



## Audit Committee

Friday, November 16, 2018 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. October 26, 2018 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
  - A. FY 2018 Year-end Audit Progress Report (Page 4)
  - B. Investment Strategy and Related Proposed Contract Extension (Page 6) with PFM Asset Management LLC (GLWA Contract No. GLWA CS-022)
  - C. FY 2030 Financial Forecast Update (Page 40)
  - D. Capital Improvement Plan Relative to Financial Plan (Continued) (Page 47)
  - E. Reconciliation Committee Update (Page 58)
  - F. Oakland-Macomb Interceptor Drainage District Update (Page 60)
7. NEW BUSINESS
  - A. Inaugural Ratings for Junior Lien Debt (Page 79)
8. REPORTS
  - A. Quarterly Investment Report (Page 90)
  - B. Monthly Financial Report for August 2018 (Page 120)
  - C. CFO Update Topics (verbal)
    - i. Legacy Pension
9. LOOK AHEAD

Next Audit Committee Meeting – December 21, 2018 at 8 am (Regular Meeting)
10. INFORMATION
  - A. Calendar Year 2019 Audit Committee Meeting Dates (Page 179)
  - B. FY 2020 Charges Rollout Meeting Schedule (Page 180)
11. OTHER MATTERS
12. ADJOURNMENT

*Note: Binders 1 and 2 are combined in agenda order and document was renumbered.*



# Great Lakes Water Authority

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

## Meeting Minutes - Draft

### Audit Committee

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Friday, October 26, 2018

8:00 AM

Water Board Building 5th Floor

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#### 1. Call To Order

Chairman Baker called the meeting to order at 8:05 a.m.

#### 2. Quorum Call

**Present:** 3 - Chairman Brian Baker, Director Gary Brown, and Director Robert Daddow

Note: Director Brown's attendance via teleconference.

#### 3. Approval of Agenda

Chairman Baker requested a Motion to approve the Agenda.

**Motion By:** Robert Daddow

**Support:** Gary Brown

**Action:** Approved

The motion carried unanimously.

#### 4. Approval of Minutes

[2018-973](#) Approval of Minutes-September 21, 2018

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Meeting Minutes September 21 2018](#)

Chairman Baker requested a Motion to approve the September 21, 2018 Audit Committee Meeting Minutes.

**Motion By:** Robert Daddow

**Support By:** Gary Brown

**Action:** Approved

The motion carried by a unanimous vote.

#### 5. Public Comment

There were no public comments.

#### 6. Old Business

[2018-974](#) Status Update: 2018 Contract Alignment Process and Wholesale Water Contract Reopeners

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Status Update: 2018 Contract Alignment Process and Wholesale Water Contract Reopeners- 10.26.18](#)

**Motion By: Robert Daddow**  
**Support By: Brian Baker**  
**Action: Received and Filed**  
The motion carried by a unanimous vote.

## 7. New Business

A. [2018-975](#) FY 2018 Year-end Audit Progress Report

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [FY 2018 Year-end Audit Progress Report](#)  
[Audit Planning Schedule for Audit Committee Meeting 10-26-2018](#)

**Motion By: Robert Daddow**  
**Support By: Gary Brown**  
**Action: Received and Filed**  
The motion carried by a unanimous vote.

B. [2018-976](#) Capital Improvement Plan Relative to Financial Plan

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Capital Plan Relative to Financial Plan 10.26.2018](#)  
[Draft CIP Observations 102418](#)

Director Brown made a Motion, Supported by Director Daddow, to postpone the Capital Improvement Plan Relative to Financial Plan to the November 16, 2018 Audit Committee Meeting.

C. [2018-977](#) Proposed 2019 Audit Committee Meeting Dates

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [GLWA Audit Committee Memo 2019 Meeting Calendar](#)

**Motion By: Robert Daddow**

**Support By: Brian Baker**

**Action: Approved**

**The motion carried by a unanimous vote.**

**8. Reports**

A. [2018-978](#) Monthly Financial Report for July 2018

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Monthly Financial Report for July 2018](#)

**Motion By: Robert Daddow**

**Support By: Gary Brown**

**Action: Received and Filed**

**The motion carried by a unanimous vote.**

B. CFO Update (verbal)

**Nicolette Bateson, Chief Financial Officer/Treasurer, gave an update regarding rating agencies.**

**9. Look Ahead**

The next Audit Committee Meeting is scheduled for November 16, 2018 at 8 am (Regular Meeting).

**10. Information**

None

**11. Other Matters**

None

**12. Adjournment**

**There being no further business, Chairman Baker adjourned the meeting at 10:07 a.m.**



## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

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

**Re:** FY 2018 Year-end Audit Progress Report

**Background:** The fieldwork for the audit of the Great Lakes Water Authority's FY 2018 financial statements began on October 15, 2018 and is currently winding down. Ken Melvin from Rehmann Robson, auditors for GLWA, was in attendance at the October 26, 2018 Audit Committee meeting to review the progress report (attached).

**Analysis:** Mr. Melvin will be in attendance at the November 16, 2018 Audit Committee meeting to provide a verbal update on the audit process. At the time of the preparation of this memo, staff and auditors are working on draft financial statements and footnotes. We are reworking some of the financial statement account groupings and supplemental schedules in response to inquiries received during the 2018 bond sale from key stakeholders. While this is causing a delay of approximately three to six calendar days, it is presently anticipated that the audit report will be issued on or about December 13, 2018.

**Proposed Action:** Receive and file report.

# Memo

**To:** Great Lakes Water Authority Audit Committee  
**From:** Ken Melvin, Manager (Rehmann)  
**cc:** Mark Kettner, Principal (Rehmann), Nicolette Bateson, Chief Financial Officer (GLWA)  
**Date:** October 26, 2018  
**Re:** Great Lakes Water Authority Audit Status and Comprehensive Annual Financial Report (CAFR)

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We have prepared this memo to communicate to the audit committee our expectations regarding the timing of fieldwork, review, draft reports and issuance of the CAFR. The schedule below summarizes expected milestone dates to meet a deadline of issuance on December 13, 2018.

	<b>Due Date</b>
	<b>Thursday, December 13, 2018</b>
All audit workpapers uploaded to portal for audit	<b>Monday, October 29, 2018</b>
End of Fieldwork (Including first review)	<b>Friday, November 09, 2018</b>
Draft back from detail check by Rehmann	<b>Monday, November 12, 2018</b>
Draft to Audit Committee	<b>Friday, November 16, 2018</b>
Draft to Mark Kettner	<b>Friday, November 16, 2018</b>
Comments returned from GLWA management to Rehmann *	<b>Friday, November 30, 2018</b>
Draft to Stephen Blann for technical review and concurrence	<b>Friday, December 07, 2018</b>
Presentation of Draft to full Board of Directors	<b>Wednesday, December 12, 2018</b>
Issuance of the CAFR	<b>Thursday, December 13, 2018</b>
Meeting with the Audit Committee to present the CAFR	<b>Friday, December 21, 2018</b>

\* - Comments should include everyone on team in addition to various third parties (i.e. attorneys, bond advisors, etc.). Ideally, all changes would be accumulated into one file and given to us.



## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

**From:** Deirdre Henry, Treasury Manager

**Re:** Investment Strategy and Related Proposed Contract Extension with PFM Asset Management LLC (GLWA Contract No. GLWA CS-022)

**Background:** In November 2015, Great Lakes Water Authority (GLWA) engaged PFM Asset Management LLC (PFM) as a registered investment advisor to assist with 1) identifying portfolio and cash management optimization opportunities, 2) overcome personnel resource constraints during the stand-up of both GLWA and DWSD-Retail, 3) expand the transparency and capacity of investment portfolio reporting, and 4) provide an added level of controls.

PFM has worked with the GLWA treasury staff to 1) negotiate and increase bank earnings credit rates, 2) invest debt service and debt reserve funds, 3) transition balances in bank deposit accounts to higher yielding government money market and local government investment pools, 4) invest funds in construction and trust accounts into longer term investment securities, 5) develop quarterly investment report package and 6) identify a portfolio strategy appropriate for GLWA. With PFM's assistance, GLWA earned \$4.3 million in investment income for fiscal year 2017 and \$13.2 million in fiscal year 2018. The projected investment earnings for fiscal year 2019 is \$19 million.

The original PFM contract amount in 2015, which did not contemplate PFM actively managing the portfolio, was \$250,000. As we have worked through the optimization of the portfolio, identifying cash management opportunities, development of the reporting package, and PFM's management of the portfolio, the contract has been extended and increased two times. The current contract total amount is \$700,000 and is scheduled to expire December 2018.

**Analysis:** The use of a registered investment advisor has proven to be a cost effective and efficient approach to portfolio management. The investment advisor allows GLWA to have direct access to financial market expertise while allowing the treasury team to focus on the development of cash flows, treasury internal controls, and process improvements.

We have now reached a steady state in identifying GLWA cash flows and fund balances. Based on the analysis and review of our portfolio we have identified an investment strategy for GLWA. This strategy segregates the funds into cash flow portfolios and benchmarked portfolios. The cash flow portfolios will be managed using the Earnings Target Approach which focuses on income stability and specific cash flow predictability. The benchmarked portfolios are proposed to be managed using a Total Return Approach with PFM having approval to actively manage the portfolio to

maximize investment returns while considering financial market conditions and GLWA goals of liquidity and safety. It should be noted that this change in strategy that achieves a desired outcome of increased investment earnings while preserving compliance with GLWA’s investment policy and Michigan Public Act 20, *Investments of Surplus Funds of Political Subdivisions*.

GLWA Treasury recommends an investment strategy which includes active management of some of the funds. Given the timing for implementation of this investment strategy, it is recommended that the PFM contract be extended for a year to allow for stability of this investment approach. The contract extension would be through December 2019 and increase the contract amount by \$370,000. The total life-to-date PFM contract amount after this increase would be \$1,070,000 which requires approval action by the GLWA Board.

The fees charged by PFM are reasonable. As a measure of reasonableness, the total contract amount of \$1,070,000 is 2.9% of the total portfolio income for FY 2017, FY 2018 and FY 2019. In addition, the estimated annual fee of \$415,000 is .04% of the September 2018 investment portfolio balance of \$981,577,211.

<b>Portfolio Income</b>	
FY 2017	\$4,300,000
FY 2018	13,200,000
Projected FY 2019	<u>19,000,000</u>
Total Portfolio Income	<u>\$36,500,000</u>
<b>PFM Contract</b>	
Original Contract Amount - November 2015	\$250,000
Contract Extension & Increase - Approved November	350,000
Contract Extension & Increase - Approved June 2018	<u>100,000</u>
Total PFM Contract - ending December 2018	<u>\$700,000</u>
Proposed Contract Extension & Increase	<u>370,000</u>
New Total PFM Contract - ending December 2018	<u>\$1,070,000</u>
PFM Contract as % of Portfolio Income	<u>2.9%</u>
PFM Annual Fee as % of September 2018 Portfolio	<u>0.04%</u>



<b>Calculation of Contract Increase - Invested Portfolio</b>			
<u>Estimated Invested Portfolio \$</u>	<u>Rate</u>	<u>Fee \$</u>	
1st 100,000,000	0.08%	\$ 80,000	
2nd 100,000,000	0.06%	60,000	
above 2nd 550,000,000	0.05%	275,000	
Portfolio Balance <u>\$ 750,000,000</u>		<u>\$ 415,000</u>	
	Monthly	<u>\$ 34,583</u>	
Total Contract Amount through December 2018	\$	700,000	
Projected billings through December 2018		<u>(647,000)</u>	
Remaining Balance on Current Contract	\$	<u>53,000</u>	
Projected billings through December 2019		<u>(415,000)</u>	
Additional Contract Funds Needed	\$	<u>(362,000)</u>	
Requested Increase		\$370,000	

**Proposed Action:** The Audit Committee recommends that the Board of Directors for the Great Lakes Water Authority approve a contract extension with PFM Asset Management LLC in the amount of \$370,000 through December 2019 for a total life-to-date contract of \$1,070,000.



# Great Lakes Water Authority

## Strategy Update Discussion

November 2018

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PFM Asset  
Management LLC

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Suite 333  
Ann Arbor, MI 48108

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[pfm.com](http://pfm.com)



# Objective

GAIN SUPPORT FOR FULL DISCRETIONARY/  
ACTIVE MANAGEMENT ON SPECIFIC GLWA  
PORTFOLIOS AND CONFIRM STRATEGY ON  
CASH FLOW BASED PORTFOLIOS

# Agenda

ACTIVE MANAGEMENT CONSIDERATIONS

YIELD VS. TOTAL RETURN

IMPACT ON GLWA'S PORTFOLIOS

PFM DELIVERABLES

APPENDIX: RELATIONSHIP TEAM



# Active Management Considerations



## Active versus Cash Flow (Passive) Management

- ◆ There are basically two ways to manage an investment portfolio: active or passive
- ◆ *Active Management* implies that the portfolio manager may sell some investment securities in order to shift assets to other instruments
  - This may be done simply to rebalance a portfolio that has become over-concentrated in one sector, or it may reflect an effort to enhance total returns by trading or swapping into securities that are expected to outperform the original holding
- ◆ *Passive Management* is an investment strategy in which securities are bought with the intention of holding them to maturity or investing in benchmark products designed to yield a market rate of return
  - Cash flow structured portfolios are considered passive portfolios as securities are purchased with the primary purpose of providing liquidity on a specific future date
- ◆ GLWA is currently following a passive strategy



## Active Management vs. Cash Flow Focused Strategies

### Active Management

- Ideal for funds with **expansive** permitted investments and / or **uncertain** liquidity needs
- Advisor goal: generate incremental earnings via swapping amongst individual CUSIPs, sectors, and duration buckets to attempt to offset advisory fees
- Enhanced ability to take advantage of benefit from near-constant duration exposure

### Cash Flow Strategies

- Ideal for funds with defined cash flow needs and defined permitted investments
- Securities are purchased with intent to hold to maturity and typically used to fund a specific need (i.e., debt service funds)
- May require significant change to market conditions and / or cash flow requirements for restructurings to add value

ACTIVE MANAGEMENT	CASH FLOW STRATEGIES
Real-time monitoring of holdings through time	Monitoring of credit and liquidity needs
More frequent trades to manage duration and / or liquidity	Infrequent trades as typically buy and hold to specific maturity
Greater ability to take advantage of short-term securities mispricings	Limited ability to take advantage of short-term opportunities
Enhanced ability to add incremental net value	May require substantial changes in market conditions to add value
Advisor has fiduciary responsibility	Advisor has fiduciary responsibility primarily focused on credit/liquidity



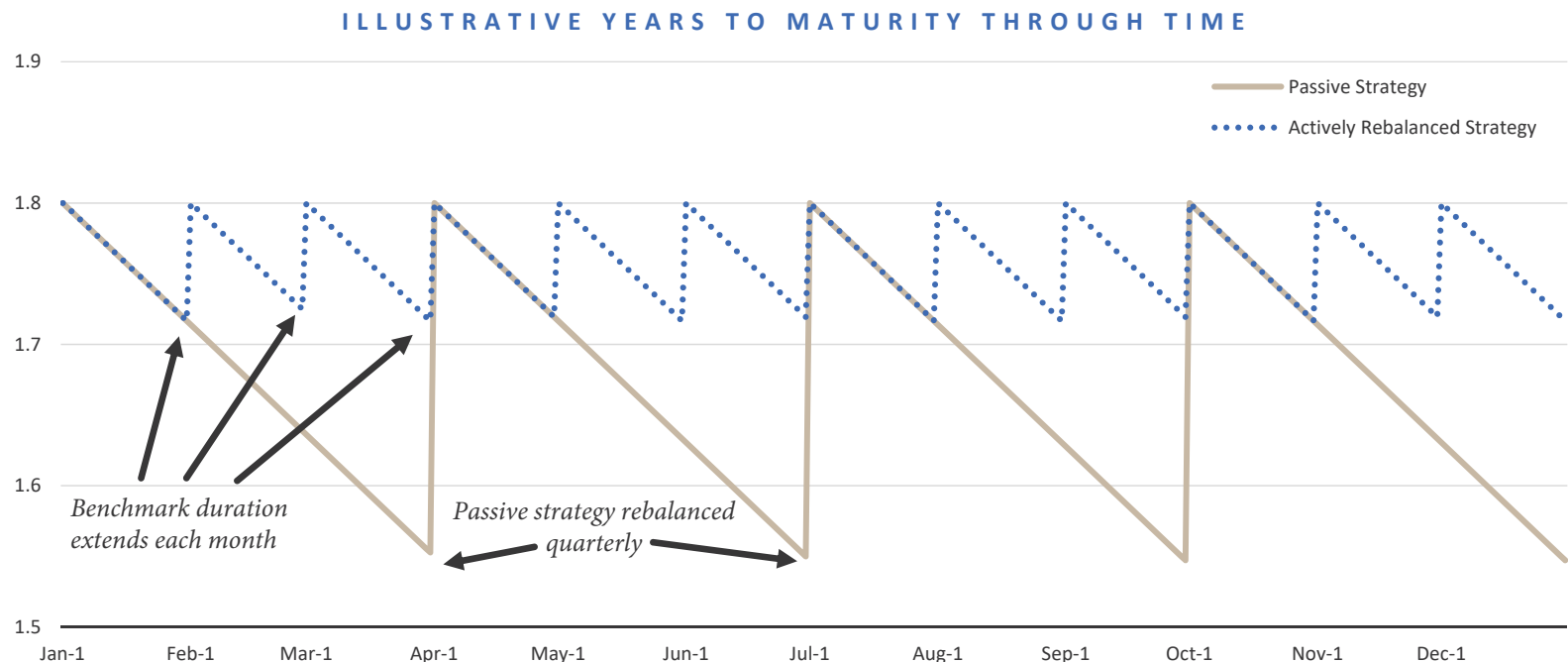
## Active Management Tool Box

Source of Return	Factor	Style
<b>Sector</b>	<ul style="list-style-type: none"> <li>Expected to contribute 30% - 40% to the return of the portfolio</li> <li>Treasury sector is baseline</li> <li>Sector spreads respond to macro forces as well as overall supply / demand technical</li> </ul>	<ul style="list-style-type: none"> <li>Seek value in historically wide spreads</li> <li>Macro forces may override value decisions</li> <li>Collective decisions on rich / cheap value</li> <li>Follow credit trends closely – credit first</li> </ul>
<b>Duration</b>	<ul style="list-style-type: none"> <li>Expected to contribute no more than 20% to the return of the portfolio</li> <li>Treasury allocation is best way to manage duration dynamically</li> <li>With low rates, income cushion is minimal</li> </ul>	<ul style="list-style-type: none"> <li>Collective portfolio strategy produces targets</li> <li>Manage within a duration band for each product</li> <li>Generally cautious investment approach helps us in down markets</li> </ul>
<b>Issuer / Security Selection</b>	<ul style="list-style-type: none"> <li>Expected to contribute 20% - 25% to the return of the portfolio</li> <li>Liquidity differs by issuer and by sector</li> <li>New issue concessions can add value</li> <li>Universe limited to high-grade credits</li> </ul>	<ul style="list-style-type: none"> <li>Investing in liquid issues provides opportunity for active management</li> <li>Will also invest where there is a liquidity premium when appropriate</li> <li>Limit non-government issuer exposure to 2%</li> <li>Changes in relative investment values give insights into credit strength</li> <li>Follow dynamic credit process with maturity limits for each credit -- credit is first</li> </ul>
<b>Yield Curve</b>	<ul style="list-style-type: none"> <li>Expected to contribute 15% - 20% to the return of the portfolio</li> <li>Shape of curve may provide roll-down</li> <li>Yield per unit of risk varies over time and by security sector</li> </ul>	<ul style="list-style-type: none"> <li>Macro outlook over 3 – 6 months drives forward rates view</li> <li>Seek greatest income per unit of risk</li> <li>Assess expected investment returns over 3 – 24 month horizon</li> <li>Look to various yield curves for insights into non-macro trends</li> </ul>



## Proactive Duration Management – Near-Constant Duration Exposure

- Extending with the benchmark on a monthly basis allows for near-constant duration exposure
  - Actively rebalanced strategy matching the benchmark will have a longer average duration than a passive strategy
  - Passive strategy will have a duration that is 2 months shorter by the next purchase date
  - Upward sloping yield curve produces better return due to longer duration of active vs. passive



Assumes both strategies are structured with an initial days to maturity of 1.80 years on January 1. On the first calendar day of each month, the actively rebalanced strategy is assumed to be restructured to the original days to maturity of 1.80 years. The passive strategy is assumed to be restructured quarterly (April 1, July 1, October 1) to have a days to maturity of 1.80.





## Proactive Duration Management – Benefit of Roll Down (2-Year Example)

- ◆ Extending duration on a monthly basis may also allow GLWA to take advantage of roll down (price appreciation) as not all securities may be held to maturity
  
- ◆ Passive strategy will produce the initial yield on the securities purchased assuming each Treasury Note is held to maturity
  
- ◆ Example: \$100MM invested in 2-year Treasury Note purchased at par and held to maturity vs. BofA/Merrill Lynch 1-3 Year Treasury index
  - Treasury Note purchased at par on 1/2/2007 at a yield of 4.79%
  - The quarterly return was 1.20% (calculated as 4.79% divided by 4 quarters)

QTR ENDED	Return (at par) 2-YR TREASURY	Growth of \$100 MM	BofA Merrill Lynch 1-3 YEAR TSY INDEX	Growth of \$100 MM
Mar-07	1.20%	101,197,750	1.40%	101,400,000
June-07	1.20%	102,409,846	0.70%	102,109,800
Sept-07	1.20%	103,636,460	2.67%	104,836,132
Dec-07	1.20%	104,877,766	2.36%	107,310,264
Mar-08	1.20%	106,133,939	2.98%	110,508,110
June-08	1.20%	107,405,158	-0.86%	109,557,741
Sept-08	1.20%	108,691,604	1.68%	111,398,311
Dec-08	1.20%	109,993,457	2.69%	114,394,925

\*Source: Bloomberg. Data retrieved March 2, 2017. 2-Year Treasury Investment assumes investment at yield of 2-year Treasury Note on January 1, 2007 and held to maturity. Quarterly yield is calculated by dividing the 2-year Treasury yield by 4 annual periods. Assumes no interim cash flows or reinvestment of cash flows. Past performance is no guarantee of future results. Actual results will vary.

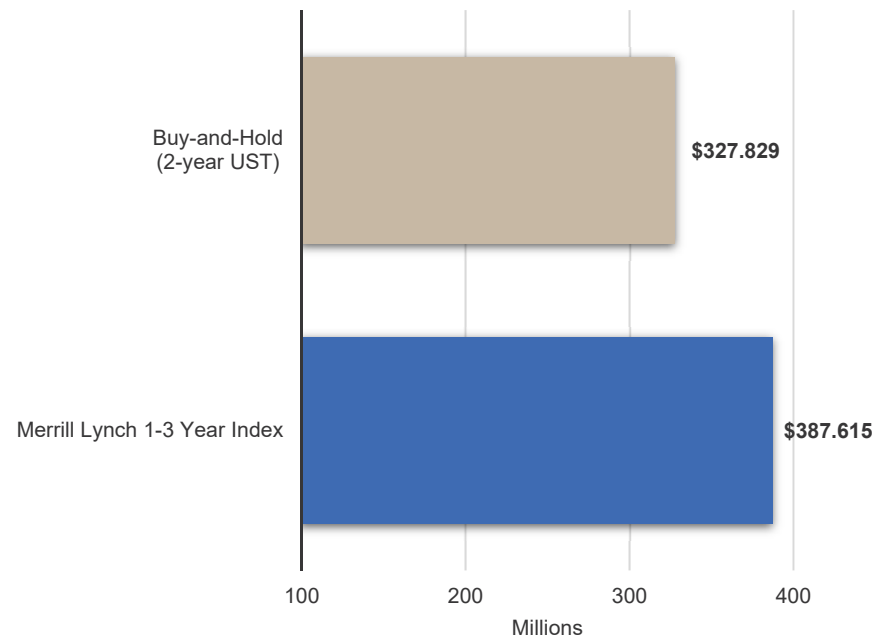
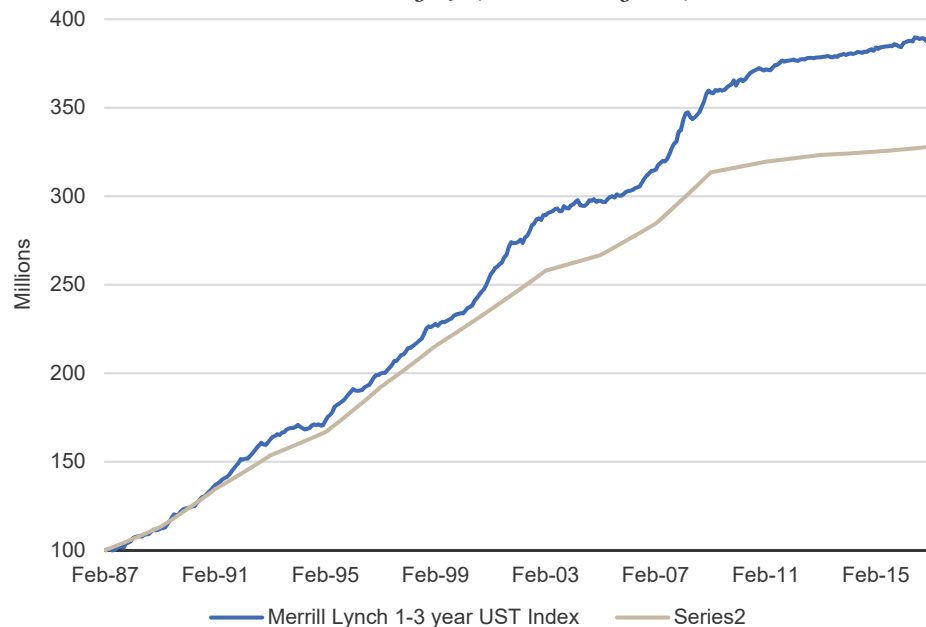


## Proactive Duration Management – Benefit of Roll Down (30-Year Example)

- Active management allows portfolios to be continually rebalanced to maintain a constant duration target
- Buy-and-hold eliminates impact of changes in yields between purchase dates (no way to capture price appreciation)

### HYPOTHETICAL PERFORMANCE OF ACTIVE VS. PASSIVE STRATEGIES

Growth of \$100,000,000  
February 1987 – February 2017



Source: Bloomberg. Data retrieved September 20, 2016. Buy-and-hold strategy assumes all securities are purchased at par and all proceeds reinvested at the yield of the relevant Treasury Note on each applicable purchase date. The 2-year buy-and-hold strategy assumes an initial purchase date of September 1, 1996 and subsequent reinvestment every 2 years. Assumes no interim cash flows.



