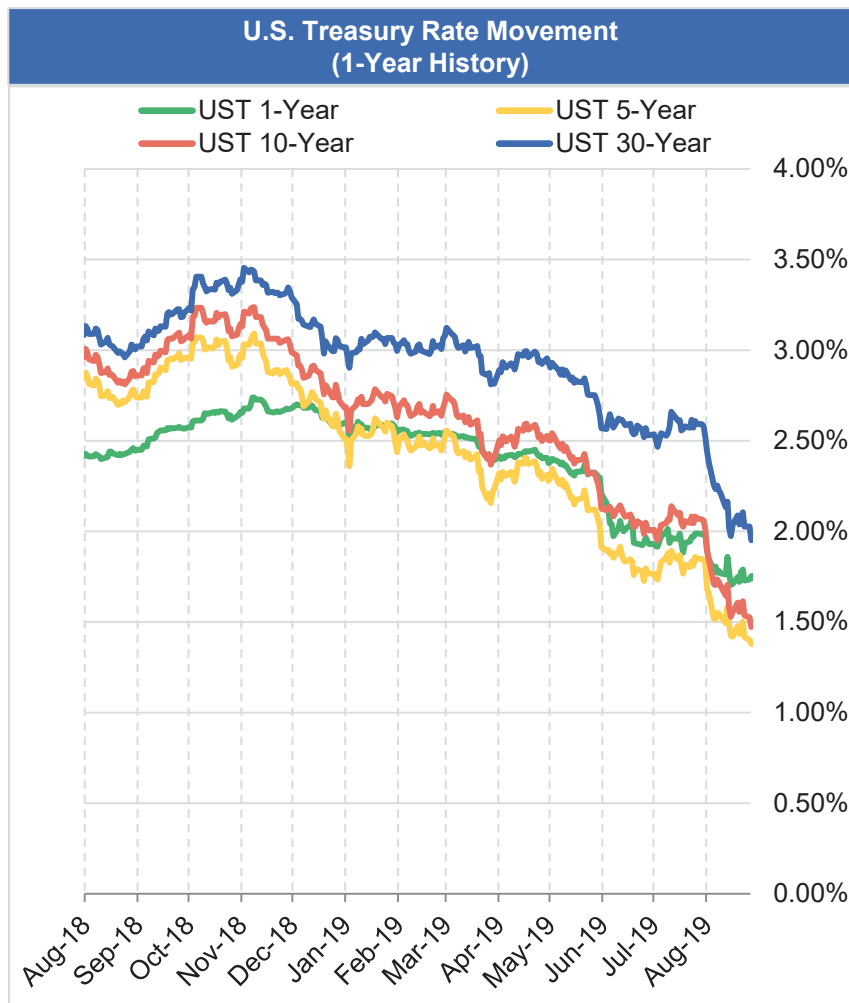
30 Year History of AAA MMD Rate Position
(September 4, 1989 to September 3, 2019)



Statistic	1 Year	2 Year	3 Year	4 Year	5 Year	7 Year	10 Year	15 Year	20 Year	25 Year	30 Year
9/3/2019	1.01%	1.01%	1.02%	1.02%	1.03%	1.06%	1.22%	1.45%	1.65%	1.79%	1.84%
Average	2.17%	2.45%	2.65%	2.83%	3.01%	3.34%	3.71%	4.17%	4.43%	4.57%	4.61%
Spread to Avg.	-1.16%	-1.44%	-1.63%	-1.81%	-1.98%	-2.28%	-2.49%	-2.72%	-2.78%	-2.78%	-2.77%
Minimum	0.11%	0.25%	0.36%	0.44%	0.62%	0.89%	1.21%	1.44%	1.64%	1.78%	1.83%
Spread to Min.	0.90%	0.76%	0.66%	0.58%	0.41%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%
Maximum	6.25%	6.35%	6.45%	6.55%	6.65%	6.85%	7.00%	7.25%	7.30%	7.35%	7.35%
Spread to Max.	-5.24%	-5.34%	-5.43%	-5.53%	-5.62%	-5.79%	-5.78%	-5.80%	-5.65%	-5.56%	-5.51%
Percent of Market Days Lower	34.06%	30.05%	26.17%	18.67%	10.94%	1.13%	0.01%	0.01%	0.01%	0.01%	0.01%



U.S. Treasury & AAA MMD Rate Movement



Source: Thomson Reuters



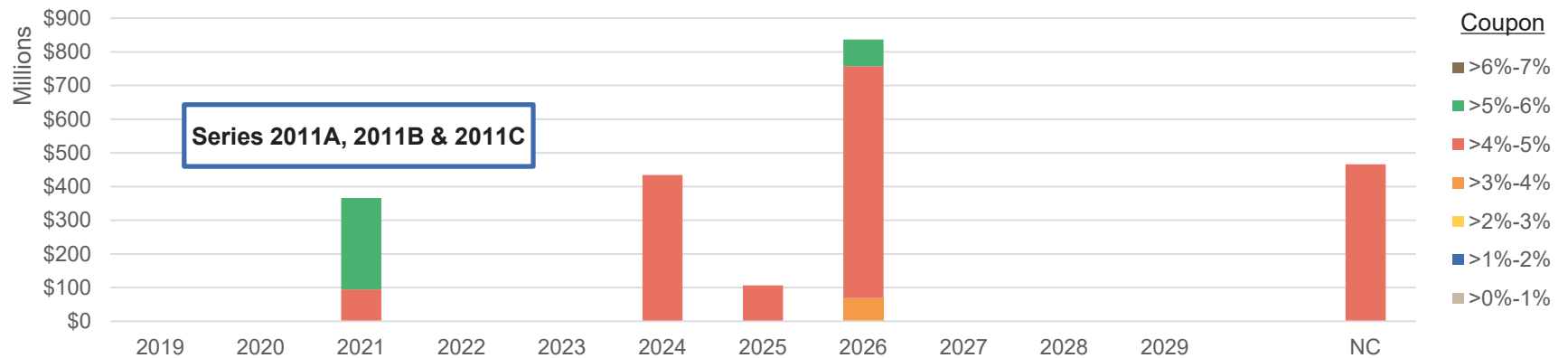
Interest Rate Forecasts

Bond Yield Forecast (As of September 3, 2019)							
Average Forecasts	Current	Q3 19	Q4 19	Q1 20	Q2 20	Q3 20	Q4 20
30-Year UST	1.99%	2.46%	2.49%	2.55%	2.59%	2.61%	2.63%
10-Year UST	1.49%	1.91%	1.98%	2.06%	2.11%	2.14%	2.17%
2-Year UST	1.46%	1.71%	1.74%	1.75%	1.77%	1.79%	1.82%
3M LIBOR	2.13%	2.12%	2.02%	1.94%	1.88%	1.88%	1.88%
Fed Funds Target Rate (Upper)	2.25%	2.10%	1.95%	1.90%	1.85%	1.85%	1.85%
Fed Funds Target Rate (Lower)	2.00%	1.85%	1.68%	1.61%	1.57%	1.55%	1.56%

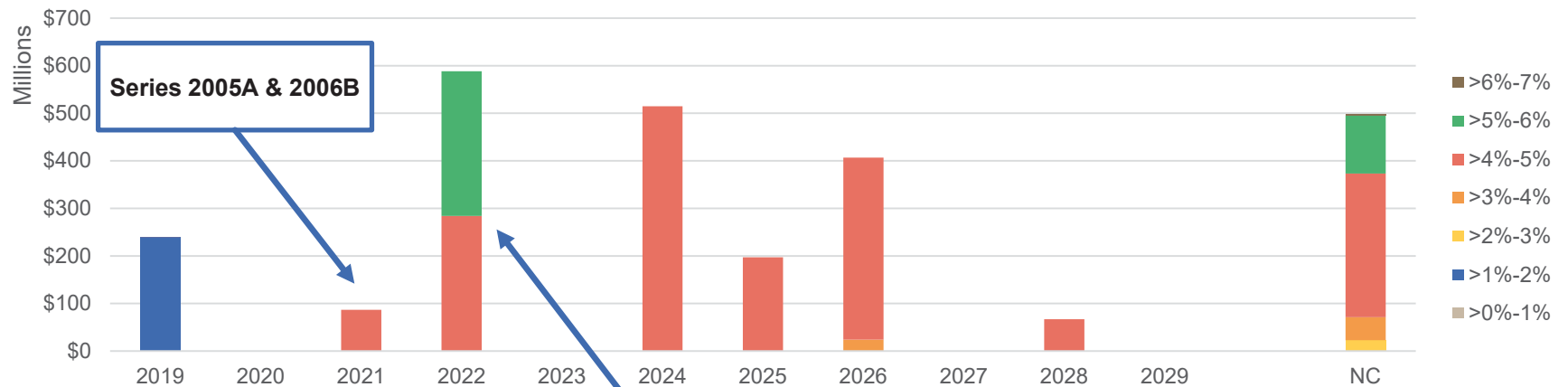


Fixed Rate Par Call Options

Distribution of Par Call Options on Water Debt (Senior & Second Lien)



Distribution of Par Call Options on Sewer Debt (Senior & Second Lien)





GLWA Refunding Candidate Summary

Water							
Senior Lien							
Series Name	Indenture	Lien	Tax Status	Coupons	Outstanding (\$000s)	Next Call Date	Callable Par (\$000s)
Series 2011A Senior	Water	Senior	Tax-Exempt		293,970	7/1/2021	289,605
Series 2011B Senior	Water	Senior	Taxable		3,950	7/1/2021	2,295
Series 2011C Senior	Water	Senior	Tax-Exempt		75,145	7/1/2021	74,125
					373,065		373,065
Sewer							
Senior Lien							
Series Name	Indenture	Lien	Tax Status	Coupons	Outstanding (\$000s)	Next Call Date	Callable Par (\$000s)
Series 2012A Senior	Sewer	Senior	Tax-Exempt		495,175	7/1/2022	437,795
Series 2014C-1 Senior	Sewer	Senior	Tax-Exempt		123,220	7/1/2022	123,200
Series 2014C-2 Senior	Sewer	Senior	AMT		27,470	7/1/2022	27,450
					645,865		588,445
Second Lien							
Series Name	Indenture	Lien	Tax Status	Coupons	Outstanding (\$000s)	Next Call Date	Callable Par (\$000s)
Series 2005A Sec.(Call Mod) ¹	Sewer	Second	Tax-Exempt		31,785	7/1/2021	31,785
Series 2006B Sec.(Call Mod) ²	Sewer	Second	Tax-Exempt		55,000	7/1/2021	55,000
					86,785		86,785

Note: excludes series of debt with callable amounts of \$100,000 or less outstanding.

1. The call date on \$31.8 million of the series 2005A Sewer Bonds was modified to July 1, 2021.

2. The call date on \$55.0 million of the Series 2006B Sewer Bonds was modified to July 1, 2021.



Comparison of Savings Opportunities

Water System												
Candidate				Taxable Advance Refunding			Tax-Exempt Forward Refunding			Future Tax-Exempt Current Refunding		
Series	Lien	Refunded Par	Call Date	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)
Series 2011A	Senior	289,605	7/1/2021	81,236	63,606	21.96%	102,584	65,720	22.69%	124,928	79,737	27.53%
Series 2011B	Senior	2,295	7/1/2021	462	419	18.26%	N/A	N/A	N/A	N/A	N/A	N/A
Series 2011C	Senior	74,125	7/1/2021	13,650	11,246	15.17%	17,527	11,929	16.09%	21,716	14,728	19.87%
Total Water		366,025		95,348	75,271	20.56%	120,111	77,649	21.21%	146,644	94,465	25.81%

Sewer System												
Candidate				Taxable Advance Refunding			Tax-Exempt Forward Refunding			Tax-Exempt Current Refunding		
Series	Lien	Refunded Par	Call Date	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)
Series 2012A	Senior	437,795	7/1/2022	83,099	70,826	16.18%	N/A	N/A	N/A	166,861	108,946	24.89%
Series 2014C-1	Senior	123,200	7/1/2022	25,634	20,408	16.56%	N/A	N/A	N/A	50,008	28,436	23.08%
Series 2014C-2	Senior	27,450	7/1/2022	5,704	4,543	16.55%	N/A	N/A	N/A	9,492	5,401	19.68%
Total Senior		588,445		114,437	95,777	16.28%	N/A	N/A	N/A	226,361	142,783	24.26%

Series	Lien	Refunded Par	Call Date	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)	Gross Savings (\$000s)	PV Savings (\$000s)	PV Savings (%)
Series 2005A	Second	31,785	7/1/2021	7,144	6,014	18.92%	9,134	6,391	20.11%	11,349	7,940	24.98%
Series 2006B	Second	55,000	7/1/2021	12,442	10,338	18.80%	15,795	10,912	19.84%	19,905	13,595	24.72%
Total Second		86,785		19,586	16,352	18.84%	24,929	17,303	19.94%	30,444	21,535	24.81%

Total Sewer		675,230		134,023	112,129	16.60%	-	-	-	256,805	164,318	24.34%
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Assumptions: Matched lien refunding with Delivery Date of January 1, 2020; Interest rates as of September 5, 2019; Maturity by Maturity savings structure; SLGS escrow; issuance costs of \$5/bond. All figures present valued at Taxable Advance Yields to January 1, 2020. Future current refunding savings calculated using current tax-exempt rates. Forward refunding assumes an 18 month forward period with 3.5bps of premium per month. Tax-exempt refunding bonds issued with 5% premium coupon structure and 01 year par call; taxable refunding bonds issued with par coupon structure and 10 year par call.



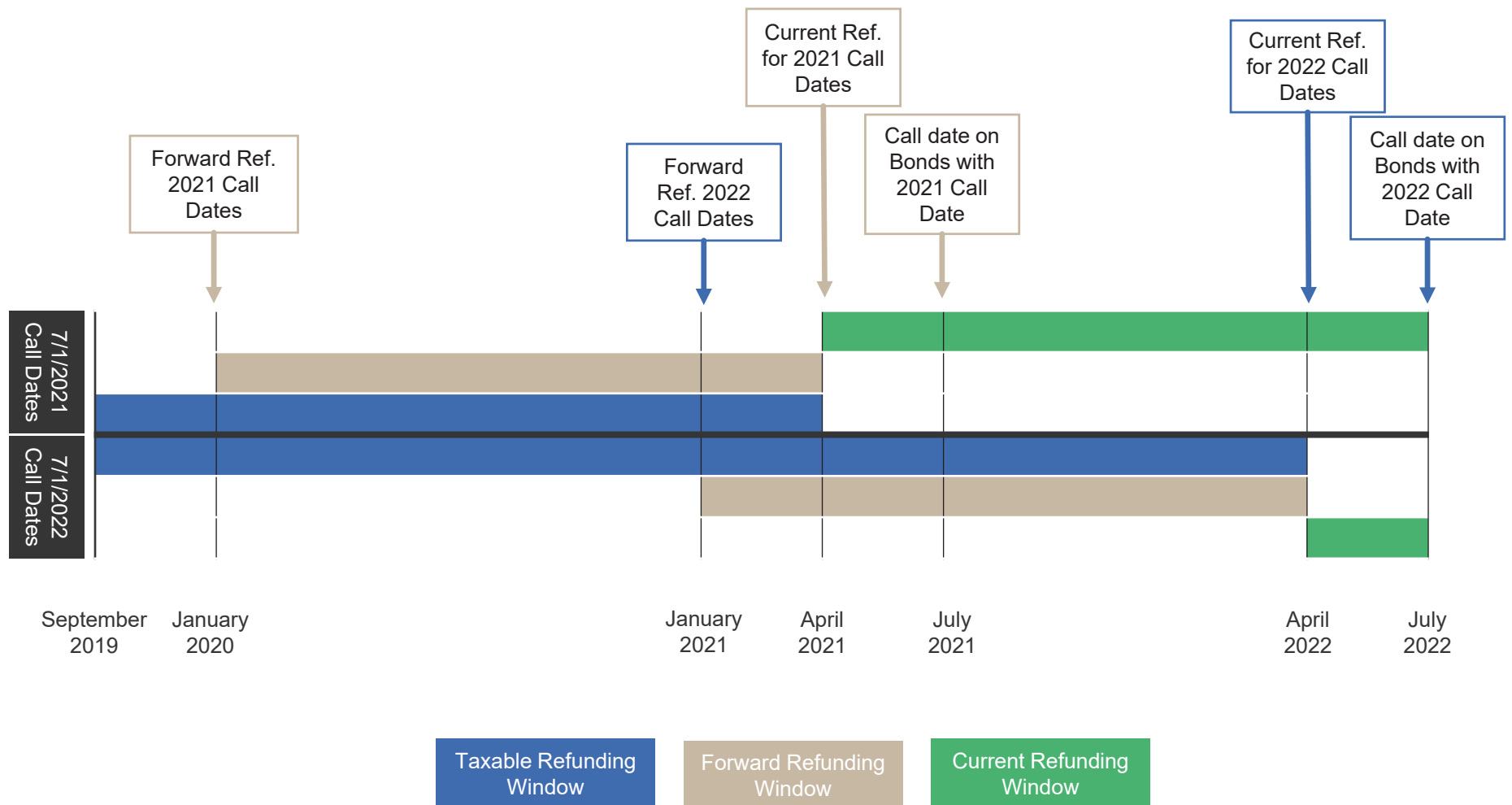
Considerations and Risks

- Each strategy to extract refunding savings from outstanding debt portfolio comes with a set of trade-offs that should be carefully considered

	Taxable Advance Refunding	Tax-Exempt Current Refunding	Tax-Exempt Forward Refunding	Forward-Starting Swap
Ability to Accomplish Today	✓		✓	✓
Future Obligations (Disclosure, Opinions, etc.)		✓	✓	✓
Interest Rate Risk		✓		
Tax and Credit Risk		✓	✓	✓
Swap-Related Risk (Counterparty, Basis, Liquidity, etc.)				✓
Savings Accrue Immediately	✓			
Maximize <u>Potential</u> Savings		✓		✓
Maximize Value of Future Call Option		✓	✓	
Policy Concerns on Tax-Exemption	✓			



Potential Refunding Timing





Taxable Advance Refunding – Water System (as of September 5)

Savings Summary

- Over \$107 million in gross cashflow savings can be achieved (>\$77 million present value)
- Potential to accelerate savings as desired

Refunding Candidates

- Includes all callable bonds from Series 2011A/B/C
- Advance refunding on a tax-exempt basis not an option under current tax law

Assumptions

- Uninsured, matched lien refunding
- Interest rates as of September 5, 2019
- Conservatively assumes no DSRF release
- Contribution of accrued interest from DS fund
- Hypothetical SLGS escrow as of September 5, 2019
- Savings structured for level aggregate savings
- Par coupon structure
- Assumes par call on 1/1/2030
- PV at Bond Yield of 3.17% to 1/1/2020

Refunding Results

Delivery Date:	1/1/2020
Call Date:	1/1/2030
Refunding Par (\$):	387,600,000
Callable Refunding Par (\$):	323,325,000
Advance Refunded Par (\$):	366,025,000
NPV Savings (\$):	77,250,371
NPV Savings as % :	21.10%
Negative Arbitrage (\$) ¹ :	(8,779,862)
Escrow Efficiency ¹ :	89.79%
TIC:	3.19%
WAM:	16.8 yrs
Refunded Bonds WAM:	17.6 yrs
PV of 0.01% Change in Interest Rates (\$)	501,766

Date	Prior Net Cashflow (\$)	Refunding DS (\$)	Savings (\$)
6/30/2021	19,091,363	11,824,897	7,266,466
6/30/2022	19,091,363	14,334,547	4,756,816
6/30/2023	19,290,213	14,532,043	4,758,170
6/30/2024	21,235,113	16,475,009	4,760,104
6/30/2025	29,345,550	24,585,588	4,759,963
6/30/2026	27,971,206	23,209,652	4,761,554
6/30/2027	18,032,825	13,274,280	4,758,546
6/30/2028	31,210,650	26,449,643	4,761,008
6/30/2029	21,155,525	16,394,591	4,760,935
6/30/2030	20,940,500	16,180,296	4,760,204
6/30/2031	20,204,225	15,446,639	4,757,586
6/30/2032	20,158,100	15,399,197	4,758,903
6/30/2033	20,002,725	15,245,231	4,757,495
6/30/2034	19,943,275	15,181,749	4,761,526
6/30/2035	19,654,175	14,896,048	4,758,128
6/30/2036	19,600,300	14,838,727	4,761,574
6/30/2037	28,577,925	23,818,051	4,759,874
6/30/2038	42,720,631	37,963,345	4,757,286
6/30/2039	71,625,694	66,867,036	4,758,658
6/30/2040	71,546,513	66,788,066	4,758,447
6/30/2041	71,465,238	66,708,182	4,757,056
6/30/2042	70,117,125	65,359,904	4,757,221
	702,980,231	595,772,716	107,207,515

1. Negative arbitrage and escrow efficiency calculated for illustrative purposes assuming earnings cap on investments at refunding bond yield.



Taxable Advance Refunding – Sewer System (as of September 5)

Savings Summary

- Over \$170 million in gross cashflow savings can be achieved (>\$120 million present value)
- Potential to accelerate savings as desired

Refunding Candidates

- Includes all callable bonds from series 2005A, 2006A, 2012A, 2014C-1 and 2014C-2
- Advance refunding on a tax-exempt basis not an option under current tax law

Assumptions

- Uninsured, matched lien refunding
- Interest rates as of September 5, 2019
- Conservatively assumes no DSRF release
- Contribution of accrued interest from DS fund
- Hypothetical SLGS escrow as of September 5, 2019
- Savings structured for level aggregate savings by lien
- Par coupon structure
- Assumes par call on 1/1/2030
- PV at Bond Yield of 3.14% to 1/1/2020

Refunding Results

Delivery Date:	1/1/2020
Call Date:	1/1/2030
Refunding Par (\$):	732,650,000
Callable Refunding Par (\$):	649,330,000
Advance Refunded Par (\$):	675,230,000
NPV Savings (\$):	120,709,254
NPV Savings as % :	17.87%
Negative Arbitrage (\$) ¹ :	(27,141,452)
Escrow Efficiency ¹ :	81.64%
TIC:	3.14%
WAM:	16.6 yrs
Refunded Bonds WAM:	17.7 yrs
PV of 0.01% Change in Interest Rates (\$)	936,873

Date	Prior Net Cashflow (\$)	Refunding DS (\$)	Savings (\$)
6/30/2021	34,522,363	22,263,259	12,259,104
6/30/2022	34,522,363	27,490,330	7,032,033
6/30/2023	34,522,363	27,489,765	7,032,598
6/30/2024	52,067,488	45,035,075	7,032,412
6/30/2025	33,632,363	26,603,036	7,029,327
6/30/2026	33,631,863	26,600,791	7,031,072
6/30/2027	42,560,650	35,530,648	7,030,002
6/30/2028	35,398,800	28,364,564	7,034,236
6/30/2029	38,892,288	31,862,325	7,029,963
6/30/2030	34,208,413	27,176,686	7,031,727
6/30/2031	38,889,913	31,855,026	7,034,887
6/30/2032	45,769,788	38,738,977	7,030,811
6/30/2033	68,699,413	61,669,854	7,029,559
6/30/2034	29,738,663	22,702,188	7,036,475
6/30/2035	53,965,075	46,933,241	7,031,834
6/30/2036	68,186,813	61,151,863	7,034,950
6/30/2037	51,341,638	44,305,910	7,035,728
6/30/2038	129,464,838	123,692,394	5,772,444
6/30/2039	129,316,281	123,544,919	5,771,362
6/30/2040	129,164,138	123,390,680	5,773,458
6/30/2041	34,117,125	28,345,853	5,771,273
6/30/2042	34,079,375	28,309,212	5,770,163
6/30/2043	34,041,875	28,269,220	5,772,655
6/30/2044	34,006,000	28,236,088	5,769,912
6/30/2045	33,758,375	27,987,420	5,770,955
1,288,498,256			1,117,549,321
			170,948,936

1. Negative arbitrage and escrow efficiency calculated for illustrative purposes assuming earnings cap on investments at refunding bond yield.



Summary of Key Decision-Making Considerations for a Taxable Advance Refunding

- By pursuing a refunding now, GLWA forgoes the opportunity to generate even greater savings later
 - Should interest rates increase less than breakeven yield curve movements of approximately 0.50% - 1.60%, higher savings would be generated by a tax-exempt current refunding at each call date
 - Future tax-exempt refunding options carry more option value with tax-exempt 5.00% coupons than taxable par coupons
- While taxable bonds lock in a permanent interest rate penalty versus any tax-exempt option, with the elimination of tax-exempt advance refundings municipal issuers have limited other options to “lock in” current rates
 - Current taxable rates offer effective refinancing economics of two separate future tax-exempt refundings with 10% PV savings each
- Alternative options that could generate greater savings for GLWA exist as well – namely forward tax-exempt delivery bonds and use of interest rate swaps – but each has its own limitations
 - Forward delivery bonds can typically be completed only within 18 months of the call date, and with a premium to a current refunding transaction and additional disclosure at closing
 - Interest rate swaps (and other derivative products) can provide efficient solutions, but come with a set of different business risks and policy considerations
- Despite trade-offs, taxable bonds have extremely strong economics in the current environment and fairly low breakeven yield curve movements to each call date
 - Compression vs. tax-exempt rates
 - Use of par coupons that increases savings vs. typical 5.00% tax-exempt coupon that is priced to call
 - Ability to tax-exempt advance or current refund taxable refunding bonds, once prior tax-exempt bonds are retired



Potential Refunding Process and Timeline

- September 2019 – Financing team and GLWA staff begin work on transactions
- October 2019 – Appointment of underwriting team
- December 2019 / January 2020 – Rating Agency meetings
- January 2020 – Audit Committee review and Board approval of documents, including:
 - Preliminary Official Statements
 - Series Ordinances
 - Escrow Agreements
 - Sale Orders
- February 2020 (or thereafter as market conditions permit) – Bond Pricing



Financial Services Audit Committee Communication

Date: September 20, 2019

To: Great Lakes Water Authority Audit Committee

From: Steve Hoover, Financial Reporting Manager

Re: FY 2019 Annual Financial Audit Update

Background: In June 2019, the GLWA Audit Committee completed the process of recommending to the GLWA Board of Directors a selection of independent certified public accounting firms to complete the organization's required annual financial audit as required under Article 7, Section J of the Articles of Incorporation. GLWA is required to complete this process every three years.

Analysis: The firm of Baker Tilly Virchow Krause LLP (Baker Tilly) was chosen by the Board from the pool of three firms provided. Baker Tilly will complete the GLWA annual financial audits for fiscal years ending 2019, 2020 and 2021. To initiate the FY 2019 audit, Baker Tilly has submitted the following two items through the Audit Committee to the GLWA Board of Directors for review.

- Governing Body Cover Letter
- AU-C 260 Planning Letter to Governance

Proposed Action: Motion to approve for presentation to the Board.

Baker Tilly Virchow Krause, LLP
Ten Terrace Ct; PO Box 7398
Madison, WI 53707-7398
United States of America

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bakertilly.com

September 11, 2019

Ms. Nicolette Bateson, CPA
Chief Financial Officer/ Treasurer
Great Lakes Water Authority
735 Randolph
Detroit, Michigan 48226

Dear Ms. Bateson:

Under auditing standard AU-C Statement 260, "The Auditor's Communication with Those Charged with Governance," we are required to inform your governing body about a number of things relative to our audit of your June 30, 2019 financial statements.

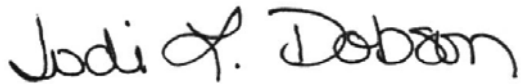
Enclosed is the letter to the Great Lakes Water Authority Board of Directors, which addresses those items. Please make sure that every member of the governing body gets a copy of the letter at their next meeting. There is no official action required. However, the letter does ask for their input about various aspects of our audit. If they wish to respond, we have provided a phone number and email address for that purpose.

At the conclusion of the audit, we will revisit this communication with another written letter, and, when we present report at a meeting, we can discuss it further with them at that time.

Thanks for your assistance with this requirement. Please give me a call with any questions.

Sincerely,

BAKER TILLY VIRCHOW KRAUSE, LLP



Jodi Dobson, CPA, Partner

Enclosures

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To the Board of Directors
Great Lakes Water Authority
735 Randolph
Detroit, Michigan 48226

Thank you for using Baker Tilly Virchow Krause, LLP as your auditor.

There are auditing standards that are intended to provide communication to you as the people charged with governing the Authority.

Specifically, we are required to communicate certain things during the planning and completion phases of the audit. The following items are presented to you for your consideration. You do not need to take any action on this letter unless you wish to contact us with relevant information as noted later in this document.