## PFM Fixed Income Separate Account Composite Snapshot (as of June 30, 2018)

- PFM's composites consistently outperform their respective benchmarks
- For example, PFM's 1 – 3 Year Fixed Income Composite has outperformed the Bof/AML 1 – 3 Year Treasury index by 32 basis points (0.32%) over the past 10 years

Strategy/Benchmark	Average Annual Total Returns						Duration	Standard Deviation of Returns (5 years)	No. of Accounts	Assets (in \$ Millions)
	for periods ended June 30, 2018									
	2Q18	1 Year	3 Years	5 Years	7 Years	10 Years				
<b>PFM Enhanced Cash Composite</b>	<b>0.51%</b>	<b>1.16%</b>	<b>0.99%</b>	<b>0.82%</b>	<b>0.72%</b>	<b>1.07%</b>	<b>0.63</b>	<b>0.27%</b>	<b>17</b>	<b>1,646</b>
<i>ICE BofAML 1 Yr Treasury Index</i>	0.40%	0.92%	0.64%	0.49%	0.43%	0.77%	0.90	0.24%		
<b>PFM 1-3 Year Fixed Income Composite</b>	<b>0.36%</b>	<b>0.38%</b>	<b>0.75%</b>	<b>0.81%</b>	<b>0.80%</b>	<b>1.56%</b>	<b>1.68</b>	<b>0.61%</b>	<b>161</b>	<b>11,220</b>
<i>ICE BofAML 1-3 Treasury Index</i>	0.22%	0.08%	0.42%	0.58%	0.58%	1.24%	1.80	0.68%		
<b>PFM 1-5 Year Fixed Income Composite</b>	<b>0.27%</b>	<b>-0.08%</b>	<b>0.82%</b>	<b>1.08%</b>	<b>1.17%</b>	<b>2.16%</b>	<b>2.37</b>	<b>1.14%</b>	<b>125</b>	<b>8,504</b>
<i>ICE BofAML 1-5 Treasury Index</i>	0.13%	-0.35%	0.50%	0.81%	0.89%	1.79%	2.58	1.30%		
<i>ICE BofAML 1-5 Gov't/Corp, AA or better</i>	0.15%	-0.27%	0.58%	0.89%	0.96%	1.89%	2.54	1.26%		
<b>PFM 1-10 Year Fixed Income Composite</b>	<b>0.17%</b>	<b>-0.33%</b>	<b>1.09%</b>	<b>1.46%</b>	<b>1.73%</b>	<b>2.91%</b>	<b>3.48</b>	<b>1.81%</b>	<b>19</b>	<b>810</b>
<i>ICE BofAML 1-10 Treasury Index</i>	0.06%	-0.70%	0.65%	1.09%	1.45%	2.47%	3.64	2.10%		

*The performance data shown represent past performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate. Data shown is prior to the deduction of investment advisory fees. GIPS compliant composite presentations are available upon request. For important disclosure information please go to [pfm.com/disclosures](http://pfm.com/disclosures).*

*Benchmark source: Bloomberg. All benchmarks represent total returns for the noted periods, with the exception of the ICE BofAML Constant 5-Year Maturity Treasury Index, which represents a book value return by utilizing the rolling 60-month moving average yield. As the stable value benchmark is an equally weighted rolling 60-month moving average of a 5-year Treasury security for each month, the 2.54 year duration noted above represents a weighted average maturity (WAM).*



## Examples of Active Management

- Active management requires the investment advisor to have full discretion to take losses when necessary to improve long-term performance

Settle Date	Trade Type	Issuer	Par	Maturity	Yield at Cost	Yield at Market	Loss on Sale	Earnings to 6/29/2018	Total Cash Flow
4/19/2018	Sale	Federal Agency	\$1,350,000	6/29/2018	0.85%	1.79%	(\$2,470)	(\$2,184)	(\$4,654)
4/19/2018	Purchase	Supranational	\$1,445,000	4/19/2021	2.70%	2.70%	-	\$7,544	\$7,544
<b>Additional Net Benefit to 6/29/2018</b>									<b>\$2,890</b>

*Earnings to 6/29/2018 for the Federal Agency investment that was sold would be the difference between par value and market value at the time of the sale, plus the final coupon payment. For the new Supranational investment that was purchased, earnings to 6/29/2018 and the total cash flow reflects the estimated amortization of the new Supranational purchase from the trade date of 4/19/2018 up to 6/29/2018 plus coupon payments.*

Settle Date	Trade Type	Issuer	Par	Maturity	Yield at Cost	Yield at Market	Loss on Sale	Earnings to 10/12/2018	Total Cash Flow
7/3/2018	Sale	Federal Agency	\$3,075,000	10/12/2018	0.90%	2.03%	(\$9,540)	(\$7,587)	(\$17,127)
7/3/2018	Purchase	Commercial Paper	\$3,150,000	10/30/2018	2.38%	2.38%	-	\$20,864	\$20,864
<b>Additional Net Benefit to 10/12/2018</b>									<b>\$3,737</b>

*Earnings to 10/12/2018 for the Federal Agency that was sold would be the difference between par value and market value at the time of the sale, plus the final coupon payment. For the new Commercial Paper investment that was purchased, earnings to 10/12/2018 and the total cash flow reflects the estimated amortization of the new Commercial Paper purchase from the trade date of 7/3/2018 up to 10/12/2018.*



# Yield vs. Total Return



## Investment Objectives – Yield vs. Total Return

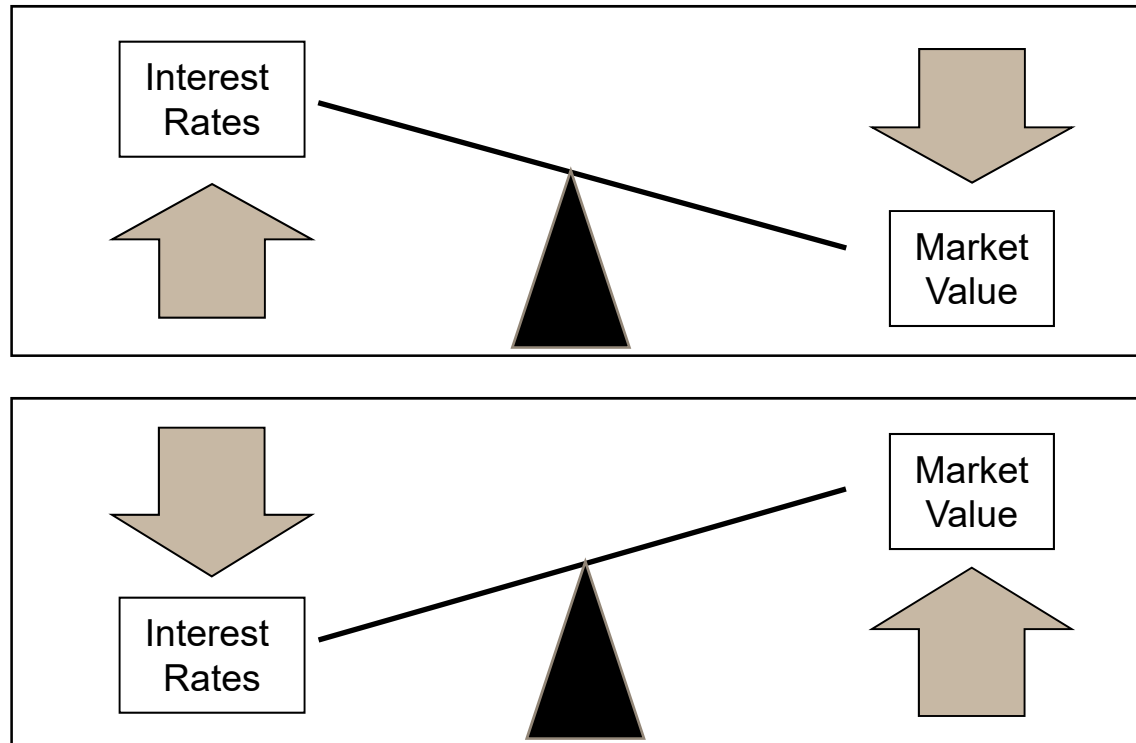
- ◆ **Yield** is the income return at a point in time, expressed as an annualized rate of return based on cost, and is forward-looking; the calculation of yield assumes no changes in cash flow and reinvestment rates (GLWA is currently using an earnings target approach)
- ◆ **Total return** is calculated based on interest and both realized and unrealized changes in market value, expressed as a rate of return over a specified period of time based on cost, and is backward-looking (the use of a total return approach is a GFOA best practice)

Earnings Target Approach	Total Return Approach
<ul style="list-style-type: none"> <li>- Focused on income stability and useful for budgeting purposes</li> <li>- Does not account for changes in market value</li> <li>- Not sufficient for assessing risk and/or investment performance</li> </ul>	<ul style="list-style-type: none"> <li>- Focused on long-term performance and growth</li> <li>- Affected by both yield and also market value fluctuations</li> <li>- Reflects “true value” of the portfolio</li> <li>- Recommended approach by the Government Finance Officers Association</li> </ul>
<p><b>Portfolio Management Style</b></p> <ul style="list-style-type: none"> <li>- Can limit active management strategies</li> <li>- Focused on meeting earnings target</li> <li>- May sacrifice higher earnings in the future to avoid negatively affecting current year earnings</li> </ul>	<p><b>Portfolio Management Style</b></p> <ul style="list-style-type: none"> <li>- Flexible active management</li> <li>- More flexibility to capitalize on new opportunities from changes in interest rates</li> <li>- Can be negative during rising interest rates</li> </ul>



## Total Return = Yield + Change in Market Value

- Market values move inversely to interest rates





# Impact on GLWA's Portfolios





## What Would be Different with Active Management

- ◆ Current investment procedures: “Buy and Hold” for cash flow related portfolios
  - Once a security is purchased, it is held to maturity with no active management
- ◆ “Active Management”: PFM would actively manage benchmarked portfolios with full discretion (subject to GLWA’s investment policy)
  - Formal benchmark(s) would be established and portfolios would be managed with similar characteristics
    - Performance and characteristics would be evaluated relative to the benchmark (GFOA best practice)
  - Securities may be sold prior to maturity to improve the overall earning potential of the portfolios
    - GLWA would continue to receive trade tickets for all transactions
  - PFM would not confirm reinvestment or maturity ranges
    - GLWA would inform us of any unexpected cash flows (inflows or outflows) in these accounts
    - To assist in orderly trades, unexpectedly large and significant cash flows should be communicated with as much advanced notice as possible



## GLWA Investments by Account Purpose (as of 9/30/2018)

Account Purpose	Balance	Management Type	Strategy Considerations / Comments
Operating & Maintenance	\$105,719,981	Cash-flow Driven	Due to 90 day liquidity goal, decided best to keep in money market
Bond / Construction	\$214,528,410	Cash-flow Driven	Portfolios invested based on initial expected cash flow needs for the construction accounts
Debt Service / Debt Reserve	\$160,400,491	Cash-flow Driven	Duration cannot be extended beyond upcoming principal and interest payment dates
Receiving Funds	\$132,823,776	Cash-flow Driven	Requested liquidity in deposit account at U.S. Bank
Pension Obligation	\$11,072,253	Cash-flow Driven	Known monthly cash flow deposits; securities invested out to mature by June 15th for liquidity to meet pension payments
WRAP Funds	\$8,180,646	Cash-flow Driven	Monthly deposits come in; rolling 3-month investment purchases to meet quarterly cash payouts
Retainage	\$15,308,726	Cash-flow Driven	These funds do not belong to GLWA - they are held on behalf of Flint
All Other	\$3,760,760	Cash-flow Driven	Funds in the Flint Security Deposit account that are held on behalf of the City of Flint and do not belong to GLWA
Budget Stabilization	\$7,509,413	Benchmarked	There will be no deposits into this account during the year; initially laddered investing with maturities from 0 – 5 years
Extraordinary R & R Reserve	\$63,590,192	Benchmarked	Balances will remain relatively stable; laddered investments out to mature from 0 – 5 years
Improvement & Extension	\$258,682,561	Benchmarked	A portion of funds invested short-term to be reviewed for reinvesting with balanced invested out 0 – 5 years
<b>Total</b>	<b>\$981,577,211</b>		



## Current Quarterly Report Shows Yields at Cost & Market

	As of September 30, 2018		As of June 30, 2018	
	YTM @ Cost	YTM @ Market	YTM @ Cost	YTM @ Market
<b>Bank Deposits</b>				
Comerica	0.25%	0.25%	0.25%	0.25%
First Independence	0.05%	0.05%	0.05%	0.05%
Flint Deposit Account	0.69%	0.69%	0.57%	0.57%
JP Morgan Chase	0.69%	0.69%	0.57%	0.57%
<b>Sub-Total Bank Deposits</b>	<b>0.43%</b>	<b>0.43%</b>	<b>0.43%</b>	<b>0.43%</b>
<b>Money Market Funds / LGIPs</b>				
GovMIC	2.08%	2.08%	2.02%	2.02%
U.S. Bank - First American MMF	1.95%	1.95%	1.75%	1.75%
JP Morgan Securities - Blackrock MMF	1.88%	1.88%	1.73%	1.73%
<b>Sub-Total MMF / LGIPs</b>	<b>1.84%</b>	<b>1.84%</b>	<b>1.78%</b>	<b>1.78%</b>
<b>Investment Portfolios</b>				
Sewage SR Debt Serv 5403	2.38%	2.43%	0.00%	0.00%
Sewage SR Res 5400	1.51%	2.66%	1.35%	2.33%
Sew 2nd Debt Serv 5403	2.35%	2.40%	0.00%	0.00%
Sewage 2nd Res 5481	1.51%	2.67%	1.30%	2.29%
Sew SRF Debt Serv 5410	2.18%	2.40%	1.98%	2.17%
Sewage ER & R	2.61%	2.72%	1.50%	1.92%
Sewer Improvement & Extension	2.53%	2.65%	0.00%	0.00%
Sewer Pension Obligation	2.36%	2.48%	0.00%	0.00%
Sewer Wrap Fund	2.11%	2.34%	0.00%	0.00%
Sewer Budget Stabilization Fund	2.62%	2.74%	0.00%	0.00%
Sewer Bond Fund	1.53%	2.42%	1.49%	2.25%
Sewer O&M Pension Sub Account	2.41%	2.52%	0.00%	0.00%
Water SR Debt Ser 5503	2.37%	2.42%	0.00%	0.00%
Water SR Reserve 5500	1.44%	2.33%	1.17%	2.11%
Water 2nd Debt Serv 5503	2.37%	2.42%	0.00%	0.00%
Water 2nd Res 5581	2.14%	2.54%	2.15%	2.36%
Water SRF Debt Serv 5575	0.00%	0.00%	1.98%	2.16%
Water ER & R	2.61%	2.72%	1.50%	1.92%
Water Improvement & Extension	2.60%	2.71%	0.00%	0.00%
Water Pension Obligation	2.37%	2.49%	0.00%	0.00%
Water Wrap Fund	2.11%	2.34%	0.00%	0.00%
Water Budget Stabilization Fund	2.62%	2.74%	0.00%	0.00%
Water Bond Fund	1.67%	2.49%	1.63%	2.29%
Water O&M Pension Sub Account	2.41%	2.52%	0.00%	0.00%
<b>Sub-Total Investment Portfolios</b>	<b>2.16%</b>	<b>2.68%</b>	<b>1.61%</b>	<b>1.84%</b>
<b>Grand Total</b>	<b>2.02%</b>	<b>2.30%</b>	<b>1.61%</b>	<b>1.84%</b>

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.



## GLWA Sample Investment Report

Cash Flow Portfolios	Balance	Duration	Yield	Market Indicator Yield (3-mo. T-Bill)	Yield Spread
Operating & Maintenance	\$105,719,981	1 Day	1.75%	1.80%	-0.05%
Bond / Construction	\$226,878,891	0.76 Years	2.36%	1.80%	+0.56%
Debt Service / Debt Reserve	\$179,001,860	0.26 Years	1.98%	1.80%	+0.18%
Receiving Funds	\$132,823,776	1 Day	1.75%	1.80%	-0.05%
Pension Obligation	\$11,063,336	0.42 Years	2.11%	1.80%	+0.31%
WRAP Funds	\$8,166,198	0.21 Years	1.92%	1.80%	+0.12%
Retainage	\$15,308,726	1 Day	1.75%	1.80%	-0.05%
All Other	\$3,760,760	1 Day	1.75%	1.80%	-0.05%

Benchmarked Portfolios	Balance	Duration	Quarterly Total Return	Benchmark Return	Performance Difference	Benchmark Type
Budget Stabilization	\$7,516,458	2.10 Years	0.205%	0.151%	+0.54%	0 – 5 Year UST
Extraordinary R & R Reserve	\$71,142,609	2.09 Years	0.203%	0.151%	+0.52%	0 – 5 Year UST
Improvement & Extension	\$258,810,258	2.11 Years	0.206%	0.151%	+0.55%	0 – 5 Year UST

*For illustrative purposes only.*



# **PFM Deliverables**



## Investment Progression – Putting Money to Work Safely



Step 1 – Completed

### **JP Morgan Chase Earnings Credit Rate (“ECR”) and interest rate negotiation**

- Increase ECR to 0.35%
- Interest Rate of 0.31%



Step 2 – Completed

### **Utilization of money market funds for short-term needs**

- Fee reduction (“FDIC”)
- Interest of +50 bps
- Reduce credit exposure
- Invest in government and LGIP funds\*



Step 3 – Completed

### **Investment of operating / construction funds based on cash needs**

- Diversified investment portfolios matched to cash flow needs
- Potential for higher returns by investing out a little bit longer



Step 4 - Completed

### **Refinement of cash flows to look at opportunities to invest longer**

- Identify assets that can be invested beyond 3 months

\* LGIP – Local Government Investment Pool is currently rated “AAAm” by Standard & Poor’s rating agency.



## What Value Does PFM Provide to GLWA

	Hiring PFM
Portfolio Management	<ul style="list-style-type: none"> <li>• Team of over 25 investment professionals</li> <li>• Sector specialists</li> <li>• Supported by 221 professionals, 22 with CFA designations</li> <li>• Functional expertise in portfolio management, trading, accounting, IRS regulations, compliance</li> </ul>
<b>Trade Execution &amp; Transparency</b>	<ul style="list-style-type: none"> <li>• Extensive Broker/Dealer relationships including 22 of 23 Primary Dealers &amp; 58 in total</li> <li>• Daily trading volume of \$1 – \$3 billion</li> <li>• Ability to execute reverse inquiry due to PFM market presence and relationships</li> </ul>
Portfolio Management Technology & Compliance	<ul style="list-style-type: none"> <li>• Bloomberg, Market Axess, TradeWeb</li> <li>• Bloomberg AIM</li> <li>• CAMRA Accounting System</li> <li>• Easy Online Network (“EON”)</li> </ul>
<b>Credit Research &amp; Monitoring</b>	<ul style="list-style-type: none"> <li>• PFM’s Fixed-Income Credit Committee (10 members)</li> <li>• Our access to rating agency research and other independent in-house research</li> <li>• History of never taking a credit loss (past performance is not indicative of future)</li> </ul>
<b>Training / Education</b>	<ul style="list-style-type: none"> <li>• Monthly/quarterly market reviews</li> <li>• Strategy calls with the entity</li> <li>• Thought leadership pieces</li> <li>• Training sessions for public finance officials</li> </ul>
Portfolio Accounting	<ul style="list-style-type: none"> <li>• Dedicated Accounting team (23 people)</li> <li>• Weekly/monthly reconciliation to custody bank</li> <li>• Industry standard accounting (GASB)</li> <li>• Full service reporting with secure online portal</li> </ul>

*For illustrative purposes only.*



## Competitive Trade Execution Process

### Value Added Through Superior Market Access

- 22 of 23 primary government securities dealers
- Direct issuers
- Electronic trading / processing platforms provide efficiency and access to real-time prices
- All securities are competitively shopped from a robust list of 58 approved broker/dealers
- Clients benefit from PFMAM's economies of scale: \$2+ billion in average daily trading volume

### PFM's Competitive Shopping Can Save Money on Every Trade

Broker	Price (32nds)	Price (decimal)	Yield	Cost (\$)	Difference (\$)
Barclays	116-08 5/8	116.27	1.044%	8,364,294.34	-
Merrill Lynch	116-08 5/8	116.27	1.044%	8,364,294.34	-
BNP Paribas	116-09	116.28	1.042%	8,365,126.37	832.03
JP Morgan	116-09 1/8	116.29	1.041%	8,365,403.71	1,109.37
Deutsche Bank	116-17 7/8	116.56	0.986%	8,384,817.78	20,523.44

Value Added

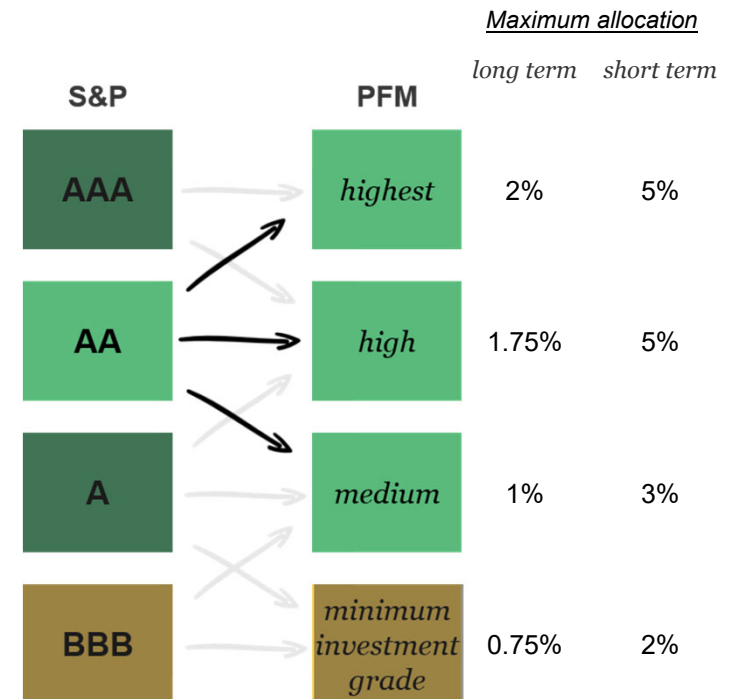
For illustrative purposes only.





## PFM's Approach to Credit

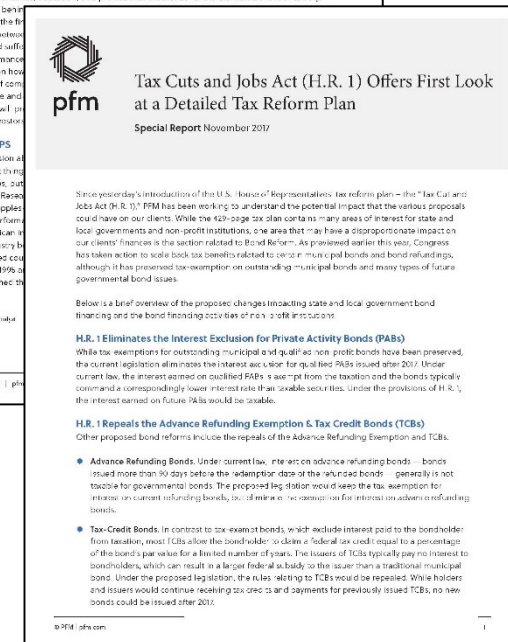
PHILOSOPHY
<ul style="list-style-type: none"> <li>• Use credit to safely seek enhanced returns</li> <li>• Approach credit from the view of a public sector investor</li> <li>• Conduct research “on the desk” by portfolio managers, traders, and analysts</li> <li>• Utilize proprietary models to maintain independence</li> <li>• Build in a margin of safety</li> </ul>
CREDIT SCREENING PROCESS
<ul style="list-style-type: none"> <li>• Determine universe of issuers</li> <li>• Narrow list based on ratings criteria, supply, and value</li> <li>• Industry screen – growth outlook and prospects; regulatory environment</li> <li>• Issuer screen – quantitative analysis; in-depth review of financials</li> </ul>
IMPLEMENTATION AND MONITORING
<ul style="list-style-type: none"> <li>• Creation of approved list with long- and short-term exposure and horizon limits</li> <li>• Formal credit meetings with Chief Credit Officer, Chief Investment Officer, credit analysts, and traders</li> <li>• Proprietary assessment and mapping to PFM credit tiers</li> <li>• Ongoing evaluation with an emphasis on qualitative assessment</li> </ul>





# Public Sector Education & Training

- Monthly Market Updates
- PFM “InvestEd” & Thought Leadership Pieces
  - Deconstructing Duration
  - Rolling Down the Yield Curve
  - Money Market Fund Reform
- Investment Seminars (CPE Credit)
  - One-Week Client Training Sessions
  - Customized Training and Education
- Research White Papers
- Annual Economic and Financial Markets Update





# What Sets Us Apart

## VALUE

- Strong performance track record relative to benchmarks
- Active management that safely enhances investment returns and manages downside risk

## EXTENSION OF STAFF

- Independent investment advisor with fiduciary responsibility that provides unbiased advice to the Authority
- Dedicated accounting team and online network that fit seamlessly with existing systems

## EXECUTION

- Large staff of fixed-income sector specialists with access to Bloomberg, Market Axess, TradeWeb, and extensive proprietary tools
- Rigorous investment credit review process through PFM's Fixed-Income Credit Committee
- Access to rating agency research and other independent in-house research tools

## EXPERTISE




- Public sector specialists who fully understand the unique investment considerations of public agencies
- Consider the implications of investments on both sides of the balance sheet by working closely with the Authority's financial advisor



# Appendix: Relationship Team






## Brief Resumes: Client Service Team Key Professionals

Team Member	Brief Resume
 <p><b>Brian Quinn</b> <i>Managing Director</i></p>	<p><b>32 Years of Experience / 9 Years with PFM</b>            Brian is a managing director in PFM's Midwest region for the firm's asset management business. With more than 30 years of investment, accounting and financial management experience, he provides investment advisory and treasury management services in Michigan and Ohio to public-sector clientele, including cities, counties, higher education, insurance pools, public power and intermediate and local school districts. Brian provides banking and investment service needs, including procurement and implementation of treasury management services, design and adoption of investment policies, benchmarking investment performance, development and implementation of investment strategies and discretionary management of public funds. He has extensive experience developing and monitoring the investment of bond proceeds. Brian advises clients through development of cash flows, review of investment policies and banking relationship structuring and evaluation.</p>
 <p><b>Kyle Jones</b> <i>Director</i></p>	<p><b>16 Years of Experience / 6 Years with PFM</b>            Kyle Joined PFM's asset management business in 2012 and is the director of portfolio strategies and a member of the Portfolio Strategies Group. Kyle works primarily with clients of the separate account business by helping to devise customized portfolio strategies designed to meet their specific investment needs. In addition, he assists in the creation and delivery of our views and strategies to clients, prospects and third-party consultants. Prior to joining PFM, Kyle spent 10 years at JPMorgan Chase in a variety of capacities, most recently as an investment specialist for their Institutional Sales business. Kyle is a board member of the Chicago Booth Black Alumni Association, and an active participant in the Dillard University Alumni Association. He is a frequent speaker at industry conferences and educational seminars.</p>
 <p><b>Gray Lepley</b> <i>Senior Analyst</i></p>	<p><b>3 Years of Experience / 3 Years with PFM</b>            Gray Lepley joined PFM in 2015 and works in the Harrisburg office. As an analyst in the Structured Products Group, Gray provides quantitative support on a variety of projects including open-market escrow optimization and procurement and the structuring and restructuring of bond proceeds portfolios.</p>



## Brief Resumes: Client Service Team Key Professionals

Team Member	Brief Resume
 <p><b>Danny Nelson</b> <i>Senior Managing Consultant</i></p>	<p><b>14 Years of Experience / 14 Years with PFM</b>            Danny Nelson joined PFM in 2002 and is currently a senior managing consultant in the Midwest region asset management business. He manages relationships for various clients in Illinois, Michigan and Minnesota. He helps municipal governments, school districts and other public authorities with cash flow analysis and overall investment needs. He provides investment advisory and consulting services, develops investment policies and monitors guidelines and strategy implementation. Danny provides clients with training and technical and analytical support with respect to their investment portfolios.</p>
 <p><b>Amber Cannegieter</b> <i>Key Account Manager</i></p>	<p><b>13 Years of Experience / 5 Years with PFM</b>            Amber joined PFM in 2013 as a key account manager for PFM's Client Service Group. In her role, Amber provides customer service in everyday functions, such as onboarding and new client administration. She also serves as a client advocate by providing a "high touch, high value" experience, to address client needs.</p>
 <p><b>Brian Raubenstine</b> <i>Portfolio Manager</i></p>	<p><b>11 Years of Experience / 10 Years with PFM</b>            Brian Raubenstine joined PFM's asset management business in 2008 and is a portfolio manager on the long-term fixed-income desk. His primary focus is the daily management of client portfolios, generally from a total return perspective. He specializes in the municipal securities market and credit for the trading desk. He is currently enrolled in the Chartered Financial Analyst (CFA) program.</p>



## Disclaimers

### **Investment Advisory Services:**

*PFM is the marketing name for a group of affiliated companies providing a range of services. All services are provided through separate agreements with each company. This material is for general information purposes only and is not intended to provide specific advice or a specific recommendation.*

*Investment advisory services are provided by PFM Asset Management LLC which is registered with the Securities and Exchange Commission under the Investment Advisers Act of 1940. The information contained is not an offer to purchase or sell any securities. Applicable regulatory information is available upon request.*

*For more information regarding PFM's services or entities, please visit [www.pfm.com](http://www.pfm.com).*

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*Case study details were provided at your request. You should note the details provided are based on factual information from actual projects that PFMAM completed. It has been provided for general information purposes only and is not intended to provide specific advice or a specific recommendation. The results of individual projects will vary significantly depending upon the size and structure of each fund, permitted investments, prevailing market conditions at the time of the structuring and procurement process, and other events or circumstances beyond the control of PFMAM.*

*To ensure compliance with U.S. Treasury Regulations governing tax practice, we inform you that any U.S. federal tax advice contained in this communication, including any attachments, is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding any penalties under U.S. federal tax law, or (ii) promoting, marketing, or recommending to another party any transaction or matter addressed herein. PFM Asset Management LLC cannot provide legal advice, and appropriate professionals should be consulted if such issues are involved. PFM Asset Management LLC is registered with the SEC under the Investment Advisers Act of 1940. A copy of our Form ADV, Parts 2A & 2B is available upon request.*

# Thank You!



pfm





## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

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

**Re:** FY 2030 Financial Forecast

**Background:** Earlier this calendar year, the Great Lakes Water Authority (GLWA) initiated an FY 2030 financial forecast. This desired outcome of this effort is a roadmap for financially sound and sustainable utility that meets its capital and operational needs in an environmentally responsible manner.

**Analysis:** The Foster Group LLC has developed a model to assist GLWA in this planning effort. Attached is a report and related analysis (the latter is designed for 8.5 x 14 printing).

Mr. Foster will be in attendance at the Audit Committee to provide a live demonstration of the model as we discuss a range of possible assumptions (such as capital spending, budget levels, paygo capital, debt management, charge adjustments, and others) and the related outcomes.

**Proposed Action:** Receive and file report.

**TFG**  
**THE FOSTER GROUP**

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Tel: (913) 345-1410  
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**The Foster Group, LLC**  
Bart Foster, President  
Cell: (913) 530-6240  
bfoster@fostergroupllc.com

MEMORANDUM

Executive Summary Financial Forecast Model

November 12, 2018

To: Nicolette Bateson

From: Bart Foster

At your request, we have developed an “executive summary” version of our financial forecast model. This tool is designed to easily illustrate potential impacts of alternative assumptions and policies on key financial metrics. While it is not as robust as the modeling tools we utilize when preparing financial feasibility and related forecast analyses, we believe it can provide valuable information to stakeholders in a simplified manner.

The foundational assumptions and projections for this forecast model are consistent with our financial feasibility report(s) developed in support of the recent bond sales, which contained financial forecasts for a five year period ending with FY 2023. We have extended the forecast period to FY 2030 in order to provide a longer term vision, consistent with the analyses we’ve been discussing over the past year.

The first page of the model illustrates forecasted revenues and revenue requirements under three key assumptions:

1. Annual increases in Charges;
2. Annual increases in O&M Budget;
3. Average annual CIP Financing requirements.

Based on decisions regarding these assumptions, the model computes the adequacy of existing fund balances and revenue transfers to finance capital improvement requirements, and calculates amounts of additional debt necessary to fully fund the CIP. The debt service requirements are computed and impact the financial metrics accordingly. The version of the model reflected in the attached exhibits is “pre loaded” with assumptions consistent with the recent feasibility reports, and with our understanding of the latest long term CIP plans – although annualized and “funded at” 80% of planning levels. This equates to approximate annual amounts of \$140 million for Water and \$120 million for Sewer.

The second page of the model presents forecasted results for key metrics, designed to be reflected in a “red/yellow/green” format aligned with relative rating agency assessments. As

we have discussed in prior conversations on this topic, these metrics are not necessarily definitive, but do provide guidance on how the investment community views the credit worthiness of GLWA and its peers.

We note that the metrics and criteria illustrated on page 2 should be considered a work in progress, and we encourage review by GLWA's financial advisor and other stakeholders. Having said that, we believe the presentation on page 2 for each system is fairly self evident, and we'll not elaborate herein. Rather, we stand prepared to present this model to the Audit Committee on November 16, and to illustrate hypothetical results of alternative assumptions and policy considerations.

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Please note pages 43-46 are 8.5x14 legal.