- a. The auditor is responsible for forming and expressing an opinion about whether the financial statements that have been prepared by management with the oversight of those charged with governance are presented fairly, in all material respects, in conformity with generally accepted accounting principles.
- b. The audit does not relieve management or those charged with governance of their responsibilities.
- c. An audit performed in accordance with generally accepted auditing standards is designed to obtain reasonable but not absolute assurance that the statements are free of material misstatement.
- d. Our consideration of internal control is to determine a basis for designing audit procedures and not for the purpose of expressing an opinion on internal control.
- e. The auditor is responsible for communicating significant financial statement related matters to those charged with governance; however, the auditor is not required to design procedures to find such matters.
- f. The financial statement document may also contain other information for which we have the following responsibility:
 - 1) Supplementary Information – “In relation to” audit coverage
 - 2) Required Supplementary Information – Limited procedures
 - 3) Other Information – No audit coverage

With regard to the audit of your June 30, 2019 financial statements, the following points are an overview of our scope and timing:

- a. We address the significant risks of material misstatement, whether due to fraud or error, through our detailed audit procedures.
- b. We will obtain an understanding of the five components of internal control sufficient to assess the risk of material misstatement of the financial statements whether due to error or fraud, and to design the nature, timing, and extent of further audit procedures. We will obtain a sufficient understanding by performing risk assessment procedures to evaluate the design of controls relevant to an audit of financial statements and to determine whether they have been implemented. We will use such knowledge to:
 - > Identify types of potential misstatements.
 - > Consider factors that affect the risks of material misstatement.
 - > Design tests of controls, when applicable, and substantive procedures.
- c. We will not express an opinion on the effectiveness of internal control over financial reporting or compliance with laws, regulations, and provisions of contracts or grant programs. For audits performed in accordance with *Government Auditing Standards*, our report will include a paragraph that states that the purpose of the report is solely to describe the scope of testing of internal control over financial reporting and compliance and the result of that testing and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance and that the report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering internal control over financial reporting and compliance. The paragraph will also state that the report is not suitable for any other purpose.
- d. The concept of materiality recognizes that some matters, either individually or in the aggregate, are important for fair presentation of financial statements in conformity with generally accepted accounting principles while other matters are not important. In performing the audit, we are concerned with matters that, either individually or in the aggregate, could be material to the financial statements. Our responsibility is to plan and perform the audit to obtain reasonable assurance that material misstatements, whether caused by errors or fraud, are detected.
- e. We address the significant risks or material noncompliance, whether due to fraud or error, through our detailed audit procedures.
- f. We will obtain an understanding of the five components of internal control sufficient to assess the risk of material noncompliance related to the federal and state awards whether due to error or fraud, and to design the nature, timing, and extent of further audit procedures. We will obtain a sufficient understanding by performing risk assessment procedures to evaluate the design of controls relevant to an audit of the federal and state awards and to determine whether they have been implemented. We will use such knowledge to:
 - > Identify types of potential noncompliance.
 - > Consider factors that affect the risks of material noncompliance.
 - > Design tests of controls, when applicable, and other audit procedures.

September 11, 2019
Page 3

Our audit will be performed in accordance with U.S. generally accepted auditing standards, *Government Auditing Standards*, and OMB's *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance).

We will not express an opinion on the effectiveness of internal control over financial reporting or compliance with laws, regulations, and provisions of contracts or grant programs. For audits done in accordance with *Government Auditing Standards* and the Uniform Guidance, our report will include a paragraph that states that the purpose of the report is solely to describe (a) the scope of testing of internal control over financial reporting and compliance and the result of that testing and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance, (b) the scope of testing internal control over compliance for major programs and major program compliance and the result of that testing and to provide an opinion on compliance but not to provide an opinion on the effectiveness of internal control over compliance and, (c) that the report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering internal control over financial reporting and compliance and the Uniform Guidance in considering internal control over compliance and major program compliance. The paragraph will also state that the report is not suitable for any other purpose.

We are very interested in your views regarding certain matters. Those matters are listed here:

- a. We typically will communicate with your top level of management unless you tell us otherwise.
- b. We understand that the governing body has the responsibility to oversee the strategic direction of your organization, as well as the overall accountability of the entity. Management has the responsibility for achieving the objectives of the entity.
- c. We need to know your views about your organization's objectives and strategies, and the related business risks that may result in material misstatements.
- d. We anticipate that the Authority will receive an unmodified opinion on its financial statements .
- e. Which matters do you consider warrant particular attention during the audit, and are there any areas where you request additional procedures to be undertaken?
- f. Have you had any significant communications with regulators or grantor agencies?
- g. Are there other matters that you believe are relevant to the audit of the financial statements?

Also, is there anything that we need to know about the attitudes, awareness, and actions of the governing body concerning:

- a. The entity's internal control and its importance in the entity, including how those charged with governance oversee the effectiveness of internal control?
- b. The detection or the possibility of fraud?

We also need to know if you have taken actions in response to developments in financial reporting, laws, accounting standards, governance practices, or other related matters, or in response to previous communications with us.

To the Board of Directors
Great Lakes Water Authority

September 11, 2019
Page 4

With regard to the timing of our audit, here are some general observations. If necessary, we may do preliminary audit work during the months of June - September. Our final fieldwork is scheduled in October. After fieldwork, we wrap up our audit procedures at our office and may issue drafts of our report for your review. Final copies of our report and other communications are issued after approval by your staff.

Keep in mind that while this new communication may assist us with planning the scope and timing of the audit, it does not change the auditor's sole responsibility to determine the overall audit strategy and the audit plan, including the nature, timing, and extent of procedures necessary to obtain sufficient appropriate audit evidence.

We realize that you may have questions on what it means, or wish to provide other feedback. We welcome the opportunity to hear from you. Please contact your engagement partner, Jodi Dobson, at 608 240 2469 or email at jodi.dobson@bakertilly.com. We look forward to hearing from you.

Sincerely,

BAKER TILLY VIRCHOW KRAUSE, LLP

A handwritten signature in dark ink that reads "Baker Tilly Virchow Krause, LLP". The signature is written in a cursive, flowing style.

GLWA

Great Lakes Water Authority



Monthly Financial Report Binder

June 2019

(Preliminary FY 2019 Year-end Close)

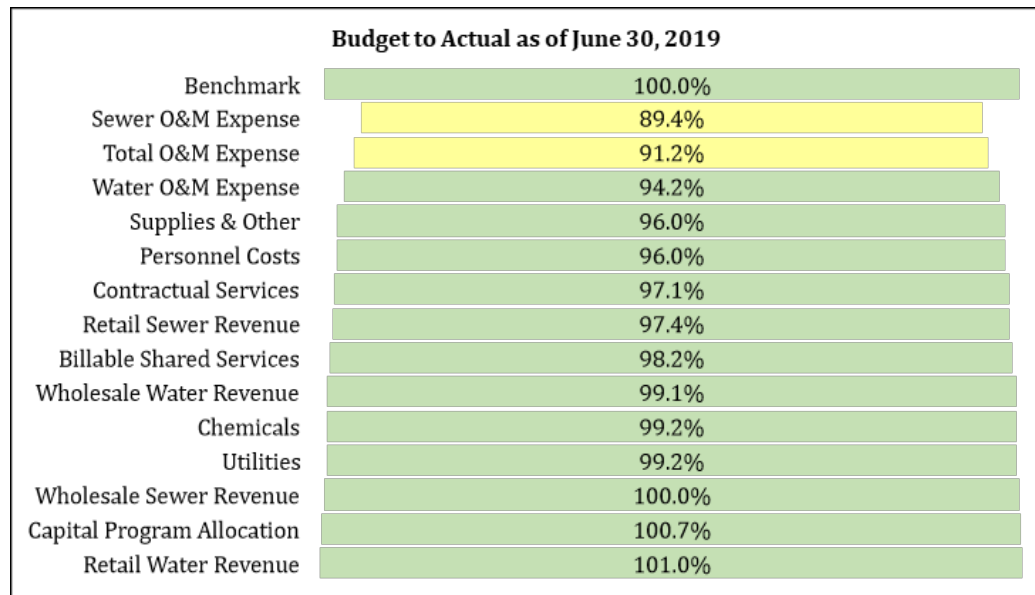
**Presented to the
Great Lakes Water Authority
Audit Committee on September 20, 2019**

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Revenue and Expense Budget to Actual¹ – Pro-rata Benchmark of 100%

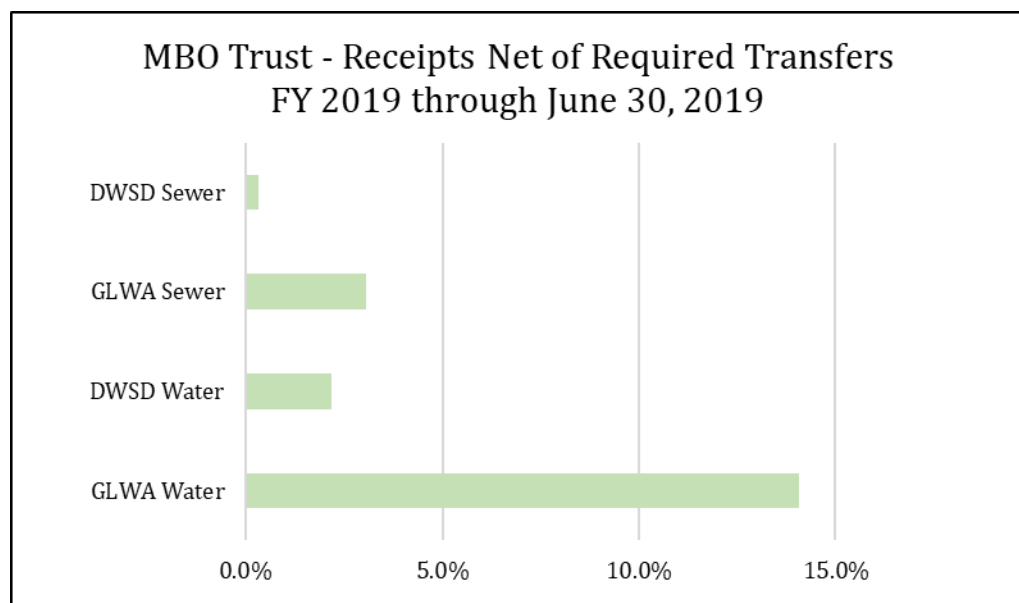
Preliminary June 2019 yearend financial results indicate only two categories falling outside the 7.5% of the pro-rata benchmark for the current fiscal yearend.



Sewer Operations & Maintenance (O&M) Expense: Sewer and Total O&M Expense closed FY 2019 consistent with the trend of positive variances throughout the year. This is largely attributable to the categories of Capital Program Allocation, Supplies & Other, and Chemicals.

Master Bond Ordinance (MBO) Trust Net Receipts

Overall net cash flow (receipts) is positive for both GLWA and DWSD. This means that all legal commitments of the MBO Trust and the lease payment are fully funded to date – and that positive cash flow is available for additional capital program funding in subsequent year(s).



Questions? Contact the Office of the Chief Financial Officer at CFO@glwater.org

¹ All amounts are GLWA entity-wide unless noted as water, sewer, and/or retail.

The Monthly Budget to Actual Analysis report includes the following three sections.

1. Revenue Requirement Budget Basis Analysis
2. Operations & Maintenance Budget – Major Budget Categories
3. Alignment of Operations & Maintenance Budget Priorities – Expense Variance Analysis

Revenue Requirement Budget Basis Analysis - Draft

GLWA's annual revenue requirement represents the basis for calculating Member Partner charges and also aligns with the Master Bond Ordinance flow of funds categories. The budget basis is not the same as the full accrual basis used for financial reporting although the revenues and operations and maintenance expense are largely reported on an accrual basis. The primary difference between the revenue requirement budget basis to the financial reporting basis is the treatment of debt service, legacy pension obligations, and lease related activities. The Revenue Requirement Basis is foundational to GLWA's daily operations, financial plan, and of most interest to key stakeholders.

Table 1A – Water Revenue Requirement Budget and **Table 1B – Sewer Revenue Requirement Budget** presents a year-over-year budget to actual performance report. The revenue requirement budget is accounted for in the operations and maintenance fund for each system. Since this report is for June 2019, the pro-rata benchmark is 100.0% (12 of 12 months of the fiscal year).

Items noted below are highlighted in gold on Tables 1A (Water) and 1B (Sewer).

1. **Revenues:** For *both* systems, FY 2019 revenues are either at or above target and are consistent with the prior year (FY 2018) at the same time. Detailed schedules related to revenues are provided in the *Wholesale Billings, Collections, and Receivables* section of this financial report binder.
2. **Investment Earnings:** For *both* systems, investment earnings are above target for FY 2019. Detailed analysis of investment earnings activity to date can be found in the *Cash & Investment Income* section of this financial report binder.
3. **Other Revenues:** These are one-time and unusual items that do not fit an established revenue category. Both the *water* and *sewer* systems actual amount will vary from budget due to the nature of the items recorded in this category. For example, in FY 2018 the variance reported for the *sewer* system was due, in large part, to fire remediation insurance proceeds received.

4. **Operations & Maintenance Expense:** Actual expenses¹ for *both* systems are less than the pro-rata benchmark; the *water* system is slightly under the pro-rata benchmark for FY 2019 at 94.2%, while the *sewer* system O&M expense is at 89.4%.
5. **Debt Service:** *Both* systems are on target with the pro-rata benchmark; the *water* system is at 100.0%, while the *sewer* system is at 100.8%. The activity is based on the payment schedules that have been adjusted for the State Revolving Fund loans that are still being drawn down. In October 2018, the GLWA had a successful bond sale which will provide a positive budget variance for *both* systems. The budget amendment for this transaction was recorded in January 2019.
6. **DWSD Budget Shortfall Pending:** To the extent that the local (DWSD) system experiences budgetary shortfalls as defined by the Water & Sewer Services Agreement, the GLWA budget is impacted.² Steps to proactively detect, and ideally prevent, this shortfall scenario were put into place with the 2018 Memorandum of Understanding (dated June 27, 2018). For FY 2018, the DWSD *sewer* shortfall through June 30, 2018, was \$24.1 million. A plan for payment of this shortfall is in place with the outer boundary of payment terms being paid over three years plus interest at the three-year treasury rate plus 1.5% with payments beginning in July 2019. For FY 2019, there is no DWSD *sewer* shortfall through June 30, 2019. As of June 2019, DWSD has reduced its sewer system O&M transfers in May and June to assist in achieving the goal of positive, net cash flows for FY 2019. The transfers reduced were \$5,676,792 each for a total of \$11,353,584.
7. **Improvement & Extension (I&E) Fund Transfer Pending:** The contribution to the I&E Fund is for improvements, enlargements, extensions or betterment of the Water System. Transfers to the I&E Fund from net revenues typically occur later in the year or after year end close when final net revenue is validated.
8. **Other Revenue Requirements:** The remaining revenue requirements for *both* systems are funded on a 1/12th basis each month in accordance with the Master Bond Ordinance. At yearend, this is in line with actual activity as provided in summary in the *Trust Receipts & Disbursements* report.
9. **Overall:** Total revenue requirements for *both* systems are in line with the benchmark.

¹The tables in this analysis reflect actual amounts spent. If this analysis was on a master bond ordinance (MBO) basis, like that used for calculating debt service coverage, O&M “expense” would equal the pro-rata budget because 1/12 of the O&M budget is transferred monthly outside the MBO trust to an O&M bank account.

² As a reminder, the monthly O&M transfer for MBO purposes are at 1/12 of the budget to a DWSD O&M bank account outside the trust. Actual budget may be less than that amount providing an actual positive variance for DWSD.

Table 1A – Water Revenue Requirement Budget (year-over-year) – (\$000) - Draft

	FY 2018 BOARD ADOPTED BUDGET	FY 2018 THRU 6/30/2018	Percent Year-to- Date	FY 2019 BOARD ADOPTED BUDGET	FY 2019 AMENDED BUDGET	FY 2019 THRU 6/30/2019	Percent Year-to- Date
Water System							
Revenues							
Wholesale Customer Charges	\$ 310,020	\$ 320,197	103.3%	\$ 307,383	\$ 307,383	\$ 304,164	99.0%
Retail Services Agreement	15,131	15,131	100.0%	20,181	20,181	20,181	100.0%
Investment Earnings	2,969	4,489	151.2%	3,802	9,425	10,200	108.2%
Other Revenues	-	64	0.0%	34	-	21	0.0%
Total Revenues	\$ 328,119	\$ 339,882	103.6%	\$ 331,401	\$ 336,989	\$ 334,567	99.3%
Revenue Requirements							
Operations & Maintenance Expense	\$ 121,563	\$ 108,530	89.3%	\$ 121,563	\$ 121,563	\$ 114,525	94.2%
O&M Legacy Pension	6,048	6,048	100.0%	6,048	6,048	6,048	100.0%
Debt Service	135,464	136,288	100.6%	134,215	131,242	131,178	100.0%
Accelerated Legacy Pension	6,268	6,268	100.0%	6,268	6,268	6,268	100.0%
Extraordinary Repair & Replacement							
Deposit	646	646	100.0%	-	-	-	0.0%
Lease Payment	22,500	22,500	100.0%	22,500	22,500	22,500	100.0%
Operating Reserve Deposit	1,098	1,098	100.0%	-	-	-	0.0%
Water Residential Assistance Program	1,711	1,711	100.0%	1,673	1,673	1,673	100.0%
Improvement & Extension Fund							
Transfer Pending	32,821	32,821	100.0%	39,134	47,695	47,695	100.0%
Total Revenue Requirements	\$ 328,119	\$ 315,911	96.3%	\$ 331,401	\$ 336,989	\$ 329,888	97.9%
Net Difference		\$ 23,971				\$ 4,678	
<i>Recap of Net Positive Variance</i>							
Revenue Variance		\$ 11,762				\$ (2,422)	
Revenue Requirement Variance		12,208				7,101	
Overall Variance		\$ 23,971				\$ 4,678	

Table 1B – Sewer Revenue Requirement Budget (year-over-year) – (\$000) - Draft

	FY 2018 BOARD ADOPTED BUDGET	FY 2018 THRU 6/30/2018	Percent Year-to- Date	FY 2019 BOARD ADOPTED BUDGET	FY 2019 AMENDED BUDGET	FY 2019 THRU 6/30/2019	Percent Year-to- Date
Sewer System							
Revenues							
Wholesale Customer Charges	\$ 267,034	\$ 268,979	100.7%	\$ 271,296	\$ 271,296	\$ 272,773	100.5%
Retail Services Agreement	178,969	178,969	100.0%	181,159	181,159	181,159	100.0%
Industrial Waste Control Charges	14,458	14,335	99.2%	15,006	15,001	9,106	60.7%
Pollutant Surcharges	5,099	6,908	135.5%	-	-	5,933	0.0%
Investment Earnings	2,751	4,023	146.2%	4,086	6,879	10,066	146.3%
Other Revenues	-	4,391	0.0%	480	-	506	0.0%
Total Revenues	\$ 468,311	\$ 477,605	102.0%	\$ 472,027	\$ 474,335	\$ 479,543	101.1%
Revenue Requirements							
Operations & Maintenance Expense	\$ 191,079	\$ 176,379	92.3%	\$ 191,079	\$ 191,079	\$ 170,732	89.4%
O&M Legacy Pension	10,824	10,824	100.0%	10,824	10,824	10,824	100.0%
Debt Service	207,616	204,289	98.4%	214,601	208,389	210,008	100.8%
Accelerated Legacy Pension	11,621	11,621	100.0%	11,621	11,621	11,621	100.0%
Extraordinary Repair & Replacement							
Deposit	814	814	100.0%	-	-	-	0.0%
Lease Payment	27,500	27,500	100.0%	27,500	27,500	27,500	100.0%
Operating Reserve Deposit	1,733	1,733	100.0%	-	-	-	0.0%
Water Residential Assistance Program	2,392	2,392	100.0%	2,374	2,374	2,374	100.0%
DWSD Budget Shortfall Pending	-	24,113	0.0%	-	-	-	0.0%
Improvement & Extension Fund							
Transfer Pending	14,733	14,733	100.0%	14,028	22,548	22,548	100.0%
Total Revenue Requirements	\$ 468,311	\$ 474,397	101.3%	\$ 472,027	\$ 474,335	\$ 455,607	96.1%
Net Difference		\$ 3,208				\$ 23,936	
<i>Recap of Net Positive Variance</i>							
Revenue Variance		\$ 9,294				\$ 5,208	
Revenue Requirement Variance		(6,086)				18,728	
Overall Variance		\$ 3,208				\$ 23,936	

Operations & Maintenance Budget – Major Budget Categories - Draft

The year-over-year benchmark ratio as of June 30, 2019, is 100.0% (twelve months). When comparing FY 2019 to FY 2018 in **Table 2 – Operations & Maintenance Budget – Major Budget Categories**, it appears that spending is consistent in total.

In addition to the four major budget categories, an internal charge cost center for employee benefits is shown in the table below. If the number is positive, it indicates that the internal cost allocation rate charges to other cost centers is not sufficient. A negative number indicates a surplus in the internal cost center. A moderate surplus is preferred as it provides a hedge for mid-year benefit program cost adjustments (premiums adjust on January 1 each year) as well as managing risk as the program is partially self-insured.

Table 2 – Operations & Maintenance Budget – Major Budget Categories – (\$000) - Draft

Major Budget Categories	FY 2018 AMENDED BUDGET	FY 2018 ACTIVITY THRU 6/30/2018	Percent Year-to-Date	FY 2019 BOARD ADOPTED BUDGET	FY 2019 AMENDED BUDGET	FY 2019 ACTIVITY THRU 6/30/2019	Percent Year-to-Date
Water	\$ 73,511	\$ 61,658	83.9%	\$ 66,596	\$ 66,596	\$ 68,832	103.4%
Sewer	124,106	109,730	88.4%	118,319	118,319	110,768	93.6%
Centralized	82,629	81,558	98.7%	99,045	99,045	83,031	83.8%
Administrative	32,305	31,964	98.9%	28,682	28,682	25,532	89.0%
Employee Benefits	-	-	0.0%	-	-	(2,905)	0.0%
Total O&M Budget	\$ 312,551	\$ 284,910	91.2%	\$ 312,642	\$ 312,642	\$ 285,257	91.2%

Alignment of Operations & Maintenance Budget Priorities – Expense Variance Analysis - Draft

The purpose of **Table 3 – Operations & Maintenance Expense Variance Analysis** is to evaluate whether the actual spend rate within a natural cost category is in alignment with the budget. Given the effort to develop an accurate budget, a variance is a red flag of a *potential* budget amendment or misalignment of priorities.

Total: In total, the O&M expenses are at 91.2% which is reasonably within the pro-rata benchmark of 100.0%. This positive variance equates to a dollar amount of \$27.4 million. The expense category commentary is provided below for items highlighted on Table 3.

Personnel Costs: The overall category is slightly lower than the benchmark; coming in at 96.0% through June 2019.

Utilities: The overall category is slightly lower than the benchmark; coming in at 99.2% through June 2019. In comparing FY 2019 to FY 2018 the expenses appear more in line with the budget in FY 2019. This is due in large part to the month-end closing process improvements implemented during the latter half of FY 2018.

Chemicals: This category is slightly lower than the benchmark; coming in at 99.2% through June 2019. This variance is not unexpected as usage varies throughout the year.

Supplies & Other: This category is lower than the benchmark; coming in at 96.0% through June 2019. The nature of the items in this category are subject to one-time expenses that do not occur evenly throughout the year. A variance in this category can result from items budgeted in one year not being realized until the following year.

Contractual Services: The overall category is slightly lower than the benchmark; coming in at 97.1% through June 2019.

Capital Program Allocation: This category is slightly higher than the benchmark; coming in at 100.7% through June 2019. In July 2018, GLWA launched a time keeping software (including an app), BigTime, to make it easier for team members to report their time spent on direct capital delivery.

Shared Services: This category is slightly lower than the benchmark; coming in at 98.2% through June 2019. This variance is the result of prior year true-up amounts that are included in the activity for FY 2019. When the true-up activity is removed, the variance for FY 2019 is at 100.0%. The shared services reimbursement is comprised of both labor (tracked via BigTime) and expenses, such as annual fees for software licensing. Staff from both GLWA and DWSD have been working together to evaluate and refine the budget for the shared services agreements. In December 2018, adjustments were made to both the billings and accounting accruals to bring them in line with the amended shared services budget.

Table 3 – Operations & Maintenance Expense Variance Analysis – (\$000) - Draft

Expense Categories Entity-wide	FY 2018 AMENDED BUDGET	FY 2018 ACTIVITY THRU 6/30/2018	Percent Year-to- Date at 6/30/2018	FY 2019 AMENDED BUDGET	FY 2019 ACTIVITY THRU 6/30/2019	Percent Year-to- Date	FY 2019 BUDGET LESS FY 2019 ACTIVITY
Salaries & Wages	\$ 57,114	\$ 55,174	96.6%	\$ 61,600	\$ 59,672	96.9%	\$ 1,928
Workforce Development	662	605	91.4%	751	794	105.7%	(43)
Overtime	6,517	6,162	94.6%	7,612	7,554	99.2%	58
Employee Benefits	20,999	20,432	97.3%	23,778	24,766	104.2%	(988)
Transition Services	13,865	13,153	94.9%	8,556	8,322	97.3%	234
Personnel Transition Adjustment	(1,557)	-	0.0%	-	-	0.0%	-
Employee Benefits Fund	-	-	0.0%	-	(2,905)	0.0%	2,905
<i>Personnel Costs</i>	<u>97,599</u>	<u>95,526</u>	<u>97.9%</u>	<u>102,296</u>	<u>98,202</u>	<u>96.0%</u>	<u>4,094</u>
Electric	42,324	40,874	96.6%	39,019	39,103	100.2%	(84)
Gas	7,030	6,612	94.1%	6,631	6,568	99.1%	63
Sewage Service	2,031	1,716	84.5%	2,491	2,094	84.1%	397
Water Service	4,588	4,493	97.9%	3,648	3,631	99.5%	17
<i>Utilities</i>	<u>55,972</u>	<u>53,694</u>	<u>95.9%</u>	<u>51,789</u>	<u>51,396</u>	<u>99.2%</u>	<u>394</u>
Chemicals	13,341	12,878	96.5%	13,385	13,276	99.2%	110
Supplies & Other	46,971	34,527	73.5%	36,180	34,717	96.0%	1,463
Contractual Services	108,480	99,877	92.1%	102,828	99,893	97.1%	2,935
Capital Program Allocation	(2,013)	(1,683)	83.6%	(3,356)	(3,381)	100.7%	25
Shared Services	(10,110)	(9,908)	98.0%	(9,005)	(8,846)	98.2%	(159)
Unallocated Reserve	2,311	-	0.0%	18,524	-	0.0%	18,524
Total Expenses	<u>\$ 312,551</u>	<u>\$ 284,910</u>	<u>91.2%</u>	<u>\$ 312,642</u>	<u>\$ 285,257</u>	<u>91.2%</u>	<u>\$ 27,385</u>

The Basic Financial Statements report includes the following four tables.

1. Statement of Net Position - All Funds Combined
2. Statement of Revenues, Expenses and Changes in Net Position – All Funds Combined
3. Supplemental Schedule of Operations & Maintenance Expenses -All Funds Combined
4. Supplemental Schedule of Nonoperating Expenses – All Funds Combined

At a macro level GLWA has two primary funds for financial reporting purposes: *Water Fund* and *Sewage Disposal Fund*. These funds represent the combined total of four sub-funds for each system that are used internally to properly account for sources and uses of funds. Those sub-funds for each system are: *Operations & Maintenance Fund, Improvement & Extension Fund, Construction Bond Fund, and Capital Asset Fund*.

The June 2019 basic financial statements are presented in a draft format. Adjustments related to fiscal year end 2019 audit affect the basic financial statements. The results of these adjustments will be presented in the audited CAFR.

Statement of Net Position – All Funds Combined - Draft

Explanatory notes follow the Statement of Net Position shown in Table 1 below.

Table 1 – Statement of Net Position - All Funds Combined - Draft
As of June 30, 2019
(\$000)

	Water	Sewage Disposal	Total Business- type Activities	Comparative June 30, 2018
Assets				
Cash (a)	\$ 252,053	\$ 318,962	\$ 571,015	\$ 671,753
Investments (a)	275,418	182,345	457,763	343,235
Accounts Receivable	103,637	106,581	210,218	191,359
Due from Other Funds (b)	3,997	-	3,997	32,255
Other Assets (c)	595,487	453,670	1,049,157	985,888
Cash Held FBO DWSD Advance (d)	-	-	-	18,468
Capital Assets, net of Depreciation	1,669,845	2,446,314	4,116,160	4,402,212
Construction Work in Process (e)	191,550	226,298	417,848	288,052
Total assets	3,091,987	3,734,171	6,826,158	6,933,222
Deferred Outflows (f)	98,309	187,647	285,956	332,992
Liabilities				
Liabilities - Short-Term (g)	142,877	177,598	320,475	270,446
Due to Other Funds (b)	-	3,997	3,997	32,255
Other Liabilities (h)	2,805	6,292	9,097	8,638
Cash Held FBO DWSD (d)	2,185	623	2,807	8,902
Liabilities - Long-Term (i)	3,050,759	3,802,645	6,853,405	6,998,296
Total liabilities	3,198,625	3,991,155	7,189,781	7,318,537
Deferred Inflows (f)	64,824	56,077	120,901	126,432
Total net position (j)	\$ (73,153)	\$ (125,415)	\$ (198,568)	\$ (178,755)

Totals may be off due to rounding

In general, the Statement of Net Position - Draft reflects a mature organization with no unexpected trends. Cash balances as of June 30, 2019 are lower when compared to June 30, 2018 (highlighted in gold on Table 1). This is primarily the result of a more active investment strategy which has resulted in a lower cash and higher investment balance as of June 30, 2019.

An ongoing challenge is the Net Position Deficit. The underlying causes took years to build (largely heavy use of debt to finance capital asset investment versus a strategic blend of debt, state revolving funds, and cash). The effect is reflected in GLWA's high debt interest expense. The GLWA is regularly updating the FY 2030 forecast which helps to provide a pathway to a positive Net Position in the future.