Executive Summary Forecast Worksheet  
Water Supply System - \$ millions

Revenue / Revenue Req't Forecast	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
<b><u>GLWA Wholesale System</u></b>												
1 Charge Increase - %	<b>4.0%</b>	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Cumulative		4.0%	8.2%	12.5%	17.0%	21.7%	26.5%	31.6%	36.9%	42.3%	48.0%	53.9%
2 Baseline Revenue	327.6	327.6	327.6	327.6	327.6	327.6	327.6	327.6	327.6	327.6	327.6	327.6
3 Charge Increase Revenue		<u>13.1</u>	<u>26.7</u>	<u>40.9</u>	<u>55.6</u>	<u>71.0</u>	<u>86.9</u>	<u>103.5</u>	<u>120.7</u>	<u>138.7</u>	<u>157.3</u>	<u>176.7</u>
4 Revenue from Charges	327.6	340.7	354.3	368.5	383.2	398.5	414.5	431.1	448.3	466.2	484.9	504.3
5 Non Operating Revenue	3.0	3.8	3.7	3.4	3.1	2.5	2.7	2.6	2.7	2.7	2.8	2.8
6 Total Revenue	330.5	344.5	358.0	371.9	386.3	401.1	417.2	433.7	451.0	469.0	487.6	507.1
7 Operating Expense Increase - %	<b>2.0%</b>	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
8 O&M Budget	121.6	124.0	126.5	129.0	131.6	134.2	136.9	139.6	142.4	145.3	148.2	151.1
9 O&M Pension Obligation	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	<u>6.0</u>	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>	<u>1.2</u>
10 Operating Expense	127.6	130.0	132.5	135.1	137.6	135.4	138.1	140.8	143.6	146.5	149.4	152.3
11 Net Revenue	202.9	214.5	225.5	236.9	248.6	265.7	279.1	292.8	307.3	322.5	338.2	354.7
<b><u>Existing Debt Service</u></b>												
12 Principal	40.2	48.6	61.0	60.1	67.0	70.3	73.6	77.1	79.5	82.9	86.8	93.8
13 Interest	<u>91.2</u>	<u>90.5</u>	<u>89.5</u>	<u>86.6</u>	<u>83.8</u>	<u>80.6</u>	<u>77.3</u>	<u>73.7</u>	<u>70.1</u>	<u>66.3</u>	<u>62.3</u>	<u>58.1</u>
14 Total	131.4	139.1	150.5	146.7	150.8	150.9	150.8	150.8	149.6	149.2	149.1	151.9
15 Net Revenue after Existing Debt Svc	71.5	75.3	75.0	90.2	97.9	114.8	128.2	142.0	157.7	173.3	189.2	202.8
16 Fixed MBO Requirements	35.3	36.1	36.2	36.3	36.4	29.1	30.5	30.6	30.4	30.3	30.4	30.4
17 Available for Capital / New Debt Svc	<b>36.3</b>	<b>39.2</b>	<b>38.8</b>	<b>53.9</b>	<b>61.5</b>	<b>85.7</b>	<b>97.7</b>	<b>111.4</b>	<b>127.3</b>	<b>143.0</b>	<b>158.8</b>	<b>172.4</b>
18 Existing Available Capital Funds	383.2	<u>30.0</u>	<u>100.8</u>	<u>101.2</u>	<u>61.3</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
19 Total CIP Funding	<b>140.0</b>	<b>66.3</b>	<b>140.0</b>	<b>140.0</b>	<b>115.2</b>	<b>61.5</b>	<b>85.7</b>	<b>97.7</b>	<b>111.4</b>	<b>127.3</b>	<b>143.0</b>	<b>158.8</b>
20 Carryover Capital Funding Balance	353.2	252.5	151.3	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
21 Additional Bond Proceeds Needed		<b>0.0</b>	<b>0.0</b>	<b>24.8</b>	<b>78.5</b>	<b>54.3</b>	<b>42.3</b>	<b>28.6</b>	<b>12.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
22 Cumulative Additional Bonds	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>24.8</b>	<b>103.4</b>	<b>157.7</b>	<b>199.9</b>	<b>228.5</b>	<b>241.2</b>	<b>241.2</b>	<b>241.2</b>	<b>241.2</b>
23 Additional Debt Service	0.0	0.0	0.0	1.5	6.2	9.4	11.9	13.6	14.4	14.4	14.4	14.4

Executive Summary Forecast Worksheet  
Water Supply System - \$ millions

Metric Calculations	Metric Target			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030			
	Min A	Min AA	Min AAA	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note			
<b><u>Operating Margin</u></b>																		
24	Depreciation Expense			137.3	125.8	119.8	122.1	124.0	103.6	82.9	83.2	84.3	86.4	89.3	93.0			
25	Total Operating Expenses			258.9	249.8	246.3	251.1	255.6	237.8	219.8	222.8	226.8	231.7	237.5	244.1			
26	Operating Margin			68.7	90.9	108.0	117.4	127.6	160.8	194.7	208.2	221.5	234.6	247.4	260.1			
27	Operating Margin %			25%	40%	50%	21.0%	26.7%	30.5%	31.9%	33.3%	40.3%	47.0%	48.3%	49.4%	50.3%	51.0%	51.6%
<b><u>Regional Revenue Allocation</u></b>																		
28	O&M			38.6%	37.7%	37.0%	36.3%	35.6%	33.8%	33.1%	32.5%	31.8%	31.2%	30.6%	30.0%			
29	Debt Service			40%	33%	25%	39.8%	40.4%	42.0%	39.4%	39.0%	37.6%	36.2%	34.8%	33.2%	31.8%	30.6%	29.9%
30	Non-Operating Expense			10.7%	10.5%	10.1%	9.8%	9.4%	7.3%	7.3%	7.1%	6.7%	6.5%	6.2%	6.0%			
31	Capital Financing			11.0%	11.4%	10.8%	14.5%	15.9%	21.4%	23.4%	25.7%	28.2%	30.5%	32.6%	34.0%			
32	Total			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			
<b><u>Debt Service Coverage</u></b>																		
33	Net Revenue - Local System (a)			36.7	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8	36.8			
34	Total Net Revenues			239.7	251.2	262.3	273.7	285.4	302.5	315.9	329.7	344.2	359.3	375.1	391.5			
35	Debt Service Coverage			1.25	1.70	2.00	1.43	1.43	1.40	1.47	1.47	1.53	1.58	1.63	1.71	1.79	1.87	1.92
36	Sr. Lien Debt Service Coverage			1.50	2.00	2.25	2.01	2.03	2.07	2.12	2.08	2.15	2.21	2.28	2.36	2.47	2.58	2.69
<b><u>Debt to Operating Revenue</u></b>																		
37	Outstanding Debt Balance			2,416.2	2,353.3	2,276.9	2,200.8	2,117.0	2,029.1	1,937.1	1,840.8	1,741.1	1,637.1	1,528.2	1,411.3			
38	Additional Principal				0.0	0.0	24.8	103.0	155.5	194.9	219.9	228.3	223.6	218.7	213.7			
39	Estimated Premium/Discount			272.0	264.9	256.3	247.7	238.3	228.4	218.1	207.2	196.0	184.3	172.0	158.9			
40	Outstanding Indebtedness			2,688.2	2,618.2	2,533.3	2,473.4	2,458.2	2,413.0	2,350.2	2,267.9	2,165.4	2,045.0	1,919.0	1,783.9			
41	Debt to Operating Revenue			7.0	4.0	2.0	6.59	6.19	5.79	5.47	5.26	5.07	4.75	4.44	4.10	3.74	3.38	3.04
42	Free Cash as a % of Depreciation			65%	105%	145%	54.3%	61.6%	64.5%	74.8%	76.3%	100.5%	138.6%	152.6%	168.2%	182.2%	194.0%	201.0%
43	Net Position			-	250	500	(99.6)	(113.6)	(109.3)	(93.9)	(68.4)	(8.2)	88.9	203.2	335.4	485.9	654.8	842.1
44	Debt / Asset Ratio			1.00	0.90	0.75	1.14	1.11	1.07	1.04	1.04	1.01	0.97	0.92	0.86	0.81	0.75	0.69

Executive Summary Forecast Worksheet  
Sewage Disposal System - \$ millions

Revenue / Revenue Req't Forecast	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b><u>GLWA Wholesale System</u></b>												
1 Charge Increase - %	<b>4.0%</b>	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Cumulative		4.0%	8.2%	12.5%	17.0%	21.7%	26.5%	31.6%	36.9%	42.3%	48.0%	53.9%
2 Baseline Revenue	465.6	465.6	465.6	465.6	465.6	465.6	465.6	465.6	465.6	465.6	465.6	465.6
3 Charge Increase Revenue		<u>18.6</u>	<u>38.0</u>	<u>58.1</u>	<u>79.1</u>	<u>100.9</u>	<u>123.5</u>	<u>147.1</u>	<u>171.6</u>	<u>197.1</u>	<u>223.6</u>	<u>251.2</u>
4 Revenue from Charges	465.6	484.2	503.6	523.7	544.7	566.5	589.1	612.7	637.2	662.7	689.2	716.7
5 Non Operating Revenue	2.8	4.6	3.6	3.6	3.7	3.7	3.9	4.0	4.2	4.5	5.0	5.8
6 Total Revenue	468.3	488.8	507.2	527.3	548.3	570.1	593.0	616.6	641.4	667.2	694.2	722.5
7 Operating Expense Increase - %	<b>2.0%</b>	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
8 O&M Budget	191.1	194.9	198.8	202.8	206.8	211.0	215.2	219.5	223.9	228.4	232.9	237.6
9 O&M Pension Obligation	<u>10.8</u>	<u>10.8</u>	<u>10.8</u>	<u>10.8</u>	<u>10.8</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>	<u>2.1</u>
10 Operating Expense	201.9	205.7	209.6	213.6	217.7	213.1	217.3	221.6	226.0	230.5	235.0	239.7
11 Net Revenue	266.4	283.1	297.5	313.7	330.7	357.0	375.7	395.1	415.4	436.7	459.2	482.9
<b><u>Existing Debt Service</u></b>												
12 Principal	89.7	96.6	95.0	107.8	104.2	114.5	104.7	119.0	126.5	130.6	127.8	141.6
13 Interest	<u>118.6</u>	<u>117.3</u>	<u>114.3</u>	<u>106.7</u>	<u>102.6</u>	<u>98.6</u>	<u>94.0</u>	<u>89.5</u>	<u>85.0</u>	<u>80.3</u>	<u>75.1</u>	<u>70.2</u>
14 Total	208.4	214.0	209.3	214.6	206.8	213.1	198.7	208.4	211.5	210.9	202.9	211.8
15 Net Revenue after Existing Debt Svc	58.0	69.1	88.2	99.1	123.9	144.0	177.0	186.6	203.9	225.8	256.3	271.0
16 Fixed MBO Requirements	45.1	46.5	46.6	46.8	47.0	37.2	39.5	39.6	39.3	39.0	39.1	39.2
17 Available for Capital / New Debt Svc	<b>13.0</b>	<b>22.6</b>	<b>41.6</b>	<b>52.3</b>	<b>76.9</b>	<b>106.8</b>	<b>137.5</b>	<b>147.0</b>	<b>164.6</b>	<b>186.8</b>	<b>217.2</b>	<b>231.8</b>
18 Existing Available Capital Funds	196.6	<u>30.0</u>	<u>76.6</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
19 Total CIP Funding	<b>120.0</b>	<b>43.0</b>	<b>99.2</b>	<b>41.6</b>	<b>52.3</b>	<b>76.9</b>	<b>106.8</b>	<b>137.5</b>	<b>147.0</b>	<b>164.6</b>	<b>217.2</b>	<b>231.8</b>
20 Carryover Capital Funding Balance	166.6	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
21 Additional Bond Proceeds Needed		<b>20.8</b>	<b>78.4</b>	<b>67.7</b>	<b>43.1</b>	<b>13.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
22 Cumulative Additional Bonds	<b>0.0</b>	<b>20.8</b>	<b>99.2</b>	<b>166.9</b>	<b>210.0</b>	<b>223.2</b>	<b>223.2</b>	<b>223.2</b>	<b>223.2</b>	<b>223.2</b>	<b>223.2</b>	<b>223.2</b>
23 Additional Debt Service	0.0	1.2	5.9	9.9	12.5	13.3	13.3	13.3	13.3	13.3	13.3	13.3

Executive Summary Forecast Worksheet  
Sewage Disposal System - \$ millions

Metric Calculations	Metric Target			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030			
	Min A	Min AA	Min AAA	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note	Note			
<b><u>Operating Margin</u></b>																		
24	Depreciation Expense			160.3	141.1	130.9	129.7	130.4	122.3	114.9	117.8	121.2	125.6	131.1	137.6			
25	Total Operating Expenses			351.4	336.0	329.7	332.5	337.2	333.2	330.1	337.2	345.1	354.0	364.0	375.2			
26	Operating Margin			114.2	148.2	173.9	191.2	207.4	233.2	259.0	275.4	292.1	308.7	325.1	341.6			
27	Operating Margin %			25%	40%	50%	24.5%	30.6%	34.5%	36.5%	38.1%	41.2%	44.0%	45.0%	45.8%	46.6%	47.2%	47.7%
<b><u>Regional Revenue Allocation</u></b>																		
28	O&M			43.1%	42.1%	41.3%	40.5%	39.7%	37.4%	36.6%	35.9%	35.2%	34.5%	33.9%	33.2%			
29	Debt Service			40%	33%	25%	44.5%	43.8%	41.3%	40.7%	37.7%	37.4%	33.5%	33.8%	33.0%	31.6%	29.2%	29.3%
30	Non-Operating Expense			9.6%	9.5%	9.2%	8.9%	8.6%	6.5%	6.7%	6.4%	6.1%	5.9%	5.6%	5.4%			
31	Capital Financing			2.8%	4.6%	8.2%	9.9%	14.0%	18.7%	23.2%	23.8%	25.7%	28.0%	31.3%	32.1%			
32	Total			100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			
<b><u>Debt Service Coverage</u></b>																		
33	Net Revenue - Local System (a)			29.3	31.6	31.7	31.6	31.7	31.7	31.6	31.6	31.7	31.7	31.7	31.7			
34	Total Net Revenues			295.7	314.7	329.2	345.3	362.3	388.7	407.4	426.7	447.0	468.4	490.8	514.5			
35	Debt Service Coverage			1.25	1.70	2.00	1.24	1.27	1.33	1.35	1.44	1.51	1.67	1.68	1.74	1.83	1.98	2.00
36	Sr. Lien Debt Service Coverage			1.50	2.00	2.25	2.05	2.13	2.38	2.24	2.21	2.41	2.61	2.51	2.62	2.75	2.88	2.93
<b><u>Debt to Operating Revenue</u></b>																		
37	Outstanding Debt Balance			3,050.7	2,941.0	2,832.3	2,710.2	2,591.1	2,461.2	2,340.3	2,204.4	2,060.3	1,911.3	1,764.2	1,602.5			
38	Additional Principal				20.8	98.9	164.9	205.0	214.4	210.2	205.8	201.3	196.5	191.6	186.4			
39	Estimated Premium/Discount			272.0	262.2	252.5	241.6	231.0	219.4	208.7	196.5	183.7	170.4	157.3	142.9			
40	Outstanding Indebtedness			3,322.7	3,224.0	3,183.7	3,116.7	3,027.2	2,895.0	2,759.1	2,606.8	2,445.2	2,278.2	2,113.1	1,931.8			
41	Debt to Operating Revenue			7.0	4.0	2.0	5.85	5.45	5.21	4.93	4.62	4.30	3.94	3.60	3.26	2.93	2.62	2.31
42	Free Cash as a % of Depreciation			65%	105%	145%	41.2%	52.5%	68.4%	74.3%	90.9%	105.6%	140.9%	145.6%	155.5%	167.3%	183.1%	184.6%
43	Net Position			-	250	500	(167.5)	(172.9)	(151.7)	(108.1)	(45.7)	46.1	169.3	314.4	482.0	672.3	886.0	1,122.9
44	Debt / Asset Ratio			1.00	0.90	0.75	1.08	1.06	1.06	1.04	1.02	0.98	0.94	0.89	0.84	0.79	0.74	0.69





## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

**From:** Nicolette Bateson, CPA  
Chief Financial Officer/Treasurer

**Re:** Capital Improvement Plan Relative to Financial Plan (Continued)

**Background:** At its meeting on October 26, 2018, the Audit Committee was asked to consider a Capital Spend Rate assumption policy. Attached is a copy of the materials presented related to that discussion. Also attached is a revised, proposed policy for the Audit Committee's consideration.

**Analysis:** The proposed policy attached, reflects feedback received. Staff recommends adoption of the policy.

**Proposed Action:** The Audit Committee recommends that the Great Lakes Water Authority Board of Directors adopt the Capital Program Spend Rate Assumption policy with an immediate effective date for implementation with the FY 2020 through FY 2024 five-year planning cycle.



## Great Lakes Water Authority

### PROPOSED Capital Program Spend Rate Assumption Policy

**Purpose:** The Spend Rate Assumption (SRA) policy provides an analytical approach to bridge the total dollar amount of projects in the Capital Improvement Plan (CIP) with what is realistically available to spend for budgetary purposes and/or delayed for non-budgetary reasons. Those limitations, whether financial or non-financial, necessitate the SRA for budgetary purposes, despite the prioritization established in the CIP. The outcome is a reasoned balance between a desired level of capital investment with financial strategies to manage debt levels and control adjustments to customer charges.

**Policy:** Annually, a projected spend rate assumption for the financial plan related to the proposed capital improvement plan will be established based upon **pertinent** factors and data available at that time. Such pertinent factors and data will include the mix of projects and phases in the proposed CIP, interdependency risk, **criticality**, and other measures provided by the GLWA team members that develop and manage the CIP projects. That spend rate assumption will be presented to the Audit Committee no later than December **31<sup>st</sup>** each year after the GLWA Board, **Capital Improvement Planning Committee**, and member partners have had the opportunity to review the draft capital improvement plan.

**Adopted:** By the Great Lakes Water Authority Board on \_\_\_\_\_.



## Financial Services Audit Committee Communication

Prior month report

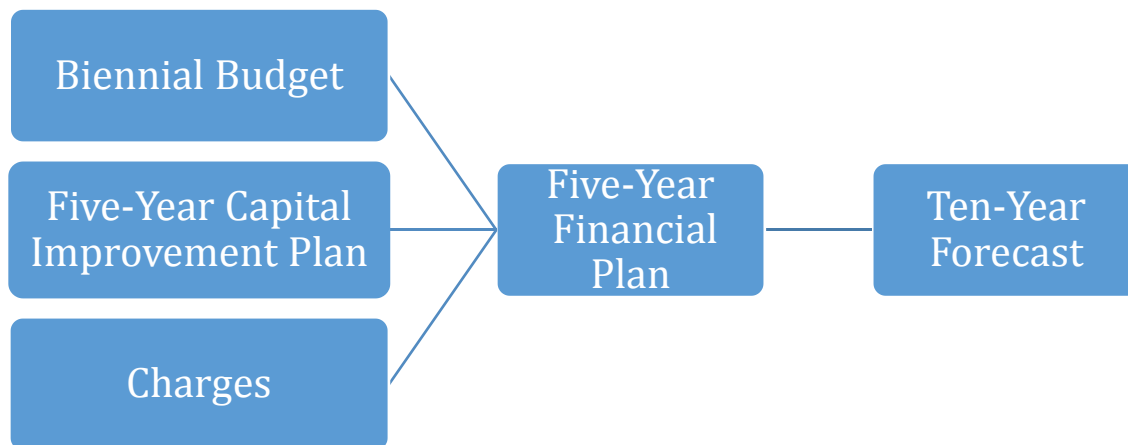
**Date:** October 26, 2018

**To:** Great Lakes Water Authority Audit Committee

**From:** Nicolette Bateson, CPA  
Chief Financial Officer/Treasurer

**Re:** Capital Improvement Plan Relative to Financial Plan

**Background:** The annual update to the Great Lakes Water Authority's five-year capital improvement plan and financial plan are underway. In preparing those plans, certain assumptions are required to effectively proceed with a comprehensive long-term financial plan.



**Analysis:** A key decision point in establishing a financial plan for the capital improvement plan (CIP) is establishing a realistic factor for the actual spending pace.

- ✓ Unforeseen schedule delays
- ✓ Timing interdependencies with partners
- ✓ Mix of phases of projects in CIP (what percent are concept vs. design vs. construction; earlier phases = increased likelihood or timing revisions)

- ✓ Historical performance vs. future performance
- ✓ FY 2030 financial plan consideration (under development) to address affordability and sustainability (new 10-year CIP is a key input)
- ✓ Where we are in GLWA's history (new entity, new staff, capital program management deployment in CY 2019)
- ✓ Magnitude and complexity of GLWA's CIP as a regional water authority

To better understand this topic, we drew upon two sources of input: 1) GLWA's engineering team members and 2) The Foster Group who has prepared and monitored the financing plan, debt issuance, and capital plan for GLWA and its predecessor regional operations for many years.

### Engineering Team Member Feedback

1. **Obtaining buy-in and acceptance of project alternatives within a study or preliminary design phase of a project.**  
 Example: the final route for the Water Works Park to Northeast water transmission main (\$130 million) is on hold pending acceptance from the City of Detroit. GLWA has identified a route that carries the least disruption to residents, however the route has not yet been endorsed. Result is that GLWA is on hold for the design of the pipeline.
2. **Obtaining maintenance agreements, permanent easements and property acquisitions.** These are common for new pipeline projects and require in-depth conversations and workshops with numerous property and utility owners. We build time into our planned schedules for these activities; however, there are times when circumstances are out of our control and delays occur.  
 Example: Achieving agreement with a county parks department for a new water transmission main which is designed to be placed in county park property.
3. **Opportunities driven by other regional stakeholders which alter priorities, timelines, and spending.** To optimize regional infrastructure investments, GLWA's goal is to engage in opportunity projects with other regional stakeholders such as Michigan Department of Transportation, county road commissions, DTE, ITC, AT&T, cities, and townships.
4. **Rebids and revisions.** There are times when projects have to be re-bid due to proposal irregularities. This causes a delay in a project's start. If it is engineering services, then the associated construction contract is delayed which impacts projected spend rates.

5. **Vendor performance.** There are times that vendors do not meet project deadlines even though GLWA issues a notice, writes notices to cure, and in the case of construction contracts assesses liquidated damages.
6. **Operational needs.** Designs include specified work limitations and periods and durations when the construction contractor will be able to take certain systems out of service to facilitate construction. These limitations are planned in collaboration with operations management during the design process. However, operational circumstances are dynamic and change which sometimes prevents system shutdowns that are required to execute and complete construction.
7. **Post-start changes.** Approval of construction change directives and change orders can consume weeks and sometimes months of time when negotiating change amounts with the contractors and internal GLWA stakeholders. This may delay a vendor's progress of work and related CIP spend.

**The Foster Group Report** (see attached)

**Recommendation:** Given the above, it is not reasonable to expect that 100% of the five-year capital improvement plan will turn into spent dollars. Nor is it appropriate to compile a financing plan (including the issuance of bonds) that reflects 100% spend rate. For this reason, a simple financial policy statement is proposed.

**Capital Program Spend Rate Assumption:** Annually, a projected spend rate assumption for the financial plan related to the upcoming capital improvement plan will be established based upon pertinent factors and data available at that time. Such factors and data will include the mix of projects and phases in the proposed CIP, interdependency risk, and other measures provided by the GLWA team members that develop and manage the CIP projects. That spend rate assumption will be presented to the Audit Committee no later than December each year after the GLWA Board and member partners have had the opportunity to review the draft capital improvement plan.

**Proposed Action:** Approve the Capital Program Spend Rate Assumption as proposed or amended.



Prior month report

# THE FOSTER GROUP

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**THE FOSTER GROUP, LLC**  
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## MEMORANDUM

Review of Draft CIPs

October 24, 2018

To: Nicolette Bateson

From: Bart Foster

You have asked for observations regarding our review of the Authority’s Draft FY 2020 Capital Improvement Programs (CIPs). Specifically, you have asked for a review of how the projected expenditures in the Draft CIPs align with the expenditures that were included in the financing plans established for the recently executed revenue bond transactions. Those financing plans are set forth in the official statement disclosures for the transactions. Herewith some commentary based on our initial review.

First, some background regarding the CIP financing requirements that were utilized for the bond sales. As we prepared the financing plans, we were aware that the actually achieved capital expenditure levels in recent years were materially lower than published planning levels. This fact is not a new occurrence, nor is it atypical of large municipal utility systems. According to my records, the average “CIP expenditure achievement” ratio for the predecessor DWSD in its final 29 full years of existence was approximately 70%. (*See attached exhibit page 1*). The performance level shows some peaks and valleys, but overall the trend is consistent. The achievement of the Sewer CIP is a bit higher than that for Water (75% vs. 63%). These ratios are not inconsistent with my experience with other large municipal utility systems.

These general results have continued for the first two years of GLWA’s existence. According to the most recently published Construction Work-in-Progress Report the actual expenditure levels during FY 2017 and FY 2018 were 37% and 36%, respectively. Once again, the Sewer performance was slightly higher than the Water performance in each of those years. It was with this recognition in mind that the FY 2018 GLWA Budget anticipated a “financing level” of 80% of the published CIPs.

As the FY 2019 Budget was being prepared, it was apparent that the early years of the CIPs included reduced projected expenditure levels. The financing plan for the FY 2019 Budget assumed full achievement of the published CIP.

There are negative consequences of financing capital expenditures that do not end up being achieved, particularly for municipal utilities that rely heavily on issuance of tax-exempt debt to finance capital improvements. The ability to realize investment earnings on Bond Construction Funds is restricted, and the earnings rate is always lower than the borrowing rate. In recent years the difference between these two interest rates has been significant. Maintaining larger than needed balances in these Funds is a net income losing strategy. There are also potential tax law compliance issues when borrowed monies are not spent within the originally anticipated schedule. Negative consequences also emerge in this scenario when project expenditures are revenue financed, as rates and charges must be set at levels that produce unspent reserve balances. These instances often result in customer and stakeholder concerns.

As we prepared the financing plans for the recent bond transactions, we recognized the prudence of establishing a realistic expectation of capital expenditures to finance, and modified the CIP financing requirements accordingly. In summary, our approach for the capital financing plans for the bond sales included:

- No changes to the FY 2019 projected expenditures;
- A “financing level” of 80% of the total expenditures between FY 2020 and FY 2023;
- A phased ramp up of FY 2020 through FY 2023 expenditures, particularly for the Water CIP.

This approach is illustrated on the first 7 lines of each section of the attached exhibit page 2, and resulted in the CIP financing expenditure plan figures on Line 6 for Water and Line 16 for Sewer. In the bond official statements, we acknowledged that the CIP expenditure schedule for purposes of the bond financing plan was different from the formally approved, published CIP. See below from the official statements.

*“The Fiscal Year 2019 Water and Wastewater Capital Improvement Plan (“CIP”) was approved by the GLWA Board on June 20, 2018. The CIP is dynamic and requires continual review and modification during the course of each year. GLWA has initiated efforts to prepare the Fiscal Year 2020-2024 CIP, and the CIP expenditure schedule shown in the following table reflects the initial planning levels established as part of those update efforts.”*

As noted in the disclosure language, we expected that the FY 2020 CIP would reflect the moderated level of projected expenditures.

We have reviewed the Draft FY 2020 CIP and compared the financing requirements to those included in the bond financing plans. See the last three lines in each section of exhibit page 2. General observations:

- The Draft FY 2020 CIP (Water and Sewer combined) is ~ \$275 million higher than the target established for the bond financing plan.

- In order to align the Draft CIP with the bond financing plan, significant planned project deferrals into years 6 through 10 would be required to move this \$275 million outside the short-term financing window - or . . .
- A "capital financing level" assumption on the order of 75% to 80% would be appropriate for policy consideration.
- The Draft FY 20 CIP assumes rapid project delivery performance. The plan indicates Water expenditures will quadruple and Sewer expenditures will double compared to what was realized during FY 2018.

Exhibit page 3 provides a graphical comparison of the figures shown on exhibit page 2.

We recognize that the Authority's infrastructure plans include projects that are essential to maintaining and improving quality of service and achieving strategic objectives. This discussion is not intended to question the intent of the overall plans or individual projects. However, we do think it would be prudent to consider policy approaches that result in capital financing plans that reflect the challenges of implementing such plans, as evidenced by recent experience. We trust that this discussion provides thoughtful topics for policy consideration and we are available to present these observations and discuss this matter at your convenience.

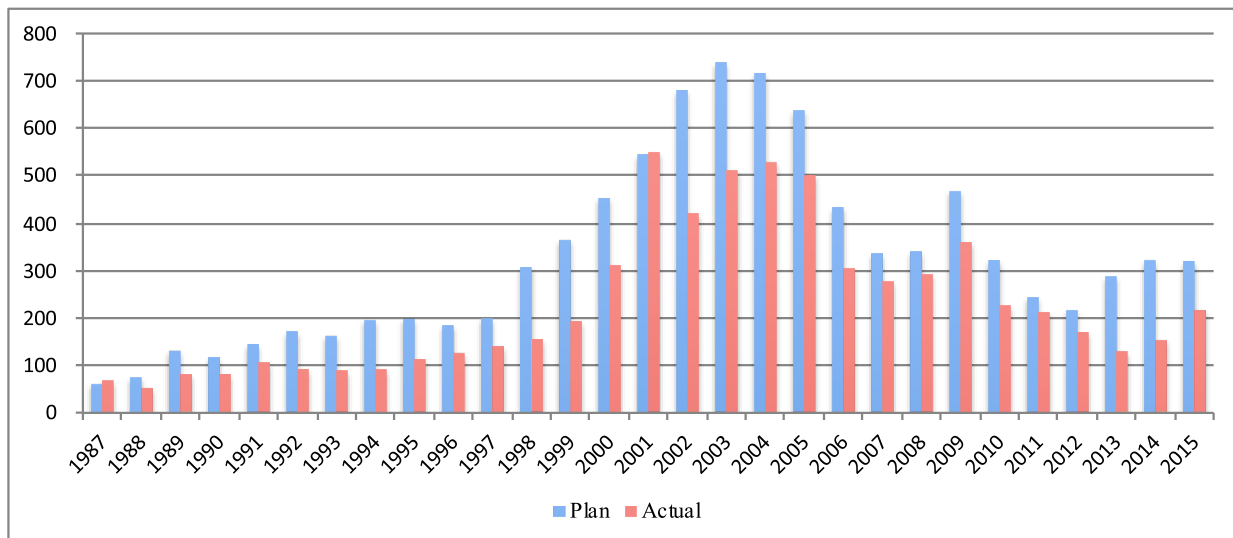


Prior month report

DWSD CIP Performance - \$ millions

Fiscal Year	Financed / Actual Expenditures						Achievement Percentage		
	Water Supply System		Sewage Disposal System		Total DWSD		Water	Sewer	Total
	Plan (a)	Actual	Plan (a)	Actual	Plan (a)	Actual			
1987	29.4	31.4	31.2	36.5	60.6	68.0	107%	117%	112%
1988	49.1	23.4	25.5	29.1	74.6	52.5	48%	114%	70%
1989	57.3	37.4	73.2	43.7	130.5	81.1	65%	60%	62%
1990	53.9	31.5	63.6	49.2	117.5	80.7	58%	77%	69%
1991	77.9	16.5	66.2	89.9	144.1	106.5	21%	136%	74%
1992	98.7	18.2	72.9	73.8	171.6	92.0	18%	101%	54%
1993	79.7	24.5	82.4	64.3	162.1	88.8	31%	78%	55%
1994	98.9	38.5	96.6	53.7	195.5	92.2	39%	56%	47%
1995	76.7	50.3	121.3	62.5	198.0	112.8	66%	52%	57%
1996	84.2	51.9	100.0	74.3	184.2	126.2	62%	74%	69%
1997	84.6	51.3	114.3	88.0	198.8	139.2	61%	77%	70%
1998	182.3	77.6	125.0	76.5	307.3	154.1	43%	61%	50%
1999	174.5	94.8	190.0	97.8	364.5	192.6	54%	51%	53%
2000	178.5	180.0	274.0	130.0	452.5	310.0	101%	47%	69%
2001	201.2	263.0	343.0	286.4	544.2	549.4	131%	83%	101%
2002	280.8	156.3	399.3	263.5	680.1	419.8	56%	66%	62%
2003	300.3	181.5	438.4	329.9	738.7	511.4	60%	75%	69%
2004	245.6	155.3	470.2	373.7	715.8	529.0	63%	79%	74%
2005	237.0	151.8	400.7	349.8	637.7	501.6	64%	87%	79%
2006	174.3	98.1	259.2	206.8	433.5	304.9	56%	80%	70%
2007	125.8	96.7	209.6	181.1	335.4	277.8	77%	86%	83%
2008	164.8	135.6	175.4	156.4	340.2	292.0	82%	89%	86%
2009	183.3	150.5	283.6	209.4	466.9	359.8	82%	74%	77%
2010	123.3	97.0	198.9	129.7	322.2	226.7	79%	65%	70%
2011	96.6	87.8	147.0	124.1	243.6	211.9	91%	84%	87%
2012	91.0	72.7	125.6	97.0	216.5	169.7	80%	77%	78%
2013	142.8	25.0	145.1	105.0	287.9	130.0	18%	72%	45%
2014	146.3	40.0	176.1	113.7	322.4	153.7	27%	65%	48%
2015	125.2	62.5	193.7	154.5	318.9	217.0	50%	80%	68%
Total	3,963.9	2,501.2	5,401.9	4,050.2	9,365.7	6,551.4	63%	75%	70%
Average	136.7	86.2	186.3	139.7	323.0	225.9	63%	75%	70%

(a) Reflects amount financed by plan in support of proposed rates. To the extent that such financing was not required, the general impact is to carry over financing to subsequent years and defer the need for additional financing sources.



Prior month report
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CIP Planning Exercise - \$1,000s  
Comparison of Financing Plan CIP from Bond Sale vs. Draft FY 2020 CIP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>5-Year Total</u>	<u>2020-2023</u>
<b>Water</b>							
1 Approved FY 2019 CIP	66,038	137,583	155,734	178,300	175,174	712,829	646,791
2 FY 2020-23 Planning Target - %							80.0%
3 FY 2020-23 Planning Target							517,433
4 Average Annual Target FY 2020-23							129,358
5 Phased Implementation		85.0%	95.0%	105.0%	115.0%		
6 Phased Financing Plan for Bond Sale	<b>66,038</b>	<b>110,000</b>	<b>122,900</b>	<b>135,800</b>	<b>148,800</b>	<b>583,538</b>	517,500
7 Variance from Approved FY 19 CIP	0	(27,583)	(32,834)	(42,500)	(26,374)	(129,291)	
8 <b>Draft FY 2020 CIP</b>	<b>68,746</b>	<b>143,247</b>	<b>166,599</b>	<b>182,595</b>	<b>169,006</b>	<b>730,193</b>	<b>661,447</b>
9 Variance from Bond Financing Plan	2,708	33,247	43,699	46,795	20,206	146,655	143,947
10 Indicated Funding Level for Fin Plan		77%	74%	74%	88%		78%
<b>Sewer</b>							
11 Approved FY 2019 CIP	105,183	111,155	111,952	136,411	168,458	633,159	527,976
12 FY 2020-23 Planning Target - %							80.0%
13 FY 2020-23 Planning Target							422,381
14 Average Annual Target FY 2020-23							105,595
15 Phased Implementation		95.0%	95.00%	105.00%	105.00%		
16 Phased Financing Plan for Bond Sale	<b>105,183</b>	<b>100,300</b>	<b>100,300</b>	<b>110,900</b>	<b>110,900</b>	<b>527,583</b>	422,400
17 Variance from Approved FY 19 CIP	0	(10,855)	(11,652)	(25,511)	(57,558)	(105,576)	
18 <b>Draft FY 2020 CIP</b>	<b>104,931</b>	<b>139,480</b>	<b>107,430</b>	<b>139,677</b>	<b>156,884</b>	<b>648,402</b>	<b>543,471</b>
19 Variance from Bond Financing Plan	(252)	39,180	7,130	28,777	45,984	120,819	121,071
20 Indicated Funding Level for Fin Plan		72%	93%	79%	71%		78%
<b>Combined</b>							
21 Approved FY 2019 CIP	171,221	248,738	267,686	314,711	343,632	1,345,988	1,174,767
22 FY 2020-23 Planning Target - %							80.0%
23 FY 2020-23 Planning Target							939,814
24 Average Annual Target FY 2020-23							234,953
25 Phased Implementation		89.5%	95.0%	105.0%	110.5%		
26 Phased Financing Plan for Bond Sale	<b>171,221</b>	<b>210,300</b>	<b>223,200</b>	<b>246,700</b>	<b>259,700</b>	<b>1,111,121</b>	939,900
27 Variance from Approved FY 19 CIP	0	(38,438)	(44,486)	(68,011)	(83,932)	(234,867)	
28 <b>Draft FY 2020 CIP</b>	<b>173,677</b>	<b>282,727</b>	<b>274,029</b>	<b>322,272</b>	<b>325,890</b>	<b>1,378,595</b>	<b>1,204,918</b>
29 Variance from Bond Financing Plan	2,456	72,427	50,829	75,572	66,190	267,474	265,018
30 Indicated Funding Level for Fin Plan		74%	81%	77%	80%		78%

Prior month report

CIP Planning Exercise - \$ millions  
 Comparison of Financing Plan CIP from Bond Sale vs. Draft FY 2020 CIP

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Combined Water/Wastewater CIP</b>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Financing Plan CIP	110.7	171.2	210.3	223.2	246.7	259.7
Draft FY 2020 CIP	110.7	173.7	282.7	274.0	322.3	325.9
<i>Pace of Increase from FY 2018</i>		57%	155%	148%	191%	194%
<b>Water CIP</b>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Financing Plan CIP	40.0	66.0	110.0	122.9	135.8	148.8
Draft FY 2020 CIP	40.0	68.7	143.2	166.6	182.6	169.0
<i>Pace of Increase from FY 2018</i>		72%	258%	316%	356%	322%
<b>Wastewater CIP</b>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Financing Plan CIP	70.6	105.2	100.3	100.3	110.9	110.9
Draft FY 2020 CIP	70.6	104.9	139.5	107.4	139.7	156.9
<i>Pace of Increase from FY 2018</i>		49%	97%	52%	98%	122%





## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

**From:** Nicolette Bateson, CPA  
Chief Financial Officer/Treasurer

**Re:** Reconciliation Committee Update

**Background:** The Reconciliation Committee is defined by the Water and Sewer Services Agreement (WSSA) between the Great Lakes Water Authority (GLWA) and the Detroit Water & Sewerage department (DWSD) as a DWSD Board Member and GLWA Board Member along with GLWA's Chief Executive Officer, DWSD's Director, and their respective Chief Financial Officers and General Counsels.

The 2018 Memorandum of Understanding, finalized in June 2018, between GLWA and DWSD requires the parties to meet at a minimum quarterly (January, April, July, and October). The purpose of the quarterly meetings is to expand the level of communication between the two entities related to financial, operational, legal, capital planning, and other matters and opportunities for improved management and coordination of both entities and foster a positive partnership in the water services sector. The results of those meetings shall be reported back to the respective Boards by the Board liaison.

In the event that there is a budget shortfall, the WSSA require that the Reconciliation Committee meet promptly for the purpose of reviewing actions the City proposes to take to address such significant unfavorable variance. Following the meeting of the Reconciliation Committee, the City agrees to take actions to address any such significant unfavorable variance and to make appropriate adjustments to the related Detroit Local System Budget in the current and succeeding Fiscal Year.

**Analysis:** The Reconciliation Committee held its first meeting on October 19, 2018. A primary topic at that meeting was a net budgetary shortfall in the local sewer fund of \$56.27 million through June 30, 2018 (unaudited) of which \$29.52 million was outstanding as of June 30, 2017. The action items from that meeting were for the DWSD representatives to discuss the matter with their Board, which they did on November 7, 2018. The next step for

DWSD is to provide written notice as it relates to the plan to address the shortfall. DWSD has a number of remedies available as described below.

The 2018 MOU provides that if DWSD experiences a cumulative negative variance of more than two percent (2%) of the total budget for either Local System (a "Budget Shortfall") from its budget adopted pursuant to the Water and Sewer Services Agreement based on DWSD's quarterly reports to GLWA, DWSD, as the agent of GLWA, shall, within thirty (30) days thereafter, schedule a meeting of the Reconciliation Committee to discuss the magnitude and reasons for the shortfall and possible approaches to address the shortfall. Within sixty (60) days after the Reconciliation Committee meets, DWSD, as agent, shall develop a plan to cure the Budget Shortfall and the time period within which the shortfall will be cured, taking into account the reasons for and magnitude of the shortfall. If Revenues, including, but not limited to, adjustments to Local O&M expenditures and the use of subsequent positive receipts, are not available to cure the Budget Shortfall within the same Fiscal Year, DWSD shall reallocate available funds in the related DWSD I&E Account or reallocate any unencumbered Lease Payment to eligible debt service to satisfy the Budget Shortfall.

Budget Shortfalls not cured by the end of the Fiscal Year following the year in which they arise shall be repaid in full, in installments, over a period not to exceed the next three fiscal years, plus a surcharge calculated as provided below, as part of the Revenue Requirement payable by DWSD. The surcharge factor on the portion of the Budget Shortfall which remains unpaid at June 30 of the Fiscal Year following the fiscal year in which the Budget Shortfall arises shall be based on the three-year U.S. Treasury Note Rate, as published in the Wall Street Journal, plus 150 basis points.

Until the Budget Shortfall is repaid, and unless DWSD has other resources available for that purpose or otherwise agreed to by GLWA, DWSD shall apply any available funds in the related DWSD I&E Account for that purpose. GLWA Board approval shall be required for repayment terms in excess of three (3) years. The quarterly Reconciliation Committee meetings shall include a review of the progress in eliminating the Budget Shortfall.

**Proposed Action:** Receive and file report.



## Financial Services Audit Committee Communication

**Date:** November 16, 2018  
**To:** Great Lakes Water Authority Audit Committee  
**From:** Nicolette Bateson, CPA  
Chief Financial Officer/Treasurer  
**Re:** Oakland-Macomb Interceptor Drainage District Update

**Background:** The Great Lakes Water Authority' (GLWA) has been engaged with representatives of the Oakland-Macomb Interceptor Drainage District (OMIDD) in relation to a potential operating arrangement for certain facilities leased by GLWA from the City of Detroit. Those discussions include assets referenced in the attached correspondence from earlier in this calendar year.

**Analysis:** The discussion with OMIDD representatives continues to be underway. This has been an opportunity for both parties to exchange information and ideas related to financial and operational matters. There are no definitive next steps at the time of preparing this memo. A verbal update will be provided at the Audit Committee meeting.

**Proposed Action:** Receive and file report.



*Jim Nash*

May 21, 2018

Mr. Brian Baker, Chairperson  
GLWA Audit Committee  
Great Lakes Water Authority  
735 Randolph St., Suite 1900  
Detroit, MI 48226

Re: Response to Foster Group Memorandum, April 19, 2018  
Cost of Service FY 2018-19

Dear Chairperson Baker:

On April 20, 2018, appearing before the GLWA Audit Committee, the Oakland-Macomb Interceptor Drain Drainage District ("OMID") provided commentary on the Foster Group response dated April 19, 2018 ("Foster Group Memorandum") to previously raised questions and concerns on the proposed FY 2018-19 Cost of Service charges to the OMID. The Audit Committee requested that the OMID prepare its response to the Foster Group Memorandum. Below are our comments and concerns regarding the FY 2019 Sewer Charges to the OMID:

**1. Foster Group Memorandum:**

"Capital Revenue Requirement Allocations

Since the establishment of the FY 2011 Sewage Disposal Charges, GLWA allocations of capital revenue requirements (including debt service) have been allocated to cost pools and Customers based on a "Utility Basis" approach. Under this approach statistics from the fixed asset records of the Sewer Utility are used to allocate capital costs. For instance, if 1% of the representative capital asset value for the Sewer System is related to OMID specific assets, then 1% of the capital revenue requirements (including debt service) are allocated to OMID."

**OMID Response:**

In 2009, the City of Detroit ("City") transferred to the OMID certain sanitary sewer interceptors, pump stations, meters and appurtenant facilities originally constructed and owned by the City. As part of this OMID/City transaction, the City also entered in a "Settlement and Release of Certain Rate Disputes" agreement dated October 22, 2009 ("Release Agreement"). According to the Release Agreement, the only debt service that was to be assigned to the OMID was the debt service associated with capital improvements at the Northeast Pump Station ("NEPS"). The pertinent portion of the Release Agreement is restated below:

### “3. Summary of Post-Closing Debt

a. The parties agree that after the Oakland-Macomb Interceptors have been transferred to the District and the Macomb Interceptors to Macomb County, the only debt service included in the sewer rates for the District, other than debt service allocated "common-to-all" or "suburban common-to-all," will be debt service associated with capital improvements at the Northeast pump station (excluding meters at the Northeast Pump Station). Further, no debt service in the rates for the C-OSDS or the MCWDD in FY2008/2009 and associated with the meters listed in Section l(d) will be included in the District's rates as a suburban common-to-all charge in the FY 2009/2010 rate year or subsequent rate years.”

Regardless of whether GLWA (as the successor entity to the City) utilizes Cash Basis, Utility Basis or any other basis, any debt service assigned to “OMID specific” other than for the Northeast Pump Station (“NEPS”) would be inconsistent with the Release Agreement. Accordingly, in addition to the NEPS, the City (and now GLWA) should not have assigned any debt service for the North Interceptor East Arm since 2009.

## 2. **Foster Group Memorandum:**

### “Operating Revenue Requirement Allocations

For purposes of assigning operating costs to the OMID cost pool, the same approach (relative inch miles) is used to assign NIEA related interceptor costs. In the FY 2019 Cost of Service Study this resulted in approximately \$0.43 million of direct operating revenue requirements allocated to the OMID cost pool.

With regard to the NEPS operating costs, GLWA allocations of all budget operating expenses related to sewer pumping stations (including maintenance, SCADA, etc.) have been assigned to individual sewer pumping stations based on relative electric usage or costs. This approach was established several years ago, as detailed specific pumping station maintenance costs, etc. were difficult to isolate. For purposes of the FY 2019 Cost of Service Study, we obtained budgeted electric utility costs for several years. The relative budgeted electric utility costs for the NEPS, as a proportion of budgeted electric utility costs for all GLWA sewer pumping stations, ranged from 24% to 40%. In our FY 2019 Cost of Service Study we allocated 25% of all sewer pumping station operating expenses to the NEPS, which resulted in direct operating costs totaling \$5.88 million being assigned to the OMID cost pool. So our FY 2019 Cost of Service Study included \$6.05 million of direct operating revenue requirements assigned to the OMID cost pool, which was then directly assigned to the OMID Customer.

The combined total revenue requirement allocated to the OMID cost pool in the FY 2019 Cost of Service Study was \$10.50 million.”

## **OMID Response:**



As indicated above, the NEPS is assigned costs based on electrical usage which was established several years ago by the City, and continued under GLWA. However, the OMID Wastewater Disposal Services Contract dated October 22, 2009 (“Service Contract”), indicates that such allocations requires justification, as well customer (i.e. OMID) consent (which “shall not be unreasonably withheld”). To assist us in understanding GLWA’s costs allocations, we request GLWA provide justification that establishes a reasonable relationship between electrical usage and the allocations of other costs associated with the operations of the NEPS.

In addition, although we understand that the transition from DWSD to GLWA is still a work-in-progress, the Service Contract provides that separate accounts should have been established for the NEPS to account for all costs associated with this facility. To our knowledge, this process was never implemented by the City prior to, or by GLWA, after the transfer of the regional system. It would be helpful to understand whether GLWA intends to establish separate accounts to which all costs will be charged by employees for in-house labor, parts, equipment and contractual services, or whether GLWA intends to continue to allocate these costs. If the latter, we will need justification as to why it is more cost effective to allocate these costs rather than directly account and bill for them. For purposes of this letter, we have restated the relevant portions of the Service Contract below concerning this particular issue:

“22.02 Northeast Pump Station Costs and Accounting. Customer shall be responsible for the payment of all costs arising out of or related to the operation, maintenance, improvement and repair the Northeast Pump Station. City will establish separate accounts for the Northeast Pump Station to which all costs will be charged by employees for in-house labor, parts and equipment and for contractual services. In the event the City determine that it is more cost effective to allocate certain labor functions or establish a flat monthly charge rather than directly account for them, it may do so with Customer's prior consent which consent shall not be unreasonably withheld so long as City has provided a acceptable cost allocation justification for the proposed allocation or flat charge. An allocation or flat charge will be subject to periodic review and adjustment at intervals no greater than five years. City will maintain supporting records for all Northeast Pump Station charges for 12 months after the Look Back for the relevant financial year has been completed and the associated detailed rate notebook has been made available to Customer. Supporting records will be available for Customer review upon written request. City will invoice Customer directly for the cost of operating, maintaining improving and repairing the Northeast Pump Station on a quarterly basis. These cost will not be recovered through the rates.”

During the April 20 Audit Committee meeting, we also indicated that there are two customers which receive customer specific charges associated with sewage pump stations: the City and the OMID. At that time, we inquired as to how the City was assessed by GLWA for its customer specific sewage pumping stations, and were informed that Shared Services Agreement establishes the charges for the operations and maintenance of the City’s sewage pump station.

We have reviewed the Shared Services Agreement between the City and GLWA, and in particular, Schedule #OPS-008 which identifies the charges for GLWA services. Attached is a copy of Schedule #OPS-008. Under the Shared Services Agreement Schedule #OPS-008, GLWA provides 24/7 operations, maintenance, engineering and management services for the following City facilities: (1) Belle Isle Main Pump Station and Combined Sewer Overflow Facility; (2) Bluehill Pump Station; (3) Fischer Pump Station; and (4) Woodmere Pump Station. According to Schedule #OPS-008 (for FY 2016 Budget), the City's share of the total annual estimated cost to operate and maintain these facilities, is \$1,393,598 (see attachment for specific services provided). Moreover, the City is directly responsible for all utilities. Any emergency or extraordinary repairs are separately billed with supporting documentation. Using this information, it appears that the OMID is being charged significantly more for a similar level of service for operations and maintenance associated with NEPS than the City is for its pump stations. GLWA needs to justify this disparate treatment for similar levels of service. Further, based on the Shared Services Agreement, GLWA is currently capable of directly billing for services provided.

**Remaining Foster Group Memo Item:**

During the April 20 Audit Committee meeting, the Committee did not address the treatment of return on rate base and depreciation expense. We are willing to discuss this matter as well as the responses above, at the convenience of the Audit Committee.

On behalf of the Oakland-Macomb Interceptor Drain, thank you for taking the time to review our responses to the issues raised in the Foster Group Memorandum. If you have any questions regarding this matter please feel free to contact me.

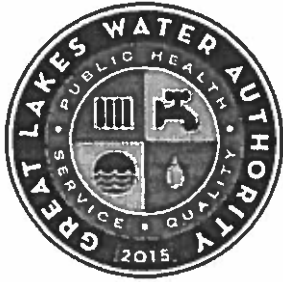
Sincerely,



Raphael Chirolla

Enclosure

cc: Robert Daddow, Director, GLWA Audit Committee  
Gary Brown, Director, GLWA Audit Committee  
Sue F. McCormick, Chief Executive Officer  
William N. Wolfson, Chief Administrative and Compliance Officer  
Nicolette Bateson, CPA, CFO/Treasurer  
Randal M. Brown, General Counsel



**Shared Services Agreement  
Schedule  
Operations: Systems Control Center, Detroit Only  
Sewer Pump Stations  
and Belle Isle CSO Facility**



Shared Service Schedule #	OPS-008
Service Provider	Great Lakes Water Authority
Service Subscriber	City of Detroit / Detroit Water and Sewerage Department - Retail
Description of Service	Provide operations and maintenance of sewer pump stations and a combined sewer overflow facility that only service Detroit.
Description of Requirements, Level of Service, Hours of Service	<p><b>Level of Service (Typical):</b>            Provider will provide monitoring, operation and maintenance activities for the following facilities that serve the City of Detroit: Belle Isle Main Pump Station and CSO Facility, Bluehill Pump Station, Fischer Pump Station, and Woodmere Pump Station. Provider shall be responsible for operating and servicing the equipment consistent with current planning documents, including but not limited to the Wet Weather Operational Plan and Needs Assessment Study. This includes:</p> <p><i>Operations:</i></p> <ul style="list-style-type: none"> <li>• 24 x 7 Control and Monitoring of process from the SCC Control Room.</li> <li>• Traveling Operator site visits every other day for physical inspection</li> <li>• Emergency response to equipment malfunction or to address any alarm condition</li> </ul> <p><i>Maintenance:</i></p> <ul style="list-style-type: none"> <li>• Mechanical</li> <li>• Electrical</li> <li>• I&amp;C</li> <li>• Building</li> <li>• Grounds Maintenance</li> <li>• Cleaning</li> <li>• Emergency PMs</li> </ul> <p><i>Engineering/Management:</i></p> <ul style="list-style-type: none"> <li>• Monthly Site Visits</li> <li>• Weekly KPI Review</li> <li>• Utility Data Review</li> <li>• Wet weather event analysis</li> <li>• Data Gathering</li> <li>• Report Generation</li> <li>• Compliance Reporting</li> </ul>

	<p>Emergency repairs shall be effectuated by Provider as-needed, but will be reported to Subscriber as soon as practical. For any repair, which exceeds \$50,000 or 50% of the replacement capital cost to replace the equipment, Provider shall notify Subscriber prior to initiating repair.</p> <p>Provider shall provide Subscriber with annual maintenance report which details services rendered. The report shall include, at a minimum types of repairs performed, costs of repairs, asset criticality rating and remaining useful life for each asset operated and maintained by Provider for Subscriber. This report will be used by Subscriber to budget for capital investments for the Detroit only assets and associated infrastructure. Access to the Provider work order management system will be provided to Subscriber for review of data on a more frequent basis, if desired.</p> <p>Provider will also notify Subscriber Field Services immediately when a pressure or flow issue is monitored in the system. Subscriber Field Services will be responsible for contacting Subscriber Public Affairs group to provide/coordinate retail customer notifications for pressure issues, boil water advisories, etc.</p>
Related Services	N/A
Assumptions, Dependencies, and Requirements	All utilities associated with Subscriber locations will be paid by Subscriber
Space/Location	<ul style="list-style-type: none"> <li>• Belle Isle Combined Sewer Overflow Facility</li> <li>• Belle Isle Main Pump Station</li> <li>• Blue Hill Pump Station</li> <li>• Fischer Pump Station</li> <li>• Woodmere Pump Station</li> </ul>
Staffing	N/A
Duration (phasing), extensions	Until terminated.
Cost Methodology	<p>Phase 1 Methodology: Until the commencement of the Phase 2 cost methodology, the Service Cost shall be determined as follows:  The Systems Operations Center (SOC) Shared Service Agreement cost was based upon the 2015-2016 approved budget cost center Systems Operations Control. This cost includes labor, fringe benefits, contractual services, supplies, repairs &amp; maintenance, and other direct costs.</p> <ol style="list-style-type: none"> <li>1. The allocation of costs was based on the total number of major and minor sites monitored and operated by the SOC. There were a total of 35 major sites and 15 minor sites. The major sites have been weighted at 2x the minor sites for the purposes of the pro ration. Bluehill pump station was identified as a major site. The Belle Isle CSO and pump station were identified as a single minor</li> </ol>

	<p>site. Woodmere pump station was identified as one minor site. Fisher pump station was identified as one minor site.</p> <p>2. The cost center FY2015-2016 budgeted expense for SOC was then allocated based upon percentage determined from the evaluation in "1" above.</p> <p>Phase 2 Methodology: Commencing on July 1, 2017, or such later date as agreed to by the Director and the CEO, the Parties shall determine the Service Costs based on the results of a study of the distribution of work in the SOC, conducted with the goal of capturing a more accurate allocation of the Service Costs for this Service. This study shall be completed no later than January 1, 2017 or such later date as agreed to by the Director and the CEO.</p>
	<p><u>Expense reimbursement-</u>  Costs incurred above and beyond the fixed fee for emergency/extraordinary repairs shall be invoiced separately and include description of service provided. These costs shall be reimbursed at time and materials.</p>
Separation Costs	<p>Separation Costs are anticipated as follows:  Stranded Costs associated with the lay-off of employees, including unemployment benefits.  Transition Costs associated with transferring records of the Services provided to Subscriber's new data/records system.</p>
Frequency of Payment (if other than monthly)	N/A
Notice of Termination of Entire Service or Element	<p>Provider may terminate this schedule upon two years advance written notice to the Subscriber; and Subscriber may terminate this schedule upon 180 days advance written notice to the Provider.</p>
Contact for City/DWSD – R	Title: Deputy Director/Chief Engineer
Contact for GLWA	Title: Chief Operating Officer
List of Exhibits & Attachments	Exhibit A: Cost Methodology Initial Allocation
Approved for GLWA (w/Date):	Sue McCormick (12/9/2015)
Approved for City/DWSD-R (w/Date):	Gary Brown (12/9/2015)
Effective Date:	January 1, 2016

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**EXHIBIT A**  
**COST METHODOLOGY INITIAL ALLOCATION**

# Cost Allocation Calculations for OPS-008 Systems Control

DWSD BUDGET DETAIL from Approved Budget FY 2016

<u>GL Account</u>	<u>Expense Description</u>	Systems Operations Control 412301 <u>FY16 Budget</u>
601100	Salaries-Full Time	2,456,308
601300	Salaries - Overtime	40,000
601400	Salaries-Shift Premium	2,000
601500	Salaries-Holiday Premium	1,000
602100	Wages- Full Time	-
602300	Wages- Overtime	800,000
602400	Wages- Shift Premium	50,000
602500	Wages- Holiday Premium	20,000
603100	Emp Benefits-Pensions	141,238
603101	Emp Benefits-Pension-UAAL	-
603120	Non Actuarial	-
603200	Emp Benefits-Hospitalization	364,066
603220	Empl Ben-Hosp General Retiree	-
603300	Emp Benefits-Social Security	187,908
603400	Unemployment	9,198
603405	Workers' Compensation	75,409
603900	Emp Benefits-Miscellaneous	1,589
604100	Other Comp-Unused Sick Leave	68,193
604200	Other Comp-Longevity	-
605100	Group Life Insurance	7,727
605200	Eye Care Premium	-
605205	Eye Care-Active Civilian	3,593
605210	Eye Care-Retired Civilian	-
605700	Health Care Reserve	49,126
605415	Service Death	-
605500	Income Protection	1,611
605620	Dental Active	31,536
605640	Dental Retired	-
611200	Auditing	-
613100	Legal	-
616100	Consultant Fees-Mgt Consult	-
617200	Contract Scv-Bldg Maint-Misc	113,600
617400	Contract Services-Info Tech.	260,000
617900	Contract Svcs-Other-Misc	7,967,458
617903	Pers Servs Contract-Pd On P/R	9,400,000
620100	Office Supplies	-
621100	Oper Supplies-Medical	-
621300	Oper Supplies-Automotive	-

12/7/2015

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OPS-008 Systems Control

# Cost Allocation Calculations for OPS-008 Systems Control

DWSD BUDGET DETAIL from Approved Budget FY 2016

STEP 1	GL Account	Expense Description	Systems
			Operations Control 412301 FY16 Budget
	621400	Oper Supplies-Janitorial	3,600
	621500	Oper Supplies-Fuel	-
	621600	Operating Supplies-Chemicals	-
	621900	Oper Supplies-Miscellaneous	308,000
	622100	Repairs & Maint-Automotive	-
	622200	Repairs & Maint-Bldgs&Ground	-
	622300	Repairs & Maint-Equipment	267,200
	622301	Hardware Maintenance	-
	622302	Software Maintenance	19,600
	622400	Repairs & Maint-Facilities	480,000
	622900	Repairs & Maint-Misc	-
	623100	Uniforms, Laundry, Cleaning	-
	626010	Advertising	-
	626100	Printing	-
	626300	Insurance Premium	-
	626310	Insurance- Other	-
	626400	Rentals- Buildings	20,972
	626410	Rentals- Computers	-
	626415	Rentals- Office Equipment	-
	626430	Rentals- Miscellaneous	-
	626500	Dues & Miscellaneous	-
	626600	Postage	-
	626700	Telecommunications	-
	626702	Data Com Equip	-
	626800	Utilities	-
	626801	Utilities-Water	10,000
	626802	Utilities-Gas	65,000
	626803	Utilities-Steam	-
	626804	Utilities-Electricity	-
	626805	Utilities-Sewage	-
	626806	Utilities-Pld Electricity	-
	627105	Private Car Reimbursements	500
	627110	Purchased Services - Other	-
	627135	Pur Svcs-Law Dept	-
	627140	Pur Svcs-Staff Services	-
	627175	Pur Svcs-Personnel	-
	627190	Pur Svcs-Shared Svcs Chg	-
	627195	Employee Uniform Expense	-

12/7/2015

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OPS-008 Systems Control



# Cost Allocation Calculations for OPS-008 Systems Control

DWSD BUDGET DETAIL from Approved Budget FY 2016

GL Account	Cost Center Description Cost Center Expense Description	Systems Operations Control 412301 FY16 Budget
627225	Other Oper Svc-Miscellaneous	-
627230	Employee Parking	200
627255	Photographic Service	-
628100	Travel	-
628200	Training	-
628208	Training-Tuition Reimbursement	-
628500	Miscellaneous Expense	-
628501	Misc-License,Insp&Permit Fees	-
628508	Violation Penalties	-
633100	Major Rep - Plant Equipment	-
633150	Major Rep - Other Equip	-
644111	Capital Outlay - Equipment - Other Plant	-
644114	Capital Outlay Equipment Office Furniture	-
644900	Acquisitions - Fixed Asset - Other	-
645260	Capital Outlay - Equipment Transportation	-
661100	Damage Claims	-
703100	Interest On Bonded Debt	-
704100	Retirement Of Debt-Principal	-
707100	Property Taxes	-
711700	Bad Debts	-
	<b>Total GROSS Budget</b>	<b>23,226,631</b>

## Cost Allocation Calculations for OPS-008 Systems Control

Cost Allocation based on FTEs

		Sites	# of Sites	Site Equivalents
<b>STEP 1</b>	Total Major Site		35	70
	Total Minor Sites		15	15
	Total Site Equivalent			85
	Blue Hill	Major		2
	Belle CSO & Pump Station	Minor		1
	Woodmere	Minor		1
	Fischer	Minor		1
	Total DWSDR Equivaent Sites			5
	% Retail Hrs			6%

**Step 2**

Total Systems Control	\$ 23,226,631	FY 16 Budget
DWSD-R Share	\$ 1,393,598	DWSD-R
GLWA Share	\$ 21,833,033	GLWA
Monthly Cost	\$ 116,133	



**Audit Committee**

**Friday, April 20, 2018 at 8:00 a.m.**

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

**MEETING BINDER ADDENDUM #1**

- ✓ *Agenda Item #6D - Report: Responses to Questions from Oakland County Drain Commissioner's Office*

**TFG**  
**THE FOSTER GROUP**

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BART FOSTER, PRESIDENT  
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MEMORANDUM

FY 2019 Sewer Charges to OMID

April 19, 2018

To: Nicolette Bateson

From: Bart Foster

You have asked for commentary and observations regarding a potential response to public comments made by representatives of the Oakland Macomb Interceptor Drain District (OMID) at the GLWA Audit Committee meeting on February 23. We have reviewed the comments, which appear to request modifications to proposed FY 2019 Sewer Charges to reflect four specific areas of inquiry. Herein we present background information, set forth our understanding of OMID's request, and provide a summary of our analyses and perspective regarding the request.