Footnotes to Statement of Net Position

- a. *Cash and Investments* include restricted amounts and are reported at book value. Investments at June 30, 2018 are reported at market value. The June 30, 2019 values differ from the Cash and Investment section of this Financial Report Binder due to timing of certain items recognized on a cash versus accrual basis.
- b. *Due from Other Funds* and *Due to Other Funds* is shown at the gross level for sub-fund activity.
- c. *Other Assets* primarily consists of the contractual obligation receivable from DWSD related to reimbursement of bonded indebtedness for local system improvements.
- d. *Cash Held FBO Advance (for benefit of) DWSD* and *Cash Held FBO DWSD* represents the net difference between DWSD retail cash received from customers and net financial commitments as outlined in the Master Bond Ordinance.
- e. *Construction Work in Process* represents the beginning balance of CWIP plus any construction spending during the fiscal year. The balance will fluctuate based on the level of spend less any capitalizations or write-offs.
- f. *Deferred Inflow* and *Deferred Outflow* relate to financing activity and GLWA's share of the legacy General Retirement System (GRS) pension obligation.
- g. *Liabilities - Short-term* include accounts payable, retainage payable, and certain accrued liabilities. Some items, such as compensated absences and worker's compensation, are reviewed periodically but are only adjusted on an interim basis if there is a material change.
- h. *Other Liabilities* account for the cash receipts set aside for the Budget Stabilization Fund and the Water Residential Assistance Program.
- i. *Liabilities - Long-term* include bonds payable, lease payable, and legacy General Retirement System pension liabilities.
- j. *Net Position Deficit* is defined by accounting standards as the residual of all other elements presented in a statement of financial position. It is the difference between (a) assets and deferred outflows of resources and (b) liabilities and deferred inflows of resources. A net deficit occurs when the liabilities and deferred inflows exceed assets and deferred outflows. GLWA's net deficit is largely driven by an increase in depreciation expense as a result of the increase in the acquisition valuation approach for recording

capital asset values in the opening Statement of Net Position on January 2016. Efforts are underway to evaluate the net operating effect of this matter over the long term.

Statement of Revenues, Expenses and Changes in Net Position - All Funds Combined - Draft

This statement, shown in Table 2, is presented in summary format. The accrual basis of revenues and operations and maintenance expense vary from the revenue requirement basis presented in the *Budget to Actual Analysis* and the *Wholesale Billings, Receivables & Collections* sections of the June 2019 Financial Report Binder. Prior year ending balances are provided in the June 30, 2018 column as a reference for comparative purposes. Explanatory notes follow this statement.

**Table 2 – Statement of Revenues, Expenses and Changes in Net Position
- All Funds Combined - Draft
For the Fiscal Year ended June 30, 2019
(\$000)**

	Water	Percent of Revenue	Sewage Disposal	Percent of Revenue	Total Business- type Activities	Comparative June 30, 2018
Revenue						
Wholesale customer charges	\$ 311,399	93.9%	\$ 272,772	58.1%	\$ 584,172	\$ 592,096
Local system charges	20,181	6.1%	181,159	38.6%	201,341	194,100
Industrial waste charges	-	0.0%	9,106	1.9%	9,106	14,335
Pollutant surcharges	-	0.0%	5,933	1.3%	5,933	6,908
Other revenues	21	0.0%	506	0.1%	528	4,455
Total Revenues	\$ 331,602	100%	\$ 469,477	100%	\$ 801,079	\$ 811,894
Operating expenses						
Operations and Maintenance	114,525	34.5%	170,732	36.4%	285,257	284,910
Depreciation	140,571	42.4%	168,544	35.9%	309,115	331,242
Total operating expenses	255,097	76.9%	339,276	72.3%	594,373	616,152
Operating income	76,505	23.1%	130,201	27.7%	206,706	195,742
Total Nonoperating (revenue) expense	89,223	26.9%	137,296	29.2%	226,519	271,662
Increase/(Decrease) in Net Position	(12,718)	-3.8%	(7,095)	-1.5%	(19,813)	(75,920)
Net position (deficit), beginning of year	(60,435)		(118,319)		(178,755)	(102,835)
Net position (deficit), end of year	\$ (73,153)		\$ (125,415)		\$ (198,568)	\$ (178,755)

Totals may be off due to rounding

Water Fund

- ✓ The decrease in Water Fund Net Position is \$12.7 million.
- ✓ Wholesale water customer charges of \$311.4 million account for 93.9% of Water System revenues.
- ✓ Operating expenses of \$255.1 million represent 76.9% of total operating revenue. Depreciation is the largest operating expense at \$140.5 million or 55.1% of operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals \$76.5 million or 23.1% of operating revenue. This represents an increase of \$5.7 million over May 2019 year-to-date.
- ✓ The largest category within nonoperating activities is interest expense of \$113.7 million (this equates to the bonded debt interest less the offset from DWSD contractual obligation income).

Sewage Disposal Fund

- ✓ The decrease in the Sewage Disposal Fund Net Position is \$7.1 million.
- ✓ Wholesale customer charges of \$272.7 million account for 58.1% of Sewer System revenues. Wholesale customer charges are billed one-twelfth each month based on an agreed-upon historical average “share” of each customer’s historical flows which are formally revisited on a periodic basis. The result is no revenue shortfall or overestimation.
- ✓ Local system (DWSD) charges of \$181.1 million account for 38.6% of total operating revenues. These are also billed at one-twelfth of the annual revenue requirement.
- ✓ Operating expenses of \$339.2 million represent 72.3% of total operating revenue. Depreciation is the largest operating expense at \$168.5 million or 49.7% of total operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals \$130.2 million or 27.7% of operating revenue. This represents an increase of \$8.0 million over May 2019 year-to-date.
- ✓ The largest category within nonoperating activities is interest expense of \$142.1 million (this equates to the bonded debt interest less the offset from DWSD contractual obligation income).

Supplemental Schedule of Operations & Maintenance Expenses – All Funds Combined - Draft

This Supplemental Schedule of Operations & Maintenance Expenses (O&M) schedule is shown below in Table 3. This accrual basis of operations and maintenance expense may vary from the revenue requirement basis presented in the *Budget to Actual Analysis* section of the June 2019 Financial Report Binder. Explanatory notes follow this schedule.

**Table 3 – Supplemental Schedule of Operations & Maintenance Expenses
– All Funds Combined - Draft
For the Fiscal Year ended June 30, 2019
(\$000)**

	Water	Percent of Total	Sewage Disposal	Percent of Total	Total Business- type Activities	Percent of Total
Operating expenses						
Personnel						
Salaries & Wages	23,931	20.9%	44,857	26.3%	68,788	24.1%
Overtime	4,301	3.8%	3,252	1.9%	7,553	2.6%
Benefits	12,484	10.9%	9,378	5.5%	21,861	7.7%
Total Personnel	\$ 40,716	35.6%	\$ 57,486	33.7%	\$ 98,202	34.4%
Utilities						
Electric	24,462	21.4%	14,640	8.6%	39,103	13.7%
Gas	1,108	1.0%	5,460	3.2%	6,568	2.3%
Sewage	676	0.6%	1,418	0.8%	2,094	0.7%
Water	2	0.0%	3,629	2.1%	3,631	1.3%
Total Utilities	\$ 26,248	22.9%	\$ 25,148	14.7%	\$ 51,395	18.0%
Chemicals	5,089	4.4%	8,187	4.8%	13,276	4.7%
Supplies and other	11,228	9.8%	23,489	13.8%	34,717	12.2%
Contractual services	41,432	36.2%	58,461	34.2%	99,893	35.0%
Capital program allocation	(2,055)	-1.8%	(1,326)	-0.8%	(3,381)	-1.2%
Shared services allocation	(8,132)	-7.1%	(714)	-0.4%	(8,846)	-3.1%
Operations and Maintenance Expenses	\$ 114,525	100.0%	\$ 170,732	100.0%	\$ 285,257	100.0%

Totals may be off due to rounding.

- ✓ Core expenses for water and sewage disposal systems are utilities (18.0% of total O&M expenses) and chemicals (4.7%).
- ✓ Personnel costs (34.4% of total O&M expenses) include all salaries, wages, and benefits for employees as well as staff augmentation contracts that fill a vacant position (contractual transition services).
- ✓ Contractual services (35.0%) includes:
 - Water System costs of sludge removal and disposal services at the Northeast, Southwest and Springwells Water Treatment Plants (approximately \$10.9 million);
 - Sewage Disposal System costs for the operation and maintenance of the biosolids dryer facility (approximately \$15.5 million); and
 - Centralized and administrative contractual costs allocated to both systems for information technology, building maintenance, field, planning and other services.

Supplemental Schedule of Nonoperating Expenses – All Funds Combined - Draft

The Supplemental Schedule of Nonoperating Expenses – All Funds Combined is shown in Table 4. Explanatory notes follow this schedule.

**Table 4 – Supplemental Schedule of Nonoperating Expenses – All Funds Combined - Draft
For the Fiscal Year ended June 30, 2019
(\$000)**

	Water	Sewage Disposal	Total Business- type Activities	Comparative June 30, 2018
Nonoperating (Revenue)/Expense				
Interest income contractual obligation	\$ (22,921)	\$ (17,752)	\$ (40,673)	\$ (38,857)
Interest income DWSD Shortfall	-	(1,104)	(1,104)	-
Investment earnings	(13,068)	(11,135)	(24,203)	(11,396)
Other nonoperating revenue	(123)	6,375	6,252	(430)
Interest expense				
Bonded debt	114,150	136,816	250,966	255,868
Lease obligation	17,669	21,595	39,264	39,702
Other obligations	4,885	1,479	6,364	4,825
Total interest expense	136,704	159,890	296,594	300,395
Other capital / non-capital expense	560	2,358	2,918	1,684
Capital Contribution	-	2,000	2,000	-
Amortization, issuance costs, debt	(10,772)	6,777	(3,995)	(8,684)
Amortization, raw water rights	3,567	-	3,567	2,081
(Gain) loss on disposal of capital assets	435	(516)	(81)	(2,463)
Loss on impairment of capital assets	-	-	-	654
Water Residential Assistance Program	855	1,169	2,024	3,756
Legacy pension expense	(6,014)	(10,764)	(16,778)	24,922
Total Nonoperating (Revenue)/Expense	\$ 89,223	\$ 137,296	\$ 226,519	\$ 271,662

Totals may be off due to rounding.

- ✓ Interest income on contractual obligation relates to the portion of the total GLWA debt obligation attributable to DWSD. This interest income offsets the total debt interest expense paid by GLWA on behalf of both entities monthly.
- ✓ Interest income DWSD shortfall represents interest from a budgetary shortfall loan from fiscal years 2016 and 2017 and is paid in accordance with the 2018 Memorandum of Understanding (MOU). The repayment of the shortfall will last for three years.
- ✓ Investment earnings in this report are reflected at book value. Any differences between the Basic Financial report and Cash and Investment section of this Financial Report binder are due to accrued interest.

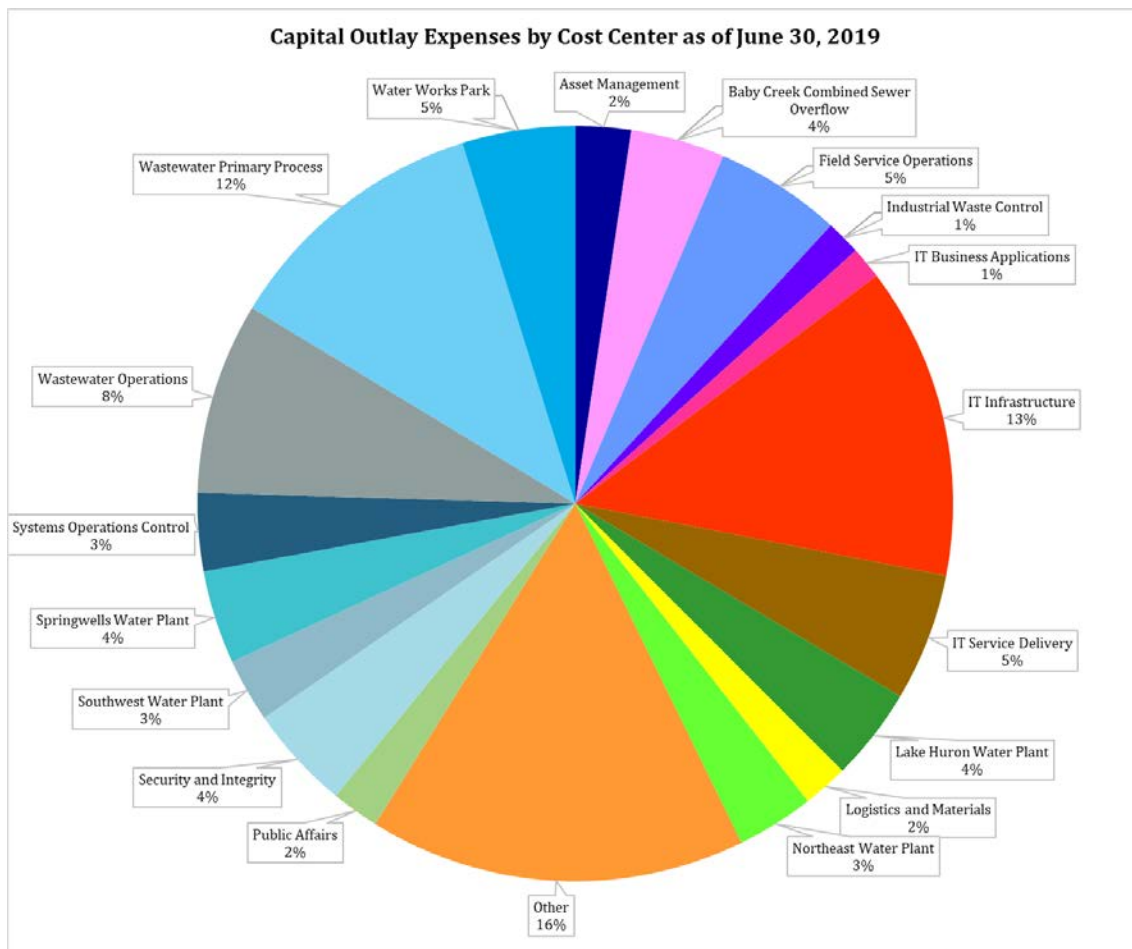
- ✓ Interest expense, the largest category of nonoperating expenses, is made up of three components:
 - Bonded debt;
 - Lease obligation for the regional assets from the City of Detroit; and
 - Other obligations such as an obligation payable to the City of Detroit for an allocation BC Notes related to assumed DWSD liabilities; acquisition of raw water rights related to the KWA Pipeline.
- ✓ Legacy Pension expense for FY 2019 is currently reflected as income due to changes in actuarial assumptions and rates from the June 30, 2018 City of Detroit General Retirement System Component II audited financial statement.
- ✓ Sewer Other Non-operating expense includes the 2018 MOU Item 8a from June 27, 2018 for a final bad debt lookback adjustment for DWSD of \$6.5 million.
- ✓ Sewer Capital Contribution represents activity for a redundant power line WRRF.

Financial Activity Charts

Chart 1 – Capital Outlay – Water and Sewer System Combined

Capital Outlay represents purchases of equipment, software, and small facility improvement projects. It *excludes* any capital investment which is included in the monthly construction work-in-progress report related to the Capital Improvement Program. Some items span several months so the entire cost may not have been incurred yet. In addition, items are capitalized only if they meet GLWA’s capitalization policy.

Through June 30, 2019, total capital outlay spend is \$21.0 million. Below is a sample list of projects and purchases from the total spend of \$21.0 million:



Note: Due to rounding totals may not equal 100%.

Water Operations: underground storage tanks, dispenser and management system (\$2.9m), filter upgrade at Water Works Park (\$165k), and HVAC Controls upgrade at Imlay Pumping Station

Wastewater Operations: pump pull-out assembly (\$1.8m); chiller replacement at Water Resource Recovery Facility (WRRF) (\$779k); underground storage tanks, dispenser and management system (\$674k); grit crane (\$563k); IWC relocation (\$240k); WRRF engineering offices design (\$224k); booster pump and expansion tank for Scum building (\$196k); boilers (\$146k) and dump truck (\$125k)

Information Technology: low voltage wiring (\$1.9m); software (\$368k) and Optiplex computers (\$294k)

Security: security infrastructure (\$857k)

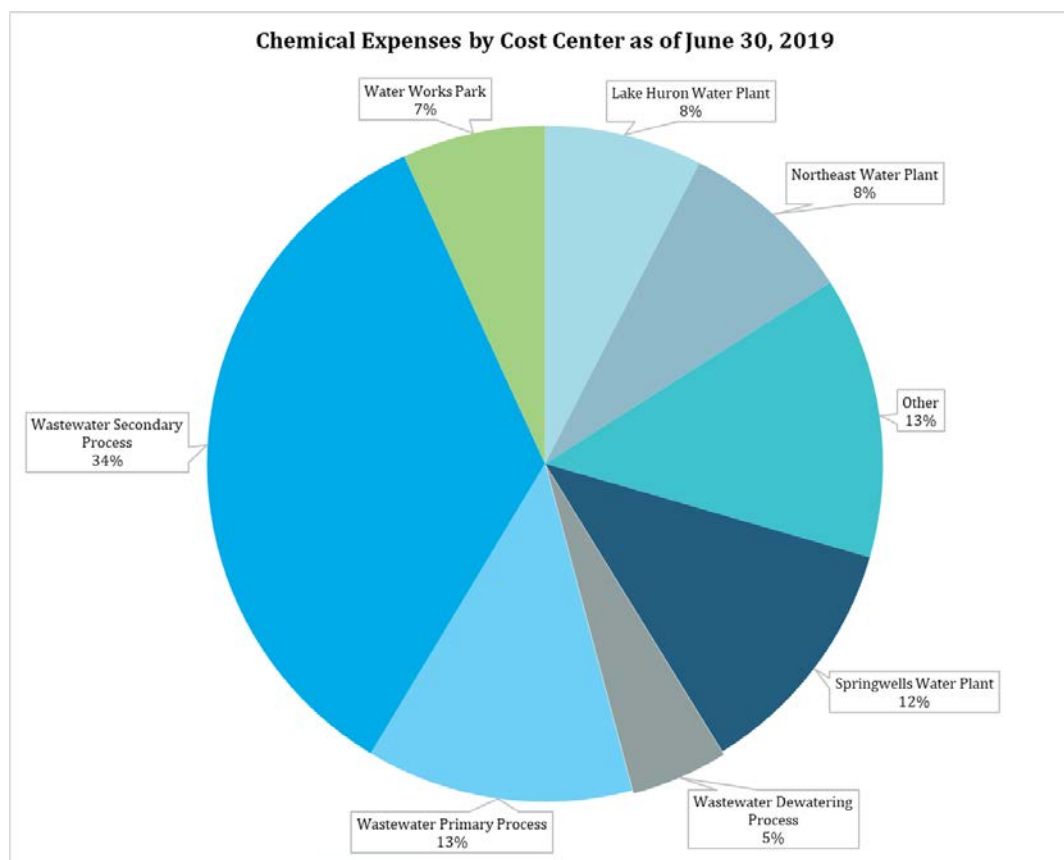
System Analytics: flow meters (\$193k)

CSO Facilities: channel meters (\$725k); chemical feed pump (\$178k); submersible sewage pump (\$144k); chopper pump (\$125k); chemical induction unit (\$124k) and influent flow meters (\$121k)

Centralized & Administrative Facilities: Field Services water main assessment (\$1.1m); WRRF Asset Management offices (\$493k); Public Affairs & 13th floor renovation and furniture (\$402k); Logistics & Materials Office Suite renovation (\$326k); Fleet trucks (\$287k) and split case pump (\$137k)

Chart 2 – Chemical Spend – Water and Sewer System Combined

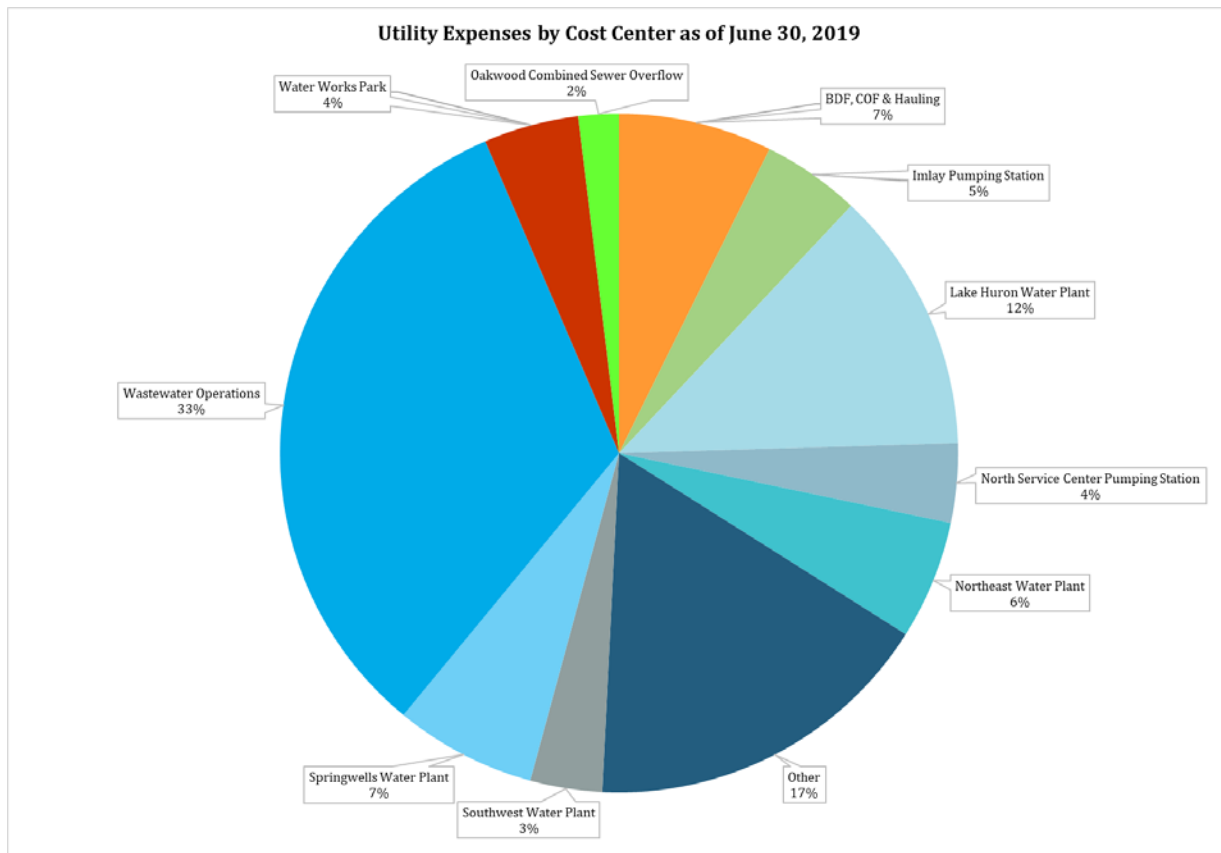
Chemical spend is \$13.2 million through June 30, 2019. The allocation is shown in the chart below and remains consistent with prior periods.



Note: “Other” includes Combined Sewer Overflow (CSO), portions of the Wastewater process and two departments from Water. Due to rounding totals may not equal 100%.

Chart 3 – Utility Spend – Water and Sewer System Combined

Utility spend is \$51.4 million through June 30, 2019. The allocation is shown in the chart below and consistent with prior periods.



Note: Due to rounding totals may not equal 100%.

Financial Operations KPI

This key performance indicator shown in Chart 1 below provides a measure of the progress made in the month-end close process which includes bank reconciliations with a completed status at month end.

A new Accounts Payable account was opened in June 2019. This account was necessary for GLWA to offer an electronic payment process to vendors.

There were no other changes in accounts from May 2019.

Chart 1 – Bank Reconciliation Completion Status

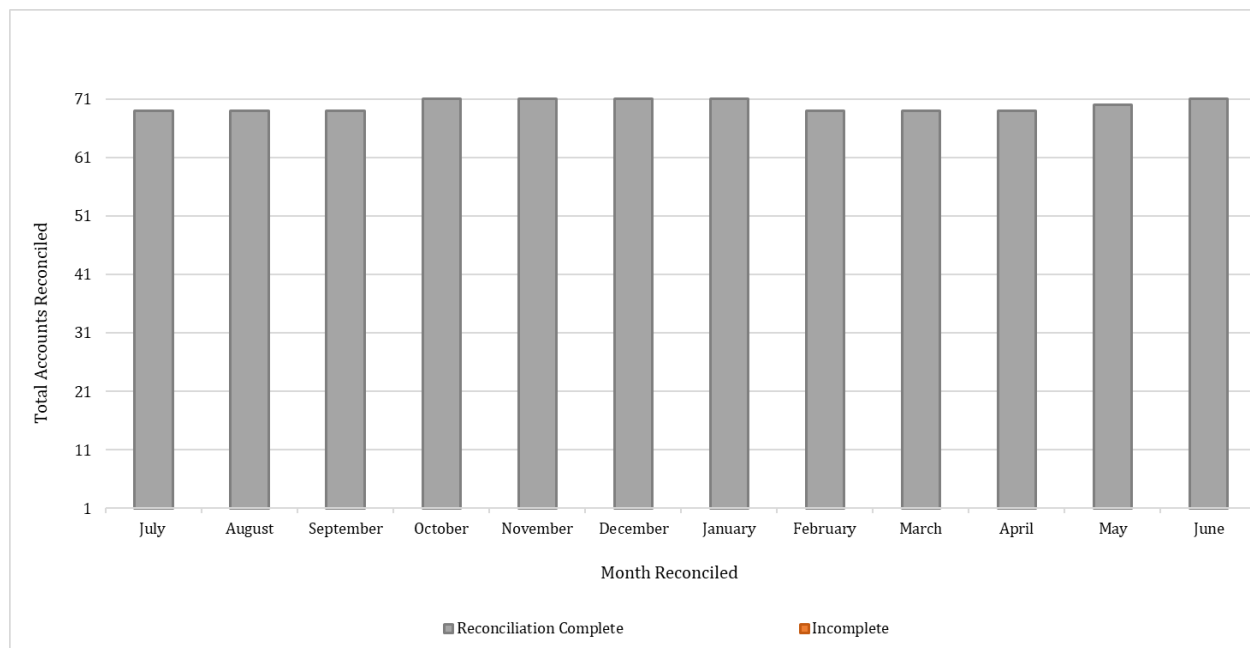


Table 1 – Fiscal Year 2019 Bank Account Rollforward

Total accounts as of July 1, 2018	70
Bank accounts opened	4
Bank accounts closed	(3)
Total accounts as of June 30, 2019	<u>71</u>

The monthly Budget to Financial Statements Crosswalk includes the following.

1. Crosswalk Budget Basis to Financial Reporting Basis
2. Explanatory Notes for Crosswalk

Purpose for Crosswalk: The Great Lakes Water Authority establishes a “Revenue Requirements” budget for the purposes of establishing charges for services. The financial report is prepared in accordance with Generally Accepted Accounting Policies for enterprise funds of a local government. Because the budget and the financial statements are prepared using different basis of accounting, the crosswalk reconciles the “Net Revenue Requirement Basis” from the Budget to Actual Analysis (Table 1A and Table 1B) to the “Increase/(Decrease) in Net Position” in Table 2 of the Basic Financial Statements in the monthly Financial Report.

The Authority has a Water Master Bond Ordinance and a Sewer Master Bond Ordinance (MBO). The Ordinances provide additional security for payment of the bonds. All revenues of the system are deposited into Revenue Receipts Funds which are held in trust by a trustee. The cash is moved to multiple bank accounts monthly based on 1/12th of the budget as defined in the MBO (“the flow of funds”) for all revenue requirements except for the Debt Service monthly transfer. The Debt Service monthly requirement is computed by the trustee, U.S. Bank. The cash transfer for debt is net of investment earnings that remain in the debt service accounts to be used for debt service.

The budget is prepared on a modified cash basis. The revenue requirements are determined based upon the cash needed to meet the financial commitments as required by the Master Bond Ordinance.

- Operation & Maintenance (O&M) expenses based on an accrual basis
- O&M Legacy Pension Allocation (includes administrative fee) and Accelerated Legacy Pension Allocation (includes B&C notes obligation) based on a cash basis
- Debt Service Allocation based on a cash set aside basis to provide the cash for the debt payments on the due dates
- Lease payments based on a cash basis
- Water Residential Assistance Program based on a percentage of budgeted revenue
- Regional System Improvement & Extension Fund Allocation on a cash basis

Budget: In Table 1A and Table 1B of the Budget to Actual Analysis the ‘Revenues’ section is the accrual basis revenues that are available to meet the ‘Revenue Requirements’. The “Revenue Requirements’ section budget column indicates the annual cash transfers to be made.

Financial Reporting: The Authority's financial statements are prepared in conformity with generally accepted accounting principles (GAAP) as applied to government units. The Authority maintains its records on the accrual basis of accounting to conform to GAAP. Revenues from operations, investments and other sources are recorded when earned. Expenses (including depreciation) are recorded when incurred.

Table 1 – Crosswalk Budget Basis to Financial Reporting Basis provides a reconciliation of the “Net Difference” in Table 1A and Table 1B in the Budget to Actual Analysis report to the “Increase/(Decrease) in Net Position” in Table 2 of the Basic Financial Statements in this monthly Financial Report. Explanatory notes follow the Crosswalk shown in Table 1 below.

Table 1 – Crosswalk Budget Basis to Financial Reporting Basis (\$000)
For the Eleven Months Ended June 30, 2019

	Water	Sewer	Total
Net Revenue Requirement Budget Variance (a)	\$ 4,678	\$ 23,936	\$ 28,614
Budgetary categories adjustments to financial reporting basis			
Pension delayed accounting election adjustments			
Current year pension transfers/payments recorded as deferral (c)	10,811	19,348	30,159
Prior year pension contribution accounted for in current year (d)	6,014	10,764	16,778
Administrative prepaid adjustment (e)	404	723	1,127
Debt service (f)	39,949	90,944	130,893
Accelerated pension B&C notes obligation portion (g)	216	490	706
Lease payment (h)	4,831	5,905	10,736
WRAP (i)	818	1,205	2,023
DWSD short term allocation (j)	-	-	-
Improvement & Extension Fund (j)	47,695	22,548	70,243
Nonbudgeted financial reporting categories adjustments			
Depreciation (k)	(140,571)	(168,544)	(309,115)
Amortization (k)	7,205	(6,777)	428
Other nonoperating income (k)	350	(5,968)	(5,618)
Other nonoperating expense (k)	(560)	(4,358)	(4,918)
Gain(loss) on disposal of capital assets (k)	(435)	516	81
Raw water rights (l)	3,010	-	3,010
Investment earnings construction fund (m)	2,867	2,173	5,040
Net Position Increase/(Decrease) per Financial Statements (b)	\$ (12,718)	\$ (7,095)	\$ (19,813)

Table 2- Explanatory Notes for Crosswalk

- (a) Source: Budget to Actual Table 1A and Table 1B in Monthly Financial Binder
- (b) Source: Basic Financial Statements Table 2 in Monthly Financial Binder
- (c) Current year pension payments are an expense for budget purposes but not for financial reporting purposes.
- (d) Prior year pension payments are accounted for in the current year financial statements.

- (e) The administrative fee is part of the O&M Legacy Pension shown as an expense for budget purposes. For financial reporting purposes part of the administrative fee is considered prepaid based on the prior year General Retirement System audit information and therefore not an expense for the current year financial reporting. The prepaid portion is adjusted in June each year.
- (f) Debt service (principal and interest payments) are shown as an expense for budget purposes. Most of the adjustment relates to principal payments which are not an expense for financial reporting purposes. A portion of the adjustment relates to interest expense variances on state revolving fund debt due to the timing of payment draws. The cash set aside basis for interest expense generally is the same as the accrual basis for financial reporting.
- (g) The accelerated pension payment includes the obligation payable for the B&C notes. The pension portion is included in item (c) above. This adjustment relates to the B&C note obligation payments. The principal and interest cash basis payments are treated as an expense for budget purposes. The principal portion is not an expense for financial reporting purposes. For financial reporting purposes interest is expensed on an accrual basis which is different from the cash basis.
- (h) The lease payment is included as an expense for budget and includes both principal and interest payments. Most of the adjustment relates to the principal payments which are not an expense for financial reporting purposes. A portion of the adjustment relates to interest expense which is recorded on an accrual basis for financial reporting which is different from the cash basis.
- (i) WRAP is shown as an expense for budget purposes. For financial reporting purposes the expense is not recognized until the funds have been transferred to the WRAP administrator. The adjustment shown is the amount of current year transfers that have not been transferred to the WRAP administrator. Note that there are funds from the prior year that have not been transferred to the WRAP administrator.
- (j) The DWSD short term allocation and Improvement & Extension Fund transfers are shown as an expense for budget purposes but not for financial reporting purposes.
- (k) Certain nonoperating income and expenses are reported in financial statements only.

- (l) The water service contract with Flint includes a license for raw water rights which has been recorded as an asset and liability by the Authority. The contract provides a credit to Flint as Flint satisfies its monthly bond payment obligation to KWA. This KWA credit is treated as a noncash payment of principal and interest on the liability recorded for the raw water rights. For budget, wholesale customer charges are net of the anticipated KWA credits to Flint as that is the cash that will be received and available to meet the budgeted revenue requirements. For financial reporting basis the Flint wholesale charges are recorded at the total amount billed. When the KWA credit is issued, the receivable from Flint is reduced and the principal and interest payments on the liability for the raw water rights are recorded as a noncash transaction. Most of the adjustment shown relates to the principal reduction made for the credits applied which are not an expense for financial reporting basis.
- (m) Investment earnings from the construction fund are not shown as revenue in the budget and are shown as revenue in the financial statements. Construction fund investment earnings are excluded from the definition of revenue for budget purposes as they are used for construction costs and are not used to meet the revenue requirements in the budget.

This report includes the following.

1. Master Bond Ordinance (MBO) Required Transfers to Accounts Held by GLWA
2. Master Bond Ordinance (MBO) Required Transfers to Accounts Held by DWSD

MBO Transfers to Accounts Held by GLWA

GLWA Transfers: The Treasury team completes required MBO transfers on the first business day of each month. These transfers are completed in accordance with the Great Lakes Water Authority (GLWA) and Detroit Water & Sewerage Department (DWSD) budgets as approved and adopted by the GLWA Board of Directors and DWSD Board of Water Commissioners annually.

Monthly transfers for Operations & Maintenance (O&M), Pension, and Water Residential Assistance Program (WRAP) are one-twelfth of the annual, budgeted amount. Budget stabilization should not require additional funding due to new, baseline funding levels established as part of the June 2018 Memorandum of Understanding but is included to reflect historical activity. Transfers to the Extraordinary Repair & Replacement (ER&R) fund are completed annually based on budget and year-end fund status.

Table 1 – GLWA FY 2019 Water MBO Transfers reflects the total required transfers for FY 2019. The December O&M transfer amount is less than the other months due to correction to bring fiscal year to date transfers to the approved FY 2019 year to date budget. In May 2019, a budget adjustment resulted in a slight increase for the WRAP transfer in May and June 2019. For FY 2019, MBO transfers for Water totaling \$140.4 million have been transferred to accounts held by GLWA.

Table 2 – GLWA FY 2019 Sewer MBO Transfers reflects the total required transfers for FY 2019. The December O&M transfer amount is less than the other months due to correction to bring fiscal year to date transfers to the approved FY 2019 year to date budget. In May 2019, a budget adjustment resulted in a slight increase for the WRAP transfer in May and June 2019. For FY 2019, MBO transfers for Sewer totaling \$219.5 million have been transferred to accounts held by GLWA.

Table 3 – GLWA MBO Transfer History reflects historical transfers for FY 2016, FY 2017, FY 2018 and FY 2019 to date.

Table 1 – GLWA FY 2019 Water MBO Transfers

WATER							
	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization (For Benefit of DWSO)</u>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
FY 2019							
July 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
August 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
September 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
October 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
November 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
December 2018	8,813,927	504,000	891,308	171,683	-	-	10,380,918
January 2019	10,130,217	504,000	891,308	171,683	-	-	11,697,208
February 2019	10,130,217	504,000	891,308	171,683	-	-	11,697,208
March 2019	10,130,217	504,000	891,308	171,683	-	-	11,697,208
April 2019	10,130,217	504,000	891,308	171,683	-	-	11,697,208
May 2019	10,130,217	504,000	891,308	172,085	-	-	11,697,610
June 2019	10,130,217	504,000	891,308	172,085	-	-	11,697,610
Total FY 2019	121,562,604	6,048,000	10,695,696	2,061,000	\$0	\$0	140,367,300

Table 2 – GLWA FY 2019 Sewer MBO Transfers

SEWER							
	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization (For Benefit of DWSO)</u>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
FY 2019							
July 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
August 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
September 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
October 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
November 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
December 2018	15,072,198	902,000	1,223,958	238,483	-	-	17,436,639
January 2019	15,923,283	902,000	1,223,958	238,483	-	-	18,287,724
February 2019	15,923,283	902,000	1,223,958	238,483	-	-	18,287,724
March 2019	15,923,283	902,000	1,223,958	238,483	-	-	18,287,724
April 2019	15,923,283	902,000	1,223,958	238,483	-	-	18,287,724
May 2019	15,923,283	902,000	1,223,958	243,081	-	-	18,292,322
June 2019	15,923,283	902,000	1,223,958	243,081	-	-	18,292,322
Total FY 2019	191,079,396	\$10,824,000	14,687,496	2,870,992	\$0	\$0	219,461,884

Table 3 – GLWA MBO Transfer History

GLWA MBO Transfer History							
WATER							
	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization (For Benefit of DWSO)</u>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
Total FY 2016	\$71,052,000	\$6,037,100	\$10,297,200	\$1,983,300	\$2,326,900	\$606,000	\$92,302,500
Total FY 2017	111,879,600	6,037,200	10,297,200	2,077,200	360,000	-	130,651,200
Total FY 2018	121,562,604	6,048,000	10,695,696	2,159,400	-	-	140,465,700
Total FY 2019 (12 months)	121,562,604	6,048,000	10,695,696	2,061,000	-	-	140,367,300
Life to Date	\$426,056,808	\$24,170,300	\$41,985,792	\$8,280,900	\$2,686,900	\$606,000	\$503,786,700
SEWER							
	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization (For Benefit of DWSO)</u>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
Total FY 2016	\$100,865,600	\$10,838,400	\$14,025,800	\$2,523,400	\$5,591,700	\$779,600	\$134,624,500
Total FY 2017	175,858,800	10,838,400	14,026,800	2,654,400	2,654,400	-	206,032,800
Total FY 2018	191,079,396	10,824,000	14,687,496	2,760,804	-	-	219,351,696
Total FY 2019 (12 months)	191,079,396	10,824,000	14,687,496	2,870,992	-	-	219,461,884
Life to Date	\$658,883,192	\$43,324,800	\$57,427,592	\$10,809,596	\$8,246,100	\$779,600	\$779,470,880

MBO Required and Lease Payment Transfers to DWSD

DWSD Transfers: The GLWA Treasury team completes the required MBO transfers on the first business day of each month. These transfers are completed in accordance with the GLWA and DWSD budgets as approved and adopted by the GLWA Board of Directors and DWSD Board of Water Commissioners annually. Transfers are coordinated with other areas of GLWA Financial Services in advance of the first business day of each month. GLWA Treasury sends confirmation of transfers made to DWSD Treasury.

Monthly transfers for O&M and O&M Pension are one-twelfth of the annual, budgeted amount. The annual lease payment, as stated in the Water & Sewer Lease Agreements, is \$22,500,000 for Water and \$27,500,000 for Sewer. The monthly lease transfer is one-twelfth of the amount as stated in the Lease agreements unless otherwise designated by DWSD. Per Section 3.5 of the Lease, the Lease payment may be used for (a) bond principal and interest for Local System Improvements, (b) bond principal and interest for the City's share of common-to-all System Improvements, and (c) Local System improvements.

Table 4 – DWSD FY 2019 Water MBO Transfers reflects the total required transfers for FY 2019. MBO transfers for Water totaling \$58.3 million have been transferred to accounts held by DWSD. For FY 2019, DWSD has requested \$3,972,200 of the lease payment be utilized to offset a portion of debt service. (Note: the original FY 2019 request was for \$3,949,200; the net impact of the revision in the requested amount is reflected in the March - June 2019 transfers.)

Table 5 – DWSD FY 2019 Sewer MBO Transfers reflects the total required transfers for FY 2019. MBO transfers for Sewer totaling \$82.7 million have been transferred to accounts held by DWSD. For FY 2019, DWSD has requested \$4,415,000 of the lease payment be utilized to offset a portion of debt service. (Note: the original FY 2019 request was for \$4,864,000; the net impact of the revision in the requested amount is reflected in the March - June 2019 transfers.)

Table 6 – DWSD MBO and Lease Payment Transfer History reflects historical transfers for FY 2016, FY 2017, FY 2018 and FY 2019 to date.

Table 4 – DWSD FY 2019 Water MBO Transfers

	WATER			
	<u>Operations & Maintenance</u>	<u>Pension</u>	<u>Lease Payment (I&E Fund)</u>	<u>Total Water</u>
FY 2019				
July 2018	\$ 2,957,025	\$ 356,000	\$ 1,545,900	\$ 4,858,925
August 2018	2,957,025	356,000	1,545,900	4,858,925
September 2018	2,957,025	356,000	1,545,900	4,858,925
October 2018	2,957,025	356,000	1,545,900	4,858,925
November 2018	2,957,025	356,000	1,545,900	4,858,925
December 2018	2,957,025	356,000	1,545,900	4,858,925
January 2019	2,957,025	356,000	1,545,900	4,858,925
February 2019	2,957,025	356,000	1,545,900	4,858,925
March 2019	2,957,025	356,000	1,594,200	4,907,225
April 2019	2,957,025	356,000	1,594,200	4,907,225
May 2019	2,957,025	356,000	1,486,100	4,799,125
June 2019	2,957,025	356,000	1,486,100	4,799,125
Total FY 2019	\$ 35,484,300	\$ 4,272,000	\$ 18,527,800	\$ 58,284,100

Table 5 – DWSD FY 2019 Sewer MBO Transfers

	SEWER			
	<u>Operations & Maintenance</u>	<u>Pension</u>	<u>Lease Payment (I&E Fund)</u>	<u>Total Sewer</u>
FY 2019				
July 2018	\$ 5,676,792	\$ 238,000	\$ 1,886,333	\$ 7,801,125
August 2018	5,676,792	238,000	1,886,333	7,801,125
September 2018	5,676,792	238,000	1,886,333	7,801,125
October 2018	5,676,792	238,000	1,886,333	7,801,125
November 2018	5,676,792	238,000	1,886,333	7,801,125
December 2018	5,676,792	238,000	1,886,333	7,801,125
January 2019	5,676,792	238,000	1,886,333	7,801,125
February 2019	5,676,792	238,000	1,886,333	7,801,125
March 2019	5,676,792	238,000	1,538,734	7,453,526
April 2019	5,676,792	238,000	1,538,734	7,453,526
May 2019	-	238,000	2,458,434	2,696,434
June 2019	-	238,000	2,458,434	2,696,434
Total FY 2019	\$ 56,767,920	\$ 2,856,000	\$ 23,085,000	\$ 82,708,920

Table 6 – DWSD MBO and Lease Payment Transfer History

Transfers to DWSD				
WATER				
	Operations & Maintenance	Operations & Maintenance Pension	Lease Payment (I&E Fund)	Total Water
FY 2016 ⁽¹⁾				
MBO/Lease Requirement	\$ 26,185,600	\$ 4,262,700	\$ 22,500,000	\$ 52,948,300
Offset to Debt Service	-	-	(2,326,900)	(2,326,900)
Net MBO Transfer	26,185,600	4,262,700	20,173,100	50,621,400
FY 2017				
MBO/Lease Requirement	33,596,400	4,262,400	22,500,000	60,358,800
Offset to Debt Service	-	-	-	-
Net MBO Transfer	33,596,400	4,262,400	22,500,000	60,358,800
FY 2018				
MBO/Lease Requirement	35,059,704	4,272,000	22,500,000	61,831,704
Offset to Debt Service	-	-	(1,875,000)	(1,875,000)
Net MBO Transfer	35,059,704	4,272,000	20,625,000	59,956,704
FY 2019 (12 months)				
MBO/Lease Requirement	35,484,300	4,272,000	22,500,000	62,256,300
Offset to Debt Service	-	-	(3,972,200)	(3,972,200)
Net MBO Transfer	35,484,300	4,272,000	18,527,800	58,284,100
Life-to-Date				
MBO/Lease Requirement	130,326,004	17,069,100	90,000,000	237,395,104
Offset to Debt Service	-	-	(8,174,100)	(8,174,100)
Total Water	\$ 130,326,004	\$ 17,069,100	\$ 81,825,900	\$ 229,221,004
SEWER				
	Operations & Maintenance	Operations & Maintenance Pension	Lease Payment (I&E Fund)	Total Sewer
FY 2016 ⁽¹⁾				
MBO/Lease Requirement	\$ 19,774,300	\$ 2,861,800	\$ 27,500,000	\$ 50,136,100
Offset to Debt Service	-	-	(19,991,500)	(19,991,500)
Total MBO Transfer	19,774,300	2,861,800	7,508,500	30,144,600
FY 2017				
MBO/Lease Requirement	41,535,600	2,862,000	27,500,000	71,897,600
Offset to Debt Service	-	-	-	-
Total MBO Transfer	41,535,600	2,862,000	27,500,000	71,897,600
FY 2018				
MBO/Lease Requirement	60,517,992	2,856,000	27,500,000	90,873,992
Offset to Debt Service	-	-	(9,166,664)	(9,166,664)
Total MBO Transfer	60,517,992	2,856,000	18,333,336	81,707,328
FY 2019 (12 months)				
MBO/Lease Requirement	56,767,920	2,856,000	27,500,000	87,123,920
Offset to Debt Service	-	-	(4,415,000) ⁽²⁾	(4,415,000)
Total MBO Transfer	56,767,920	2,856,000	23,085,000	82,708,920
Life-to-Date				
MBO/Lease Requirement	178,595,812	11,435,800	110,000,000	300,031,612
Offset to Debt Service	-	-	(33,573,164)	(33,573,164)
Total Sewer	\$ 178,595,812	\$ 11,435,800	\$ 76,426,836	\$ 266,458,448

(1) FY 2016 lease transfer amounts shown do not include prepayment on lease amount for the 6 month period before bifurcation

(2) June 2019 transfer adjust the total to FY 2019 DWSD requested offset of \$ 4,415,000.

This report includes the following:

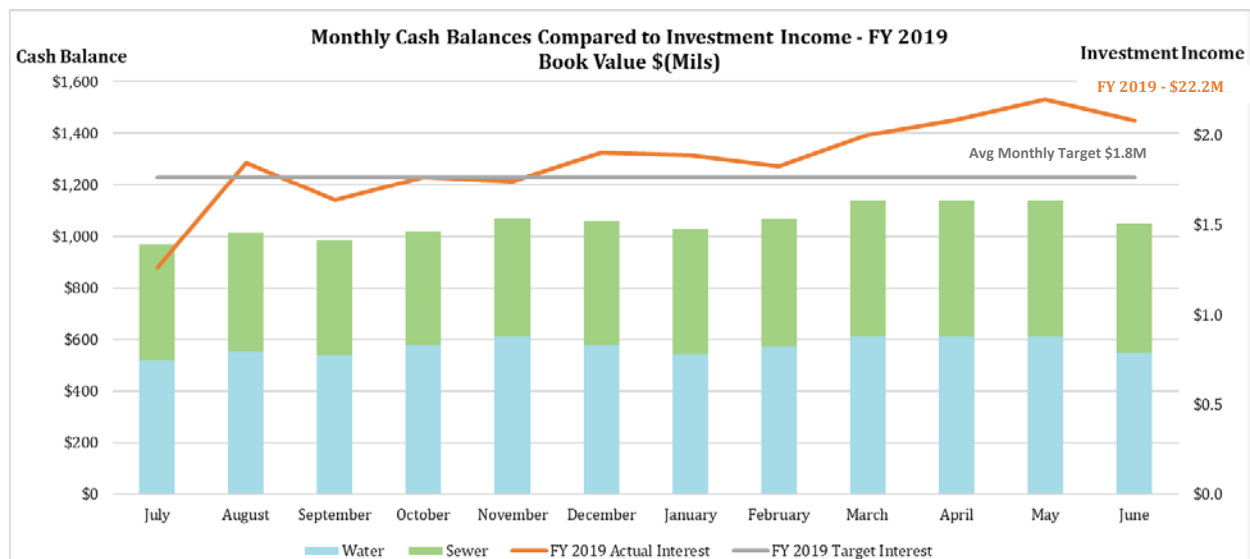
1. Monthly Cash Balances Compared to Investment Income
2. Cash Balance Detail

Monthly Cash Balances Compared to Investment Income

GLWA's investment holdings comply with the requirements of Public Act 20 of 1948, as amended and the GLWA Investment Policy. The cash balances shown in this report include bank deposits, money market funds, a local government investment pool, U.S. Treasuries, Federal Agencies, and commercial paper.

Cash and investment balances change each month based on Master Bond Ordinance (MBO) funding requirements, operational needs, capital spending pace, and mandatory debt payments. Investment income fluctuates monthly based on cash and investment balances as well as market conditions and investment strategy. The cumulative investment earnings for FY 2019 of \$22.3 million exceeded the FY 2019 target of \$21.2 million.

Chart 1 – Monthly Cash Balances Compared to Investment Income



\$(Mils)	July	August	September	October	November	December	January	February	March	April	May	June
Water	\$521	\$553	\$539	\$579	\$611	\$579	\$544	\$573	\$612	\$612	\$612	\$534
Sewer	\$447	\$462	\$445	\$440	\$459	\$481	\$484	\$495	\$528	\$528	\$528	\$501
Total	\$968	\$1,015	\$984	\$1,018	\$1,071	\$1,060	\$1,028	\$1,068	\$1,140	\$1,140	\$1,140	\$1,035
Investment Income	\$1.3	\$1.8	\$1.6	\$1.8	\$1.7	\$1.9	\$1.9	\$1.8	\$2.0	\$2.1	\$2.2	\$2.1

Cash Balance Detail

Funds Held By GLWA: GLWA cash balances are held in accounts as defined by the Master Bond Ordinance. The accounts are funded by monthly transfers, as stipulated in the MBO, on the first business day of each month. The “operations and maintenance” (O&M) fund transfer amounts are based upon the annual O&M budget approved by the GLWA Board of Directors for the regional systems and by the Board of Water Commissioners for the Detroit Water & Sewerage Department (DWSD) local system budgets. The water and sewer funds held by GLWA and their purpose, as defined by the MBO, are listed below.

Funds Held Within Trust:

- Receiving – all retail and wholesale revenues collected which are distributed in subsequent month(s)
- Debt Service – funds set aside for debt service and debt reserve requirements
- Pension Obligation – funds set aside to meet GLWA’s annual funding requirements for the legacy General Retirement System Pension Plan
- Water Residential Assistance Program (WRAP) – funds set aside to be used to provide financial assistance to qualified residents throughout the local and regional water system as directed by program guidelines
- Budget Stabilization – funds held by GLWA on behalf of DWSD that can be applied against shortfalls in retail revenues
- Emergency Repair & Replacement (ER&R) – funds set aside to pay the costs for major unanticipated repairs and replacements of the local and regional systems
- Improvement & Extension (I&E) – funds set aside to be used for the improvements, enlargements and extensions of the regional system

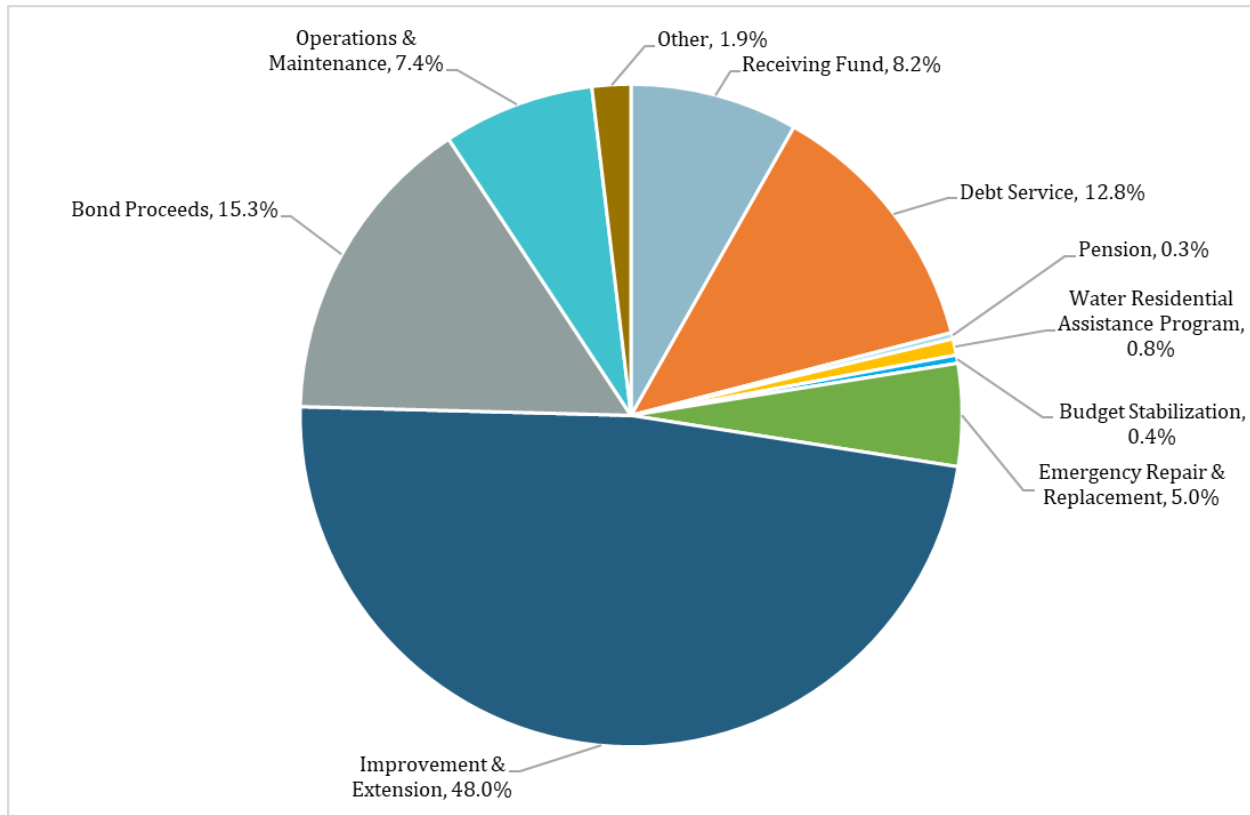
Funds Held Outside Trust:

- Bond Proceeds – funds raised from debt issuance used for costs of repairs, construction, and improvements of the regional system
- Operations & Maintenance (O&M) – funds used to meet the operational and maintenance requirements of the regional system
- Other – retainage funds held on behalf of contractors and security deposit funds held on behalf of the City of Flint

A [chart](#) depicting the follow of funds is online at glwater.org as well as the [MBO](#) documents.

Chart 2 – Cash Balances - Water Funds - Shows the allocation of the balance among the different categories defined in the section above. The total cash balance for Water Fund FY 2019 is \$534 million. The allocation of balances among the I&E, bond proceeds, and debt service reserve funds reflects GLWA's commitment to funding capital improvements and meeting debt reserve requirements while simultaneously increasing I&E resources to fund pay-as-you-go capital funding to reduce long-term debt in the future. In June 2019, GLWA transferred \$47.7 million through the flow of funds to I&E.

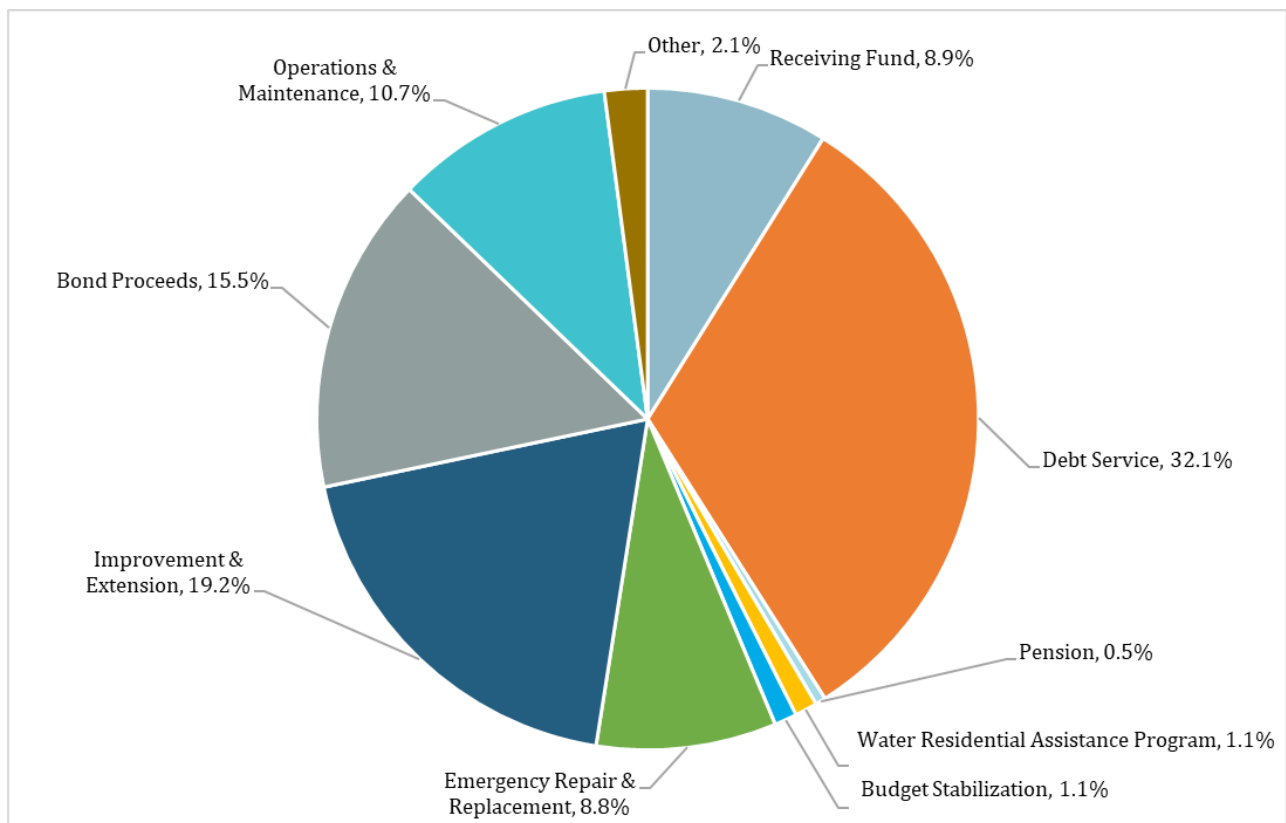
Chart 2 – Cash Balances - Water Funds



Note: Due to rounding totals may not equal 100%.