**Background:**

The GLWA cost allocation methodology<sup>1</sup> for purposes of establishing Sewer service charges includes a "customer specific" cost pool designed to capture the costs related to GLWA facilities that serve only the OMID. These facilities include the Northeast Sewer Pumping Station ("NEPS"), and the portion of the North Interceptor East Arm ("NIEA") downstream of the NEPS that conveys flow *only from* OMID. The cost of service allocation methodology has traditionally employed slightly different approaches for assigning capital and operating revenue requirements to this cost pool.

**Capital Revenue Requirement Allocations**

Since the establishment of the FY 2011 Sewage Disposal Charges, GLWA allocations of capital revenue requirements (including debt service) have been allocated to cost pools and Customers based on a "Utility Basis" approach. Under this approach statistics from the fixed asset records of the Sewer Utility are used to allocate capital costs. For instance, if 1% of the representative capital asset value for the Sewer System is related to OMID specific assets, then 1% of the capital revenue requirements (including debt service) are allocated to OMID.

GLWA's review of the interceptor inventory indicates that the NIEA segment in question represents approximately 3.5% of all GLWA interceptors, based on an "inch mile" analysis. For purposes of the FY 2019 Cost of Service Study, we assigned 3.5% of all interceptor capital revenue requirements to the OMID cost pool. This created a direct capital revenue requirement of approximately \$0.78 million.

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<sup>1</sup> The GLWA methodology is consistent with the methodology of the predecessor entity, DWSD.

Our cost of service study included a review of the GLWA asset records, which indicated that the net book value of \$19.6 million assigned to the NEPS. This NEPS asset value (and the representative annual depreciation expense) amounted to approximately 1.2% of the overall capital asset structure, and we used this ratio to subsequently allocate approximately \$2.81 million of direct capital revenue requirements. So our FY 2019 Cost of Service Study included \$3.59 million of direct capital revenue requirements assigned to the OMID cost pool, which was then directly assigned to the OMID Customer<sup>2</sup>.

#### Operating Revenue Requirement Allocations

For purposes of assigning operating costs to the OMID cost pool, the same approach (relative inch miles) is used to assign NIEA related *interceptor* costs. In the FY 2019 Cost of Service Study this resulted in approximately \$0.43 million of direct operating revenue requirements allocated to the OMID cost pool.

With regard to the NEPS operating costs, GLWA allocations of all budget operating expenses related to sewer pumping stations (including maintenance, SCADA, etc.) have been assigned to individual sewer pumping stations based on relative electric usage or costs. This approach was established several years ago, as detailed specific pumping station maintenance costs, etc. were difficult to isolate. For purposes of the FY 2019 Cost of Service Study, we obtained budgeted electric utility costs for several years. The relative budgeted electric utility costs for the NEPS, as a proportion of budgeted electric utility costs for all GLWA sewer pumping stations, ranged from 24% to 40%. In our FY 2019 Cost of Service Study we allocated 25% of all sewer pumping station operating expenses to the NEPS, which resulted in direct operating costs totaling \$5.88 million being assigned to the OMID cost pool. So our FY 2019 Cost of Service Study included \$6.05 million of direct operating revenue requirements assigned to the OMID cost pool, which was then directly assigned to the OMID Customer<sup>3</sup>.

The combined total revenue requirement allocated to the OMID cost pool in the FY 2019 Cost of Service Study was \$10.50 million.

#### Pending Potential Operating Agreement

We have participated in several meetings between GLWA and OMID representatives as they have sought to establish an “operating agreement regarding the OMID specific facilities addressed in this memorandum. Elements of that potential operating agreement would impact the cost allocation approaches and results discussed above.

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<sup>2</sup> Table 3 in the FY 2019 Cost of Service Study Report contains a “Net Capital” Revenue Requirement line item that includes proportional allocation of certain other “indirect” non-operating items, such as the Lease Payment, etc. These indirect elements result in the OMID “Net Capital” Revenue Requirement totaling \$3.99 million in the Cost of Service Study Report.

<sup>3</sup> Table 3 in the FY 2019 Cost of Service Study Report contains a “Net Operating Expenses” Revenue Requirement line item that includes proportional allocation of certain other “indirect” operating items, such as the operating portion of the pension obligation, etc. These indirect elements result in the OMID “Net Operating Expenses” Revenue Requirement totaling \$6.52 million in the Cost of Service Study Report.

**OMID Request, Analyses, and Perspective:**

1. *Reflect the treatment of debt service for the OMID only rate category consistent with the October 22, 2009 Settlement and Release of Certain Rate Disputes as stated in paragraph 3.a of that document.*
  - We believe that the reference in the OMID correspondence is taking a position that the district should not be allocated **any** capital revenue requirements associated with the portion of the NIEA that conveys only OMID flow. We do not agree with that conclusion. We believe that the agreement that is cited in the referenced document predates the agreements established as part of the Rate Simplification Initiative. In any event, we encourage this issue to be further explored and discussed as part of the negotiations towards the Operating Agreement. For purposes of our hypothetical analysis summarized in the table that follows, we have reflected the calculated effect of removing such capital revenue requirements from the OMID cost pool, which would **reduce** the direct OMID cost pool allocated revenue requirements by approximately \$0.78 million. However the OMID share of the reallocated common-to-all (“CTA”) revenue requirement would **increase** by \$0.13 million, resulting in a net **decrease** of \$0.65 million.
2. *Adjust the assets of the Northeast Pump Station based on the results of the Northeast Pump Station asset inventory review performed on February 2, 2018 with representatives from OMID and GLWA.*
  - As noted in the request, subsequent to the establishment of the proposed FY 2019 charges, additional review of the capital asset data reported for the NEPS has been conducted. It is our understanding that the parties are in basic agreement that the asset records should be adjusted to reflect the results of that review, and that the adjustments will result in a \$5.2 million reduction in the 6/30/17 net book value allocated to the NEPS – which would result in a revised total of approximately \$14.4 million. For purposes of our hypothetical analysis summarized herein, we have reflected the calculated effect of adjusting the capital revenue requirement allocations accordingly. Based on our analysis, this would **reduce** the direct OMID cost pool allocated revenue requirements by approximately \$0.82 million. However the OMID share of the reallocated common-to-all (“CTA”) revenue requirement would **increase** by \$0.12 million, resulting in a net **decrease** of \$0.70 million.
3. *Adjust the OMID only cost category revenue requirements to reflect any changes which may occur pending the review of electrical costs.*

- As noted in the request, subsequent to the establishment of the proposed FY 2019 charges, additional review of the sewer pumping station electric use and costs has been conducted. While the analysis continues<sup>4</sup>, the initial findings indicate that the NEPS accounts for approximately 36% of recent pumping station electric *bills*, and approximately 44% of recent total pumping station electric *usage*. Had we the benefit of this additional analysis at the time we conducted the FY 2019 Cost of Service Study, we likely would have allocated **at a minimum** 35% (rather than the 25% original figure) of total sewer pumping station operating revenue requirements to the NEPS. This hypothetical adjustment would have resulted in a \$2.74 million *increase* to the operating revenue requirements allocated to the OMID cost pool. However the OMID share of the reallocated common-to-all (“CTA”) revenue requirement would *decrease* by \$0.45 million, resulting in a net *increase* of \$2.49 million.
- As shown in the table, the net impact of incorporating all of the hypothetical adjustments noted above would result in a net increase of approximately \$0.94 million. Given that the parties are negotiating an Operating Agreement, and that GLWA is exploring a “Charges Stability Adjustment” to reflect potential adjustments of actual costs, we do not believe it is prudent to modify the originally proposed FY 2019 Sewer Charges.

Hypothetical Analysis Summary  
 FY 2019 OMID Cost of Service Calculations - \$ millions

	<u>OMID Specific</u>	<u>Share of CTA</u>	<u>TOTAL</u>
Proposed FY 2019 Charges	10.50	67.79	78.29
What If Remove NIEA Int Capital?	<span style="color: red;">(0.78)</span>	0.13	<span style="color: red;">(0.65)</span>
What If Adjust NEPS Capital?	<span style="color: red;">(0.82)</span>	<u>0.12</u>	<span style="color: red;">(0.70)</span>
Subtotal Hypothetical Capital Adjustments	<span style="color: red;">(1.60)</span>	0.25	<span style="color: red;">(1.35)</span>
What If Adjust NEPS O&M Alloc to 40%?	<u>2.74</u>	<span style="color: red;">(0.45)</span>	<u>2.29</u>
Total Hypothetical Adjustments	1.14	<span style="color: red;">(0.20)</span>	0.94
Hypothetically Recalculated Rev Req'ts	11.64	67.59	79.23

4. *At the January 31, 2018 GLWA/OMID meeting, GLWA stated depreciation expenses for the 2018-19 sewer rates will be utilized at 60% of the book value. For the formation of GLWA, Duff and Phelps analyzed the GLWA assets, stated their values for the beginning*

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<sup>4</sup> The additional review includes an analysis of the amount of wastewater volume handled by each sewer pumping station. The initial estimate indicates that the NEPS handles approximately one-third of all flows that utilize GLWA sewer pumping stations.

*balances, and revised the remaining lives of the assets. Why use 60% instead of the full amount of the depreciation expenses, does GLWA dispute the accuracy of their book values? Further, if GLWA goes forward with the 60% for 2018-19 sewer rates, is there a plan to move towards utilizing the full amounts of depreciation expense in the future?*

- As noted in the request, the GLWA capital assets were subjected to a valuation analysis conducted by Duff and Phelps, which was required to complete the creation of GLWA. The leased regional assets were booked at an acquisition value based on the Duff and Phelps analysis, which resulted in an increase in the net book value of the “acquired” assets. However it also resulted in a significant increase in the annual depreciation expense. In our opinion, GLWA does not dispute the accuracy of the book values not the depreciation expense, but also recognizes (as do we) that the changes produced by the asset valuation changed the dynamic of the overall asset structure. For purposes of the FY 2019 Cost of Service Study, we sought to strike a balance between the portion of the capital revenue requirements that were allocated (under the Utility Basis approach) based on net book value, and the portion that were allocated based on annual deprecation expense. The approach we applied successfully accomplished this balance, and adhered to the overarching stability objectives of the GLWA charge methodology initiatives. We recommend that future cost of service studies continue to embrace these objectives with respect to this specific issue.

We trust that this discussion is responsive to the request, and we are prepared to discuss this matter at your convenience.





## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

**From:** Jonathan Wheatley, Public Finance Manager

**Re:** Inaugural Ratings for Junior Lien Debt

**Background:** The Great Lakes Water Authority' (GLWA) has made efforts to maximize its use of the state of Michigan's state revolving fund (SRF) program as a lower cost alternative to finance its water and sewer capital programs. Since GLWA's (and formerly the Detroit Water and Sewerage Department) level of participation in the SRF program has grown to over twenty percent (20%) of the entire SRF loan pool portfolio, GLWA was asked by the state of Michigan Finance Authority to obtain a rating on GLWA's outstanding water and sewer junior lien bonds that were issued through the SRF program.

**Analysis:** GLWA received a rating on November 13, 2018 from S&P Global Ratings (S&P). A rating of 'A' has been assigned to GLWA's outstanding sewage disposal system junior-lien state revolving fund (SRF) bonds and an 'A+' rating has been assigned to GLWA's outstanding water supply system junior-lien SRF bonds. Both ratings are consistent with the second lien ratings assigned by S&P on September 5, 2018. A copy of the ratings report is attached.

**Proposed Action:** Receive and file report.

# RatingsDirect®

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**Summary:**

## Great Lakes Water Authority, Michigan; Water/Sewer

**Primary Credit Analyst:**

Scott D Garrigan, New York (1) 312-233-7014; scott.garrigan@spglobal.com

**Secondary Contact:**

Theodore A Chapman, Dallas (1) 214-871-1401; theodore.chapman@spglobal.com

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Rationale

Outlook

## Summary:

# Great Lakes Water Authority, Michigan; Water/Sewer

### Credit Profile

US\$167.541 mil swg disp sys rev bnds ser 2007-SRF1 due 10/01/2029		
<i>Long Term Rating</i>	A/Positive	New
US\$82.2 mil swg disp sys rev bnds ser 2001-SRF1 due 10/01/2024		
<i>Long Term Rating</i>	A/Positive	New
US\$79.5 mil swg disp sys rev bnds ser 2015A-SRF due 04/01/2036		
<i>Long Term Rating</i>	A/Positive	New
US\$64.401 mil swg disp sys rev bnds ser 2000-SRF2 due 10/01/2022		
<i>Long Term Rating</i>	A/Positive	New
US\$59.85 mil swg disp sys rev bnds ser 2001-SRF2 due 10/01/2024		
<i>Long Term Rating</i>	A/Positive	New
US\$51.31 mil swg disp sys rev bnds ser 2016-SRF2 due 04/01/2039		
<i>Long Term Rating</i>	A/Positive	New
US\$48.52 mil swg disp sys rev bnds ser 2003-SRF1 due 10/01/2025		
<i>Long Term Rating</i>	A/Positive	New
US\$44.198 mil swg disp sys rev bnds ser 2000-SRF1 due 10/01/2022		
<i>Long Term Rating</i>	A/Positive	New
US\$38.45 mil swg disp sys rev bnds ser 2017-SRF1 due 10/01/2038		
<i>Long Term Rating</i>	A/Positive	New
US\$31.549 mil swg disp sys rev bnds ser 2002-SRF3 due 10/01/2024		
<i>Long Term Rating</i>	A/Positive	New
US\$27.175 mil swg disp sys rev bnds ser 2015B-SRF due 10/01/2035		
<i>Long Term Rating</i>	A/Positive	New
US\$25.055 mil swg disp sys rev bnds ser 2003-SRF2 due 04/01/2025		
<i>Long Term Rating</i>	A/Positive	New
US\$19.485 mil swg disp sys rev bnds ser 2015D-SRF due 10/01/2035		
<i>Long Term Rating</i>	A/Positive	New
US\$19.305 mil swg disp sys rev bnds ser 2016-SRF1 due 04/01/2038		
<i>Long Term Rating</i>	A/Positive	New
US\$18.985 mil swg disp sys rev bnds ser 2002-SRF1 due 04/01/2023		
<i>Long Term Rating</i>	A/Positive	New
US\$18.353 mil swg disp sys rev bnds ser 2004-SRF2 due 04/01/2024		
<i>Long Term Rating</i>	A/Positive	New
US\$17.51 mil swg disp sys rev bnds ser 2018-SRF1 due 10/01/2042		
<i>Long Term Rating</i>	A/Positive	New

Credit Profile (cont.)		
US\$16.295 mil swg disp sys rev bnds ser 2018-SRF2 due 10/01/2039		
<i>Long Term Rating</i>	A/Positive	New
US\$14.95 mil swg disp sys rev bnds ser 2012-SRF1 due 10/01/2034		
<i>Long Term Rating</i>	A/Positive	New
US\$13.97 mil swg disp sys rev bnds ser 2009-SRF1 due 04/01/2030		
<i>Long Term Rating</i>	A/Positive	New
US\$13.805 mil wtr supp sys rev bnds ser 2005-SRF1 due 10/01/2026		
<i>Long Term Rating</i>	A+/Stable	New
US\$12.723 mil swg disp sys rev bnds ser 2004-SRF3 due 04/01/2025		
<i>Long Term Rating</i>	A/Positive	New
US\$10.0 mil swg disp sys rev bnds ser 2016-SAW due 10/01/2038		
<i>Long Term Rating</i>	A/Positive	New
US\$9.605 mil wtr supp sys rev bnds ser 2016A-SRF due 04/01/2048		
<i>Long Term Rating</i>	A+/Stable	New
US\$8.892 mil wtr supp sys rev bnds ser 2005-SRF2 due 10/01/2026		
<i>Long Term Rating</i>	A+/Stable	New
US\$6.675 mil wtr supp sys rev bnds ser 2017-SRF due 10/01/2048		
<i>Long Term Rating</i>	A+/Stable	New
US\$5.181 mil wtr supp sys rev bnds ser 2006-SRF due 10/01/2026		
<i>Long Term Rating</i>	A+/Stable	New
US\$4.215 mil swg disp sys rev bnds ser 2010-SRF1 due 04/01/2031		
<i>Long Term Rating</i>	A/Positive	New
US\$4.18 mil wtr supp sys rev bnds ser 2016B-SRF due 04/01/2048		
<i>Long Term Rating</i>	A+/Stable	New
US\$2.91 mil swg disp sys rev bnds ser 2004-SRF1 due 10/01/2024		
<i>Long Term Rating</i>	A/Positive	New
US\$2.591 mil wtr supp sys rev bnds ser 2008-SRF due 10/01/2028		
<i>Long Term Rating</i>	A+/Stable	New
US\$1.545 mil swg disp sys rev bnds ser 2002-SRF2 due 04/01/2023		
<i>Long Term Rating</i>	A/Positive	New

## Rationale

S&P Global Ratings has assigned its 'A' rating to the Great Lakes Water Authority (GLWA), Mich.'s outstanding sewage disposal system junior-lien state revolving fund (SRF) bonds and its 'A+' rating to the authority's outstanding water supply system junior-lien SRF bonds. We have also affirmed our:

- 'A+' rating on GLWA's outstanding sewage disposal senior-lien bonds,
- 'A' rating the authority's outstanding sewage disposal second-lien bonds,

- 'AA-' rating on GLWA's outstanding water supply system senior-lien bonds, and
- 'A+' rating the authority's outstanding water supply system second-lien bonds.

The outlook on the sewage disposal system bonds is positive and the outlook on the water supply system bonds is stable. Related to its sewage disposal system, currently GLWA has \$523 million of SRF junior-lien bonds, \$752 million of second-lien bonds, and \$1.9 billion of senior-lien bonds outstanding. Related to its water supply system, currently, GLWA has \$34 million of SRF junior-lien bonds, \$668 million of second-lien bonds, and \$1.6 billion of senior-lien bonds outstanding. Our ratings incorporate our opinion of GLWA's creditworthiness to make payments on all of its outstanding obligations.

The ratings reflect the application of our wholesale utility criteria, but we do not follow a purely weak-link approach since GLWA has, in our view, additional financial strengths that could be used to support debt payments if a single participant does not fulfil its payment obligations. These strengths include pledged reserves and unrestricted liquidity available at the wholesaler GLWA level, the ability to adjust revenue requirements to participants as its cost structure changes, and strong management policies related to both the regional system and Detroit's local system. The fact that GLWA's service base is large and serves a large percentage of the state's population also supports our view that the ratings should reflect that diversity, with overall economic considerations playing a more prominent role in the credit analysis.

In September 2018, we raised the ratings to the above-mentioned levels based on several factors:

- Oversight through an agency relationship and cooperation with the Detroit Water and Sewer Department (DWSD) and its Board of Water Commissioners that we view as strong and supportive of credit quality. Because of Detroit's extremely weak overall economic indicators and historical collections and bad debt issues, we view both the existence and continuation of these functions as key to the maintenance of the rating at its current level.
- Overall management and governance functions that we also view as supportive of credit quality at the current rating level. GLWA management maintains active communication with both the DWSD retail system and its wholesale customers and has a comprehensive set of internal policies related to, among other things, maintenance of certain financial targets, key performance indicators for both financial and operational metrics, and internal controls.
- Actual financial performance has continued to exceed projections from prior feasibility studies. Now that GLWA has two full fiscal years (2017 and 2018) of operating as a separate entity from DWSD, and that various reconciliations and adjustments related to the separation have already taken place, we would expect that future variances to the feasibility studies may not be as dramatic. However, given GLWA's comprehensive budgeting practices and strong budgetary oversight of DWSD's operations, we would expect that future financial performance should be largely consistent with the most current projections.
- GLWA is not under any regulatory-driven capital costs from consent orders or consent decrees. While we view the GLWA system as highly leveraged, the fact that all of the capital plan is forward-looking and not mostly being used to cure regulatory infractions is a key credit strength that is supportive of the current rating level.
- Limited future exposure to pension cost escalation from legacy Detroit obligations resulting from prior bankruptcy negotiations. It is our understanding that after the 2023 fiscal year, both GLWA and DWSD pension costs related to legacy pension plans will drop from a total for both water and sewer systems of \$45.4 million (which is a mandated contribution based on Detroit's bankruptcy plan of adjustment) to what is currently projected to be no more than

\$9.1 million. These additional payments would be used to retire the remaining unfunded liability from the closed/legacy pension plans that has arisen after the original payments were determined in 2014.

Additional factors supporting the rating include the following:

- A diverse revenue stream from a large number of wholesale customers; and
- Revenues from both wholesale customers and the DWSD retail system that are either entirely (sewage disposal) or primarily (water) fixed, which, in our view, significantly insulates GLWA's financial performance from volatility caused by weather and flow variances.

Offsetting these strengths for the sewage disposal system rating are the following factors:

- Ongoing negative revenue variances from the DWSD local sewer system that have, in our view, material effects on the overall creditworthiness of the GLWA sewage disposal system. GLWA reports that the negative revenue variance caused by DWSD for the 2018 fiscal year is about \$19.8 million. The authority has also experienced significant negative and positive outflows in the DWSD system since 2016 due to various one-time events, although GLWA reports that the 2018 variance most likely reflected DWSD's implementation of a new drainage charge program and related litigation.
- We note that continued developments related to this drainage charge program litigation will help to inform our view on the rating depending on how it is resolved.

Offsetting the strengths for the ratings on both systems is Detroit's economy, which we consider very weak. In our view, this could continue to place downward pressure on utility collection rates in the city. Another factor is high system leverage that we do not believe will abate significantly at least over the two-year outlook horizon.

Additional details regarding the rating can be found in our report, published Sept. 5, 2018, on RatingsDirect.

## **Outlook**

The positive outlook on the sewer system bonds reflects our expectation that there is at least a one-in-three chance that the rating could improve over the two-year outlook horizon. The most significant factor we are expecting to lead to an upgrade is resolution of what we view to be significant revenue variances caused by the DWSD local system. It is our understanding that progress is being made to resolve these variances, but there could be ongoing revenue pressures depending on how the drainage program litigation is resolved.

The stable outlook on the water supply system bonds reflects our opinion that the rating should not change, at least over the two-year outlook horizon, due to several factors, including the following:

- Our expectation that the water supply system's financial metrics should remain at levels generally consistent with current projections due to the rate structure that provides a large amount of revenue stability;
- DWSD revenue variances should remain low, given both GLWA's and DWSD's continued efforts to improve collections; and
- Exposure to a large service base that extends beyond the boundaries of the immediate Detroit area, which should

help continue to support stable usage trends.

### Upside scenario

For an upgrade of the sewer system bonds to occur over the next two years, we would also expect the following to occur:

- Continued financial performance that meets or exceeds GLWA's expectations as reflected in the current feasibility study;
- No large and unforeseen capital needs that would cause either large and sustained reductions in liquidity or significant increases in fixed costs; and
- Continued demonstration that the relationship with DWSD through the service agreement and memorandum of understanding is being successfully used to minimize any future financial disruptions that may occur.

While possible, we currently do not expect to raise the rating on the water supply system bonds in the foreseeable future, absent both financial performance well above what current projections indicate and economic indicators for Detroit that show significant improvement. We believe that both current and projected financial performance and service base characteristics are consistent with the current rating level.

### Downside scenario

While the outlook on the sewer system debt is currently positive, we could revise it to stable without raising the rating if we believe that a resolution with DWSD related to its ongoing revenue variances is not settled in a fashion that is either sustainable long term or able to achieve a significant amount of variance reduction. If economic stress or cost escalations lead to financial results measurably worse than that GLWA currently projects, then either the outlook, rating, or both could be negatively affected.

As for the water supply system debt, if economic stress or cost escalations lead to financial results measurably worse than that GLWA currently projects, then either the outlook, rating, or both could be negatively affected.

Ratings Detail (As Of November 13, 2018)		
Great Lakes Wtr Auth swg (wrap of insured) (ASSURED GTY) (SEC MKT)		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (wrap of insured) (MBIA, National & ASSURED GTY) (SEC MKT)		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (Sr lien)		
<i>Long Term Rating</i>	A+/Positive	Affirmed
Great Lakes Wtr Auth swg (Sr lien)		
<i>Long Term Rating</i>	A+/Positive	Affirmed
Great Lakes Wtr Auth swg (Sr lien) (AGM) (SECMKT)		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (2nd lien)		
<i>Long Term Rating</i>	A/Positive	Affirmed
Great Lakes Wtr Auth swg (2nd lien) (wrap of insured) (FGIC, AGM & BHAC) (SEC MKT)		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed

## Ratings Detail (As Of November 13, 2018) (cont.)

Great Lakes Wtr Auth swg (2nd lien) (AGM) <i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (2nd lien) (AGM) <i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (2nd lien) (BAM) (SECMKT) <i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (2nd lien) (BAM) (SECMKT) <i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swg (2nd lien) (BHAC) <i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth swr (wrap of insured) (FGIC) (ASSURED GTY - SEC MKT) <i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Great Lakes Wtr Auth wtr (BAM) (SECMKT) <i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth wtr (BAM) (SECMKT) <i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth wtr (BAM) (SECMKT) <i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth wtr (Sr lien) <i>Long Term Rating</i>	AA-/Stable	Affirmed
Great Lakes Wtr Auth wtr (Sr lien) <i>Long Term Rating</i>	AA-/Stable	Affirmed
Great Lakes Wtr Auth wtr (Sr lien) <i>Long Term Rating</i>	AA-/Stable	Affirmed
Great Lakes Wtr Auth wtr (Sr lien) (National) (MBIA) <i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth wtr (Sr Lien) <i>Long Term Rating</i>	AA-/Stable	Affirmed
Great Lakes Wtr Auth wtr (2nd lien) <i>Long Term Rating</i>	A+/Stable	Affirmed
Great Lakes Wtr Auth wtr (2nd lien) (wrap of insured) (AGM & BHAC) (SEC MKT) <i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth wtr (2nd lien) (AGM) <i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth wtr (2nd lien) (MBIA) (National) <i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Great Lakes Wtr Auth WTRSWR (National) (MBIA) <i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed

**Detroit wtr supp sys (Senior lien)**



<b>Ratings Detail (As Of November 13, 2018) (cont.)</b>		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
<b>Great Lakes Wtr Auth</b>		
<i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
<b>Great Lakes Wtr Auth supp sys (2nd lien)</b>		
<i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
<b>Great Lakes Wtr Auth swg disp sys</b>		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
<b>Great Lakes Wtr Auth swg disp sys VRBD (2nd lien) ser 2006A</b>		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
<b>Great Lakes Wtr Auth swg (FGIC) (National)</b>		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
<b>Great Lakes Wtr Auth swg (Sr lien) (AGM)</b>		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
<b>Great Lakes Wtr Auth swg (2nd lien)</b>		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
<b>Great Lakes Wtr Auth swg (2nd lien) (MBIA) (National)</b>		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
<b>Great Lakes Wtr Auth wtr supp sys</b>		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
<b>Great Lakes Wtr Auth wtr supp sys (Sr lien) (MBIA) (National)</b>		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
<b>Great Lakes Wtr Auth wtr supp sys (2nd lien)</b>		
<i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
<b>Great Lake Wtr Auth swg (2nd lien)</b>		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
<b>Michigan Fin Auth, Michigan</b>		
Great Lakes Wtr Auth, Michigan		
Michigan Fin Auth (Great Lakes Wtr Auth) swg		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) swg disposal (AGM)		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) swg disposal (BAM)		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) swg (BAM) (SECMKT)		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed

Ratings Detail (As Of November 13, 2018) (cont.)		
Michigan Fin Auth (Great Lakes Wtr Auth) swg (National)		
<i>Unenhanced Rating</i>	A(SPUR)/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) wtr		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) wtr (AGM)		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) wtr (BAM) (SECMKT)		
<i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) wtr (National)		
<i>Unenhanced Rating</i>	A+(SPUR)/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	AA-/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	A+/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	A+/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	A+/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	A+/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Unenhanced Rating</i>	A+(SPUR)/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	A/Positive	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
<i>Long Term Rating</i>	AA-/Stable	Affirmed
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR (AGM)		
<i>Unenhanced Rating</i>	AA-(SPUR)/Stable	Affirmed

Many issues are enhanced by bond insurance.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at [www.standardandpoors.com](http://www.standardandpoors.com) for further information. Complete ratings information is available to subscribers of RatingsDirect at [www.capitaliq.com](http://www.capitaliq.com). All ratings affected by this rating action can be found on S&P Global Ratings' public website at [www.standardandpoors.com](http://www.standardandpoors.com). Use the Ratings search box located in the left column.

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## Financial Services Audit Committee Communication

**Date:** November 16, 2018

**To:** Great Lakes Water Authority Audit Committee

**From:** Deirdre Henry, Treasury Manager

**Re:** Quarterly Investment Report through September 30, 2018 (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 September 30, 2018 (unaudited).

**Analysis:** The Quarterly Investment Report is in compliance 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 September 30, 2018: 2.30% vs 2.12% (3-Month Treasury Index)
  - As of June 30, 2018: 1.84% vs 1.80% (3-Month Treasury Index)
  
- Portfolio Allocation in Cash/Money Market Securities
  - As of September 30, 2018: 34%
  - As of June 30, 2018: 66%

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 – September 2018*



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**Great Lakes Water Authority  
Executive Summary**

**PORTFOLIO RECAP**

- **Safety** – The aggregate 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 overall credit profile of the pool is strong with over 98% 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 Standard & Poor’s.
- **Liquidity** – The Authority has reduced its weighting to overnight funds from June, with only 34% of the total assets maturing overnight.
- **Return** – The overall yield increased to 2.30% as of September 30, 2018 versus 1.84% at June 30, 2018. The Authority earned \$4,753,458 in investment income for fiscal year-to-date on a book value basis. Based on the current interest rate environment, the investment income earned for the previous quarter, and assuming that the Authority maintains the same investable balances for the remainder of the fiscal year, we are projecting that the Authority will earn approximately \$19.0 million in investment income for fiscal year 2019.
- **Compliance** – The aggregate portfolio is in compliance with the Authority’s investment policy and Michigan Public Act 20.

**AVAILABLE FUNDS (Unaudited)**

Type	Financial Institution	Book Value	Market Value	YTM @ Market (as of 9/30/18)
Deposit Account	Comerica	\$15,111	\$15,111	0.25%
Deposit Account - Retainage	First Independence	\$15,308,726	\$15,308,726	0.05%
Deposit Account – Flint Security Deposit	Chase	\$3,760,760	\$3,760,760	0.69%
Deposit Account	Chase	\$17,964,802	\$17,964,802	0.69%
Trust Money Market Fund	U.S. Bank	\$181,744,797	\$181,744,797	1.95%
Money Market Fund	JP Morgan	\$85,923,753	\$85,923,753	1.88%
Local Government Investment Pool	GovMIC	\$28,922,138	\$28,922,138	2.08%
Managed Funds	PFM	\$650,127,747	\$647,937,124	2.58%
<b><u>TOTAL</u></b>		<b><u>\$983,767,834</u></b>	<b><u>\$981,577,211</u></b>	<b><u>2.30%</u></b>

*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 9/30/2018.*

**Great Lakes Water Authority  
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
- The aggregate portfolio was yielding 2.30% at the end of September\*
  - This compares to the 2.12% yield of the Bank of America / Merrill Lynch 3-Month U.S. Treasury Bill Index as of 9/30/2018, 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 second quarter of FY 2019, the Authority has taken initial steps to gain support for full discretionary / active management on specific portfolios in which GLWA’s investment advisor would actively manage benchmarked portfolios with full discretion (subject to the Authority’s investment policy)
- The Authority will continue to work with its investment manager to further refine its cash flows and continue to identify strategies to maximize future investment income while meeting the objectives of safety and liquidity
- Assuming that the Authority maintains the same investable balances for FY 2019 and the interest rate environment remains in a similar range, we conservatively expect to earn approximately \$19.0 million in interest income in FY 2019

\* Current market yield as of September 30, 2018.