Chart 3 – Cash Balances - Sewer Funds - Shows the allocation of the balance among the different funds defined in the section above. The total cash balance for Sewer Funds for FY 2019 is \$501 million. Like the Water Funds, the allocation of balances among the I&E, bond proceeds, and debt service reserve funds reflects GLWA’s commitment to funding capital improvements and meeting debt reserve requirements while simultaneously increasing I&E resources to fund pay-as-you-go capital funding to reduce long-term debt in the future. The pace for Sewer Funds I&E deposits has been less than budget to address a budget shortfall over multiple years by DWSD. Beginning in February 2019, DWSD began making payments which will replenish the I&E Fund. In June 2019, GLWA transferred \$22.5 million through the flow of funds to I&E.

Chart 3 – Cash Balances - Sewer Funds



Note: Due to rounding totals may not equal 100%.

Retail Revenues, Receivables, and Collections: Pursuant to the terms of the lease agreement between the City of Detroit and the Great Lakes Water Authority (GLWA), the Detroit Water & Sewerage Department (DWSD) serves as GLWA's agent for billing activities for the City of Detroit retail customer class. All water and sewer service collections from DWSD customers are deposited in a trust account and are administered in accordance with the GLWA Master Bond Ordinance.

The Monthly Retail Revenues, Receivables, & Collections Report includes the following.

1. DWSD Retail Water Revenue Billings and Collections
2. DWSD Retail Sewer Revenue Billings and Collections
3. DWSD Retail Water & Sewer System Accounts Receivable Aging Report

Note: Wholesale customer revenues are billed by the Great Lakes Water Authority.

DWSD Retail Water Billings and Collections

Retail Billing Basis: DWSD bills retail customers monthly. Customers are billed throughout the month in cycles based on a meter reading schedule beginning with residential accounts and ending with commercial and industrial customers.

Table 1 - DWSD Retail Billings show the FY 2019 water usage and billed revenue which are provided by DWSD staff. As of June 30, 2019, the DWSD usage was at 99.94% of the budget and billed revenue was at 101.00% of budget.

DWSD Retail Water Collections: The collections represent payments made by DWSD retail customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

Table 2 - Retail Water Collections show collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods.

Table 1 – DWSD Retail Water Billings

RETAIL WATER CUSTOMERS								
Month (1)	FY 2019 - Budget/Goal			FY 2019 - Actual			FY 2019 - Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue (2)	Unit Revenue	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
July	269,000	9,424,500	35.04	300,613	10,203,409	33.94	31,613	778,909
August	273,100	9,377,700	34.34	302,476	9,833,149	32.51	29,376	455,449
September	270,500	8,494,300	31.40	221,531	8,996,692	40.61	(48,969)	502,392
October	233,800	8,165,900	34.93	215,104	8,010,524	37.24	(18,696)	(155,376)
November	224,500	7,750,100	34.52	232,770	8,325,013	35.76	8,270	574,913
December	206,500	8,224,900	39.83	202,686	7,659,930	37.79	(3,814)	(564,970)
January	226,600	7,978,800	35.21	227,697	8,250,078	36.23	1,097	271,278
February	216,400	7,980,200	36.88	232,094	8,649,072	37.27	15,694	668,872
March	213,300	8,163,900	38.27	218,435	8,165,904	37.38	5,135	2,004
April	223,100	7,856,900	35.22	208,812	8,014,291	38.38	(14,288)	157,391
May	211,000	9,109,200	43.17	204,605	7,867,637	38.45	(6,395)	(1,241,563)
June	240,200	9,063,600	37.73	239,368	8,628,374	36.05	(832)	(435,226)
Total	2,808,000	101,590,000	36.18	2,806,191	102,604,073	36.56	(1,809)	1,014,073
<i>Subtotals ytd</i>	<i>2,808,000</i>	<i>101,590,000</i>	<i>36.18</i>	<i>2,806,191</i>	<i>102,604,073</i>	<i>36.56</i>	<i>(1,809)</i>	<i>1,014,073</i>
<i>Achievement of Budget</i>				<i>99.94%</i>	<i>101.00%</i>			

(1) Figures are stated as "Service Months"; that is, July figures represent bills issued in August, etc.

(2) Retail Revenues include Miscellaneous Revenues and Penalties

Table 2 – DWSD Retail Water Collections

Water				
Month	Current Year	Prior Year	Variance	Ratio
July	7,858,272	8,357,505	(499,233)	-5.97%
August	8,692,784	9,509,488	(816,704)	-8.59%
September	9,766,449	8,949,906	816,543	9.12%
October	9,015,400	9,528,528	(513,128)	-5.39%
November	7,938,517	8,049,328	(110,811)	-1.38%
December	7,297,698	8,265,636	(967,938)	-11.71%
January	8,158,817	8,066,448	92,369	1.15%
February	7,927,299	6,432,245	1,495,054	23.24%
March	8,707,578	8,280,635	426,943	5.16%
April	8,475,657	9,226,675	(751,018)	-8.14%
May	8,415,767	8,969,019	(553,252)	-6.17%
June	7,554,457	7,940,939	(386,482)	-4.87%
Rolling, 12-Month Total	99,808,695	101,576,351		
Rolling, 12-Month Average	8,317,391	8,464,696		

DWSD Retail Sewer Billings and Collections

Retail billing basis: DWSD bills retail customers monthly. Customers are billed throughout the month in cycles based on a meter reading schedule beginning with residential accounts and ending with commercial and industrial customers.

Table 3 - DWSD Retail Sewer Billings show the FY 2019 sewer billed revenue which are provided by DWSD staff. As of June 30, 2019, the DWSD usage was at 104.38% of the budget and billed revenue was at 97.37% of budget.

DWSD Retail Sewer Collections: The collections represent payments made by DWSD retail customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

Table 4 - DWSD Retail Sewer Collections show collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods.

Table 3 - DWSD Retail Sewer Billings

RETAIL SEWER CUSTOMERS						
Month (1)	FY 2019 - Budget/Goal		FY 2019 - Actual		FY 2019 - Variance	
	Volume	Revenue	Volume	Revenue (2)	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$
July	242,100	27,423,400	273,862	27,711,606	31,762	288,206
August	244,200	27,232,200	262,525	27,263,163	18,325	30,963
September	239,600	25,367,500	221,660	25,413,790	(17,940)	46,290
October	211,000	25,177,200	205,267	24,092,209	(5,733)	(1,084,991)
November	197,600	23,861,000	205,806	24,176,849	8,206	315,849
December	182,400	25,293,500	193,791	23,787,394	11,391	(1,506,106)
January	198,600	24,852,800	201,171	24,269,509	2,571	(583,291)
February	191,600	25,329,400	220,021	25,455,499	28,421	126,099
March	191,000	25,474,500	205,424	24,510,043	14,424	(964,457)
April	197,300	24,789,700	193,725	23,743,871	(3,575)	(1,045,829)
May	187,300	26,205,200	197,705	24,005,701	10,405	(2,199,499)
June	210,300	26,730,700	221,346	25,229,255	11,046	(1,501,445)
Total	2,493,000	307,737,100	2,602,303	299,658,889	109,303	(8,078,211)
<i>Subtotals ytd</i>	<i>2,493,000</i>	<i>307,737,100</i>	<i>2,602,303</i>	<i>299,658,889</i>	<i>109,303</i>	<i>(8,078,211)</i>
<i>Achievement of Budget/Goal</i>			<i>104.38%</i>		<i>97.37%</i>	

(1) Figures are stated as "Service Months"; that is, July figures represent bills issued in August, etc.

(2) Retail Revenues include Miscellaneous Revenues and Penalties

Table 4 – DWSD Retail Sewer Collections

Sewer				
Month	Current Year	Prior Year	Variance	Ratio
July	27,332,605	18,582,964	8,749,641	47.08%
August	21,746,714	24,263,141	(2,516,427)	-10.37%
September	23,727,505	21,320,358	2,407,147	11.29%
October	23,938,933	23,786,903	152,030	0.64%
November	20,624,039	19,485,270	1,138,769	5.84%
December	19,612,154	19,522,952	89,203	0.46%
January	21,140,835	18,308,458	2,832,377	15.47%
February	20,758,852	17,495,563	3,263,289	18.65%
March	22,111,691	23,015,525	(903,834)	-3.93%
April	20,930,511	16,159,844	4,770,667	29.52%
May	22,807,283	18,341,298	4,465,985	24.35%
June	20,426,151	21,461,926	(1,035,775)	-4.83%
Rolling 12-Month Total	265,157,273	241,744,200		
Rolling, 12-Month Average	22,096,439	20,145,350		

DWSD Retail Water and Sewer Accounts Receivable Aging Report

The DWSD detailed accounts receivable aging is categorized by customer category.

Table 5 is a summary of the total, current and non-current Water and Sewer receivables by category as of June 30, 2019.

Table 5 – DWSD Retail Accounts Receivable Aging Report – Water & Sewer Combined

Sales Class	# of Accounts	Avg. Balance	Current	> 30 Days	> 60 Days	> 180 Days	Accounts Receivable Balance
Residential	287,266	\$ 319.52	\$ 13,435,000 14.6%	\$ 6,440,000 7.0%	\$ 18,087,000 19.7%	\$ 53,825,000 58.6%	\$ 91,787,000 100.0%
Commercial	28,193	1,236.01	7,914,000 22.7%	2,311,000 6.6%	6,572,000 18.9%	18,050,000 51.8%	34,847,000 100.0%
Industrial	4,804	3,309.82	4,085,000 25.7%	1,106,000 7.0%	2,699,000 17.0%	8,011,000 50.4%	15,900,000 100.0%
Tax Exempt Entities	8,170	1,748.97	2,012,000 14.1%	1,004,000 7.0%	2,289,000 16.0%	8,984,000 62.9%	14,289,000 100.0%
Government Entities	2,818	1,504.41	1,202,000 28.3%	206,000 4.9%	841,000 19.8%	1,991,000 47.0%	4,239,000 100.0%
Subtotal - Active Accounts	331,251	\$ 486.22	\$ 28,648,000 17.8%	\$ 11,067,000 6.9%	\$ 30,486,000 18.9%	\$ 90,861,000 56.4%	\$ 161,062,000 100.0%
Inactive Accounts	263,195	69.70	119,000 0.6%	202,000 1.1%	1,144,000 6.2%	16,880,000 92.0%	18,346,000 100.0%
Total	594,446	\$ 301.81	\$ 28,767,000	\$ 11,270,000	\$ 31,631,000	\$ 107,741,000	\$ 179,408,000
% of Total A/R			16.0%	6.3%	17.6%	60.1%	100.0%
Water Fund	216,533	172.23	\$ 6,716,000	\$ 2,165,000	\$ 5,972,000	\$ 22,440,000	\$ 37,293,000
Sewer Fund	278,053	511.11	\$ 22,051,000	\$ 9,104,000	\$ 25,659,000	\$ 85,301,000	\$ 142,115,000
Totals June 30, 2019	594,446	301.81	\$ 28,767,000	\$ 11,270,000	\$ 31,631,000	\$ 107,741,000	\$ 179,408,000
Water Fund- Allowance							\$ (22,641,000)
Sewer Fund- Allowance							\$ (76,123,000)
Total June 30, 2019 Bad Debt Allowance							\$ (98,764,000)
Comparative Totals June 30, 2018	576,089	256.33	\$ 28,844,000	\$ 11,721,000	\$ 27,092,000	\$ 80,011,000	\$ 147,669,000

The Monthly Wholesale Billings, Receivables, & Collections Report includes the following.

1. Wholesale Water Billings and Collections
2. Wholesale Sewer Billings and Collections
3. City of Highland Park Billings and Collections
4. Wholesale Water & Sewer Accounts Receivable Aging Report

Wholesale Water Billings and Collections

Wholesale Water Contracts: Great Lakes Water Authority (GLWA) provides wholesale water service to 87 member-partners through a variety of service arrangements.

Service Arrangement Type

Model Contract	82
Emergency	1
Older Contracts	4
Total	<u>87</u>

Note: Services are provided to the Detroit Water & Sewerage Department (DWSD) via a Water and Sewer Services Agreement (WSSA). See the “Retail Revenues, Receivables, and Collections Report” section of this monthly report.

Wholesale Water Billing Basis: Beginning with FY 2016, wholesale water charges were restructured to create a more stable revenue stream by using a historical rolling average to project customer volumes which accounts for 40% of the monthly charges and 60% of the annual customer revenue requirement as a monthly fixed charge.

Table 1 - Wholesale Water Billings shows the FY 2019 water billed usage and revenues. As of June 30, 2019, the billed usage was at 97.63% of budget and billed revenue at 99.12% of budget. Billings and usage from the City of Flint are included as they were assumed in the FY 2019 Budget.

Wholesale Water Collections: The collections represent payments made by wholesale customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA’s Master Bond Ordinance.

Table 2 - Wholesale Water Collections show collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. The difference in rolling average from current year to prior year reflects the gentle downward trend in water usage over time. The variability in collections month-to-month is associated with volumes billed and payment trends. With a 45-day payment cycle, swings can occur between periods while accounts remain current. Table 7 confirms that past due water balances relate entirely to Highland Park. All other accounts are current.

Table 1 – FY 2019 Wholesale Water Billings Report

WHOLESALE WATER CUSTOMERS								
Month (1)	FY 2019 - Budget/Goal			FY 2019 - Actual			FY 2019 - Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue	Unit Revenue	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
July	1,632,120	30,900,800	18.93	1,800,256	32,754,760	18.19	168,136	1,853,960
August	1,518,130	29,959,100	19.73	1,490,896	29,776,242	19.97	(27,234)	(182,858)
September	1,354,440	27,978,100	20.66	1,380,514	28,039,719	20.31	26,074	61,619
October	1,091,580	25,379,300	23.25	1,027,086	24,866,975	24.21	(64,494)	(512,325)
November	912,260	23,826,800	26.12	938,511	24,145,548	25.73	26,251	318,748
December	1,002,110	24,465,900	24.41	997,281	24,545,455	24.61	(4,829)	79,555
January	1,019,240	24,686,700	24.22	1,001,885	24,622,107	24.58	(17,355)	(64,593)
February	885,170	23,574,900	26.63	927,982	23,986,734	25.85	42,812	411,834
March	1,000,060	24,486,400	24.48	1,027,131	24,778,252	24.12	27,071	291,852
April	952,450	24,121,500	25.33	950,790	24,166,134	25.42	(1,660)	44,634
May	1,116,620	25,849,800	23.15	1,009,027	24,831,887	24.61	(107,593)	(1,017,913)
June	1,557,060	30,178,300	19.38	1,157,213	26,119,254	22.57	(399,847)	(4,059,046)
Total	14,041,240	315,407,600	22.46	13,708,572	312,633,067	22.81	(332,668)	(2,774,533)
<i>Subtotals ytd</i>	<i>14,041,240</i>	<i>315,407,600</i>	<i>22.46</i>	<i>13,708,572</i>	<i>312,633,067</i>	<i>22.81</i>	<i>(332,668)</i>	<i>(2,774,533)</i>
Achievement of Budget				97.63%	99.12%			

(1) Figures are stated as "Service Months"; that is, July figures represent bills issued in August, etc.

Table 2 - Wholesale Water Collections

Water				
Month	Current Year	Prior Year	Variance	Ratio
July	21,923,590	28,138,726	(6,215,136)	-22.09%
August	31,920,586	25,280,453	6,640,133	26.27%
September	26,037,313	26,757,992	(720,679)	-2.69%
October	27,827,722	38,336,777	(10,509,055)	-27.41%
November	29,238,260	27,261,391	1,976,869	7.25%
December	27,720,646	22,125,972	5,594,674	25.29%
January	23,430,974	32,002,334	(8,571,360)	-26.78%
February	26,147,082	21,352,903	4,794,179	22.45%
March	24,967,335	27,715,696	(2,748,361)	-9.92%
April	23,045,654	18,489,754	4,555,900	24.64%
May	20,755,103	30,447,581	(9,692,478)	-31.83%
June	25,676,458	21,815,013	3,861,445	17.70%
Rolling 12-Month Total	308,690,723	319,724,592		
Rolling, 12-Month Average	25,724,227	26,643,716		

Wholesale Sewer Billings and Collections

Wholesale Sewer Contracts: GLWA provides wholesale sewer service to 18 member-partners via multiple service arrangements.

Service Arrangement Type

Model Contract	11
Emergency	0
Older Contracts	7
Total	<u>18</u>

Note: Services are provided to the Detroit Water & Sewerage Department via a Water and Sewer Services Agreement (WSSA). See the “Retail Revenues, Receivables, and Collections Report” section of the monthly report.

Wholesale Sewer Billing Basis: Beginning in FY 2015, the “sewer rate simplification” initiative was applied which provides for a stable revenue stream and predictability for our member partners. Wholesale sewer customers are billed a fixed monthly fee based upon the annual revenue requirement.

Table 3 - Wholesale Sewer Billings show the FY 2019 sewer billed revenue. Consistent with expectations as a result of sewer rate simplification, billed revenue is at 100.00% of budget through June 30, 2019.

Wholesale Sewer Collections: The collections represent payments made by wholesale customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA’s Master Bond Ordinance.

Table 4 - Wholesale Sewer Collections show collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. The year-over-year rolling average from FY 2018 to FY 2019 remains consistent.

The shift in wholesale sewer collection patterns is largely attributable to the timing of payments received. There are several large accounts whose payments swing between the end of the current month and the beginning of the next month. Table 7 confirms that these payments are not delinquent as sewer past due balances relate nearly in full to Highland Park.

Table 3 – FY 2019 Wholesale Sewer Billings Report

WHOLESALE SEWER CUSTOMERS						
Month (1)	FY 2019 - Budget/Goal		FY 2019 - Actual		FY 2019 - Variance	
	Volume (2)	Revenue	Volume (2)	Revenue	Volume (2)	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$
July	N/A	22,912,800	N/A	22,912,800	N/A	-
August	N/A	22,912,800	N/A	22,912,800	N/A	-
September	N/A	22,912,800	N/A	22,912,800	N/A	-
October	N/A	22,912,800	N/A	22,912,800	N/A	-
November	N/A	22,912,800	N/A	22,912,800	N/A	-
December	N/A	22,912,800	N/A	22,912,800	N/A	-
January	N/A	22,912,800	N/A	22,912,800	N/A	-
February	N/A	22,912,800	N/A	22,912,800	N/A	-
March	N/A	22,912,800	N/A	22,912,800	N/A	-
April	N/A	22,912,800	N/A	22,912,800	N/A	-
May	N/A	22,912,800	N/A	22,912,800	N/A	-
June	N/A	22,912,800	N/A	22,912,800	N/A	-
Total		274,953,600		274,953,600		-
<i>Subtotals ytd</i>		274,953,600		274,953,600		0
<i>Achievement of Budget</i>				100.00%		

(1) Figures are stated as "Service Months"; that is, July figures represent bills issued in August, etc.

(2) Not tracked as part of the wholesale sewer charges.

Table 4 - Wholesale Sewer Collections

Sewer				
Month	Current Year	Prior Year	Variance	Ratio
July	16,179,117	22,732,006	(6,552,889)	-28.83%
August	28,384,600	21,949,300	6,435,300	29.32%
September	22,672,400	21,040,913	1,631,487	7.75%
October	16,105,200	21,902,800	(5,797,600)	-26.47%
November	28,633,300	22,662,700	5,970,600	26.35%
December	24,440,000	23,643,400	796,600	3.37%
January	26,874,927	22,057,972	4,816,955	21.84%
February	13,895,100	30,280,800	(16,385,700)	-54.11%
March	22,388,600	15,552,000	6,836,600	43.96%
April	23,203,703	27,812,417	(4,608,714)	-16.57%
May	9,284,000	15,342,700	(6,058,700)	-39.49%
June	32,639,436	28,810,500	3,828,936	13.29%
Rolling 12-Month Total	264,700,383	273,787,508		
Rolling, 12-Month Average	22,058,365	22,815,626		

City of Highland Park Billings and Collections

The City of Highland Park is provided water service pursuant to an emergency service basis. Sewer service is provided pursuant to a 1982 amended contract which indicates that the parties are guided in their legal relationship by a Michigan Supreme Court decision from 1949.

As of June 30, 2019, Highland Park had a delinquent balance of \$40.5 million, including \$31.5 million for wastewater treatment services, \$1.7 million for industrial waste control services, and \$7.3 million for water supply services.

Table 5 - City of Highland Park Billings and Collections provides a life-to-date balance summary of the billing and collection history for Highland Park with detail provided for fiscal year 2019 through June 30, 2019. Please note the numbers below reflect the month the billing was sent and not the month the service was provided. A life-to-date summary is provided as an appendix to this monthly financial report.

Table 5 - City of Highland Park Billings and Collections

	Water	Sewer	IWC	Total
July 31, 2018 Balance	6,221,815	30,938,511	1,630,776	38,791,102
August 2018 Billing	108,651	467,900	4,233	580,784
August 2018 Payments	-	-	-	-
August 31, 2018 Balance	6,330,467	31,406,411	1,635,009	39,371,887
September 2018 Billing	109,780	467,900	4,261	581,941
September 2018 Payments	-	-	-	-
September 30, 2018 Balance	6,440,247	31,874,311	1,639,270	39,953,828
October 2018 Billing	109,298	467,900	4,281	581,479
October 2018 Payments	-	-	-	-
October 31, 2018 Balance	6,549,545	32,342,211	1,643,551	40,535,307
November 2018 Billing	104,007	467,900	3,963	575,869
November 2018 Payments	-	-	-	-
November 30, 2018 Balance	6,653,552	32,810,111	1,647,514	41,111,176
December 2018 Billing	101,944	467,900	3,961	573,805
December 2018 Payments	-	-	-	-
December 31, 2018 Balance	\$ 6,755,496	\$ 33,278,011	\$ 1,651,474	41,684,981
January 2019 Billing	98,430	467,900	3,961	570,290
January 2019 Payments	-	(2,116,727)	-	(2,116,727)
January 31, 2019 Balance	\$ 6,853,926	\$ 31,629,183	\$ 1,655,435	40,138,544
February 2019 Billing	98,898	467,900	3,932	570,731
February 2019 Payments	-	-	-	-
February 28, 2019 Balance	\$ 6,952,824	\$ 32,097,083	\$ 1,659,368	40,709,275
March 2019 Billing	98,353	467,900	3,881	570,134
March 2019 Payments	-	-	-	-
March 31, 2019 Balance	\$ 7,051,177	\$ 32,564,983	\$ 1,663,248	41,279,409
April 2019 Billing	99,879	467,900	4,101	571,880
April 2019 Payments	-	(1,089,003)	-	(1,089,003)
April 30, 2019 Balance	\$ 7,151,056	\$ 31,943,880	\$ 1,667,350	40,762,286
May 2019 Billing	98,118	467,900	3,963	569,981
May 2019 Payments	-	-	-	-
May 31, 2019 Balance	\$ 7,249,174	\$ 32,411,780	\$ 1,671,312	41,332,267
June 2019 Billing	\$ 101,871	\$ 467,900	\$ 3,931	573,702
June 2019 Payments	\$ -	\$ (1,406,836)	\$ -	(1,406,836)
June 30, 2019 Balance	\$ 7,351,045	\$ 31,472,844	\$ 1,675,243	40,499,132

Wholesale Water & Sewer Accounts Receivable Aging Report

The detailed accounts receivable aging is in the Appendix to this monthly report. This report reflects the wholesale receivables only and does not include DWSD. (Note: percentages vary from 100% due to rounding.)

Table 6 - Wholesale Accounts Receivable Aging Report Summary is a summary of the total, current and non-current receivables by category as of June 30, 2019.

Table 7 - Wholesale Accounts Receivable Aging Report, Net of Highland Park is the same summary *without* the past due balances for the City of Highland Park. The \$4,611,100 sewer balance that is 46-74 days past due is made up of a \$4,480,100 balance for Rouge Valley, and \$4,100 for Wayne County. These two member partners are administered by Wayne County and were late due to a change in personnel. These amounts were paid in full by July 26th. The remaining \$126,900 past due relates to the City of Melvindale and was paid in full on July 11th.

Table 8 - Wholesale Accounts Receivable Aging Report, Net of Highland Park and WTUA is a summary *without* the past due balances for the City of Highland Park and net of pending credits for certain Western Township Utilities Authority (WTUA). Credits for billed services are pending receipt of a final agreement from Wayne County to effectuate a transfer retroactive to July 1, 2018.

Table 6 - Wholesale Accounts Receivable Aging Report Summary

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 38,336,701.30	\$ 31,185,645.28	\$ 99,878.81	\$ 98,353.27	\$ 6,952,823.94
Sewer	\$ 56,093,343.61	\$ 20,477,299.50	\$ 5,079,000.00	\$ 467,900.00	\$ 30,069,144.11
IWC	\$ 3,367,063.96	\$ 675,496.07	\$ -	\$ 80,725.62	\$ 2,610,842.27
Pollutant Surcharge	\$ 593,160.17	\$ 543,821.51	\$ 8,573.17	\$ (136.60)	\$ 40,902.09
Total	\$ 98,390,269.04	\$ 52,882,262.36	\$ 5,187,451.98	\$ 646,842.29	\$ 39,673,712.41
	100.00%	53.75%	5.27%	0.66%	40.32%

Table 7 - Wholesale Accounts Receivable Aging Report, Net of Highland Park

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 30,985,656.24	\$ 30,985,656.24	\$ -	\$ -	\$ -
Sewer	\$ 24,620,499.50	\$ 20,009,399.50	\$ 4,611,100.00	\$ -	\$ -
IWC	\$ 1,691,821.11	\$ 667,602.89	\$ -	\$ 72,743.52	\$ 951,474.70
Pollutant Surcharge	\$ 593,160.17	\$ 543,821.51	\$ 8,573.17	\$ (136.60)	\$ 40,902.09
Total	\$ 57,891,137.02	\$ 52,206,480.14	\$ 4,619,673.17	\$ 72,606.92	\$ 992,376.79
	100.00%	90.18%	7.98%	0.13%	1.71%

Table 8 - Wholesale Accounts Receivable Aging Report, Net of Highland Park and WTUA

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 30,985,656.24	\$ 30,985,656.24	\$ -	\$ -	\$ -
Sewer	\$ 24,620,499.50	\$ 20,009,399.50	\$ 4,611,100.00	\$ -	\$ -
IWC	\$ 594,557.19	\$ 594,859.37	\$ -	\$ -	\$ (302.18)
Pollutant Surcharge	\$ 593,160.17	\$ 543,821.51	\$ 8,573.17	\$ (136.60)	\$ 40,902.09
Total	\$ 56,793,873.10	\$ 52,133,736.62	\$ 4,619,673.17	\$ (136.60)	\$ 40,599.91
	100.00%	91.79%	8.13%	0.00%	0.07%

The Monthly Trust Receipts & Disbursements Report includes the following.

1. GLWA Trust Receipts & Disbursements – Net Cash Flows and Receipts
2. DWSD Trust Receipts & Disbursements – Net Cash Flows, Receipts & Loan Receivable
3. Combined System Trust Receipts & Disbursements – Net Cash Flows

GLWA Trust Receipts & Disbursements

Net Cash Flows and Receipts Basis: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department or DWSD) activities which are further separated by the water system and the sewage disposal system.

This report provides an ongoing status of the net cash flow of both organizations (GLWA and DWSD) to fund their allocated share of Master Bond Ordinance requirements in accordance with the leases for the regional systems.

Table 1 – GLWA Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year as well as a total of all activity for GLWA since inception at January 1, 2016. Fiscal year 2019 reflects twelve months of activity to date.

Water fund activity exceeded required MBO disbursements by 16% through June 30, 2019 with a historical ratio of cash receipts exceeding MBO disbursements at 15% since January 1, 2016.

Sewer fund cash receipts exceeded disbursements by 3% through June 30, 2019 with a historical ratio of cash receipts exceeding MBO disbursements at 5% since January 1, 2016.

Table 1 has been adjusted this month to reflect yearend I&E activity.

Chart 1 – GLWA 12-Month Net Receipts – Water outlines monthly cash receipt trends across two points of reference for the regional water system—current year and prior year. The black line at the zero highlights the minimum goal for net receipts.

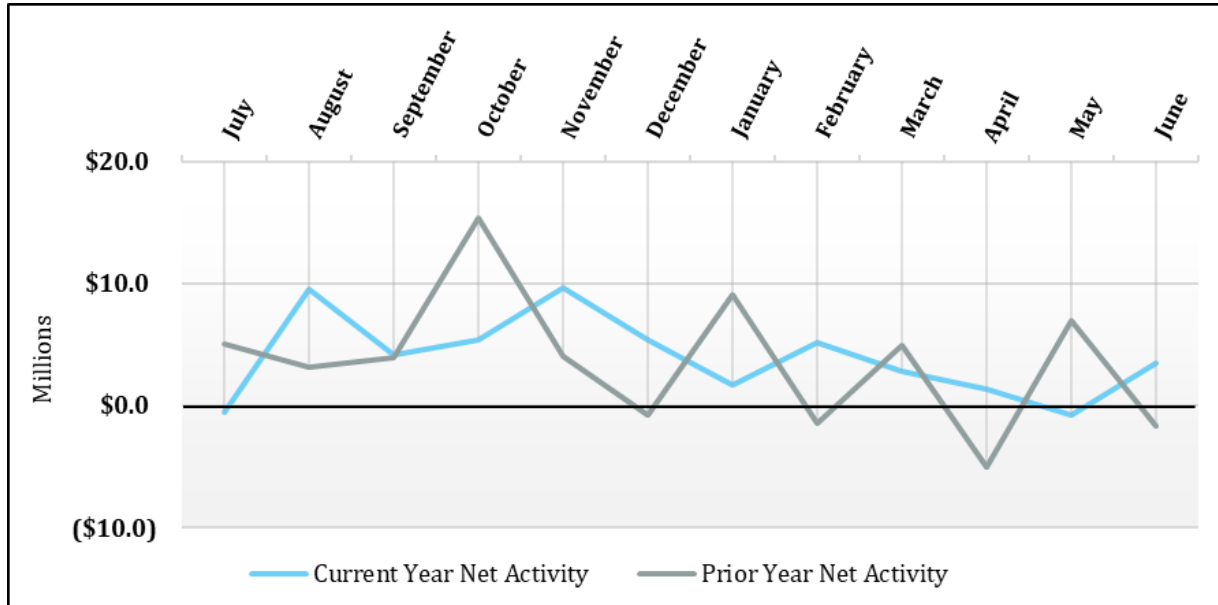
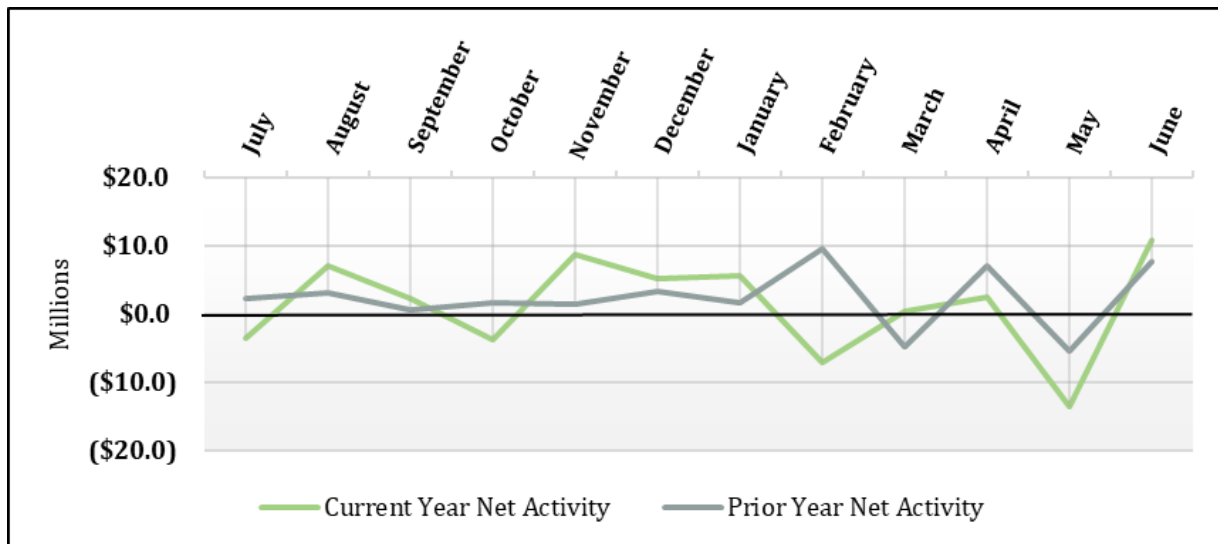
Chart 2 – GLWA 12-Month Net Receipts – Sewer outlines monthly cash receipt trends across two points of reference for the regional sewer system—current year and prior year. The black line at the zero highlights the minimum goal for net receipts.

Table 1 – GLWA Net Cash Flows from Trust Receipts & Disbursements

	FY 2016	FY 2017	FY 2018	FY 2019 (Prelim)	Life-to-Date Total
Water					
1 Receipts	\$ 149,688,711	\$ 352,941,909	\$ 338,452,001	\$ 336,594,234	\$1,177,676,855
2 MOU Adjustments	-	-	-	-	-
3 Adjusted Receipts	149,688,711	352,941,909	338,452,001	336,594,234	1,177,676,855
4 Disbursements	(146,256,185)	(288,777,985)	(297,064,810)	(289,230,481)	(1,021,329,461)
5 Receipts Net of Required Transfers	3,432,526	64,163,924	41,387,191	47,363,753	156,347,394
6 I&E Transfer	-	-	(25,739,700)	(47,695,000)	(73,434,700)
7 Net Receipts	\$ 3,432,526	\$ 64,163,924	\$ 15,647,491	\$ (331,247)	\$ 82,912,694
8 <i>Ratio of Receipts to Required Disbursements (Line 3/Line 4)</i>	102%	122%	114%	116%	115%
Sewer					
9 Receipts	\$ 232,377,715	\$ 469,788,882	\$ 476,269,761	\$ 467,743,744	\$1,646,180,102
10 MOU Adjustments	-	-	-	-	-
11 Adjusted Receipts	232,377,715	469,788,882	476,269,761	467,743,744	1,646,180,102
12 Disbursements	(219,538,325)	(441,443,340)	(458,903,335)	(453,406,636)	(1,573,291,636)
13 Receipts Net of Required Transfers	12,839,390	28,345,542	17,366,426	14,337,108	72,888,466
14 I&E Transfer	-	-	(22,698,100)	(22,547,700)	(45,245,800)
15 DWSD Shortfall Advance	(1,285,466)	(28,014,534)	(24,113,034)	-	(53,413,034)
16 Shortfall Repayment (principal)	-	-	-	9,367,355	9,367,355
17 Net Receipts	\$ 11,553,924	\$ 331,008	\$ (29,444,708)	\$ 1,156,763	\$ (16,403,013)
18 <i>Ratio of Receipts to Required Disbursements (Line 11/Line 12)</i>	106%	106%	104%	103%	105%
Combined					
19 Receipts	\$ 382,066,426	\$ 822,730,791	\$ 814,721,762	\$ 804,337,978	\$2,823,856,957
20 MOU Adjustments	-	-	-	-	-
21 Adjusted Receipts	382,066,426	822,730,791	814,721,762	804,337,978	2,823,856,957
22 Disbursements	(365,794,510)	(730,221,325)	(755,968,145)	(742,637,117)	(2,594,621,097)
23 Receipts Net of Required Transfers	16,271,916	92,509,466	58,753,617	61,700,861	229,235,860
24 I&E Transfer	-	-	(48,437,800)	(70,242,700)	(118,680,500)
25 Shortfall Advance	(1,285,466)	(28,014,534)	(24,113,034)	-	(53,413,034)
26 Shortfall Repayment	-	-	-	9,367,355	9,367,355
27 Net Receipts	\$ 14,986,450	\$ 64,494,932	\$ (13,797,217)	\$ 825,516	\$ 66,509,681
28 <i>Ratio of Receipts to Required Disbursements (Line 21/Line 22)</i>	104%	113%	108%	108%	109%

MOU Adjustments applies to DWSD and is shown here for consistency.

Note: The Sewer net receipts shortfall is a result of the shortfall advance made to DWSD and has been temporarily covered by initial, start-up transfer activity and more recently reduced by loan receivable payments made by DWSD. It is expected to resolve entirely in FY 2020 due to ongoing, positive receipts net of required transfers and continued DWSD loan receivable payments.

Chart 1 – GLWA 12-Month Net Receipts - Water

Chart 2 – GLWA 12-Month Net Receipts - Sewer


DWSD Trust Receipts & Disbursements

Net Cash Flows and Receipts Basis: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department or DWSD) activities which are further separated by the water system and the sewage disposal system.

This report provides an ongoing status of the net cash flow of both organizations (GLWA and DWSD) to fund their allocated share of Master Bond Ordinance requirements in accordance with the leases for the regional systems.

Table 2 – DWSD Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year as well as a total of all activity for DWSD since inception at January 1, 2016. Fiscal year 2019 reflects twelve months of activity to date.

Water fund cash receipts exceeded required MBO disbursements by 2% through June 30, 2019 with a historical ratio of 3% since January 1, 2016.

Sewer fund cash receipts hit a breakeven point between net receipts and required MBO disbursements through June 30, 2019 with a historic shortfall of 6% since January 1, 2016. FY 2019 activity to date reflects a \$6.5 million sewer lookback adjustment completed in December 2018. This was due from GLWA to DWSD as part of the April 2018 MOU. DWSD reduced the Operations & Maintenance (O&M) transfers in May and June to achieve a goal of a positive net cash flow for FY 2019.

Table 2 has been adjusted this month to reflect yearend I&E activity.

Table 3 – FY 2017 DWSD Loan Receivable - Sewer provides an activity summary of loan receivable established under the terms of the April 2018 MOU addressing the cash shortfall from FY 2016 and FY 2017. A loan schedule has been established for the FY 2018 shortfall. Reporting on that additional loan will begin with reporting for the month of July when the first payment is due.

Table 4 – FY 2017 DWSD Loan Receivable Payments - Sewer provides an activity summary of loan receivable payments to date on the FY 2017 Sewer Loan Receivable including the interest on the loan. The monthly interest component of each payment is transferred directly to GLWA Sewer Improvement & Extension fund.

The Reconciliation Committee monitors this balance and repayment progress as part of its quarterly meetings.

Chart 3 – DWSD 12-Month Net Receipts – Water outlines monthly activity trends across two points of reference for the local water system—current year and prior year. The black line at the zero highlights the breakeven goal for net receipts.

Chart 4 – DWSD 12-Month Net Receipts – Sewer outlines monthly activity trends across two points of reference for the local sewer system—current year and prior year. The black line at the zero highlights the breakeven goal for net receipts.

Table 2 – DWSD Net Cash Flows from Trust Receipts & Disbursements

	FY 2016	FY 2017	FY 2018	FY 2019 (Prelim)	Life-to-Date Total
Water					
1 Receipts	\$ 26,201,881	\$ 96,451,105	\$ 101,233,147	\$ 99,868,219	\$ 323,754,352
2 MOU Adjustments	18,446,100	-	-	-	18,446,100
3 Adjusted Receipts	44,647,981	96,451,105	101,233,147	99,868,219	342,200,452
4 Disbursements	(47,809,552)	(93,066,144)	(93,049,457)	(97,694,600)	(331,619,753)
5 Receipts Net of Required Transfers	(3,161,571)	3,384,961	8,183,690	2,173,619	10,580,699
6 I&E Transfer	-	-	-	(8,407,080)	(8,407,080)
7 Net Receipts	\$ (3,161,571)	\$ 3,384,961	\$ 8,183,690	\$ (6,233,461)	\$ 2,173,619
8 <i>Ratio of Receipts to Required Disbursements (Line 3/Line 4)</i>	93%	104%	109%	102%	103%
Sewer					
9 Receipts	\$ 65,256,734	\$ 233,723,367	\$ 242,104,791	\$ 265,339,797	\$ 806,424,689
10 MOU Adjustments	55,755,100	-	-	6,527,200	62,282,300
11 Adjusted Receipts	121,011,834	233,723,367	242,104,791	271,866,997	868,706,989
12 Disbursements	(122,297,300)	(261,963,973)	(266,217,825)	(271,018,306)	(921,497,404)
13 Receipts Net of Required Transfers	(1,285,466)	(28,240,606)	(24,113,034)	848,691	(52,790,415)
14 I&E Transfer	-	-	-	-	-
15 Shortfall Advance from GLWA	1,285,466	28,014,534	24,113,034	-	53,413,034
16 Net Receipts (a)	\$ 0	\$ (226,072)	\$ -	\$ 848,691	\$ 622,619
17 <i>Ratio of Receipts to Required Disbursements (Line 11/Line 12)</i>	99%	89%	91%	100%	94%
Combined					
18 Receipts	\$ 91,458,615	\$ 330,174,472	\$ 343,337,938	\$ 365,208,016	\$1,130,179,041
19 MOU Adjustments	74,201,200	-	-	6,527,200	80,728,400
20 Adjusted Receipts	165,659,815	330,174,472	343,337,938	371,735,216	1,210,907,441
21 Disbursements	(170,106,852)	(355,030,117)	(359,267,282)	(368,712,906)	(1,253,117,157)
22 Receipts Net of Required Transfers	(4,447,037)	(24,855,645)	(15,929,344)	3,022,310	(42,209,716)
23 I&E Transfer	-	-	-	(8,407,080)	(8,407,080)
24 Shortfall Advance	1,285,466	28,014,534	24,113,034	-	53,413,034
25 Net Receipts	\$ (3,161,571)	\$ 3,158,889	\$ 8,183,690	\$ (5,384,770)	\$ 2,796,238
26 <i>Ratio of Receipts to Required Disbursements (Line 20/Line 21)</i>	97%	93%	96%	101%	97%

(a) The \$226,072 difference in FY 2017 is due to the June IWC payment from DWSD that was not past due at yearend and the \$12,272 rounding difference on the loan receivable.

Note 1: The \$29,300,000 for the DWSD loan receivable balance is calculated as follows.

(1,285,466)	FY 2016 Shortfall
<u>(28,240,606)</u>	FY 2017 Shortfall
<u>(29,526,072)</u>	Subtotal
238,264	June IWC not due until July
<u>(29,287,808)</u>	FY 2017 Shortfall-to-Date
29,300,000	FY 2017 Shortfall-to-Date, Rounded

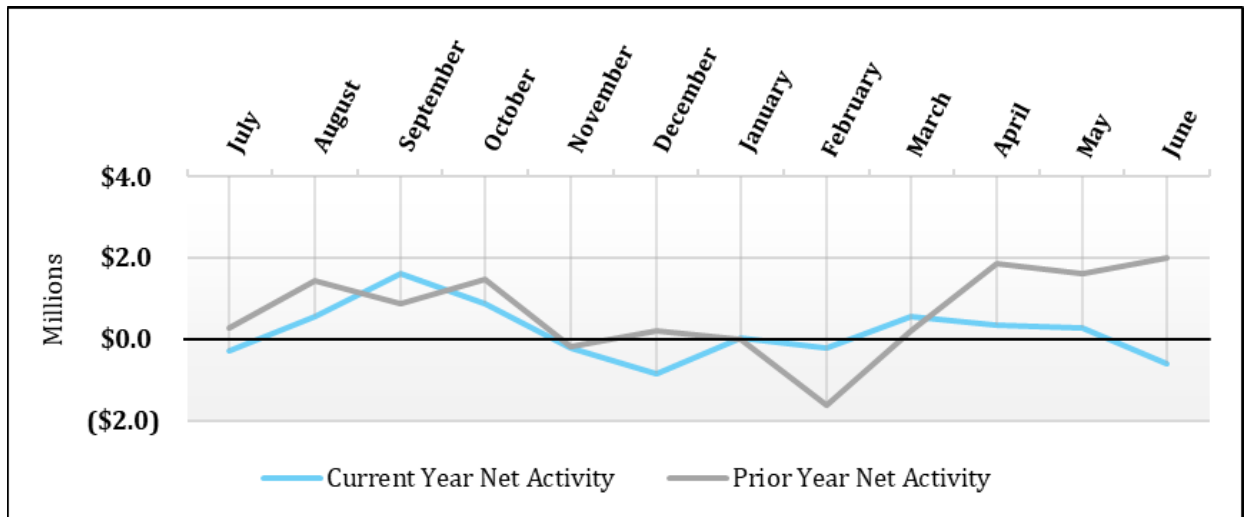
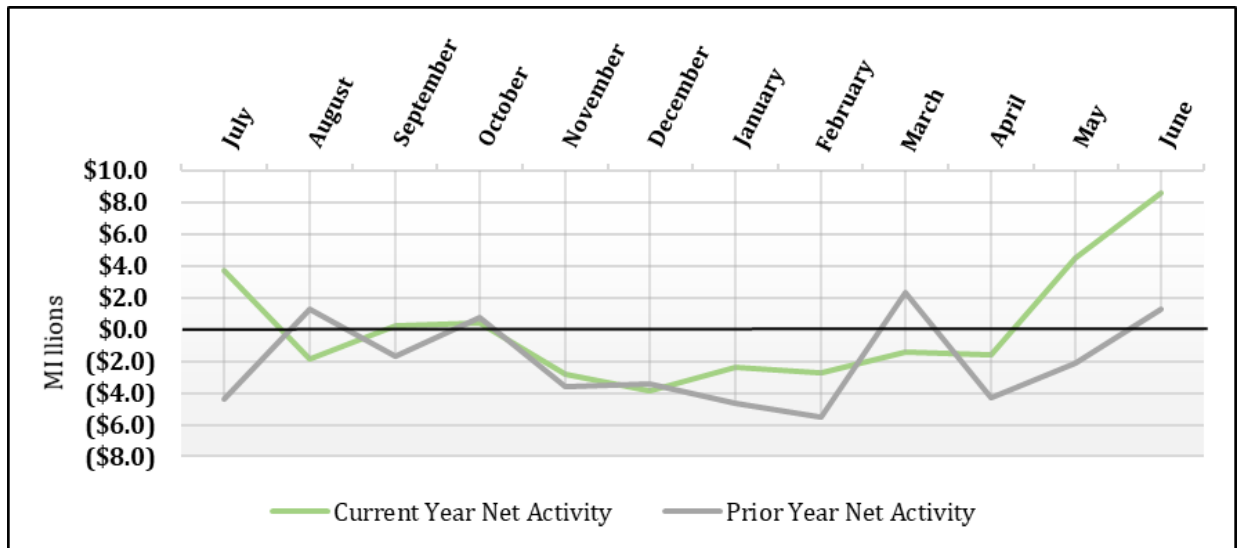
Table 3 – FY 2017 DWSD Loan Receivable - Sewer

Date	Transaction	Amount	Balance
6/30/2019	Record FY 16 and FY 17 Loan Receivable		29,300,000
2/8/2019	Loan Receivable Payment (for the months of Jul - Dec)	4,635,462	24,664,538
2/22/2019	Loan Receivable Payment (for the months of Jan - Mar)	2,353,768	22,310,770
4/15/2019	Loan Receivable Payment (for the month of Apr)	789,990	21,520,780
5/8/2019	Loan Receivable Payment (for the month of May)	792,705	20,728,075
6/7/2019	Loan Receivable Payment (for the month of June)	795,430	19,932,645
	Remaining Balance at June 30, 2019		19,932,645

Table 4 – FY 2017 DWSD Loan Receivable Payments - Sewer

Date	Transaction	Principal	Interest	Total Paid
2/8/2019	Loan Receivable Payment (for the months of Jul - Dec)	4,635,462	564,636	5,200,098
2/22/2019	Loan Receivable Payment (for the months of Jan - Mar)	2,353,768	246,280	2,600,049
4/15/2019	Loan Receivable Payment (for the month of Apr)	789,990	76,693	866,683
5/8/2019	Loan Receivable Payment (for the month of May)	792,705	73,978	866,683
6/7/2019	Loan Receivable Payment (for the month of June)	795,430	71,253	866,683
		9,367,355	1,032,840	10,400,195

Note 2: DWSD has made an additional, scheduled loan receivable payment in June which will be reflected in Table 4 above with the Trust Receipts & Disbursements report for the month of June.

Chart 3 – DWSD 12-Month Net Receipts - Water

Chart 4 – DWSD 12-Month Net Receipts – Sewer


Combined System Trust Receipts & Disbursements

Net Cash Flows and Receipts Basis: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department or DWSD) activities which are further separated by the water system and the sewage disposal system.

Table 4 – Combined Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year as well as a total of all activity for GLWA since inception at January 1, 2016. Fiscal year 2019 reflects twelve months of activity to date.

Water fund receipts exceeded required MBO disbursements by 13% through June 30, 2019 with a ratio of 12% since January 1, 2016. Sewer fund cash receipts exceeded required MBO disbursements by 2% through June 30, 2019 and sewer fund with a ratio of 1% since January 1, 2016.

FY 2019 results reflect yearend improvement and extension fund transfers that include adjustments for prior year balances. Life-to-Date results provide a more comprehensive view by balancing I&E activity across fiscal years.

Table 4 – Combined Net Cash Flows from Trust Receipts & Disbursements

	FY 2016	FY 2017	FY 2018	FY 2019 (Prelim)	Life-to-Date Total
Water					
1 Receipts	\$ 175,890,592	\$ 449,393,014	\$ 439,685,148	\$ 436,462,453	\$1,501,431,207
2 MOU Adjustments	18,446,100	-	-	-	18,446,100
3 Adjusted Receipts	194,336,692	449,393,014	439,685,148	436,462,453	1,519,877,307
4 Disbursements	(194,065,737)	(381,844,129)	(390,114,267)	(386,925,081)	(1,352,949,214)
5 Receipts Net of Required Transfers	270,955	67,548,885	49,570,881	49,537,372	166,928,093
6 I&E Transfer	-	-	(25,739,700)	(56,102,080)	(81,841,780)
7 Net Receipts	\$ 270,955	\$ 67,548,885	\$ 23,831,181	\$ (6,564,708)	\$ 85,086,313
8 <i>Ratio of Receipts to Required Disbursements (Line 3/Line 4)</i>	100%	118%	113%	113%	112%
Sewer					
9 Receipts	\$ 297,634,449	\$ 703,512,249	\$ 718,374,552	\$ 733,083,541	\$2,452,604,791
10 MOU Adjustments	55,755,100	-	-	6,527,200	62,282,300
11 Adjusted Receipts	353,389,549	703,512,249	718,374,552	739,610,741	2,514,887,091
12 Disbursements	(341,835,625)	(703,407,313)	(725,121,160)	(724,424,942)	(2,494,789,040)
13 Receipts Net of Required Transfers	11,553,924	104,936	(6,746,608)	15,185,799	20,098,051
14 I&E Transfer	-	-	(22,698,100)	(22,547,700)	(45,245,800)
15 Shortfall Advance	-	-	-	-	-
16 Shortfall Repayment (principal)	-	-	-	9,367,355	9,367,355
17 Net Receipts	\$ 11,553,924	\$ 104,936	\$ (29,444,708)	\$ (7,361,901)	\$ (25,147,749)
18 <i>Ratio of Receipts to Required Disbursements (Line 11/Line 12)</i>	103%	100%	99%	102%	101%
Combined					
19 Receipts	\$ 473,525,041	\$1,152,905,263	\$1,158,059,700	\$1,169,545,994	\$3,954,035,998
20 MOU Adjustments	74,201,200	-	-	6,527,200	80,728,400
21 Adjusted Receipts	547,726,241	1,152,905,263	1,158,059,700	1,176,073,194	4,034,764,398
22 Disbursements	535,901,362	1,085,251,442	1,115,235,427	1,111,350,023	3,847,738,254
23 Receipts Net of Required Transfers	11,824,879	67,653,821	42,824,273	64,723,171	187,026,144
24 I&E Transfer	-	-	(48,437,800)	(78,649,780)	(127,087,580)
25 Shortfall Advance	-	-	-	-	-
26 Shortfall Repayment	-	-	-	9,367,355	9,367,355
27 Net Receipts	\$ 11,824,879	\$ 67,653,821	\$ (5,613,527)	\$ (4,559,254)	\$ 69,305,920
28 <i>Ratio of Receipts to Required Disbursements (Line 21/Line 22)</i>	102%	106%	104%	106%	105%

APPENDIX

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$363,277.01	\$363,277.01	\$0.00	\$0.00	\$0.00
ASH TOWNSHIP	\$67,232.79	\$67,232.79	\$0.00	\$0.00	\$0.00
BELLEVILLE	\$26,345.80	\$26,345.80	\$0.00	\$0.00	\$0.00
BERLIN TOWNSHIP	\$59,916.82	\$59,916.82	\$0.00	\$0.00	\$0.00
BROWNSTOWN TOWNSHIP	\$287,078.51	\$287,078.51	\$0.00	\$0.00	\$0.00
BRUCE TOWNSHIP	\$42,438.56	\$42,438.56	\$0.00	\$0.00	\$0.00
BURTCHVILLE TOWNSHIP	\$23,137.59	\$23,137.59	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$780,190.91	\$780,190.91	\$0.00	\$0.00	\$0.00
CENTER LINE	\$37,282.29	\$37,282.29	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$329,657.17	\$329,657.17	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$1,292,994.76	\$1,292,994.76	\$0.00	\$0.00	\$0.00
COMMERCE TOWNSHIP	\$287,098.31	\$287,098.31	\$0.00	\$0.00	\$0.00
DEARBORN	\$698,482.24	\$698,482.24	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$288,109.69	\$288,109.69	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$242,641.47	\$242,641.47	\$0.00	\$0.00	\$0.00
ECORSE	\$129,883.14	\$129,883.14	\$0.00	\$0.00	\$0.00
FARMINGTON	\$79,652.42	\$79,652.42	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$721,933.41	\$721,933.41	\$0.00	\$0.00	\$0.00
FERNDAL	\$166,644.47	\$166,644.47	\$0.00	\$0.00	\$0.00
FLAT ROCK	\$97,967.55	\$97,967.55	\$0.00	\$0.00	\$0.00
FLINT	\$335,532.28	\$335,532.28	\$0.00	\$0.00	\$0.00
FRASER	\$95,305.07	\$95,305.07	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$136,981.00	\$136,981.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
GIBRALTAR	\$27,297.45	\$27,297.45	\$0.00	\$0.00	\$0.00
GREENWOOD TOWNSHIP	\$44,665.75	\$44,665.75	\$0.00	\$0.00	\$0.00
GROSSE ILE TOWNSHIP	\$110,497.88	\$110,497.88	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$112,406.93	\$112,406.93	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$41,674.77	\$41,674.77	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$128,726.81	\$128,726.81	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$59,368.12	\$59,368.12	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$65,919.49	\$65,919.49	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$123,789.44	\$123,789.44	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$58,828.18	\$58,828.18	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$7,351,045.06	\$199,989.04	\$99,878.81	\$98,353.27	\$6,952,823.94
HURON TOWNSHIP	\$120,014.31	\$120,014.31	\$0.00	\$0.00	\$0.00
IMLAY CITY	\$106,023.65	\$106,023.65	\$0.00	\$0.00	\$0.00
IMLAY TOWNSHIP	\$1,387.20	\$1,387.20	\$0.00	\$0.00	\$0.00
INKSTER	\$101,767.56	\$101,767.56	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$25,119.89	\$25,119.89	\$0.00	\$0.00	\$0.00
LAPEER	\$117,601.99	\$117,601.99	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$28,253.68	\$28,253.68	\$0.00	\$0.00	\$0.00
LINCOLN PARK	\$195,307.82	\$195,307.82	\$0.00	\$0.00	\$0.00
LIVONIA	\$1,097,912.11	\$1,097,912.11	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$855,128.72	\$855,128.72	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$153,799.09	\$153,799.09	\$0.00	\$0.00	\$0.00

55 **GLWA Aged Accounts Receivable- WATER ACCOUNTS**
Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MAYFIELD TOWNSHIP	\$6,556.65	\$6,556.65	\$0.00	\$0.00	\$0.00
MELVINDALE	\$109,440.18	\$109,440.18	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$31,187.29	\$31,187.29	\$0.00	\$0.00	\$0.00
NOCWA	\$3,626,257.38	\$3,626,257.38	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$63,066.01	\$63,066.01	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$423,223.64	\$423,223.64	\$0.00	\$0.00	\$0.00
NOVI	\$704,283.75	\$704,283.75	\$0.00	\$0.00	\$0.00
OAK PARK	\$114,899.56	\$114,899.56	\$0.00	\$0.00	\$0.00
OAKLAND CO DR COM	\$7,154.62	\$7,154.62	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$85,557.43	\$85,557.43	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$340,748.09	\$340,748.09	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$251,188.27	\$251,188.27	\$0.00	\$0.00	\$0.00
RIVER ROUGE	\$55,838.79	\$55,838.79	\$0.00	\$0.00	\$0.00
RIVERVIEW	\$73,126.39	\$73,126.39	\$0.00	\$0.00	\$0.00
ROCKWOOD	\$25,514.74	\$25,514.74	\$0.00	\$0.00	\$0.00
ROMEO	\$20,971.29	\$20,971.29	\$0.00	\$0.00	\$0.00
ROMULUS	\$336,583.81	\$336,583.81	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$218,249.40	\$218,249.40	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$18,241.70	\$18,241.70	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$1,060,693.21	\$1,060,693.21	\$0.00	\$0.00	\$0.00
SOCWA	\$3,647,367.36	\$3,647,367.36	\$0.00	\$0.00	\$0.00
SOUTH ROCKWOOD	\$11,512.72	\$11,512.72	\$0.00	\$0.00	\$0.00
SOUTHGATE	\$208,972.23	\$208,972.23	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ST. CLAIR SHORES	\$247,716.24	\$247,716.24	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$1,170,247.35	\$1,170,247.35	\$0.00	\$0.00	\$0.00
SUMPTER TOWNSHIP	\$56,709.79	\$56,709.79	\$0.00	\$0.00	\$0.00
SYLVAN LAKE	\$18,791.19	\$18,791.19	\$0.00	\$0.00	\$0.00
TAYLOR	\$371,685.14	\$371,685.14	\$0.00	\$0.00	\$0.00
TRENTON	\$178,352.94	\$178,352.94	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$1,047,503.16	\$1,047,503.16	\$0.00	\$0.00	\$0.00
UTICA	\$44,293.38	\$44,293.38	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$298,785.53	\$298,785.53	\$0.00	\$0.00	\$0.00
VILLAGE OF ALMONT	\$18,523.83	\$18,523.83	\$0.00	\$0.00	\$0.00
WALLED LAKE	\$74,256.57	\$74,256.57	\$0.00	\$0.00	\$0.00
WARREN	\$840,669.59	\$840,669.59	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$161,798.15	\$161,798.15	\$0.00	\$0.00	\$0.00
WAYNE	\$254,270.03	\$254,270.03	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,653,631.87	\$1,653,631.87	\$0.00	\$0.00	\$0.00
WESTLAND	\$997,357.04	\$997,357.04	\$0.00	\$0.00	\$0.00
WIXOM	\$199,462.08	\$199,462.08	\$0.00	\$0.00	\$0.00
WOODHAVEN	\$130,080.79	\$130,080.79	\$0.00	\$0.00	\$0.00
YCUA	\$1,615,612.96	\$1,615,612.96	\$0.00	\$0.00	\$0.00
TOTAL WATER ACCOUNTS	\$38,336,701.30	\$31,185,645.28	\$99,878.81	\$98,353.27	\$6,952,823.94

GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$70,600.00	\$70,600.00	\$0.00	\$0.00	\$0.00
CENTER LINE	\$85,599.50	\$85,599.50	\$0.00	\$0.00	\$0.00
DEARBORN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EVERGREEN-FARMINGTON	\$2,881,500.00	\$2,881,500.00	\$0.00	\$0.00	\$0.00
FARMINGTON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$74,100.00	\$74,100.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$31,472,844.11	\$467,900.00	\$467,900.00	\$467,900.00	\$30,069,144.11
MELVINDALE	\$253,800.00	\$126,900.00	\$126,900.00	\$0.00	\$0.00
OAKLAND COUNTY GWK DD	\$3,747,700.00	\$3,747,700.00	\$0.00	\$0.00	\$0.00
OMID	\$6,461,100.00	\$6,461,100.00	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$21,700.00	\$21,700.00	\$0.00	\$0.00	\$0.00
ROUGE VALLEY	\$8,960,200.00	\$4,480,100.00	\$4,480,100.00	\$0.00	\$0.00
WAYNE COUNTY N.E.	\$2,056,000.00	\$2,056,000.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY-AREA #3	\$8,200.00	\$4,100.00	\$4,100.00	\$0.00	\$0.00
TOTAL SEWER ACCOUNTS	\$56,093,343.61	\$20,477,299.50	\$5,079,000.00	\$467,900.00	\$30,069,144.11

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$1,612.35	\$1,612.35	\$0.00	\$0.00	\$0.00
AUBURN HILLS (C-O)	\$19,485.31	\$19,485.31	\$0.00	\$0.00	\$0.00
AUBURN HILLS (E-F)	\$366.30	\$366.30	\$0.00	\$0.00	\$0.00
BERKLEY	\$3,162.51	\$3,162.51	\$0.00	\$0.00	\$0.00
BEVERLY HILLS	\$999.14	\$999.14	\$0.00	\$0.00	\$0.00
BINGHAM FARMS	\$1,066.57	\$1,066.57	\$0.00	\$0.00	\$0.00
BIRMINGHAM (E-F)	\$2,412.46	\$2,412.46	\$0.00	\$0.00	\$0.00
BIRMINGHAM (SEOC)	\$11,138.36	\$11,138.36	\$0.00	\$0.00	\$0.00
BLOOMFIELD HILLS	\$1,763.41	\$1,763.41	\$0.00	\$0.00	\$0.00
BLOOMFIELD TOWNSHIP	\$9,056.37	\$9,056.37	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$575,136.82	\$38,132.92	\$0.00	\$38,132.92	\$498,870.98
CENTER LINE	\$3,683.10	\$3,683.10	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$12,161.35	\$12,161.35	\$0.00	\$0.00	\$0.00
CITY OF FARMINGTON (E-F)	\$ (302.18)	\$0.00	\$0.00	\$0.00	\$ (302.18)
CITY OF FERNDAL	\$8,904.91	\$8,904.91	\$0.00	\$0.00	\$0.00
CITY OF ROCHESTER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLARKSTON	\$277.48	\$277.48	\$0.00	\$0.00	\$0.00
CLAWSON	\$5,526.90	\$5,526.90	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$50,994.82	\$50,994.82	\$0.00	\$0.00	\$0.00
DEARBORN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$9,411.19	\$9,411.19	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$106.64	\$106.64	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$12,941.40	\$12,941.40	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FARMINGTON	\$4,046.54	\$4,046.54	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$24,847.86	\$24,847.86	\$0.00	\$0.00	\$0.00
FRASER	\$4,960.88	\$4,960.88	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$6,085.48	\$6,085.48	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$1,580.76	\$1,580.76	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$2,088.99	\$2,088.99	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$1,182.65	\$1,182.65	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$2,593.81	\$2,593.81	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$4,175.13	\$4,175.13	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$1,864.20	\$1,864.20	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$3,166.76	\$3,166.76	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$3,132.98	\$3,132.98	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$1,675,242.85	\$7,893.18	\$0.00	\$7,982.10	\$1,659,367.57
HUNTINGTON WOODS	\$286.18	\$286.18	\$0.00	\$0.00	\$0.00
INDEPENDENCE	\$4,818.34	\$4,818.34	\$0.00	\$0.00	\$0.00
INKSTER	\$5,559.87	\$5,559.87	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$705.59	\$705.59	\$0.00	\$0.00	\$0.00
LAKE ORION	\$803.30	\$803.30	\$0.00	\$0.00	\$0.00
LATHRUP	\$1,406.81	\$1,406.81	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$325.36	\$325.36	\$0.00	\$0.00	\$0.00
LIVONIA	\$40,341.04	\$40,341.04	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MACOMB TWP	\$206.29	\$206.29	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELVINDALE	\$7,259.98	\$7,259.98	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$2,088.10	\$2,088.10	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$138,002.17	\$9,148.06	\$0.00	\$9,148.06	\$119,706.05
NOVI	\$17,375.72	\$17,375.72	\$0.00	\$0.00	\$0.00
OAK PARK	\$6,823.02	\$6,823.02	\$0.00	\$0.00	\$0.00
OAKLAND TOWNSHIP	\$383.96	\$383.96	\$0.00	\$0.00	\$0.00
ORCHARD LAKE VILLAGE	\$401.75	\$401.75	\$0.00	\$0.00	\$0.00
ORION TOWNSHIP (C-O)	\$5,446.28	\$5,446.28	\$0.00	\$0.00	\$0.00
OXFORD TOWNSHIP	\$1,071.90	\$1,071.90	\$0.00	\$0.00	\$0.00
OXFORD VILLAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLEASANT RIDGE	\$273.77	\$273.77	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$384,124.93	\$25,462.54	\$0.00	\$25,462.54	\$333,199.85
REDFORD TOWNSHIP	\$11,436.31	\$11,436.31	\$0.00	\$0.00	\$0.00
ROCHESTER HILLS	\$18,365.37	\$18,365.37	\$0.00	\$0.00	\$0.00
ROMULUS	\$926.07	\$926.07	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$14,666.64	\$14,666.64	\$0.00	\$0.00	\$0.00
ROYAL OAK	\$13,504.73	\$13,504.73	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$933.32	\$933.32	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$12,457.40	\$12,457.40	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHFIELD (E-F)	\$28,473.78	\$28,473.78	\$0.00	\$0.00	\$0.00
SOUTHFIELD (SEOC)	\$3,804.28	\$3,804.28	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$12,017.19	\$12,017.19	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$31,370.49	\$31,370.49	\$0.00	\$0.00	\$0.00
TROY (E-F)	\$384.09	\$384.09	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$74,604.56	\$74,604.56	\$0.00	\$0.00	\$0.00
UTICA	\$3,010.88	\$3,010.88	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$2,017.52	\$2,017.52	\$0.00	\$0.00	\$0.00
VILLAGE OF FRANKLIN	\$65.69	\$65.69	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$1,400.66	\$1,400.66	\$0.00	\$0.00	\$0.00
WATERFORD TOWNSHIP	\$12,465.79	\$12,465.79	\$0.00	\$0.00	\$0.00
WAYNE	\$5,017.87	\$5,017.87	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,898.70	\$1,898.70	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (E-F)	\$12,726.18	\$12,726.18	\$0.00	\$0.00	\$0.00
WESTLAND	\$22,937.98	\$22,937.98	\$0.00	\$0.00	\$0.00
TOTAL IWC ACCOUNTS	\$3,367,063.96	\$675,496.07	\$0.00	\$80,725.62	\$2,610,842.27

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
3M COMPANY	\$4,921.67	\$4,921.67	\$0.00	\$0.00	\$0.00
A & R PACKING CO., LLC	\$3,689.44	\$3,689.44	\$0.00	\$0.00	\$0.00
AACTRON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACADEMY PACKING CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACME RUSTPROOF	\$82.55	\$82.55	\$0.00	\$0.00	\$0.00
ADVANCED RESOURCE RECOVERY	\$761.09	\$761.09	\$0.00	\$0.00	\$0.00
AEVITAS SPECIALITY SERVICES	\$20,910.40	\$20,910.40	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALGAL SCIENTIFIC CORPORATION	\$16,533.05	\$0.00	\$0.00	\$0.00	\$16,533.05
ALL CHEM CORP, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALPHA STAMPING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AMERICAN WASTE TECH INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AMERITI MFG. CO.	\$7,385.69	\$7,385.69	\$0.00	\$0.00	\$0.00
ATWATER IN THE PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AUTOMOTIVE FINISH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AXLE BREWING COMPANY, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
B. NEKTAR MEADERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BAFFIN BREWING COMPANY	\$228.80	\$119.85	\$0.00	\$0.00	\$108.95
BARON INDUSTRIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARTZ BAKERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BASTONE BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
BATCH BREWING COMPANY	\$28.88	\$0.00	\$28.88	\$0.00	\$0.00
BAYS MICHIGAN CORPORATION	\$7.91	\$7.91	\$0.00	\$0.00	\$0.00
BEIRUT BAKERY, INC.	\$291.14	\$291.14	\$0.00	\$0.00	\$0.00
BETTER MADE SNACK FOOD	\$33,655.38	\$33,655.38	\$0.00	\$0.00	\$0.00
BLACK LOTUS BREWING CO.	\$301.01	\$0.00	\$72.32	\$0.00	\$228.69
BOZEK'S MARKET	\$58.75	\$58.75	\$0.00	\$0.00	\$0.00
BREW DETROIT	\$7,214.87	\$7,204.87	\$10.00	\$0.00	\$0.00
BROADWAY MKT CORNED BEEF	\$ (102.82)	\$0.00	\$0.00	\$0.00	\$ (102.82)
BROOKS BREWING, LLC.	\$107.63	\$0.00	\$107.63	\$0.00	\$0.00
BROWN IRON BREWHOUSE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CANTON BREW WORKS	\$276.09	\$0.00	\$77.06	\$0.00	\$199.03
CAPITAL REPRODUCTIONS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CF BURGER CREAMERY	\$15,772.94	\$15,772.94	\$0.00	\$0.00	\$0.00
CHILANGO'S BAKERY	\$2,355.48	\$44.30	\$23.73	\$22.15	\$2,265.30
CINTAS CORP. - MACOMB TWP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CITY LAUNDRY, INC.	\$15.66	\$15.66	\$0.00	\$0.00	\$0.00
CLASSIC CONTAINER CORP.	\$0.00	\$0.00	\$442.83	\$ (442.83)	\$0.00
COCA-COLA REFRESHMENTS USA,	\$2,997.56	\$2,997.56	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$1,328.13	\$696.94	\$631.19	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$94.58	\$94.58	\$0.00	\$0.00	\$0.00
COUNTRY FRESH DAIRY CO.	\$3,211.19	\$3,211.19	\$0.00	\$0.00	\$0.00
CROSS CHEMICAL COMPANY, INC.	\$2,141.74	\$0.00	\$1,156.63	\$0.00	\$985.11
DARLING INGREDIENTS, INC.	\$5,779.15	\$5,779.15	\$0.00	\$0.00	\$0.00
DAVE'S SAUSAGE FACTORY 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN BREWING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE CO., INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT BEER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT LINEN SERVICE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT RIVERTOWN BREWERY CC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT SAUSAGES CO INC	\$41.97	\$22.38	\$11.19	\$8.40	\$0.00
DETRONIC INDUSTRIES, INC.	\$101.79	\$101.79	\$0.00	\$0.00	\$0.00
DIFCO LABORATORIES, INC.	\$23,987.56	\$23,987.56	\$0.00	\$0.00	\$0.00
DIVERSIFIED CHEM TECH. INC.	\$121.56	\$121.56	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,079.53	\$1,079.53	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,579.61	\$1,579.61	\$0.00	\$0.00	\$0.00
DOWNEY BREWING COMPANY	\$49.08	\$0.00	\$49.08	\$0.00	\$0.00
E.W. GROBBEL'S SONS, INC.	\$3,508.12	\$3,508.12	\$0.00	\$0.00	\$0.00
EASTERN MARKET BREWING COMP	\$123.55	\$0.00	\$123.55	\$0.00	\$0.00
ENVIROSOLIDS, L.L.C.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
EQ DETROIT, INC.	\$1,203.10	\$1,203.10	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$3,008.45	\$3,008.45	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$ (1,136.47)	\$0.00	\$0.00	\$0.00	\$ (1,136.47)
EQ DETROIT, INC.	\$ (4,588.50)	\$0.00	\$0.00	\$0.00	\$ (4,588.50)
ETON ST BREWERY- GRIFFIN CLF	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EXTRUDE HONE CORPORATION	\$109.06	\$109.06	\$0.00	\$0.00	\$0.00
EXTRUDEHODE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FARMINGTON BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FAYGO BEVERAGES, INC.	\$16,684.00	\$16,684.00	\$0.00	\$0.00	\$0.00
FORD NEW MODEL PROGRAM	\$1,430.48	\$1,430.48	\$0.00	\$0.00	\$0.00
FOUNDERS BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$461.70	\$461.70	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
G2O ENERGY, LLC	\$4,207.16	\$2,727.10	\$1,480.06	\$0.00	\$0.00
GENERAL LINEN SUPPLY CO.	\$11,665.37	\$10,502.46	\$1,162.91	\$0.00	\$0.00
GLOBAL TITANIUM, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GREAT BARABOO BREWING CO.	\$ (1,934.37)	\$0.00	\$0.00	\$0.00	\$ (1,934.37)
HACIENDA MEXICAN FOODS	\$1,443.78	\$621.91	\$621.91	\$199.96	\$0.00
HENKEL CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
HOME STYLE FOOD INC.	\$5,157.03	\$5,157.03	\$0.00	\$0.00	\$0.00
HOMEGROWN BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HOODS CLEANERS	\$211.33	\$0.00	\$0.00	\$0.00	\$211.33
HOUGHTON INTERNATIONAL INC.	\$175.67	\$175.67	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$134.82	\$134.82	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$2,349.14	\$2,349.14	\$0.00	\$0.00	\$0.00
HUNTINGTON CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INDUSTRIAL METAL COATING	\$727.82	\$727.82	\$0.00	\$0.00	\$0.00
ISLAMIC SLAUGHTER HOUSE	\$1,631.11	\$1,631.11	\$0.00	\$0.00	\$0.00
ITALIAN BUTTER BREAD STICKS	\$7.91	\$7.91	\$0.00	\$0.00	\$0.00
J & G FOOD PRODUCTS, INC.	\$125.89	\$125.89	\$0.00	\$0.00	\$0.00
JAMEX BREWING CO.	\$34.44	\$0.00	\$34.44	\$0.00	\$0.00
KAR NUT PRODUCTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KOWALSKI SAUSAGES, CO.	\$652.23	\$652.23	\$0.00	\$0.00	\$0.00
KUHNHENN BREWING	\$107.63	\$0.00	\$107.63	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$1,235.45	\$1,235.45	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$114.34	\$114.34	\$0.00	\$0.00	\$0.00
LEAR CORPORATION DBA EAGLE C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LIBERTY STREET PROD. BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LILY'S SEAFOOD GRILL & BREWE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MACDERMID, INC.	\$2,457.35	\$2,457.35	\$0.00	\$0.00	\$0.00
MCCLURE'S PICKLES	\$2.65	\$2.65	\$0.00	\$0.00	\$0.00
MCNICHOLS POLISHING & ANODIZ	\$29.95	\$29.95	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MELLO MEATS INC, - KUBISCH S	\$167.85	\$167.85	\$0.00	\$0.00	\$0.00
METROPOLITAN BAKERY	\$457.29	\$457.29	\$0.00	\$0.00	\$0.00
MIBA HYDRAMECHANICA CORP.	\$152.23	\$152.23	\$0.00	\$0.00	\$0.00
MICHIGAN DAIRY	\$78,553.21	\$78,553.21	\$0.00	\$0.00	\$0.00
MICHIGAN PROD. MACHINING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MICHIGAN SOY PRODUCTS CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MIDWEST WIRE PRODUCTS, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MILANO BAKERY	\$655.70	\$655.70	\$0.00	\$0.00	\$0.00
MILTON CHILI CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MINNIE MARIE BAKERS, INC	\$5,571.12	\$5,571.12	\$0.00	\$0.00	\$0.00
MISTER UNIFORM & MAT RENTALS	\$125.69	\$21.92	\$0.00	\$0.00	\$103.77
MOTOR CITY BREWING WORKS	\$781.77	\$175.22	\$0.00	\$0.00	\$606.55
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTH CENTER BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHERN LAKES SEAFOOD & MEAT	\$48.20	\$48.20	\$0.00	\$0.00	\$0.00
OAKWOOD BAKERY	\$468.35	\$468.35	\$0.00	\$0.00	\$0.00
PARKER'S HILLTOP BREWER & SE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PELLERITO FOODS INC.	\$920.02	\$920.02	\$0.00	\$0.00	\$0.00
PEPSI COLA, INC.	\$77,684.39	\$77,684.39	\$0.00	\$0.00	\$0.00
PERSONAL UNIFORM SERVICE, IN	\$66.13	\$66.13	\$0.00	\$0.00	\$0.00
PETRO ENVIRON TECH, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PINE TREE ACRES, INC.	\$80,850.03	\$80,850.03	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
PLATING SPEC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
POWER VAC OF MICHIGAN, INC.	\$69.10	\$69.10	\$0.00	\$0.00	\$0.00
PREMIER PLATING, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PRODUCTION SPRING, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
QUALA SERVICES, LLC	\$1,469.01	\$1,469.01	\$0.00	\$0.00	\$0.00
RAY'S ICE CREAM CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RED SPOT PAINT #409139	\$21.04	\$0.00	\$21.04	\$0.00	\$0.00
RIVER ROUGE BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROAK BREWING CO. LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS BEER COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS PROD BREWERY	\$4,471.35	\$0.00	\$1,388.30	\$0.00	\$3,083.05
RTT	\$26,247.38	\$1,462.38	\$942.79	\$0.00	\$23,842.21
SEAFARE FOODS, INC.	\$64.15	\$64.15	\$0.00	\$0.00	\$0.00
SHERWOOD BREWING COMPANY	\$828.06	\$98.74	\$0.00	\$0.00	\$729.32
SMITH-WATKINS, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPRAYTEK, INC.	\$40.41	\$40.41	\$0.00	\$0.00	\$0.00
SWEETHEART BAKERY, INC.	\$1,396.09	\$147.14	\$80.00	\$75.72	\$1,093.23
THE CROWN GROUP-LIVONIA PLAN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
THE ROYAL OAK BREWERY	\$ (1,289.08)	\$0.00	\$0.00	\$0.00	\$ (1,289.08)
TOM LAUNDRY CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TRAFFIC JAM & SNUG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$26,762.88	\$ (26,762.88)	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 06/30/19

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
U-METCO, INC.	\$1,108.89	\$1,108.89	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$61,276.87	\$61,276.87	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$2,273.06	\$2,273.06	\$0.00	\$0.00	\$0.00
UNIQUE LINEN SERVICES, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNITED FISH DISTRIBUTORS	\$8.85	\$8.85	\$0.00	\$0.00	\$0.00
UNITED LINEN SERVICE, LLC.	\$292.71	\$292.71	\$0.00	\$0.00	\$0.00
UNITED MEAT & DELI	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
URBANREST BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
US ECOLOGY MICHIGAN	\$440.02	\$440.02	\$0.00	\$0.00	\$0.00
US ECOLOGY ROMULUS, INC.	\$2,644.25	\$2,644.25	\$0.00	\$0.00	\$0.00
USHER OIL SERVICES	\$5,170.28	\$5,170.28	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS	\$11,391.34	\$11,391.34	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS, INC.	\$8,400.74	\$8,400.74	\$0.00	\$0.00	\$0.00
VERNOR FOOD PRODUCTS	\$ (36.26)	\$0.00	\$0.00	\$0.00	\$ (36.26)
WIGLEY'S MEAT PROCESS	\$559.52	\$559.52	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$858.85	\$858.85	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$153.87	\$153.87	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO	\$7,354.35	\$7,354.35	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO.	\$3,094.09	\$3,094.09	\$0.00	\$0.00	\$0.00
WOODWARD AVENUE BREWERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL POLLUTANT SURCHARGE ACCOUNTS	\$593,160.17	\$543,821.51	\$35,336.05	\$ (26,899.48)	\$40,902.09

City of Highland Park Billings and Collections

	<u>Water</u>	<u>Sewer</u>	<u>IWC</u>	<u>Cumulative Total</u>
June 30, 2012 Balance	\$ -	\$ 10,207,956	\$ 852,987	\$ 11,060,943
FY 2013 Billings	485,887	4,987,635	154,444	5,627,966
FY 2013 Payments	<u>(65,652)</u>	<u>(2,206,211)</u>	<u>-</u>	<u>(2,271,863)</u>
				-
June 30, 2013 Balance	\$ 420,235	\$ 12,989,380	\$ 1,007,431	\$ 14,417,046
FY 2014 Billings	1,004,357	6,980,442	161,951	8,146,750
FY 2014 Payments	<u>-</u>	<u>(1,612,633)</u>	<u>-</u>	<u>(1,612,633)</u>
				-
June 30, 2014 Balance	\$ 1,424,592	\$ 18,357,189	\$ 1,169,382	\$ 20,951,163
FY 2015 Billings	1,008,032	5,553,123	165,739	6,726,894
FY 2015 Payments	<u>-</u>	<u>(1,444,623)</u>	<u>-</u>	<u>(1,444,623)</u>
				-
June 30, 2015 Balance	\$ 2,432,625	\$ 22,465,689	\$ 1,335,121	\$ 26,233,435
FY 2016 Billings	1,157,178	5,612,167	106,431	6,875,776
FY 2016 Payments	<u>-</u>	<u>(2,022,335)</u>	<u>-</u>	<u>(2,022,335)</u>
				-
June 30, 2016 Balance	\$ 3,589,803	\$ 26,055,521	\$ 1,441,551	\$ 31,086,875
FY 2017 Billings	1,245,267	5,802,000	101,999	7,149,265
FY 2017 Payments	<u>-</u>	<u>(2,309,186)</u>	<u>-</u>	<u>(2,309,186)</u>
				-
June 30, 2017 Balance	\$ 4,835,070	\$ 29,548,335	\$ 1,543,550	\$ 35,926,954
FY 2018 Billings	1,277,179	5,657,101	80,472	7,014,752
FY 2018 Payments	<u>-</u>	<u>(4,108,108)</u>	<u>-</u>	<u>(4,108,108)</u>
				-
June 30, 2018 Balance	\$ 6,112,248	\$ 31,097,327	\$ 1,624,022	\$ 38,833,597
FY 2019 Billings (12 Months)	1,238,797	5,617,100	51,220	6,907,117
FY 2019 Payments (12 Months)	<u>-</u>	<u>(5,241,583)</u>	<u>-</u>	<u>(5,241,583)</u>
				-
Balance as of June 30, 2019	<u>\$ 7,351,045</u>	<u>\$ 31,472,844</u>	<u>\$ 1,675,243</u>	<u>\$ 40,499,132</u>



Debt Summary
for the Quarter Ended June 30, 2019

The Quarterly Debt Summary Report includes the following:

1. Key Takeaways
2. Look Ahead – Five Year Capital Financing Plan
3. Existing Debt
4. Debt Service Coverage
5. Potential Refinancing Opportunities

Pursuant to leases that became effective on January 1, 2016, the Great Lakes Water Authority (GLWA) assumed possession and control of the regional assets of both the water supply and sewage disposal systems owned by the City of Detroit (City), which were previously operated by the Detroit Water and Sewerage Department (DWSD). GLWA assumed certain liabilities including State Revolving Fund loans and 100% of the revenue bond debt issued by DWSD prior to January 1, 2016, pursuant to terms of bond issues in calendar years 2014 and 2015, along with a bondholder consent solicitation in 2015.

The bonds are repaid by the revenues of the water and sewage systems including the DWSD retail system (local system) revenues which are the exclusive property of GLWA in accordance with Section 5.7 of each lease agreement. The DWSD is GLWA's agent for purposes of billing and collection of the retail system revenues for both the water and sewer system, as set forth in a water and sewer services agreement between the City and GLWA. All revenue receipts are deposited into a trust and administered in compliance with the Master Bond Ordinance, applicable to each system (referred to herein collectively as the "MBO").

The leases also provide that GLWA will finance local system improvements of DWSD. GLWA is the obligor of 100% of the debt payable which is recorded in GLWA's books. An "obligation receivable" is recorded by GLWA which represents the amount related to the DWSD retail system improvements. Accordingly, DWSD records an "obligation payable" for a like amount.

GLWA maintains detailed records of all debt issuances and how that debt is allocated between the regional system and local system, as well as between the water and sewer systems. GLWA and DWSD regularly reconcile interrelated accounts between the entities.

The lease agreements, water and sewer services agreement, and MBO noted above are available on GLWA's website at www.glwater.org. The above explanation is a synopsis of key points and is not intended to fully represent the agreements or any sub-sections thereof.

Key Takeaways

- ✓ The purpose of this report is to provide a resource for stakeholders and to support management decisions as capital financing needs evolve.
- ✓ GLWA continues to enhance transparency by including the Debt Summary Report in the Audit Committee Binder quarterly.
- ✓ Currently, GLWA has six open State Revolving Fund (SRF) loans, three for water and three for sewer.
- ✓ Specific key items of interest include the following along with the balance as of June 30, 2019.

As of June 30, 2019 (\$ Millions)		
	Water	Sewer
FY 2019 Approved SRF Projects - Table 5	\$162.2	\$10.3
DWSD Obligation Receivable - Table 6	\$476.7	\$417.2
GLWA Outstanding Debt - Table 7	\$2,250.2	\$3,093.3

Look Ahead - Five Year Capital Financing Plan

The following tables summarize the projected Capital Improvement Program (CIP) funding to be provided by proceeds received from the issuance of new revenue bonds and draws on committed SRF loans. *The financing plan is dynamic and changes with the pace of capital spending and alignment with refunding opportunities.* These schedules are based upon the recently approved FY 2020 to FY 2024 Capital Improvement Plan (CIP) for the regional system by the GLWA Board of Directors and for the local system by the DWSD's Board of Water Commissioners. It is important to note the amounts represented in Revenue Bonds reflect the anticipated par amount of the bonds to be issued and not the net proceeds needed to support the capital plan.

Table 1 - GLWA Projected Financing Needs FY 2020 – FY 2024

Projected Funding Needs for Regional System					
	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Water					
Revenue Bonds	\$ -	\$ -	\$ 62,000,000	\$ 56,000,000	\$ 56,000,000
SRF loan draws	5,531,000	18,367,000	24,115,000	29,615,000	29,994,000
Total projected funding Water	\$ 5,531,000	\$ 18,367,000	\$ 86,115,000	\$ 85,615,000	\$ 85,994,000
Sewer					
Revenue Bonds	\$ 84,000,000	\$ 87,000,000	\$ 91,000,000	\$ 69,000,000	\$ 13,000,000
SRF loan draws	29,342,000	8,280,000	1,343,000	-	-
Total projected funding Sewer	\$ 113,342,000	\$ 95,280,000	\$ 92,343,000	\$ 69,000,000	\$ 13,000,000

Table 2 - DWSD Projected Bond Financing Needs FY 2020 – FY 2024

Projected Funding Needs for Local System					
	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Water					
Revenue Bonds	\$ 100,000,000		\$ 50,000,000	\$ -	\$ 50,000,000
SRF loan draws	\$ 4,020,000	\$ 12,040,000	\$ -	\$ -	\$ -
Total projected funding Water	\$ 104,020,000	\$ 12,040,000	\$ 50,000,000	\$ -	\$ 50,000,000
Sewer					
Revenue Bonds	\$ -	\$ -	\$ 50,000,000	\$ -	\$ -
SRF loans draws	\$ -	\$ -	\$ -	\$ -	\$ -
Total projected funding Sewer	\$ -	\$ -	\$ 50,000,000	\$ -	\$ -

Note: Information presented is as of June 30, 2019. Financing plans continue to evolve based on the needs of the system.

Existing Debt

Current Debt Ratings: Bond ratings are a key measure of an organization's financial strength. Ratings are established by independent agencies that conduct detailed reviews of an organization's operational and financial performance to assist those seeking to invest in an organization through the purchase of bonds. GLWA actively monitors its debt ratings and continually seeks to make operational and financial improvements to improve its bond ratings. Achieving higher ratings will allow GLWA to finance its capital needs at lower interest rates.

Table 3 – Debt Ratings by System provides a summary of the debt ratings assigned in September 2018, in advance of the most recent bond issuances in October 2018, as well as the ratings assigned to the Junior Lien debt in November 2018.

Current Debt Ratings			
	S&P Global Ratings	Moody's Investors Service	Fitch Ratings
Water Supply System Revenue Bonds			
Senior lien	AA-	A2	A
Second lien	A+	A3	A-
Junior lien	A+	N/A	N/A
Outlook	Stable	Stable	Positive
Sewage Disposal System Revenue Bonds			
Senior lien	A+	A2	A
Second lien	A	A3	A-
Junior lien	A	N/A	N/A
Outlook	Positive	Stable	Positive

Debt Allocation: GLWA has nearly \$2.3 billion in water system debt and \$3.1 billion in sewer system debt for a combined total of over \$5.3 billion. Debt within each system is prioritized according to its security interest, or lien category, with senior lien debt having the highest security interest, followed by second lien and finally junior lien.

Chart 1 - Debt Type by Lien – Water provides a breakdown of the total water system debt for both the regional and local systems by lien type.