**Great Lakes Water Authority  
Market Overview and Outlook**

**ECONOMIC HIGHLIGHTS UPDATE**

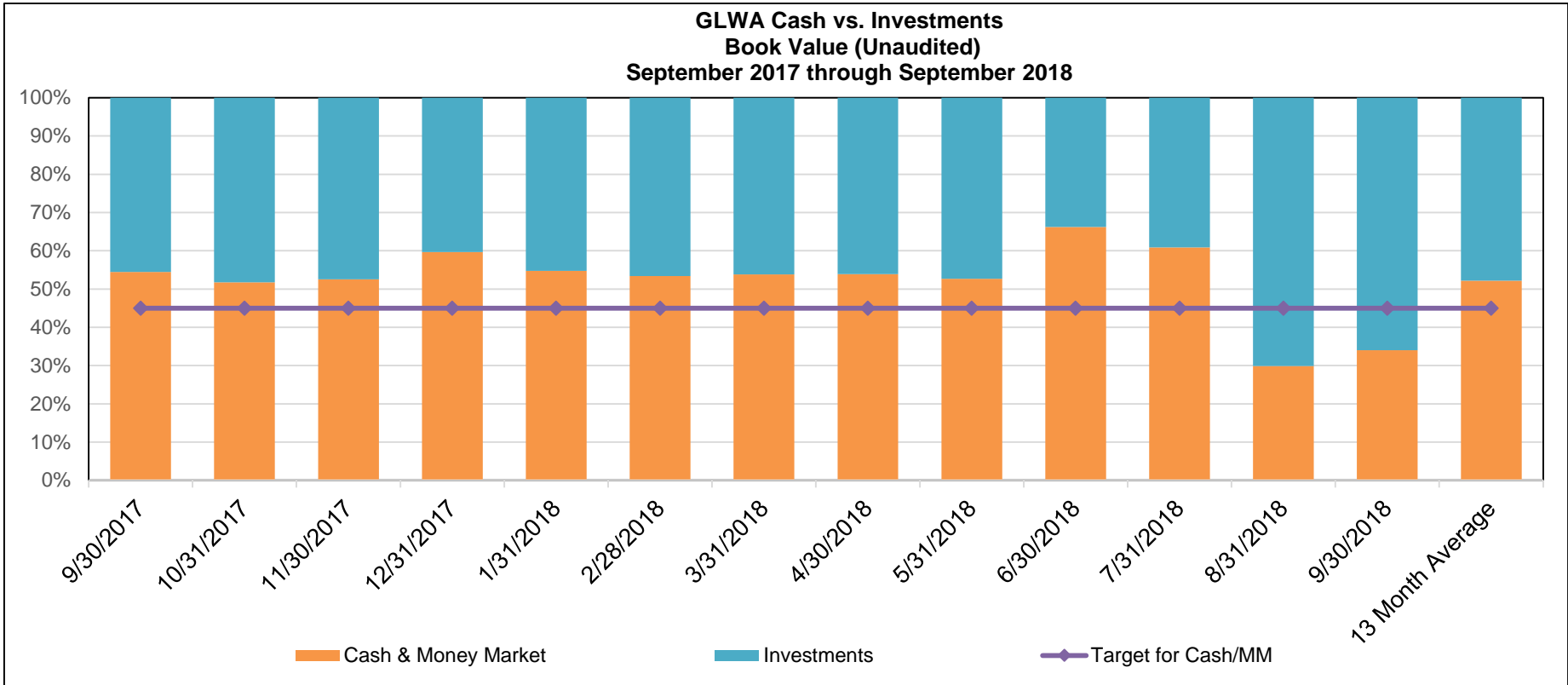
- U.S. growth remained healthy in the third quarter of calendar year 2018 as the unemployment rate hit historical lows, confidence rose further, and stocks surged; this occurred despite ongoing concerns about a trade war with China, a disorderly Brexit, Italian budget concerns, Iran sanctions, a Turkish debt crisis, and other geopolitical risks.
- Amid strong economic fundamentals, the Federal Reserve stayed the course, raising the Federal Funds rate by 0.25% to a new target range of 2.00% – 2.25%; despite the removal of longstanding language from the Federal Open Market Committee (“FOMC”) statement that previously characterized the stance of monetary policy as “accommodative,” updated FOMC forecasts indicated an additional 0.25% hike is expected in December, followed by two to four more hikes in 2019.

**ECONOMIC IMPACT ON PORTFOLIO**

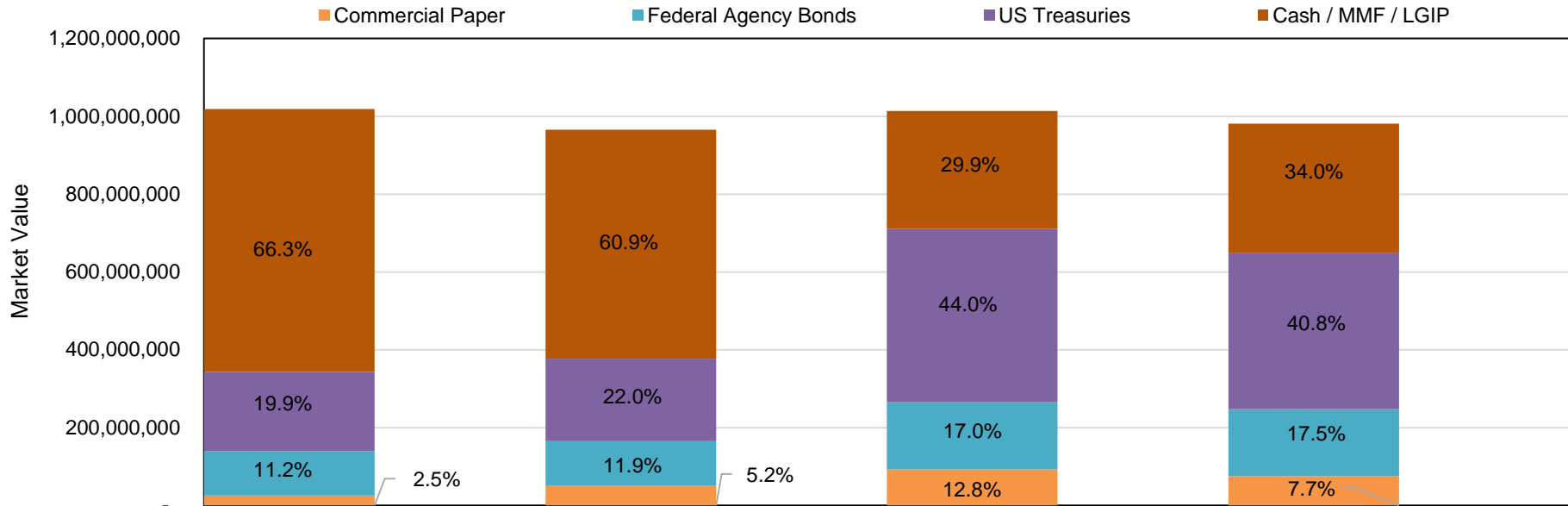
- U.S. Treasury yields rose by 20 – 30 basis points (0.20% to 0.30%) in the quarter, with short-term yields outpacing longer-term yields, and this resulted in a flatter yield curve over the quarter, though the pace of flattening moderated near quarter-end.
- The yield curve remains very flat from a historical perspective (less incentive for investors to increase maturity), and because the yield curve is so flat, holding shorter maturities resulted in very little yield concession for the Authority’s various portfolios.
- Commercial paper yield spreads grinded to one-year lows over the quarter, and as a result, short-term credit instruments now look more expensive relative to U.S. Treasuries; however, they still offer incrementally higher yields relative to similar-maturity government alternatives, particularly for the Authority’s debt accounts.
- While diversification away from Treasury securities has added significant value to the Authority’s portfolios over the last several quarters, very narrow spreads across most investment-grade sectors give us reason to turn a bit more cautious.

**Great Lakes Water Authority  
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 chart below compares the monthly allocation of the portfolio holdings to the 13-month average and the target. The decrease in the cash/money market holdings for August and September of 2018 is related to the investment of intermediate and longer-term funds based on refined cash flows.



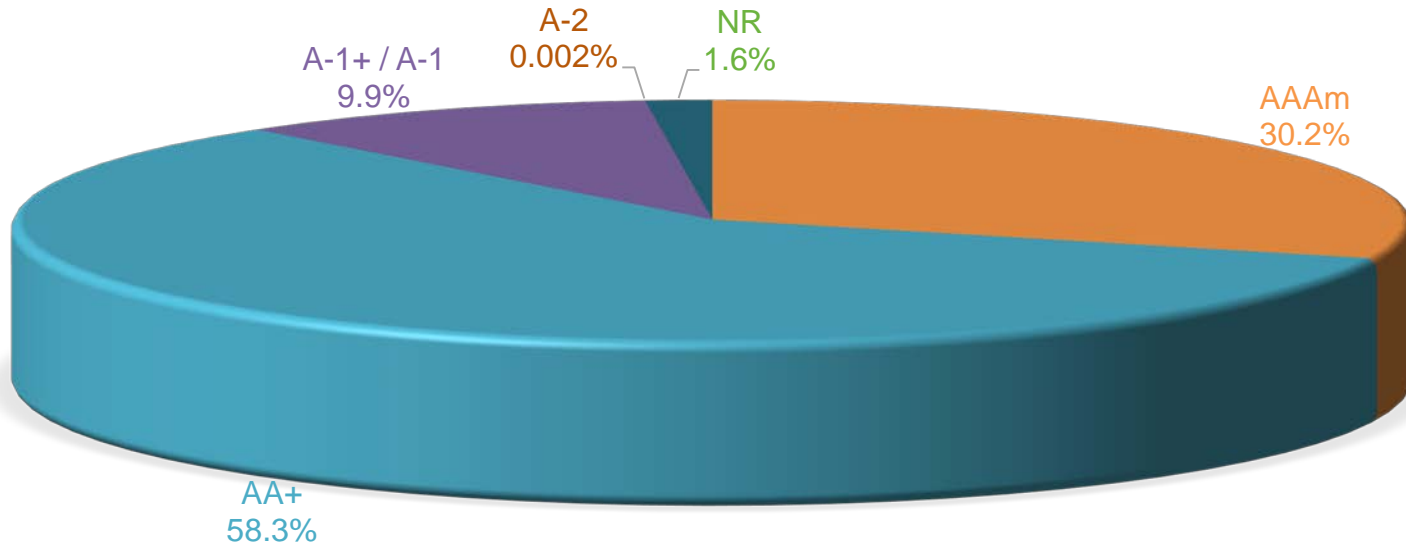
**Great Lakes Water Authority  
Investments – By Security Type**



Security Type	June		July		August		September	
	Market Value	Asset Allocation	Market Value	Asset Allocation	Market Value	Asset Allocation	Market Value	Asset Allocation
Commercial Paper	25,488,959	2.5%	50,474,489	5.2%	93,023,256	9.2%	75,609,931	7.7%
Federal Agencies	114,513,030	11.2%	114,547,336	11.9%	172,323,522	17.0%	172,066,823	17.5%
U.S. Treasuries	203,232,575	19.9%	212,553,811	22.0%	445,876,421	44.0%	400,260,370	40.8%
Cash / MMF / LGIP	675,860,282	66.3%	588,330,729	60.9%	302,971,977	29.9%	333,640,087	34.0%
<b>Total</b>	<b>1,019,094,846</b>	<b>100.0%</b>	<b>965,906,365</b>	<b>100.0%</b>	<b>1,014,195,177</b>	<b>100.0%</b>	<b>981,577,211</b>	<b>100.0%</b>

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of September 30, 2018.

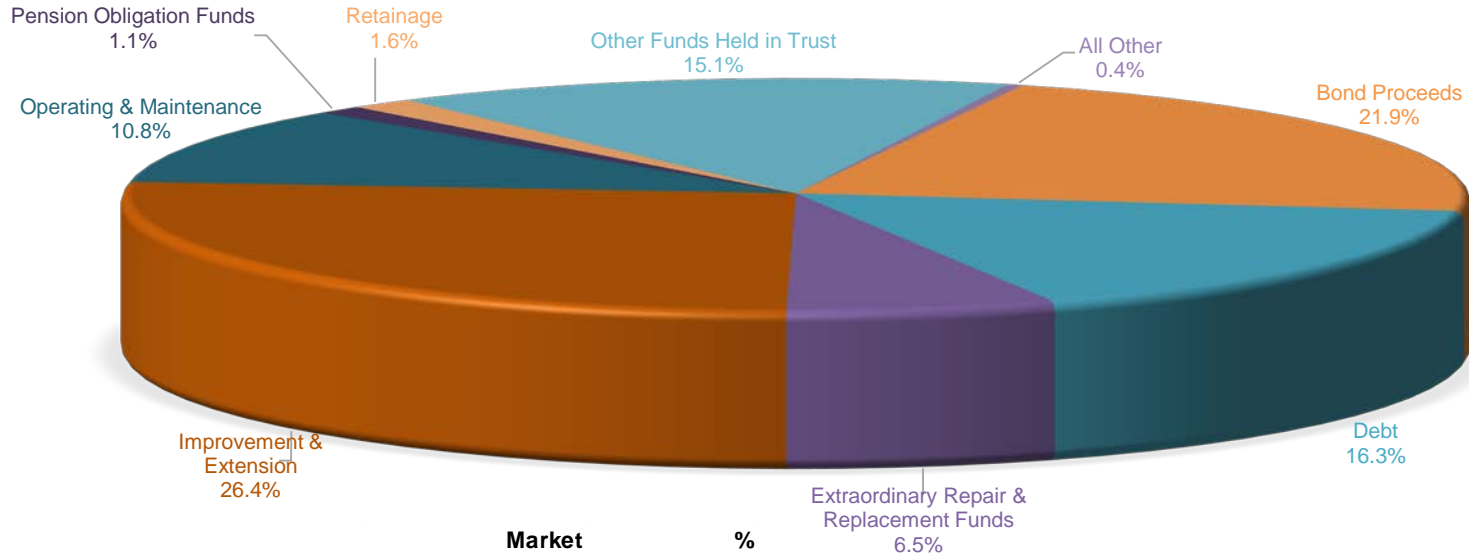
**Great Lakes Water Authority  
 Investments – By Credit Quality  
 As of September 30, 2018**



Credit Quality	Market Value	Asset Allocation
<b>Ratings</b>		
AAAm	296,590,688	30.2%
AA+	572,327,193	58.3%
A-1 + / A-1	97,335,493	9.9%
A-2	15,111	0.002%
NR	15,308,726	1.6%
<b>Totals</b>	<b>981,577,211</b>	<b>100.0%</b>

*In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of September 30, 2018.*

**Great Lakes Water Authority  
Investment Analysis – By Account Purpose  
As of September 30, 2018**



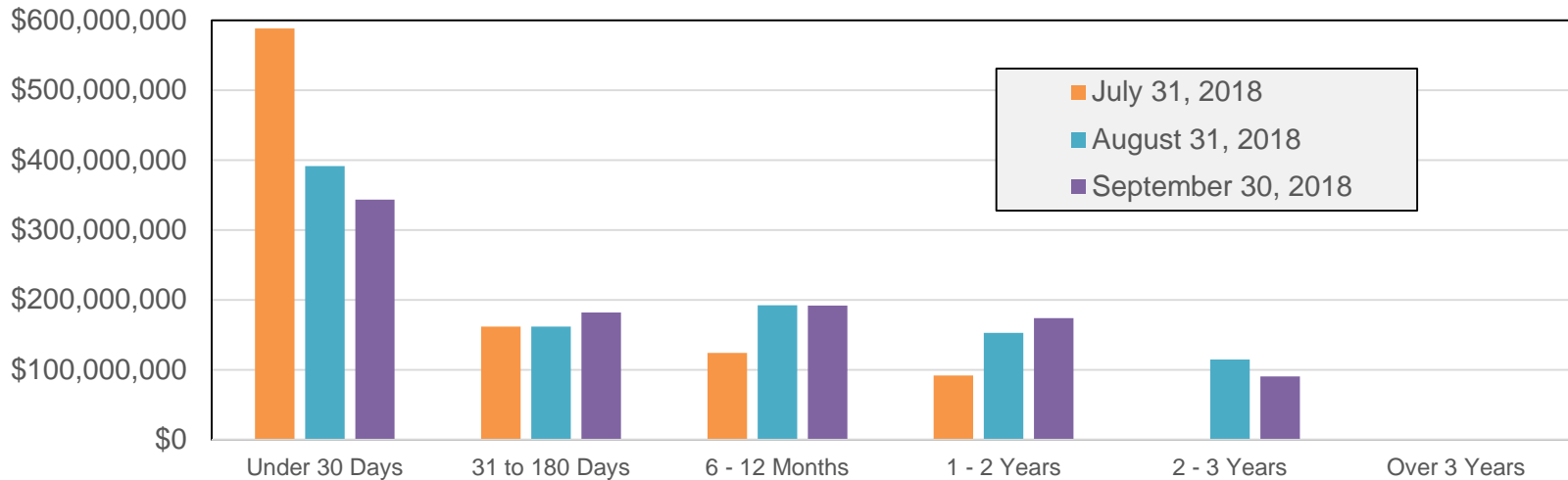
Account Purpose	Market Value	% Allocation
Bond Proceeds	\$ 214,528,410	21.9%
Debt	\$ 160,400,491	16.3%
Extraordinary Repair & Replacement Funds	\$ 63,590,192	6.5%
Improvement & Extension	\$ 258,682,561	26.4%
Operating & Maintenance	\$ 105,719,981	10.8%
Pension Obligation Funds	\$ 11,072,253	1.1%
Retainage	\$ 15,308,726	1.6%
Other Funds Held in Trust	\$ 148,513,836	15.1%
All Other	\$ 3,760,760	0.4%
<b>Total</b>	<b>\$ 981,577,211</b>	<b>100.0%</b>

Other Funds Held in Trust	Market Value	% Allocation
Budget Stabilization Funds	\$ 7,509,413	5.1%
Receiving Funds	\$ 132,823,776	89.4%
WRAP Funds	\$ 8,180,646	5.5%
<b>Total</b>	<b>\$ 148,513,836</b>	<b>100.0%</b>

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of September 30, 2018. "All Other" funds includes funds in the Flint Security Deposit account that are held on behalf of the City of Flint and do not belong to GLWA.

**Great Lakes Water Authority  
Investment Analysis – By Maturity**

Maturity Distribution	July 31, 2018	%	August 31, 2018	%	September 30, 2018	%
Under 30 Days	\$ 588,330,729	60.9%	\$ 391,642,004	38.6%	\$ 343,636,143	35.0%
31 to 180 Days	161,747,552	16.7%	161,970,963	16.0%	182,005,362	18.5%
6 - 12 Months	124,010,109	12.8%	192,566,862	19.0%	191,773,049	19.5%
1 - 2 Years	91,817,975	9.5%	153,028,829	15.1%	173,774,627	17.7%
2 - 3 Years	-	0.0%	114,986,518	11.3%	90,388,029	9.2%
Over 3 Years	-	0.0%	-	0.0%	-	0.0%
<b>Totals</b>	<b>\$ 965,906,365</b>	<b>100.0%</b>	<b>\$ 1,014,195,177</b>	<b>100.0%</b>	<b>\$ 981,577,211</b>	<b>100.0%</b>



In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of September 30, 2018.

**Great Lakes Water Authority  
Investment Accounts – Yield at Cost & Market  
As of September 30, 2018**

	As of September 30, 2018		As of June 30, 2018	
	YTM @ Cost	YTM @ Market	YTM @ Cost	YTM @ Market
<b>Bank Deposits</b>				
Comerica	0.25%	0.25%	0.25%	0.25%
First Indenpedence	0.05%	0.05%	0.05%	0.05%
Flint Deposit Account	0.69%	0.69%	0.57%	0.57%
JP Morgan Chase	0.69%	0.69%	0.57%	0.57%
<b>Sub-Total Bank Deposits</b>	<b>0.43%</b>	<b>0.43%</b>	<b>0.43%</b>	<b>0.43%</b>
<b>Money Market Funds / LGIPs</b>				
GovMIC	2.08%	2.08%	2.02%	2.02%
U.S. Bank - First American MMF	1.95%	1.95%	1.75%	1.75%
JP Morgan Securities - Blackrock MMF	1.88%	1.88%	1.73%	1.73%
<b>Sub-Total MMF / LGIPs</b>	<b>1.94%</b>	<b>1.94%</b>	<b>1.76%</b>	<b>1.76%</b>
<b>Investment Portfolios</b>				
Sewage SR Debt Serv 5403	2.38%	2.43%	0.00%	0.00%
Sewage SR Res 5400	1.51%	2.66%	1.35%	2.33%
Sew 2nd Debt Serv 5403	2.35%	2.40%	0.00%	0.00%
Sewage 2nd Res 5481	1.51%	2.67%	1.30%	2.29%
Sew SRF Debt Serv 5410	2.18%	2.40%	1.98%	2.17%
Sewage ER & R	2.61%	2.72%	1.50%	1.92%
Sewer Improvement & Extension	2.53%	2.65%	0.00%	0.00%
Sewer Pension Obligation	2.36%	2.48%	0.00%	0.00%
Sewer Wrap Fund	2.11%	2.34%	0.00%	0.00%
Sewer Budget Stabilization Fund	2.62%	2.74%	0.00%	0.00%
Sewer Bond Fund	1.53%	2.42%	1.49%	2.25%
Sewer O&M Pension Sub Account	2.41%	2.52%	0.00%	0.00%
Water SR Debt Ser 5503	2.37%	2.42%	0.00%	0.00%
Water SR Reserve 5500	1.44%	2.33%	1.17%	2.11%
Water 2nd Debt Serv 5503	2.37%	2.42%	0.00%	0.00%
Water 2nd Res 5581	2.14%	2.54%	2.15%	2.36%
Water SRF Debt Serv 5575	0.00%	0.00%	1.98%	2.16%
Water ER & R	2.61%	2.72%	1.50%	1.92%
Water Improvement & Extension	2.60%	2.71%	0.00%	0.00%
Water Pension Obligation	2.37%	2.49%	0.00%	0.00%
Water Wrap Fund	2.11%	2.34%	0.00%	0.00%
Water Budget Stabilization Fund	2.62%	2.74%	0.00%	0.00%
Water Bond Fund	1.67%	2.49%	1.63%	2.29%
Water O&M Pension Sub Account	2.41%	2.52%	0.00%	0.00%
<b>Sub-Total Investment Portfolios</b>	<b>2.15%</b>	<b>2.58%</b>	<b>1.56%</b>	<b>2.25%</b>
<b>Grand Total</b>	<b>2.02%</b>	<b>2.30%</b>	<b>1.61%</b>	<b>1.84%</b>

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.

**Great Lakes Water Authority  
 Demonstration of Yield to Maturity vs. Duration  
 As of September 30, 2018**

- 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 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 September 30, 2018				
	<i>Market Value</i>	<i>YTM @ Market</i>	<i>Effective Duration</i>	<i>Weighted Average Maturity</i>
<b>GLWA</b>				
Great Lakes Water Authority	\$981,577,211	2.30%	0.67 Years	251 Days
<b>Short/Intermediate-Term Indices</b>				
S&P Rated Government Investment Pool Index		1.87%	0.10 Years	37 Days
BoA / ML 3-Month Treasury Index		2.12%	0.16 Years	90 Days
BoA / ML 6-Month Treasury Index		2.34%	0.41 Years	180 Days
BoA / ML 1-Year Treasury Index		2.65%	0.90 Years	365 Days
BoA / ML 1-3 Year Treasury Index		2.80%	1.80 Years	657 Days
BoA / ML 1-5 Year Treasury Index		2.85%	2.57 Years	938 Days
<b>Peer Analysis (Water Entities / Utilities)</b>				
Alameda County Water District, CA	\$109,233,979	2.91%	2.36 Years	900 Days
Coachella Valley Water District, CA	\$450,391,445	2.80%	1.78 Years	759 Days
District of Columbia Water & Sewer Authority, DC	\$342,659,101	2.47%	0.81 Years	304 Days
DuPage Water Commission, IL	\$136,836,216	2.82%	2.20 Years	1022 Days
Fairfax County Water Authority, VA	\$218,308,753	2.69%	1.69 Years	652 Days
San Bernardino Valley Municipal Water District, CA	\$302,260,993	2.84%	1.74 Years	660 Days
Truckee Meadows Water Authority, NV	\$112,202,198	2.65%	1.71 Years	651 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.



**Great Lakes Water Authority**  
**Investment Income (by Book Value)**  
**As of September 30, 2018**

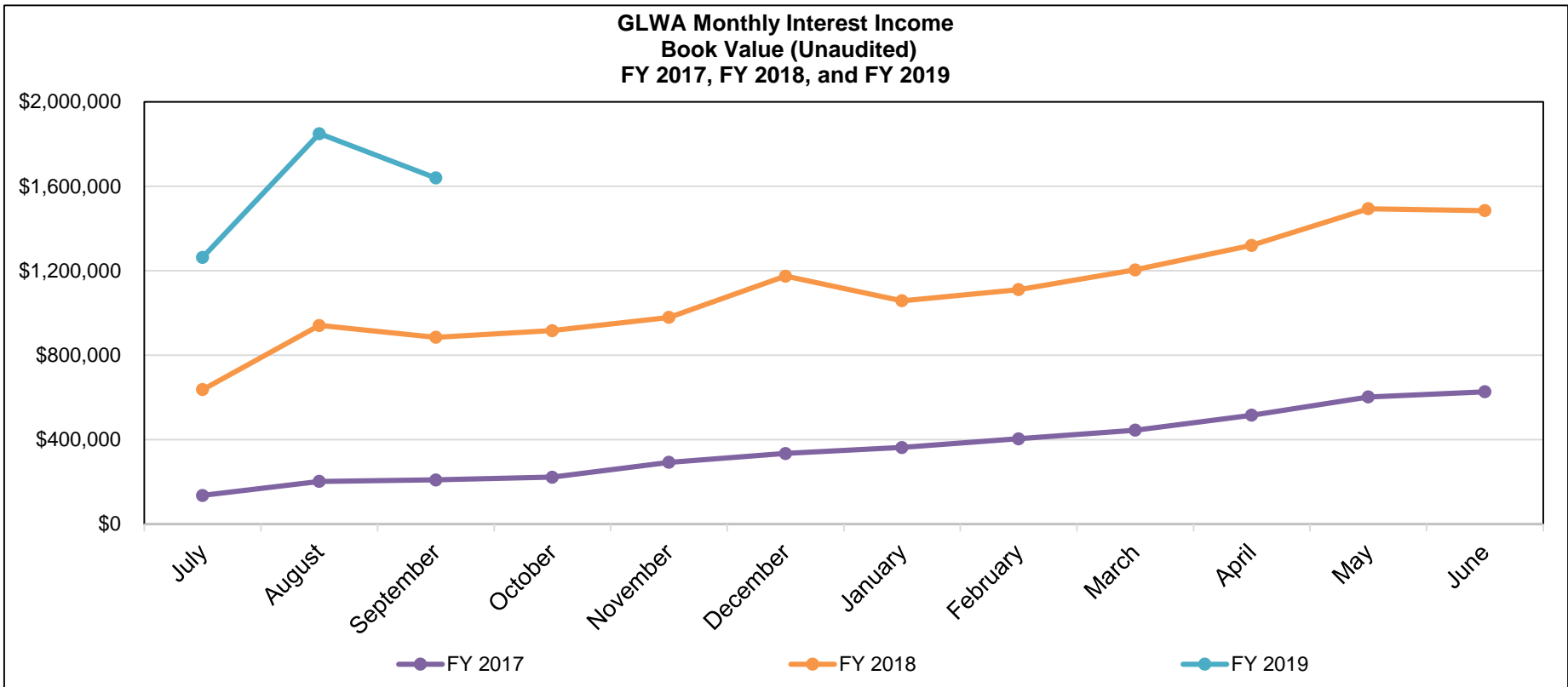
**INVESTMENT INCOME BY MONTH (Unaudited)**

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
<b><u>FY 2019 Y-T-D</u></b>	<b><u>\$4,751,826.69</u></b>	<b><u>\$1,631.65</u></b>	<b><u>\$4,753,458.34</u></b>

*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.*

**Great Lakes Water Authority  
Monthly Investment Income**

- The Authority has earned \$4,753,458 in investment income for fiscal year 2019 on a book value basis compared to \$2,463,399 for the first three months of fiscal year 2018.
- The monthly investment earnings are continuing on an upward trend as the Authority continues to refine cash flows and work with its investment advisor to identify strategies to maximize future investment income while meeting the objectives of safety and liquidity.
- Projected investment income for fiscal year 2019 is \$19.0 million.



# Appendix I: Portfolio Holdings

**Great Lakes Water Authority  
Portfolio Holdings  
As of September 30, 2018**

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
<b>Short-Term Bank Deposits / MMF / LGIP</b>									
COMERICA BANK		\$ 15,111	10/1/2018	9/30/2018	0.25%	\$ 15,111	1	\$ -	\$ 15,111
FIRST INDEPENDENCE BANK		15,308,726	10/1/2018	9/30/2018	0.05%	15,308,726	1	-	15,308,726
FLINT DEPOSIT ACCOUNT		3,760,760	10/1/2018	9/30/2018	0.69%	3,760,760	1	-	3,760,760
JP MORGAN CHASE		17,964,802	10/1/2018	9/30/2018	0.69%	17,964,802	1	-	17,964,802
GoMIC		28,922,138	10/1/2018	9/30/2018	2.08%	28,922,138	1	-	28,922,138
U.S. BANK - FIRST AMERICAN MMF		181,744,797	10/1/2018	9/30/2018	1.95%	181,744,797	1	-	181,744,797
JP MORGAN SECURITIES - BLACKROCK MMF		85,923,753	10/1/2018	9/30/2018	1.88%	85,923,753	1	-	85,923,753
<b>Commercial Paper</b>									
Toyota Motor Credit 0 11/1/2018	89233HL10	\$ 3,460,000	11/1/2018	8/28/2018	2.11%	\$ 3,446,881	32	\$ -	\$ 3,453,080
Toyota Motor Credit 0 11/1/2018	89233HL10	172,000	11/1/2018	9/5/2018	2.07%	171,439	32	-	171,656
Toyota Motor Credit 0 11/1/2018	89233HL10	4,314,000	11/1/2018	8/28/2018	2.11%	4,297,643	32	-	4,305,372
Toyota Motor Credit 0 11/1/2018	89233HL10	240,000	11/1/2018	9/5/2018	2.07%	239,217	32	-	239,520
Credit Agricole 0 12/20/2018	22533UML4	2,150,000	12/20/2018	8/9/2018	2.34%	2,131,572	81	-	2,138,670
Credit Agricole 0 12/20/2018	22533UML4	4,888,000	12/20/2018	8/9/2018	2.34%	4,846,104	81	-	4,862,240
MUFG Bank NY 0 12/20/2018	62479MML4	4,791,000	12/20/2018	9/11/2018	2.33%	4,760,258	81	-	4,765,751
Natixis NY 0 12/20/2018	63873KML8	2,982,000	12/20/2018	7/16/2018	2.45%	2,950,528	81	-	2,966,285
Natixis NY 0 12/20/2018	63873KML8	5,000,000	12/20/2018	8/9/2018	2.35%	4,956,960	81	-	4,973,650
Natixis NY 0 12/20/2018	63873KML8	445,000	12/20/2018	7/16/2018	2.45%	440,304	81	-	442,655
Credit Agricole 0 12/20/2018	22533UML4	3,648,000	12/20/2018	8/9/2018	2.34%	3,616,733	81	-	3,628,775
Credit Agricole 0 12/20/2018	22533UML4	2,314,000	12/20/2018	8/9/2018	2.34%	2,294,166	81	-	2,301,805
MUFG Bank NY 0 12/20/2018	62479MML4	2,040,000	12/20/2018	9/11/2018	2.33%	2,026,910	81	-	2,029,249
MUFG Bank NY 0 12/20/2018	62479MML4	4,370,000	12/20/2018	8/9/2018	2.35%	4,332,383	81	-	4,346,970
Natixis NY 0 12/20/2018	63873KML8	1,173,000	12/20/2018	7/16/2018	2.45%	1,160,620	81	-	1,166,818
Natixis NY 0 12/20/2018	63873KML8	3,053,000	12/20/2018	7/16/2018	2.45%	3,020,779	81	-	3,036,911
Natixis NY 0 12/20/2018	63873KML8	5,000,000	12/20/2018	8/9/2018	2.35%	4,956,960	81	-	4,973,650
BNP Paribas 0 12/31/2018	09659CMX3	3,913,000	12/31/2018	7/13/2018	2.37%	3,869,507	92	-	3,888,974
BNP Paribas 0 12/31/2018	09659CMX3	2,417,000	12/31/2018	7/13/2018	2.37%	2,390,135	92	-	2,402,160
BNP Paribas 0 12/31/2018	09659CMX3	5,125,000	12/31/2018	9/11/2018	2.25%	5,089,761	92	-	5,093,533
MUFG Bank NY 0 12/31/2018	62479MML4	1,923,000	12/31/2018	8/9/2018	2.37%	1,904,924	92	-	1,911,193
BNP Paribas 0 12/31/2018	09659CMX3	3,832,000	12/31/2018	7/13/2018	2.37%	3,789,407	92	-	3,808,472
BNP Paribas 0 12/31/2018	09659CMX3	1,613,000	12/31/2018	9/11/2018	2.25%	1,601,909	92	-	1,603,096
BNP Paribas 0 12/31/2018	09659CMX3	2,053,000	12/31/2018	7/13/2018	2.37%	2,030,181	92	-	2,040,395
ING Funding 0 4/9/2019	4497W1R99	3,049,000	4/9/2019	7/16/2018	2.62%	2,990,884	191	-	3,006,832
ING Funding 0 4/9/2019	4497W1R99	251,000	4/9/2019	7/16/2018	2.62%	246,216	191	-	247,529
ING Funding 0 4/9/2019	4497W1R99	478,000	4/9/2019	7/16/2018	2.62%	468,889	191	-	471,389
ING Funding 0 4/9/2019	4497W1R99	1,352,000	4/9/2019	7/16/2018	2.62%	1,326,230	191	-	1,333,302

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of September 30, 2018.

**Great Lakes Water Authority  
Portfolio Holdings  
As of September 30, 2018**

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
<b>Federal Agencies</b>									
FNMA 1.15 10/30/2018-14	3136G1KL2	\$ 10,000,000	10/30/2018	4/30/2013	1.36%	\$ 9,889,200	30	\$ 47,917	\$ 9,991,500
FNMA 1.375 1/28/2019	3135G0H63	5,200,000	1/28/2019	7/26/2017	1.39%	5,198,908	120	12,314	5,184,072
FNMA 1.375 1/28/2019	3135G0H63	6,695,000	1/28/2019	8/31/2017	1.31%	6,700,758	120	15,854	6,674,493
FNMA 1 2/26/2019	3135G0J53	5,205,000	2/26/2019	7/26/2017	1.39%	5,173,666	149	4,916	5,177,575
FNMA 1 2/26/2019	3135G0J53	6,690,000	2/26/2019	8/31/2017	1.33%	6,657,821	149	6,318	6,654,750
FHLB 1.5 3/8/2019	3133782M2	6,595,000	3/8/2019	8/31/2017	1.34%	6,611,026	159	6,045	6,570,684
FHLB 1.375 3/18/2019	3130AAXX1	5,175,000	3/18/2019	7/26/2017	1.38%	5,174,431	169	2,372	5,151,418
FHLB 1.375 5/28/2019	3130ABF92	5,260,000	5/28/2019	7/26/2017	1.40%	5,257,423	240	24,510	5,221,234
FHLB 1.375 5/28/2019	3130ABF92	5,245,000	5/28/2019	8/31/2017	1.34%	5,248,409	240	24,440	5,206,344
FHLB 1.625 6/14/2019	313379EE5	7,050,000	6/14/2019	9/1/2017	1.38%	7,080,033	257	33,732	7,005,592
FHLMC 0.875 7/19/2019	3137EAEB1	5,230,000	7/19/2019	7/26/2017	1.41%	5,176,079	292	9,025	5,161,194
FHLMC 0.875 7/19/2019	3137EAEB1	6,720,000	7/19/2019	8/31/2017	1.36%	6,659,386	292	11,597	6,631,592
FHLMC 1.375 8/15/2019	3137EAEB8	5,215,000	8/15/2019	7/26/2017	1.45%	5,206,917	319	8,963	5,160,639
FNMA 1 8/28/2019	3135G0P49	6,715,000	8/28/2019	8/31/2017	1.39%	6,664,100	332	5,969	6,618,217
FNMA 1.75 9/12/2019	3135G0ZG1	4,705,000	9/12/2019	7/26/2017	1.45%	4,734,171	347	4,117	4,666,250
FHLB 1 9/26/2019	3130A9EP2	7,550,000	9/26/2019	8/31/2017	1.39%	7,490,053	361	839	7,427,690
FHLMC 1.25 10/2/2019	3137EADM8	5,045,000	10/2/2019	12/28/2017	1.93%	4,985,469	367	31,181	4,975,485
FHLB 2.125 2/11/2020	3130ADN32	3,750,000	2/11/2020	6/28/2018	2.52%	3,726,750	499	10,846	3,718,639
FHLMC 2.5 4/23/2020	3137EAEM7	3,750,000	4/23/2020	6/28/2018	2.56%	3,746,288	571	41,927	3,732,600
FHLB 2.625 5/28/2020	3130AECJ7	3,750,000	5/28/2020	6/28/2018	2.57%	3,753,825	606	35,273	3,739,418
FHLMC 2.375 2/16/2021	3137EAEL9	3,500,000	2/16/2021	8/8/2018	2.79%	3,465,210	870	10,160	3,459,750
FHLMC 2.375 2/16/2021	3137EAEL9	20,000,000	2/16/2021	8/8/2018	2.79%	19,801,200	870	58,056	19,770,000
FHLMC 2.375 2/16/2021	3137EAEL9	250,000	2/16/2021	8/9/2018	2.78%	247,563	870	726	247,125
FHLMC 2.375 2/16/2021	3137EAEL9	685,000	2/16/2021	8/9/2018	2.78%	678,321	870	1,988	677,123
FNMA 2.5 4/13/2021	3135G0U27	3,500,000	4/13/2021	8/8/2018	2.82%	3,471,685	926	40,590	3,464,405
FNMA 2.5 4/13/2021	3135G0U27	20,000,000	4/13/2021	8/8/2018	2.82%	19,838,200	926	231,944	19,796,600
FNMA 2.5 4/13/2021	3135G0U27	250,000	4/13/2021	8/9/2018	2.81%	247,985	926	2,899	247,458
FNMA 2.5 4/13/2021	3135G0U27	3,400,000	4/13/2021	8/8/2018	2.81%	3,372,698	926	39,431	3,365,422
FNMA 2.5 4/13/2021	3135G0U27	685,000	4/13/2021	8/9/2018	2.81%	679,479	926	7,944	678,034
FNMA 2.5 4/13/2021	3135G0U27	5,750,000	4/13/2021	8/8/2018	2.81%	5,703,828	926	66,684	5,691,523

In addition to the totals listed above, there also exists surety bonds in the amount of \$322,809,258 as of September 30, 2018.





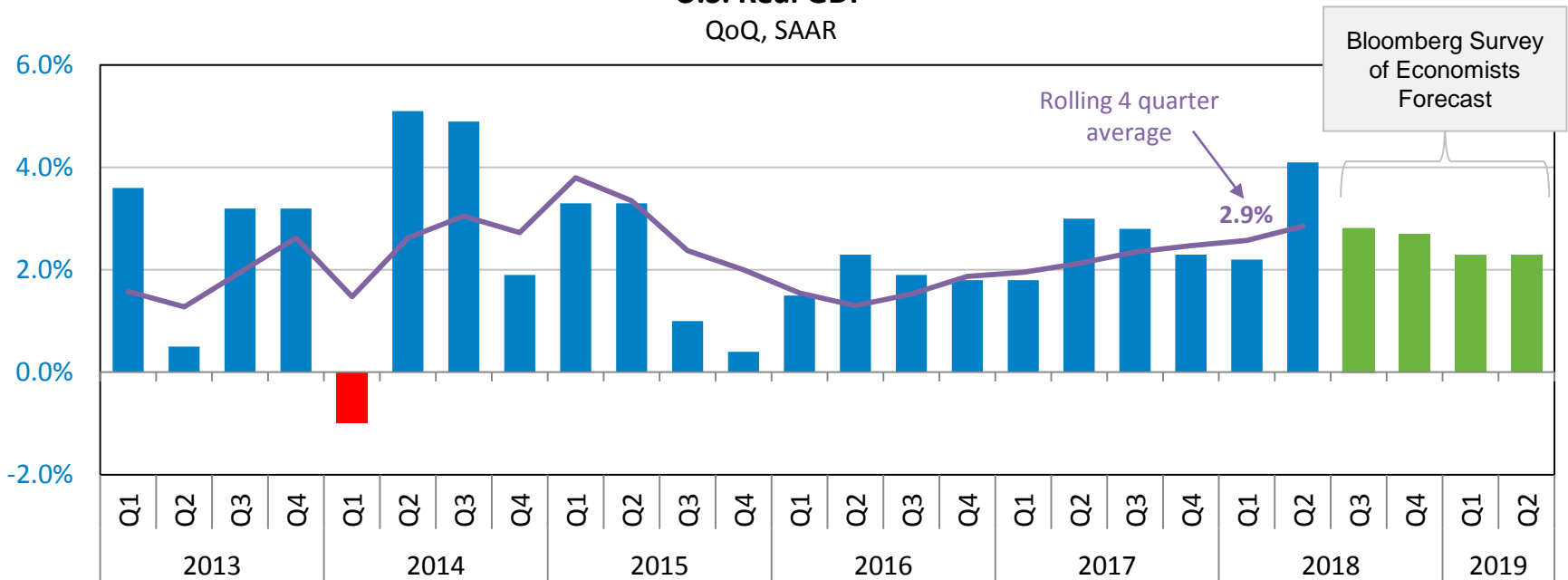
# Appendix II: Economic Update



# Economic Growth Accelerated in Second Quarter

- U.S. economic activity expanded at a strong pace in the second quarter
  - The Gross Domestic Product (“GDP”) remained unchanged for the third second quarter reading at 4.2%
  - Contributors to the unchanged GDP reading include a slight downward revision to private inventory investment and a small upward revision to most of the remaining GDP components
- The surge in growth in second quarter is not expected to be sustainable, reflected in moderate future growth forecasts

**U.S. Real GDP**  
QoQ, SAAR

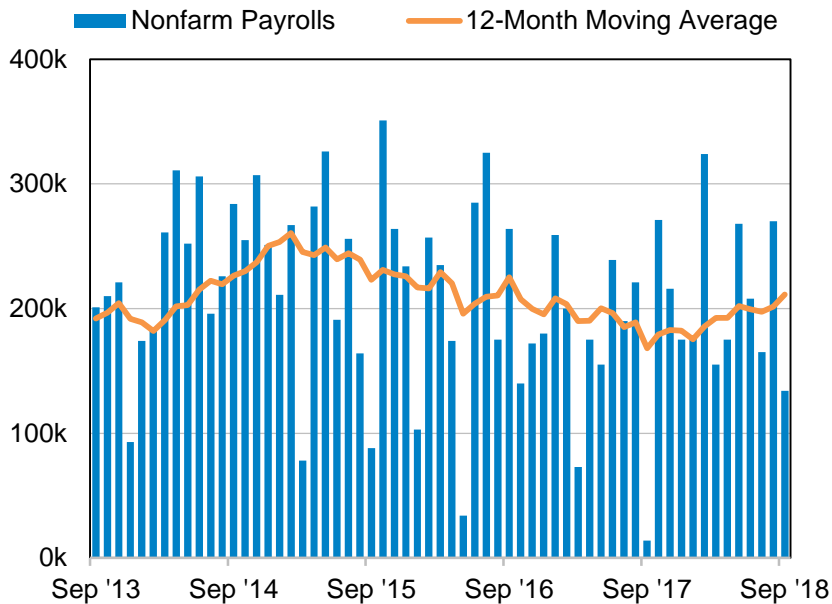


Source: Bloomberg, as of September 2018.

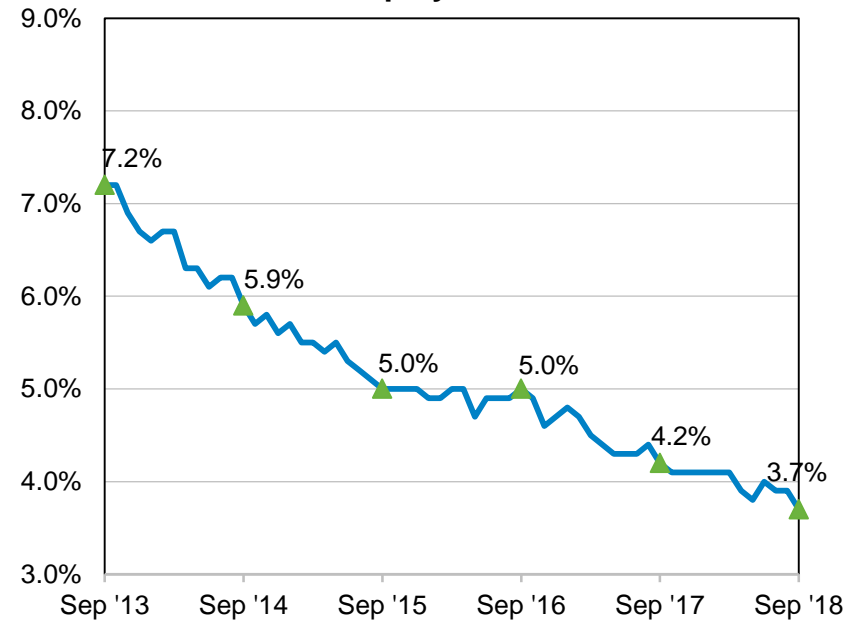
# Labor Market Remains Strong in September

- The U.S. economy added 134,000 jobs in September, falling short of expectations
- Job gains have averaged 208,000 per month so far this year
  - The unemployment rate fell to 3.7% in September, the lowest level since 1969
  - Average hourly earnings – a key measure of wage growth – slightly decelerated from the cyclical high of 2.9% in August to 2.8% in September

**Monthly Change in Nonfarm Payrolls**



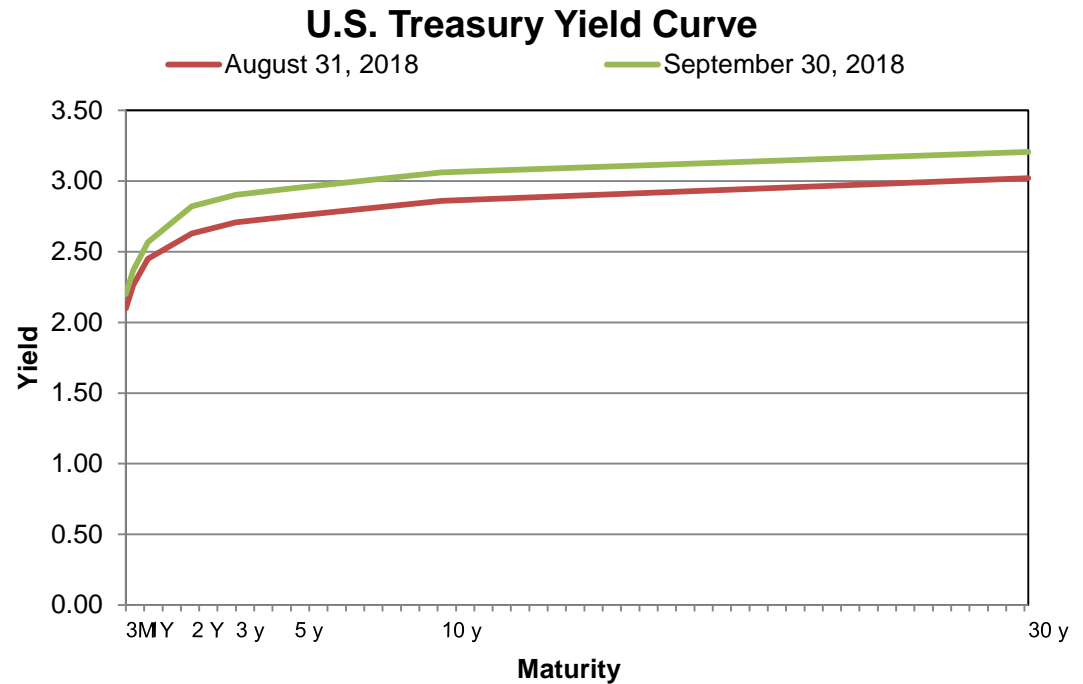
**Unemployment Rate**



Source: Bloomberg, as of September 2018.

# U.S. Treasury Yield Curve Increases

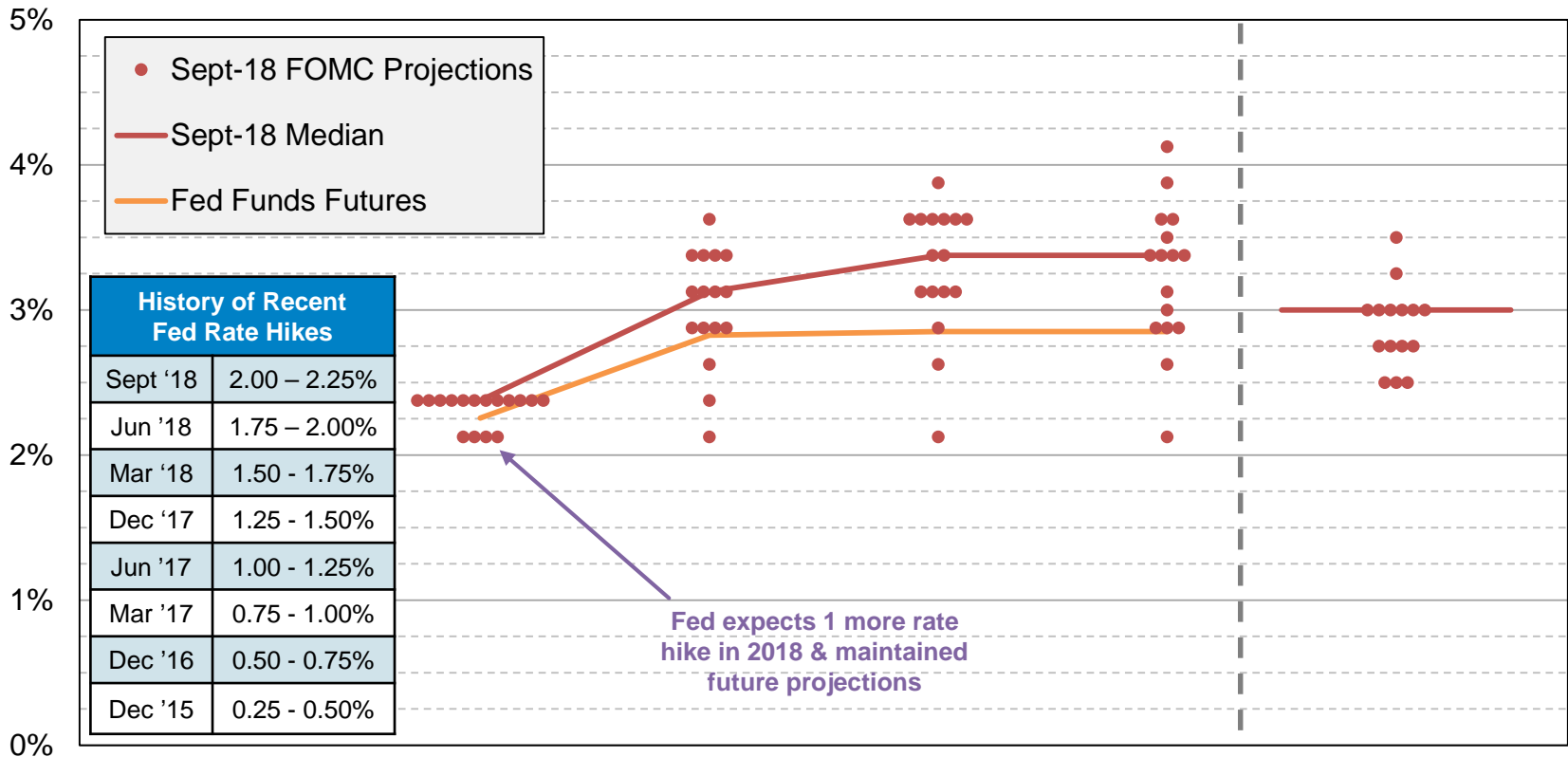
	<u>8/31/2018</u>	<u>9/30/18</u>	<u>Change</u>
3 month	2.10%	2.20%	0.10%
6 month	2.27%	2.37%	0.10%
1 year	2.45%	2.57%	0.12%
2 year	2.63%	2.82%	0.19%
3 year	2.71%	2.90%	0.19%
5 year	2.75%	2.95%	0.20%
10 year	2.86%	3.06%	0.20%
30 year	3.02%	3.21%	0.19%



Source: Bloomberg

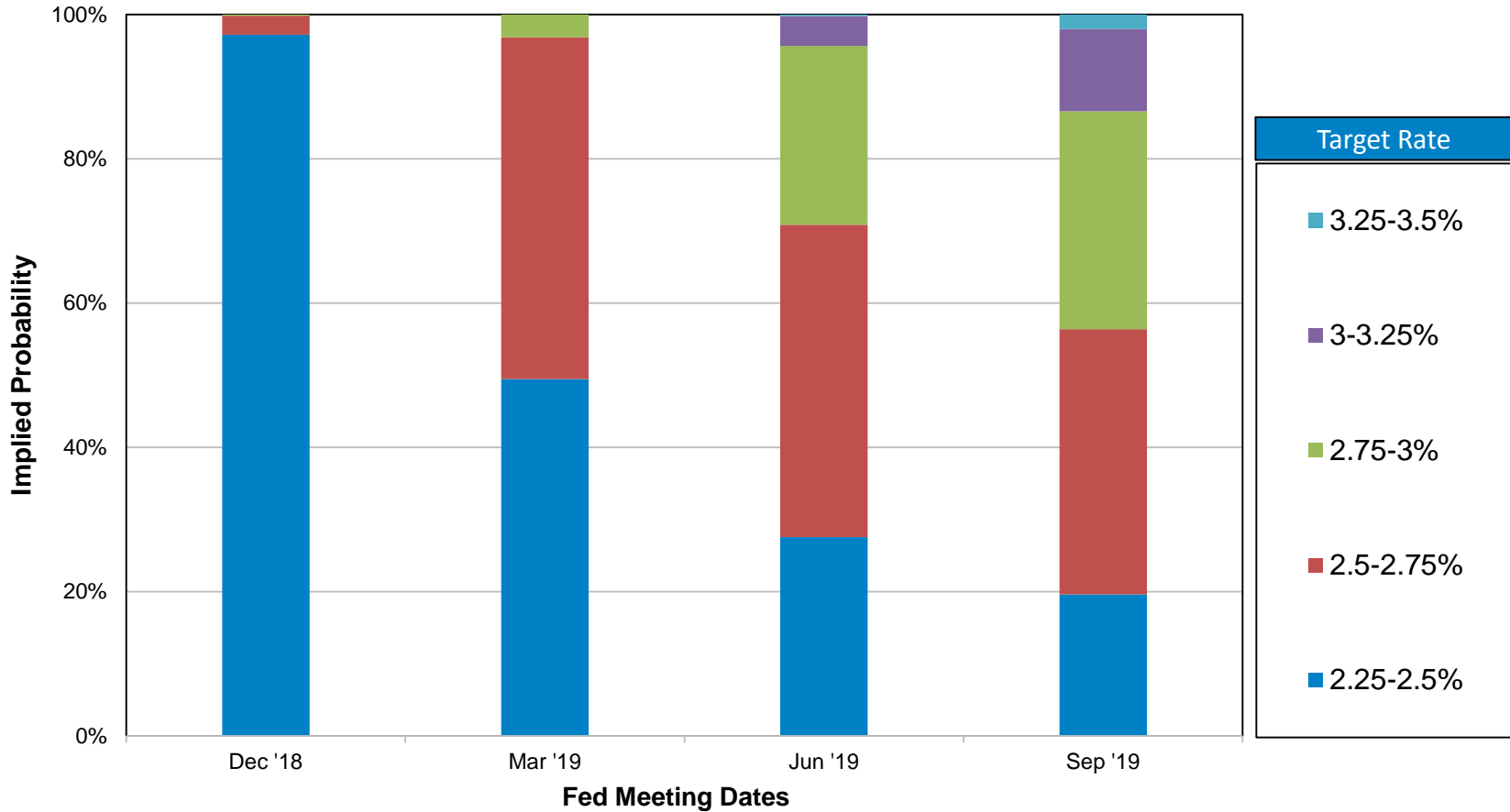
# FOMC's "Dot Plot" Projects One More Rate Hike in 2018

## Fed Participants' Assessments of 'Appropriate' Monetary Policy



Source: Federal Reserve and Bloomberg. Individual dots represent each Fed members' judgement of the midpoint of the appropriate target range for the federal funds rate at each year-end. Fed funds futures as of 9/26/18.

# Federal Reserve Rate Hike Probabilities

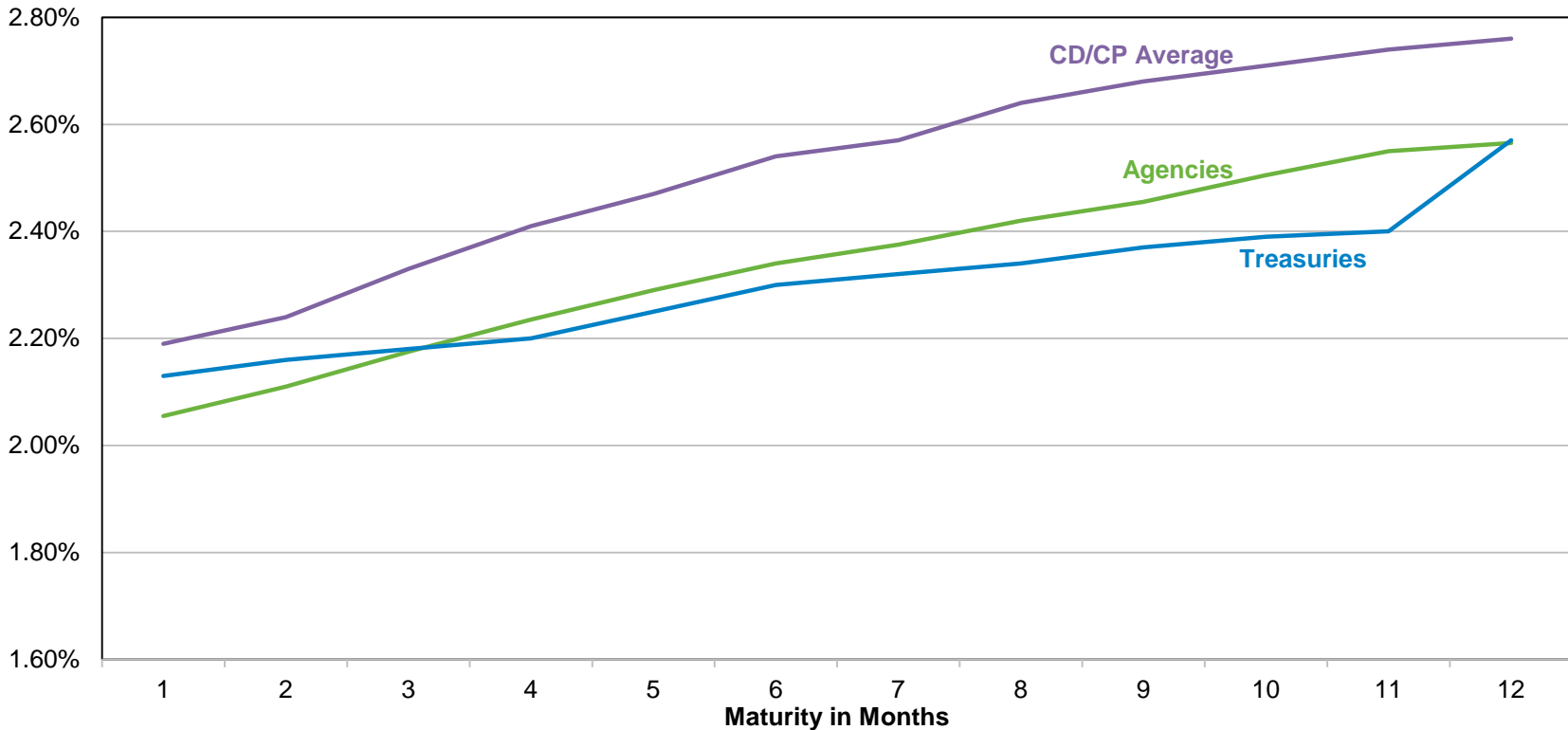


Source: Bloomberg, as of 9/28/18.

# Current Short-Term Credit Environment

- Commercial paper and negotiable bank CDs remain attractive alternatives to short-term Treasuries, Agencies, bank deposits, and government money market funds

### Money Market Yield Curves



Source: Bloomberg, PFM Trading Desk, as of 9/28/18. Not a specific recommendation.