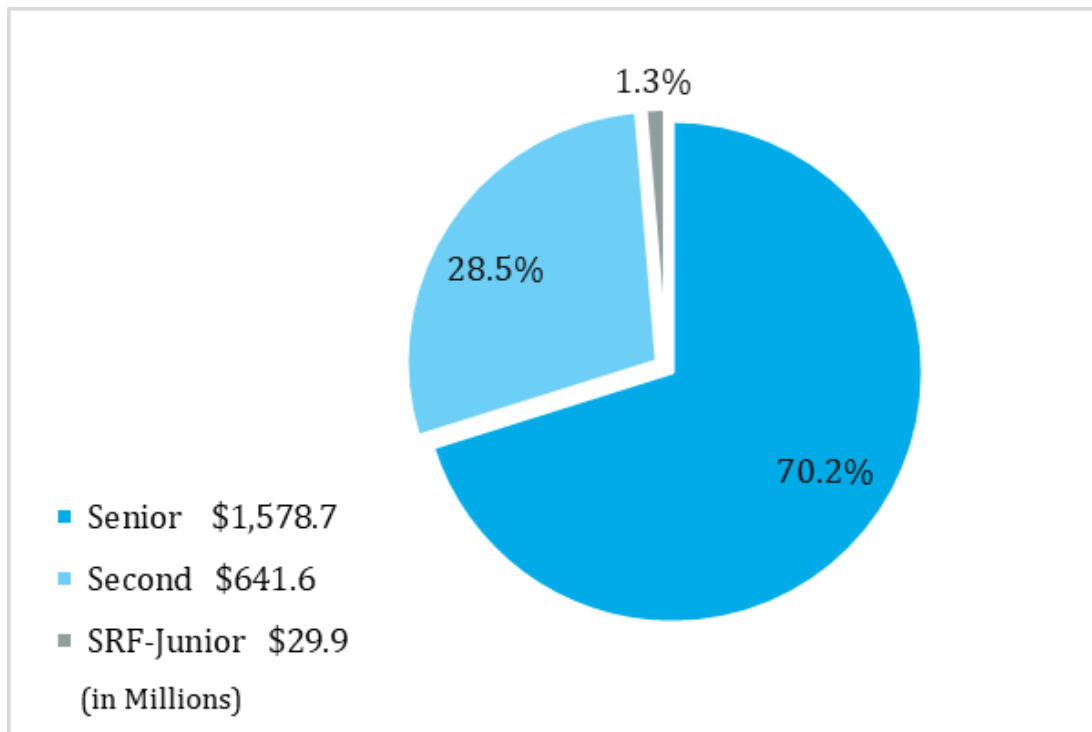


Chart 2 - Debt Type by Lien – Sewer provides a breakdown of the total sewer system debt for both the regional and local systems by lien type.

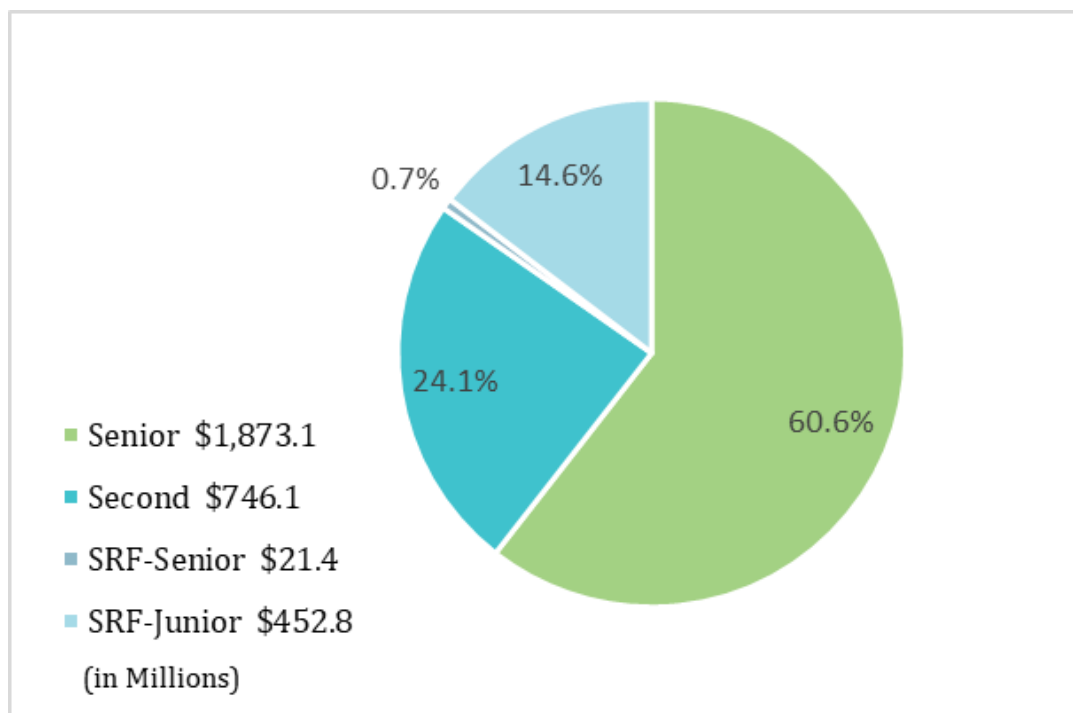


Chart 3 – Annual Debt Service Payments by Lien – Water provides the amortization schedule of combined annual debt service requirements by due dates within the fiscal year.

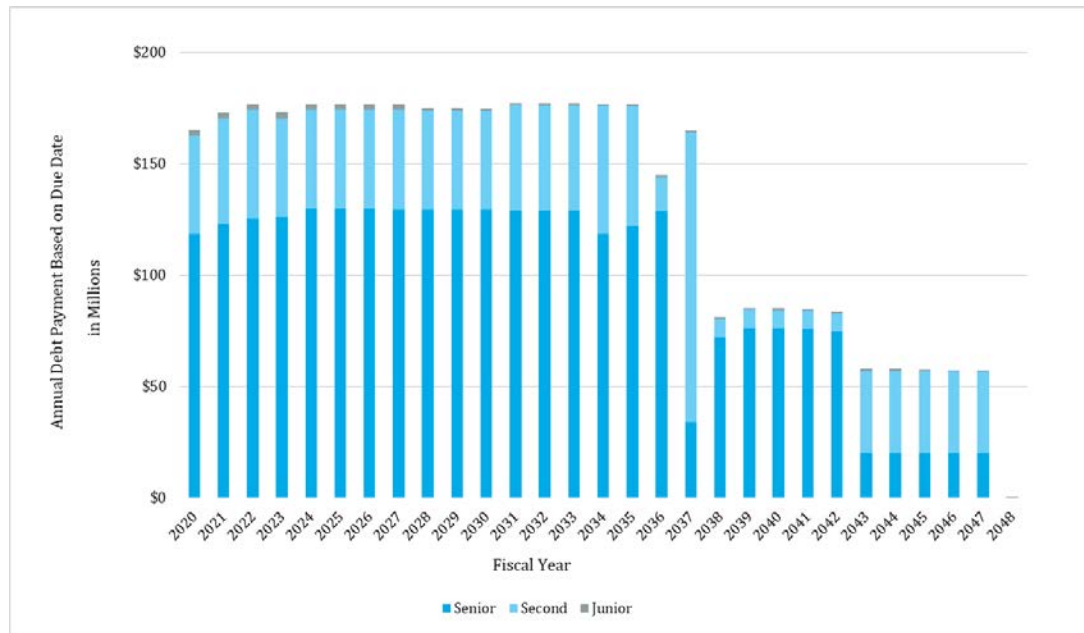
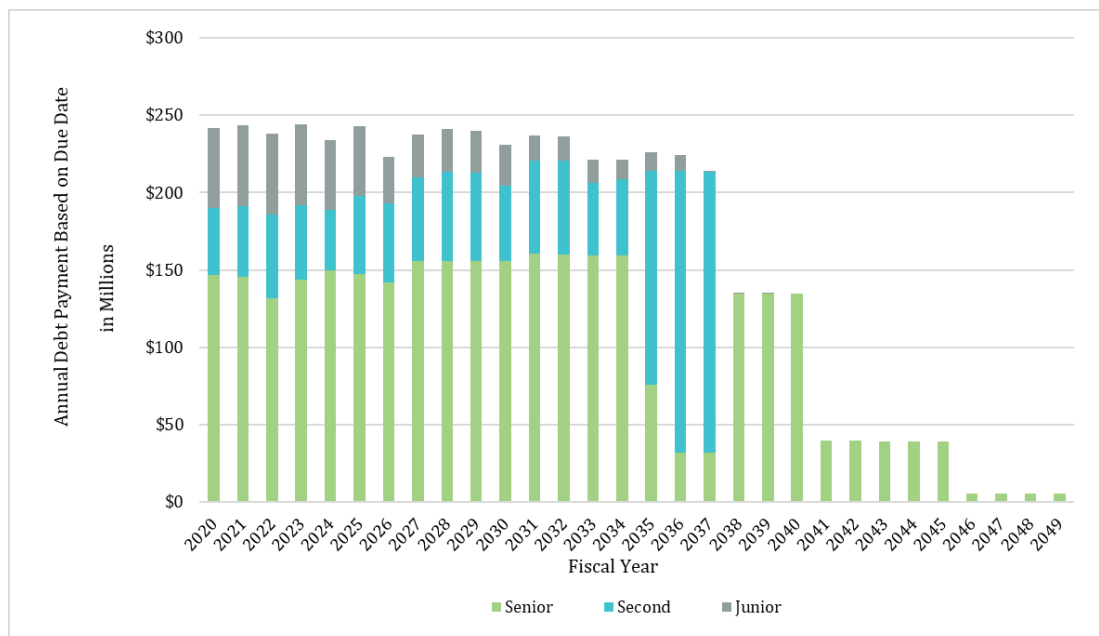


Chart 4 – Annual Debt Service Payments by Lien – Sewer provides the amortization schedule of combined annual debt service requirements by due dates within the fiscal year.



Note: Approximately one-half of the Senior and Second lien bonds are due the first day of the fiscal year and is actually paid by June 30 annually. Charts 3 & 4 accurately reflect the amounts due annually, but this information will differ from the yearend Comprehensive Annual Financial Report which requires a different manner of reporting.

State of Michigan's State Revolving Fund (SRF) Programs: GLWA participates in the State's Clean Water Revolving Fund (CWRF) to finance qualified sewage disposal system projects and the State's Drinking Water Revolving Fund (DWRF) to finance qualified water supply system projects. For the purposes of this report, both water and sewer projects financed through these programs will be referred to as either water or sewer SRF loans.

These loan programs have interest rates that are well below open market interest rates (usually between 2.0% and 2.5%) and are repaid over 20-30 years. Funds are disbursed as construction payments are made. Interest on each loan is based on the amount of funds drawn and not the full loan amount. GLWA must submit project plans to Michigan Department of Environment, Great Lakes, and Energy ("EGLE", and formerly known as the Michigan Department of Environmental Quality or MDEQ) for each project by the annual submission date (May 1 for DWRF and July 1 for CWRF) in order to be considered for the State's funding pool for the following fiscal year.

State Revolving Fund Loans: GLWA's strategy is to maximize its use of SRF loans to finance qualified capital projects. GLWA currently has over \$29.9 million in outstanding water SRF loans and \$474.2 million in outstanding sewer SRF loans.

Table 4 - Active SRF Project Summary provides information regarding each loan including the loan award date which is also referred to as the Order of Approval date by the State of Michigan.

State Loan #	Description	Order of Approval	Project Total
SRF Water - DWSD Projects			
7413-01	Water Main Replacement (WS-697)	8/24/2016	\$5.2
7414-01	Water Main Replacement (WS-698)	6/1/2017	\$8.7
SRF Water - GLWA Projects			
7446-01	Lake Huron Sludge System-Raw Sludge Clarifiers	5/17/2019	\$8.3
Total Water			\$22.2
SRF Sewer - GLWA Projects			
5635-01	Aeration System Improvements	8/24/2016	\$19.3
5636-01	Rehab Rectangular Primary Clarifiers, Electrical/Mechanical Buildings and Pipe Gallery	8/24/2016	\$51.3
5651-01	RRO Disinfection (Phase II)	3/13/2015	\$38.5
5655-01	Detroit River Interceptor	8/23/2018	\$13.2
Total Sewer			\$122.2

Chart 5 - Open State Revolving Fund Loans summarizes all current SRF loans held by GLWA (including financings on behalf of DWSD) that are active (reference Table 4 above for project descriptions). It summarizes the original award amount remaining and the amount drawn down as of June 30, 2019 for each loan.

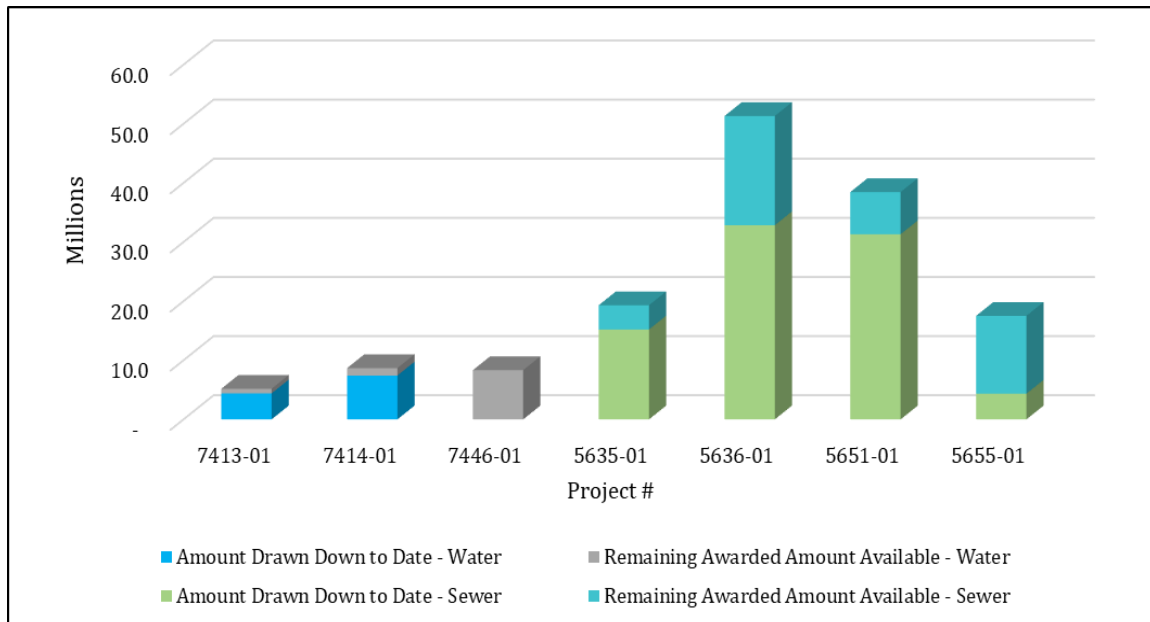


Table 5 - Project Plan Approved by EGLE identifies projects approved by the EGLE but for which applications have not yet been submitted for funding.

Project Owner	Description	Project Total	Anticipated Funding Date
Water SRF			
GLWA	Water Conveyance System-84" Transmission Main - Segment I "Improvements to Flow Control Station" (1st Loan - FY 19-4th Quarter)	\$ 29,950,000	8/30/2019
GLWA	Water Conveyance System-84" Transmission Main - Segment II+ (2nd loan or more FY 20 - beyond)	115,727,000	8/30/2020
DWSD	DWSD Water Main Replacement (FY 19-2nd Quarter)	16,500,000	8/30/2019
Total Water SRF		\$ 162,177,000	
Sewer SRF			
GLWA	Ferric Chloride System Rehabilitation (FY 19-4th Quarter)	\$ 10,297,181	3/27/2020
Total Sewer SRF		\$ 10,297,181	

DWSD Obligation Receivable: GLWA holds an obligation receivable from DWSD as an asset to account for the amount due for financing local system capital projects. DWSD carries a like amount of this as an obligation payable on its statement of net assets.

There are three components to the calculation of the DWSD obligation receivable. These are:

- an agreed upon amount for pre-January 1, 2016 (i.e. “pre-bifurcation”) debt as documented in a 2018 Memorandum of Understanding (\$455 million for water system and \$370 million for sewer per agreed-upon amortization schedules),
- new revenue bonds issued after January 1, 2016 to specifically fund the DWSD local system capital improvement projects which are payable based on the allocable share of the actual bonds debt service schedule, and
- SRF loans entered into for specific DWSD capital projects which are payable based on the allocable share of the actual loan payment schedule.

All retail customer revenues are deposited into a trust to fund these financial obligations in accordance with the MBO flow of funds.

Chart 6 - DWSD Obligation Receivable by Type summarizes the total DWSD obligation receivable balance for both Water and Sewer as of June 30, 2019 by pre-bifurcation, revenue bond and SRF component.

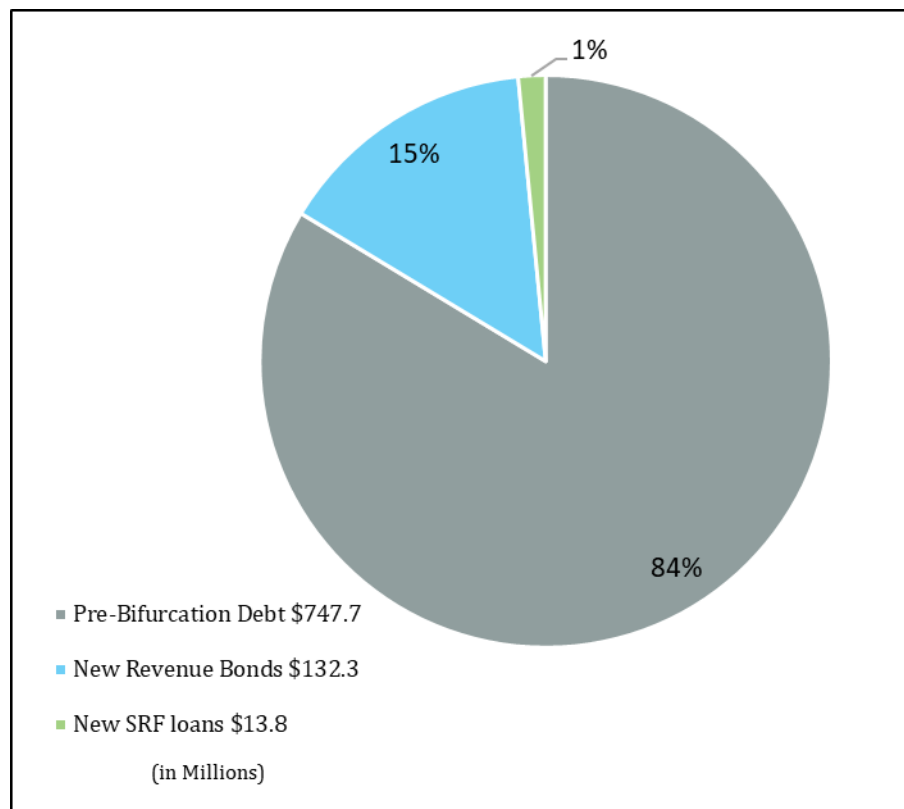


Chart 7 – Obligation Receivable Compared to Total Debt - Water provides context by comparing the Water System Obligation Receivable to the Total Water Debt (excludes unamortized premiums).

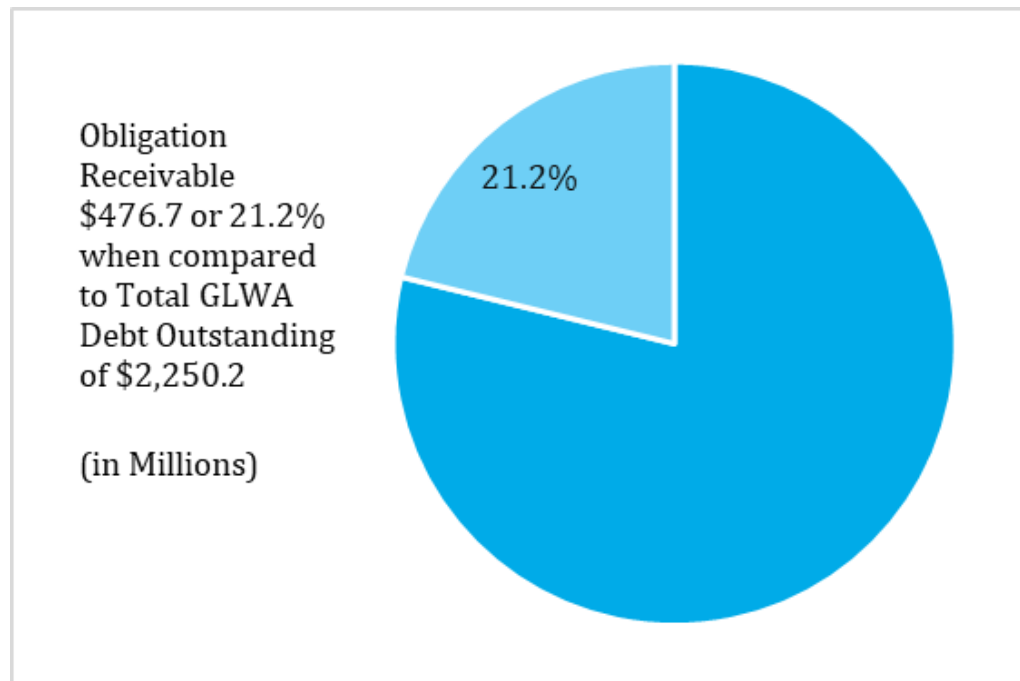


Chart 8 – Obligation Receivable Compared to Total Debt - Sewer provides context by comparing the Sewer System Obligation Receivable to the Total Sewer Debt (excludes unamortized premiums).

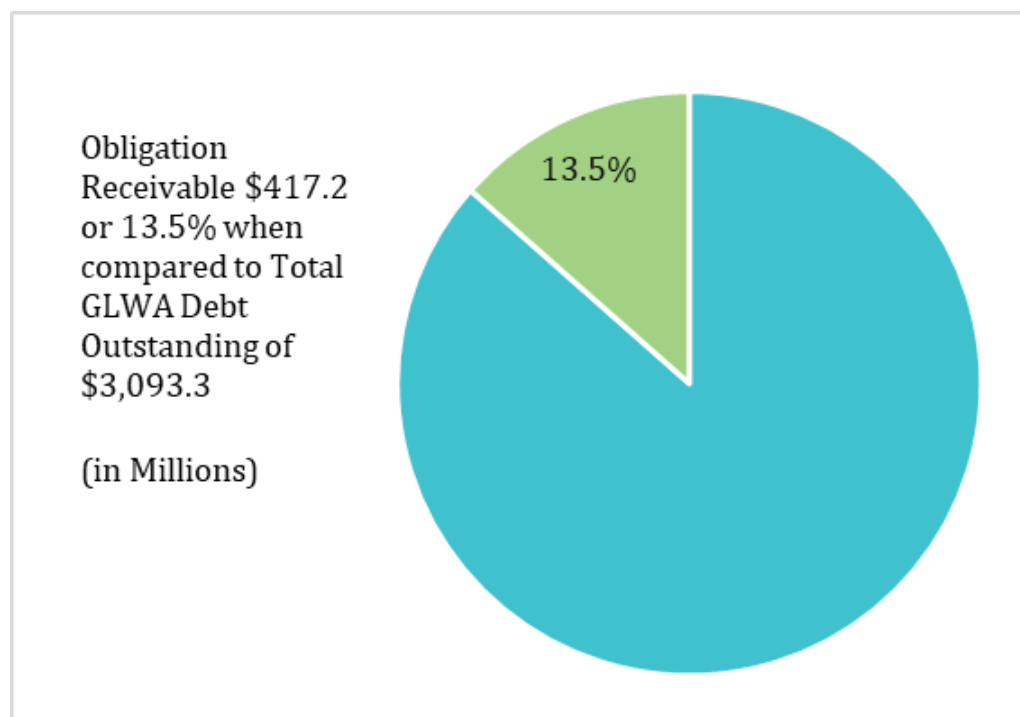


Table 6 - DWSD Obligation Receivable provides obligation receivable detail including fiscal year 2019 beginning balances by debt type and loan issue (for revenue bonds and SRF loans), year-to-date activity and ending balances as of June 30, 2019. Total DWSD debt totals \$909.7 million. This differs slightly from the total in Chart 8 due to the inclusion of unamortized premiums.

(In Thousands)

Debt Type	July 1, 2018 Beg Balance	Increase	Decrease	SRF Debt Forgiveness	June 30, 2019 End Balance
DWSD Water					
Pre-Bifurcation Debt	\$ 425,334		\$ (13,193)		\$ 412,141
Revenue Bond - 2016A	17,725				17,725
Revenue Bond - 2016B	33,015				33,015
SRF 7412-01	4,910	310	(136)		5,084
SRF 7413-01	3,354	40	(95)		3,299
SRF 7414-01	-	5,506		(85)	5,420
Total DWSD Obligation	484,337	5,856	(13,424)	(85)	476,683
Unamortized Premiums	6,262		(136)		6,127
Subtotal: Water	490,600	5,856	(13,560)	(85)	482,810
DWSD Sewer					
Pre-Bifurcation Debt	346,828		(11,254)		335,575
Revenue Bond - 2018A		81,595			81,595
Total DWSD Obligation	346,828	81,595	(11,254)	-	417,170
Unamortized Premiums		9,937	(250)		9,687
Subtotal: Sewer	346,828	91,532	(11,503)	-	426,857
Total DWSD Debt	\$ 837,428	\$ 97,388	\$ (25,063)	\$ (85)	\$ 909,667

Annual Change in Outstanding Debt: It is the goal of GLWA to ensure the long-term sustainability of the water and sewer systems. One of the best ways to accomplish this is by reducing the debt service payments on existing bonds as well as reducing the amounts of future bond issues by using revenue financed capital.

Table 7 - Long-Term Debt Summary provides a detail of GLWA's fiscal year 2019 beginning balances by debt type and loan issues, year-to-date activity, and ending balances as of June 30, 2019. GLWA debt includes financing for both the regional and local share. Most notably is the refunding as shown in the schedule below.

Debt Type	(In Thousands)					
	June 30, 2018 Beg Balance	Increase	Decrease	Refunding	Debt Forgiveness	June 30, 2019 End Balance
Water Fund						
Revenue Bonds	\$ 2,284,825	\$ 155,595	\$ (41,365)	\$ (178,735)	\$ -	\$ 2,220,320
State Revolving Loans	25,436	6,285	(1,775)	-	(85)	29,861
Total Installment Debt	2,310,261	161,880	(43,140)	(178,735)	(85)	2,250,181
Unamortized Premiums / Discounts	255,838	19,731	(16,619)	(12,710)	-	246,241
Subtotal: Water	2,566,099	181,612	(59,759)	(191,445)	(85)	2,496,422
Sewer Fund						
Revenue Bonds	2,584,065	257,465	(29,450)	(207,690)	-	2,604,390
Capital Appreciation bonds	17,250	-	(2,470)	-	-	14,780
State Revolving Loans	475,678	45,258	(46,459)	-	-	474,477
Total Installment Debt	3,076,993	302,723	(78,379)	(207,690)	-	3,093,647
Capital Appreciation Bond Discount	(2,266)	-	864	-	-	(1,402)
Unamortized Premiums / Discounts	155,026	32,322	(5,036)	(22,505)	-	159,807
Subtotal: Sewer	3,229,752	335,046	(82,551)	(230,195)	-	3,252,052
Total Combined, Long Term Debt	\$ 5,795,851	\$ 516,657	\$ (142,310)	\$ (421,640)	\$ (85)	\$ 5,748,474

Debt Service Coverage

GLWA is committed to ensuring the long-term sustainability of the water and sewer systems and has pledged specific revenue streams to secure the repayment of the revenue bonds and SRF loans associated with them. The MBO establishes minimum debt coverage levels at 1.20 for senior lien bonds, 1.10 for second lien bonds and 1.00 for any junior lien bonds, other than second lien bonds. Debt service coverage ratios are inclusive of all debt held on behalf of both GLWA and DWSD.

Table 8: Debt Service Coverage Ratios provides a summary of the debt service coverage ratios for the water and sewer systems as reported in the Comprehensive Annual Financial Report (CAFR) for 2016, 2017 and 2018 as well as ratios based on the adopted FY 2019 Budget and FY 2020 Budget. Debt service coverage is calculated by dividing the Net Revenues for the fiscal year of calculation by the debt service installment requirements on bonds for such fiscal year all for such priority of lien and any higher priority of lien.

Water - Debt Type	MBO Required Minimum	Actual 2016	Actual 2017	Actual 2018	Adopted Budget 2019	Adopted Budget 2020
Senior Lien Bonds	1.20	2.11	2.03	2.03	2.03	1.94
Senior and second lien bonds	1.10	1.59	1.57	1.52	1.44	1.40
All bonds, including SRF junior lien	1.00	1.58	1.56	1.51	1.41	1.38

Sewer - Debt Type	MBO Required Minimum	Actual 2016	Actual 2017	Actual 2018	Adopted Budget 2019	Adopted Budget 2020
Senior Lien Bonds	1.20	2.33	2.32	2.11	2.01	2.11
Senior and second lien bonds	1.10	1.72	1.73	1.61	1.55	1.61
All bonds, including SRF junior lien	1.00	1.43	1.39	1.29	1.23	1.26

Potential Refunding Opportunities

In an effort to reduce the annual water and sewer debt service payments, GLWA monitors its outstanding water and sewer debt portfolios to determine if it has the ability to refund existing bond issues with new, lower interest rate bonds. At least once per year, GLWA's registered municipal advisor, PFM Financial Advisors, LLC (PFM) prepares an analysis of GLWA's bond refunding opportunities based on the current municipal interest rate environment and the existing debt service on GLWA's callable bonds. The latest PFM analysis will be presented at the September 20, 2019 Audit Committee meeting.