**Great Lakes Water Authority  
Market Overview and Outlook**

**FIXED INCOME MARKET – ECONOMIC HIGHLIGHTS**

- Economic conditions were characterized by:
  - Stronger growth in the U.S., propelled by tax cuts and fiscal stimulus
  - A robust labor market, with the U.S. unemployment rate near 48 year lows
  - Core inflation near the Fed’s 2.0% target, while oil prices have surged and wages have begun to trend higher
  - Consumer confidence at a near two-decade high, while measures of manufacturing activity are also very strong
  - A resurging stock market, with the S&P 500 index rising by 7.7% for the third quarter, the largest quarterly gain since the fourth quarter of 2013
  - The Federal Reserve increasing short-term rates 0.25% per quarter, and signaling the expectation they will continue to do so through 2019
  - But additionally, an escalating trade war with China, weakness in emerging market economies and currencies, and also political uncertainty
  
- U.S. Treasury yields rose 20 – 30 basis points (0.20% – 0.30%) over the quarter as the yield curve flattened further:
  - Short-term Treasury bill yields rose by 25 – 30 basis points
  - The yield on the 2-year Treasury Note rose by 29 basis points to end the quarter at 2.82%
  - The yield on the 10-year Treasury rose by 20 basis points to end the quarter at 3.06%
  - Short-term rates reflected Fed rate hike expectations, while longer-term yields were the result of moderate inflation expectations, persistently low global interest rates, and a negative “term premium”
  
- After a weaker second quarter, strong economic fundamentals gave investors confidence in corporate and other non-government sectors; most investment-grade sectors contributed positive excess returns (returns in excess of similar-duration Treasuries) to fixed-income portfolios for the quarter

**Great Lakes Water Authority  
Market Overview and Outlook**

**FIXED INCOME MARKET – ECONOMIC HIGHLIGHTS**

- The incremental yield offered in many sectors relative to U.S. Treasuries has narrowed to a point that analysis indicates the current income cushion may struggle to offset the potential adverse impact of future spread widening
  - As has been the case for some time, Federal Agency yield spreads remained extremely narrow throughout the previous quarter
  - After providing several consecutive quarters of incremental income relative to short-term government alternatives, yield spreads on commercial paper grinded to 12-month tights
  
- While the Fed's policy actions will depend on future economic data, most market participants believe the current strength of the U.S. economy, coupled with a strong labor market and rising inflation, will cause the Fed to continue raising rates at a pace of about 0.25% hike per quarter well into 2019
  
- The outlook for some of the major investment-grade fixed-income sectors are as follows:
  - Federal Agency securities remain expensive, as most maturities offer less than five basis points of incremental yield relative to U.S. Treasuries
  - Short-term money market investors continue to reap the rewards of current monetary policy tightening; in addition, increased projections for U.S. Treasury debt issuance over the next several quarters may continue to pressure short-term yields higher in both the government and short-term credit spaces



## Disclosure

*This material is based on information obtained from sources generally believed to be reliable and available to the public, however PFM Asset Management LLC cannot guarantee its accuracy, completeness or suitability. This material is for general information purposes only and is not intended to provide specific advice or a specific recommendation. All statements as to what will or may happen under certain circumstances are based on assumptions, some but not all of which are noted in the presentation. Assumptions may or may not be proven correct as actual events occur, and results may depend on events outside of your or our control. Changes in assumptions may have a material effect on results. Past performance does not necessarily reflect and is not a guaranty of future results. The information contained in this presentation is not an offer to purchase or sell any securities.*

**GLWA**

*Great Lakes Water Authority*



# **Monthly Financial Report Binder**

**August 2018**

**Presented to the  
Great Lakes Water Authority  
Audit Committee  
on November 16, 2018**

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November 16, 2018

Greetings!

This month, the Great Lakes Water Authority Financial Services Area presents the inaugural Monthly Financial Report Binder. This is the result of significant effort by GLWA to build a solid financial team; identify, implement, and continually improve our financial processes; and work with our partners in Information Technology to build reliable and increasingly advanced systems to support *all* GLWA team members who have a key role in executing sound financial and budgetary practices.

Highlights of this month's report include:

- ✓ Positive FY 2019 financial performance results to date;
- ✓ Identification of areas of potential risk so that we can mitigate those risks;
- ✓ Explanation of how GLWA financial elements fit together; and
- ✓ Identification of progress in financial operations.

This report binder, along with Chief Executive Officer Sue F. McCormick's monthly CEO Report and Key Performance Indicator report provide a full menu of operational and financial reports available online at [www.glwater.org](http://www.glwater.org).

We thrive on feedback! Please send any comments or suggestions to [CFO@glwater.org](mailto:CFO@glwater.org).

Thank you,

Nicolette N. Bateson, CPA  
Chief Financial Officer & Treasurer

## Budget to Actual Analysis

The Budget to Actual Analysis report includes the following three tables.

1. Revenue Requirement Budget Basis Analysis
2. Operations Budget – Major Operations & Maintenance Budget Category
3. Operations & Maintenance Budget – Major Budget Categories

### Revenue Requirement Budget Basis Analysis

GLWA's annual revenue requirement aligns with a) the basis for calculating customer charges and b) the Master Bond Ordinance flow of funds. 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 on an accrual basis. The primary deviation between the revenue requirement basis to 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 - Water Revenue Requirement Budget presents a year-over-year budget to actual performance report. For both systems there were no budget amendments that change the totals. Therefore, only an "amended" budget column is represented. The revenue requirement budget is accounted for in the operations and maintenance fund for each system. Since this report is for August 2018, the pro-rata benchmark is 16.7% (2 of 12 months for the fiscal year).

Items of key interest discussed below are highlighted in gold on the Tables 1 and 2.

1. For both systems, FY 2019 revenues are at or above target and are consistent with the prior year (FY 2018) at the same time.
2. Operations and maintenance expense is within the pro-rata benchmark for FY 2019. Expenses are higher than the current year. While a detail review of activity to date revealed some increase in spending within approved amounts, the more likely reason is that GLWA implanted a monthly close cycle during calendar year 2018. The result is that August 2017 O&M expenses were not accrual basis where August 2018 is accrual basis.
3. The Master Bond Ordinance Commitments are generally funded on a 1/12<sup>th</sup> basis each month. The debt service amount shown on the table is accounted for on that same basis. In September 2018, the GLWA had a successful bond sale which will provide a positive budget variance. That amendment will be reported in a future month.
4. Overall total expenses are in line with the benchmark.

5. Through August 2018, both the water and sewer system have a positive revenue requirement variance.

**Table 1A – Water Revenue Requirement Budget (year-over-year)**

System	FY 2018 Amended Budget	FY 2018 Activity thru 08.31.2017	Percent to Date	FY 2019 Amended Budget	FY 2019 Activity thru 8.31.2018	Percent to Date
<b>Water</b>						
<b>Revenues</b>						
Wholesale Customer Charges	\$310,019,800	\$64,340,095	20.8%	\$307,382,500	\$64,526,968	21.0%
Retail Services Revenue	15,130,600	2,521,766	16.7%	20,181,400	3,387,684	16.8%
Other Revenues	36,000	14,668	40.7%	34,300	17,259	50.3%
Investment Earnings	2,932,900	396,758	13.5%	3,802,300	532,743	14.0%
Transfer In - Other	-	27,219	0.0%	-	525,753	0.0%
<b>Total Revenues</b>	<b>\$328,119,300</b>	<b>\$67,300,506</b>	<b>20.5%</b>	<b>\$331,400,500</b>	<b>\$68,990,407</b>	<b>20.8%</b>
<b>Expenses</b>						
Operations & Maintenance Expense	\$121,562,600	\$9,059,088	7.5%	\$121,562,600	\$19,447,242	16.0%
Debt Service	135,631,200	22,605,200	16.7%	134,214,600	22,369,100	16.7%
O&M Legacy Pension Allocation	6,048,000	1,008,000	16.7%	6,048,000	1,008,000	16.7%
Accelerated Legacy Pension Allocation	6,268,300	1,044,717	16.7%	6,268,300	1,044,717	16.7%
Water Residential Assistance Program	1,678,600	279,767	16.7%	1,673,400	278,900	16.7%
Extraordinary Repair & Replacement Deposit	1,452,500	242,083	16.7%	-	-	0.0%
Lease Payment	22,500,000	3,750,000	16.7%	22,500,000	3,750,000	16.7%
Operating Reserve Deposit	323,700	53,950	16.7%	-	-	0.0%
Improvement & Extension Fund Deposit	32,654,400	5,442,400	16.7%	39,133,600	6,522,267	16.7%
<b>Total Expenses</b>	<b>\$328,119,300</b>	<b>\$43,485,205</b>	<b>13.3%</b>	<b>\$331,400,500</b>	<b>\$54,420,225</b>	<b>16.4%</b>
<b>Variance to date</b>		<b>\$ 23,815,301</b>			<b>\$ 14,570,182</b>	

**Table 1B – Sewer Revenue Requirement Budget (year-over-year)**

System	FY 2018 Amended Budget	FY 2018 Activity thru 08.31.2017	Percent to Date	FY 2019 Amended Budget	FY 2019 Activity thru 8.31.2018	Percent to Date
<b>Sewer</b>						
<b>Revenues</b>						
Wholesale Customer Charges	271,429,300	45,238,600	16.7%	271,296,300	45,825,600	16.9%
Retail Services Revenue	178,969,100	29,828,200	16.7%	181,159,300	30,501,266	16.8%
Bad Debt Expense Recovery	-	-	0.0%	-	-	0.0%
Industrial Waste Control Charges	14,452,700	2,392,629	16.6%	15,000,800	1,581,834	10.5%
Pollutant Surcharges	5,099,000	1,097,997	21.5%	-	1,610,739	0.0%
Other Revenues	467,200	2,000,704	428.2%	485,200	135,392	27.9%
Investment Earnings	2,283,800	479,574	21.0%	4,085,700	863,692	21.1%
Transfer In - Other	-	8,379	0.0%	-	181,203	0.0%
<b>Total Revenues</b>	<b>\$472,701,100</b>	<b>\$81,046,083</b>	<b>17.1%</b>	<b>\$472,027,300</b>	<b>\$80,699,726</b>	<b>17.1%</b>
<b>Expenses</b>						
Operations & Maintenance Expense	191,079,300	13,310,690	7.0%	191,079,400	25,168,125	13.2%
Debt Service	205,859,900	34,309,983	16.7%	214,600,700	35,766,783	16.7%
O&M Legacy Pension Allocation	10,824,000	1,804,000	16.7%	10,824,000	1,804,000	16.7%
Accelerated Legacy Pension Allocation	11,620,700	1,936,783	16.7%	11,620,700	1,936,783	16.7%
Water Residential Assistance Program	2,313,700	385,617	16.7%	2,374,100	395,683	16.7%
Extraordinary Repair & Replacement Deposit	2,283,100	380,517	16.7%	-	-	0.0%
Lease Payment	27,500,000	4,583,333	16.7%	27,500,000	4,583,333	16.7%
Operating Reserve Deposit	341,600	56,933	16.7%	-	-	0.0%
Operating Transfer Out	-	6,226,093	0.0%	-	-	0.0%
Improvement & Extension Fund Deposit	20,878,700	-	0.0%	14,028,400	2,338,067	16.7%
<b>Total Expenses</b>	<b>\$472,701,000</b>	<b>\$62,993,950</b>	<b>13.3%</b>	<b>\$472,027,300</b>	<b>\$71,992,775</b>	<b>15.3%</b>
<b>Variance to date</b>		<b>\$ 18,052,133</b>			<b>\$ 8,706,951</b>	

## Operations & Maintenance Budget – Major Budget Categories

The year-over-year benchmark ratio as of August 31 is 16.7% (two months). When comparing FY 2018 to FY 2017 in Table 2, it would appear that the spending has increased. This is true in some instances for special projects (such as sludge removal and disposal for the water operations group). The greater impact, however, is that the Financial Reporting & Accounting Team has implemented a full accrual basis for interim financial statements during FY 2018. This anomaly will decrease as we proceed through FY 2019.

**Table 2 - Operations & Maintenance Budget – Major Budget Categories**

Budget Category	FY 2018 Amended Budget	FY 2018 Activity thru 08.31.2017	FY 2018 % Year-to-Date at 8.31.2017	FY 2019 Board Adopted Budget	FY 2019 Activity thru 8.31.2018	FY 2019 % Year-to-Date at 8.31.2018
A Water Operations	\$ 68,750,700	\$ 5,811,185	8.5%	\$ 67,154,800	\$ 15,050,943	22.4%
B Wastewater Operations	113,528,800	7,980,392	7.0%	118,318,900	15,603,270	13.2%
C Centralized Services	101,582,500	6,555,673	6.5%	98,485,900	10,678,541	10.8%
D Administrative Services	28,779,900	2,022,528	7.0%	28,682,400	3,282,613	11.4%
<b>Grand Total</b>	<b>\$ 312,641,900</b>	<b>\$ 22,369,778</b>	<b>7.2%</b>	<b>\$ 312,642,000</b>	<b>\$ 44,615,367</b>	<b>14.3%</b>



## Alignment of Operations & Maintenance Budget Priorities - Expense Variance Analysis

The purpose of Table 3 is to evaluate whether the actual spend rate within a category is 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.

Notable items are highlighted in golf in Table 3.

Electricity as a budgeted category is 13.5% of the total, while it represents 20.4% of the year-to-date spend. In this scenario, it is an item that staff is reconciling with year-end accruals. This is a budgetary exception that was pending negotiation with DTE and review with the Board which occurred after August 31, 2018.

Conversely, contractual services is 34.1% of the budget but only 29.3% of the spend-to-date. This is good news as it represents a positive budget variance. However, staff is reviewing activity in that category to identify if there are areas for concern, such as a delayed initiative.

**Table 3 – Expense Variance Analysis**

Operations & Maintenance Fund Categories	FY 2019 Amended Budget	Percent of Total Budget	FY 2019 Activity thru 8.31.2018	Percent of Total Spend to Date	Variance Ratio (Over)/ Under
2.1 Salaries & Wages	\$ 64,160,400	20.5%	\$ 9,778,377	21.9%	-1.4%
2.2 Workforce Development	740,200	0.2%	119,527	0.3%	0.0%
2.3 Overtime	6,813,300	2.2%	1,228,537	2.8%	-0.6%
2.4 Employee Benefits	22,255,400	7.1%	4,246,880	9.5%	-2.4%
2.5 Transition Services	11,574,600	3.7%	1,636,302	3.7%	0.0%
2.6 Personnel Transition Adjustment	(3,070,500)	-1.0%	-	0.0%	-1.0%
3.1 Electric	42,147,000	13.5%	9,095,279	20.4%	-6.9%
3.2 Gas	6,871,400	2.2%	887,826	2.0%	0.2%
3.3 Sewage Service	2,548,900	0.8%	152,566	0.3%	0.5%
3.4 Water Service	5,783,100	1.8%	598,394	1.3%	0.5%
4.1 Chemicals	16,620,900	5.3%	2,145,602	4.8%	0.5%
4.2 Supplies & Other	29,581,000	9.5%	3,192,468	7.2%	2.3%
4.3 Contractual Services	106,484,700	34.1%	13,094,070	29.3%	4.7%
5.1 Capital Program Allocation	(4,000,000)	-1.3%	(488,843)	-1.1%	-0.2%
5.2 Shared Services	(9,123,100)	-2.9%	(1,247,522)	-2.8%	-0.1%
6.0 Capital Outlay	6,935,600	2.2%	595,153	1.3%	0.9%
7.0 Unallocated Reserve	6,319,100	2.0%	-	0.0%	2.0%
8.0 Employee Benefits Fund	-	0.0%	(419,248)	-0.9%	0.9%
<b>Total</b>	<b>\$ 312,642,000</b>	<b>100.0%</b>	<b>\$ 44,615,368</b>	<b>100.0%</b>	<b>14.3%</b>

The Interim 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

On a daily basis, the GLWA utilizes four funds. At the macro level for financial reporting purposes, the Great Lakes Water Authority has two primary funds: *Water Fund* and *Sewage Disposal Fund*. These funds represent the combined total of four sub-funds for each system that are used 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*.

### Statement of Net Position – All Funds Combined (Unaudited)

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

**Table 1 – Statement of Net Position - All Funds Combined (Unaudited)  
As of August 31, 2018**

	Water	Sewage Disposal	Total Business-type Activities
<b>Assets</b>			
Cash (a)	\$ 131,825,000	\$ 152,024,000	\$ 283,849,000
Investments (a)	391,862,000	320,629,000	712,491,000
Accounts Receivable	100,579,000	58,211,000	158,790,000
Due from Other Funds (b)	14,180,000	28,340,000	42,520,000
Other Assets (c)	619,767,000	376,663,000	996,430,000
Cash Held FBO DWSD Advance (d)	-	57,107,000	57,107,000
Capital Assets, net of depreciation	1,768,759,000	2,581,890,000	4,350,649,000
Construction Work in Process	153,124,000	160,862,000	313,986,000
<b>Total Assets</b>	<b>\$ 3,180,096,000</b>	<b>\$ 3,735,726,000</b>	<b>\$ 6,915,822,000</b>
<b>Deferred Inflow (e)</b>	<b>\$ 112,267,000</b>	<b>\$ 217,953,000</b>	<b>\$ 330,220,000</b>
<b>Liabilities</b>			
Liabilities – Short-Term (f)	\$ 117,066,000	\$ 125,785,000	\$ 242,851,000
Due to Other Funds (b)	-	42,520,000	42,520,000
Other Liabilities (g)	2,699,000	6,085,000	8,784,000
Cash Held FBO DWSD (d)	14,081,000	-	14,081,000
Liabilities – Long-Term (h)	3,147,848,000	3,833,256,000	6,981,104,000
<b>Total Liabilities</b>	<b>\$ 3,281,694,000</b>	<b>\$ 4,007,646,000</b>	<b>\$ 7,289,340,000</b>
<b>Deferred Outflow (e)</b>	<b>\$ 65,998,000</b>	<b>\$ 59,401,000</b>	<b>\$ 125,399,000</b>
<b>Net Position (Deficit) (i)</b>	<b>\$ (55,329,000)</b>	<b>\$ (113,368,000)</b>	<b>\$ (168,697,000)</b>

Note: Totals may be off due to rounding.

**Footnotes to Statement of Net Position**

- a. *Cash and Investments* include restricted amounts.
- 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 to 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 net financial commitments as outlined in the Master Bond Ordinance.
- e. *Deferred Inflow* and *Deferred Outflow* relate to financing activity and GLWA's share of the legacy General Retirement System (GRS) pension obligation.
- f. *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.
- g. *Other Liabilities* account for the cash receipts set aside for the Budget Stabilization Fund and the Water Residential Assistance Program.
- h. *Liabilities - Long-term* include bonds payable, lease payable, and legacy GRS pension liabilities.
- i. *Net Position (Deficit)* is defined by the 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 1, 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**

This statement, shown in Table 2, is presented in summary format. Supplemental schedules follow the analysis: Table 3 – Operations and Maintenance Expenses Supplemental Schedule and Table 4 – Supplemental Schedule of Nonoperating Expenses.

It should be noted that the FY 2018 year-end close and audit are nearing completion in November 2018. The impact of the reversal of year-end closing accruals was not fully estimable at the time of the August 2018 month-end close. In addition, the accrual basis of

revenues and operations and maintenance expense vary from the revenue requirement basis presented elsewhere in the August 2018 Financial Report Binder.

#### Water Fund

- ✓ The increase in Water Fund Net Position is \$8 million.
- ✓ Wholesale water customer charges of \$65 million account for 95.0% of Water System revenues.
- ✓ Operating expenses of \$44 million represent 64.4% of total operating revenue. Depreciation is the largest operating expense at \$12 million or 53.2% of operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals \$24 million or 35.6% of operating revenue.
- ✓ The largest category within nonoperating activities is interest expense of \$23 million.

#### Sewage Disposal Fund

- ✓ The increase in Sewer Net Position was \$2 million.
- ✓ Wholesale customer charges of \$46 million account for 57.5% 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 every five years. The result is no revenue shortfall or overestimation.
- ✓ Local system (DWSD) charges of \$31 million account for 38.3% of total operating revenues. These are also billed at one-twelfth of the annual revenue requirement.
- ✓ Operating expenses of \$54 million represent 68.3% of total operating revenue. Depreciation is the largest operating expense at \$29 million or 53.2% of total operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals \$25 million or 31.7% of operating revenue.
- ✓ The largest category within nonoperating activities is interest expense of \$27 million.

**Table 2 – Statement of Revenues, Expenses and Changes in Net Position  
– All Funds Combined (Unaudited)  
For the Two Months ended August 31, 2018**

	Water	Percent of Revenue	Sewage Disposal	Percent of Revenue	Change in Net Position
<b>Revenue</b>					
Wholesale customer charges	\$ 64,527,000	95.0%	\$ 45,826,000	57.5%	110,353,000
Local system charges	3,388,000	5.0%	30,501,000	38.3%	33,889,000
Industrial waste charges	-		1,611,000	2.0%	1,611,000
Other revenue	13,000	0.0%	104,000	0.1%	117,000
Pollutant surcharges	-		1,611,000	2.0%	1,611,000
Bad Debt Recovery	-		-		-
<b>Total Revenues</b>	<b>\$ 67,928,000</b>	<b>100.0%</b>	<b>\$ 79,653,000</b>	<b>100.0%</b>	<b>\$ 147,581,000</b>
<b>Operating Expenses</b>					
Operations and Maintenance Expenses	19,123,000	28.2%	25,435,000	31.9%	44,558,000
Depreciation	24,602,000	36.2%	28,974,000	36.4%	53,576,000
<b>Total Operating Expenses</b>	<b>43,725,000</b>	<b>64.4%</b>	<b>54,409,000</b>	<b>68.3%</b>	<b>98,134,000</b>
Operating Income	24,203,000	35.6%	25,244,000	31.7%	49,447,000
<b>Total Nonoperating (Revenue)/Expense</b>	<b>16,088,000</b>	<b>23.7%</b>	<b>23,438,000</b>	<b>29.4%</b>	<b>39,526,000</b>
<b>Change in Net Position - Increase (Decrease)</b>	<b>8,115,000</b>	<b>11.9%</b>	<b>1,806,000</b>	<b>2.3%</b>	<b>9,921,000</b>
Net Position (Deficit), Beginning of year	(63,444,000)		(115,174,000)		(178,618,000)
<b>Net Position (Deficit), End of Year</b>	<b>\$ (55,329,000)</b>		<b>\$ (113,368,000)</b>		<b>\$ (168,697,000)</b>

Totals may be off due to rounding.

### **Supplemental Schedule of Operations & Maintenance Expenses**

This Supplemental Schedule of Operations & Maintenance Expenses (O&M) schedule is shown on the next page in Table 3.

- ✓ Core expenses for water and sewage disposal systems is utilities (24.1% of total O&M expenses) and chemicals (4.8%).
- ✓ Personnel (37.2%) 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 (29.4%) includes
  - Water System costs of sludge removal and disposal services at the Northeast, Southwest and Springwells Water Treatment Plants (approximately \$2.0 million);

- Sewage Disposal System costs for the operation and maintenance of the biosolids dryer facility (approximately \$2.3 million); and
- Centralized and Administrative contractual costs allocated to both systems for information technology, building maintenance, and other services.

**Table 3 – Supplemental Schedule of Operations & Maintenance Expenses  
 – All Funds Combined (Unaudited)  
 For the Two Months ended August 31, 2018**

<b>Expenditure</b>	<b>Water</b>	<b>Percent of Total</b>	<b>Sewage Disposal System</b>	<b>Percent of Total</b>	<b>Combined</b>	<b>Percent of Total</b>
Chemicals	\$ 985,000	5.2%	\$ 1,161,000	4.6%	\$ 2,146,000	4.8%
Contractual services	4,428,000	23.2%	8,666,000	34.1%	13,094,000	29.4%
Personnel						
Salaries & Wages	4,722,000	24.7%	6,812,000	26.8%	11,534,000	25.9%
Overtime	677,000	3.5%	551,000	2.2%	1,228,000	2.8%
Benefits	2,120,000	11.1%	1,708,000	6.7%	3,828,000	8.6%
<b>Total Personnel</b>	<b>7,519,000</b>	<b>39.3%</b>	<b>9,071,000</b>	<b>35.7%</b>	<b>16,590,000</b>	<b>37.2%</b>
Supplies and other	616,000	3.2%	3,114,000	12.2%	3,730,000	8.4%
Utilities						
Electric	7,060,000	36.9%	2,036,000	8.0%	9,096,000	20.4%
Gas	28,000	0.1%	860,000	3.4%	888,000	2.0%
Sewage	42,000	0.2%	110,000	0.4%	152,000	0.3%
Water	-	0.0%	598,000	2.4%	598,000	1.3%
<b>Total Utilities</b>	<b>7,130,000</b>	<b>37.3%</b>	<b>3,604,000</b>	<b>14.2%</b>	<b>10,734,000</b>	<b>24.1%</b>
Capital program allocation	(316,000)	-1.7%	(173,000)	-0.7%	(489,000)	-1.1%
Shared services allocation	(1,239,000)	-6.5%	(8,000)	0.0%	(1,247,000)	-2.8%
<b>Operations and Maintenance Expenses</b>	<b>\$ 19,123,000</b>	<b>100.0%</b>	<b>\$ 25,435,000</b>	<b>100.0%</b>	<b>\$ 44,558,000</b>	<b>100.0%</b>

Totals may be off due to rounding.

### Supplemental Schedule of Nonoperating Expenses – All Funds Combined

The Supplemental Schedule of Nonoperating Expenses – All Funds Combined is shown on Table 4 on the next page. Significant categories are noted below.

- ✓ Interest expense, the largest category of nonoperating expenses, is due to three sources below:
  - 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 KWA Pipeline.
- ✓ Interest income on contractual obligation from DWSD.
- ✓ Investment earnings

**Table 4 – Supplemental Schedule of Nonoperating Expenses  
 – All Funds Combined (Unaudited)  
 For the Two Months ended August 31, 2018**

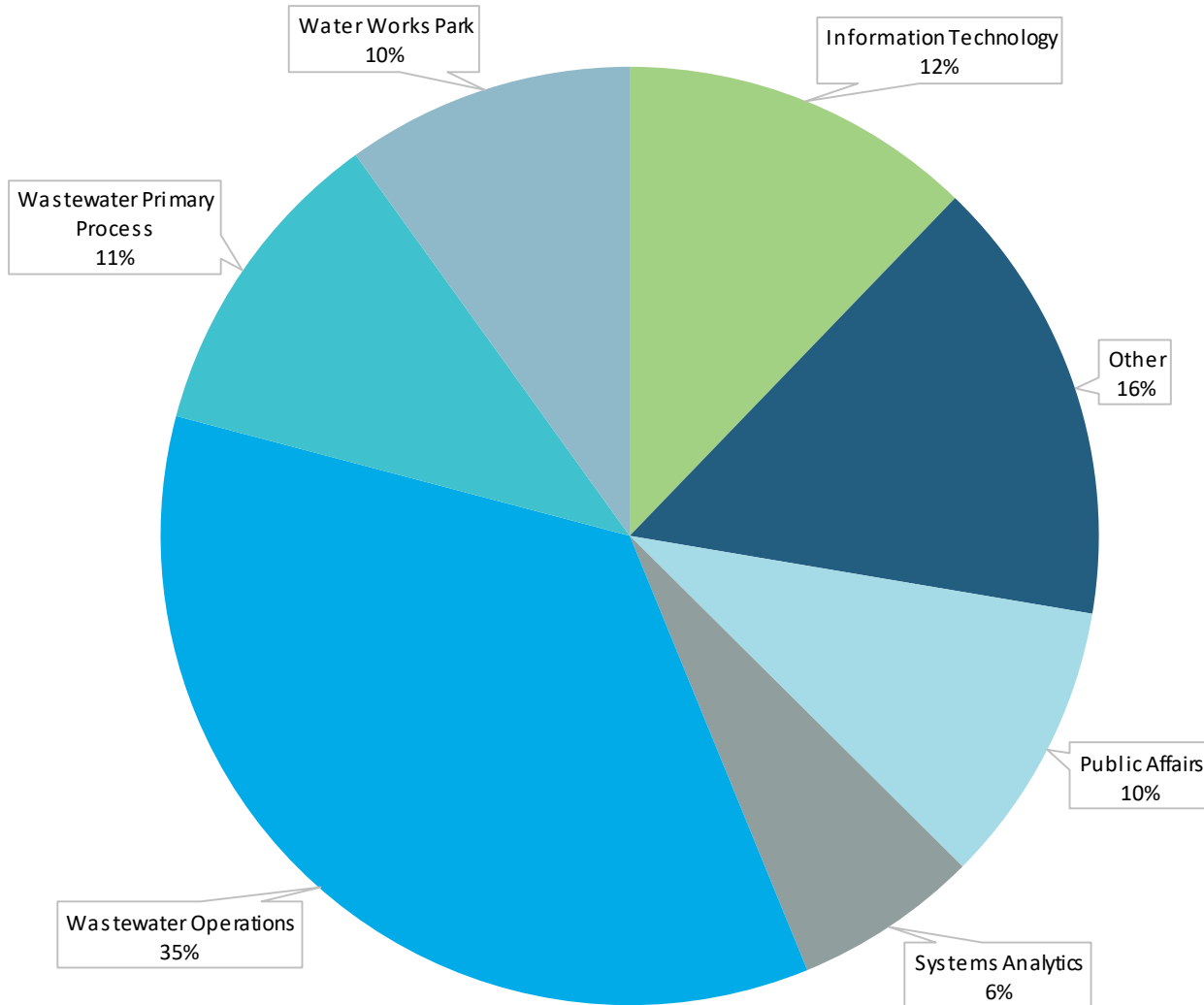
<b>Nonoperating (Revenue)/Expense</b>	<b>Water</b>	<b>Sewage Disposal</b>	<b>Combined</b>
Interest income contractual obligation	\$ (3,807,000)	\$ (2,503,000)	\$ (6,310,000)
Investment earnings	(2,465,000)	(2,484,000)	(4,949,000)
Other nonoperating revenue	(4,000)	(3,000)	(7,000)
Interest expense			
Bonded debt	22,814,000	19,280,000	42,094,000
Lease obligation	3,616,000	2,959,000	6,575,000
Other obligations	265,000	829,000	1,094,000
Total interest expense	<u>26,695,000</u>	<u>23,068,000</u>	<u>49,763,000</u>
Other nonoperating expense	221,000	408,000	629,000
Amortization, issuance costs, debt	<u>(924,000)</u>	<u>1,324,000</u>	<u>400,000</u>
<b>Total Nonoperating (Revenue)/Expense</b>	<b><u>\$ 19,716,000</u></b>	<b><u>\$ 19,810,000</u></b>	<b><u>\$ 39,526,000</u></b>

## Financial Activity Charts

### Chart 1 – Capital Outlay

Capital Outlay spend is **\$1,738,228** through August 31, 2018. The allocation is shown in the chart below.

**Capital Outlay Expenditures by Department as of August 31, 2018**

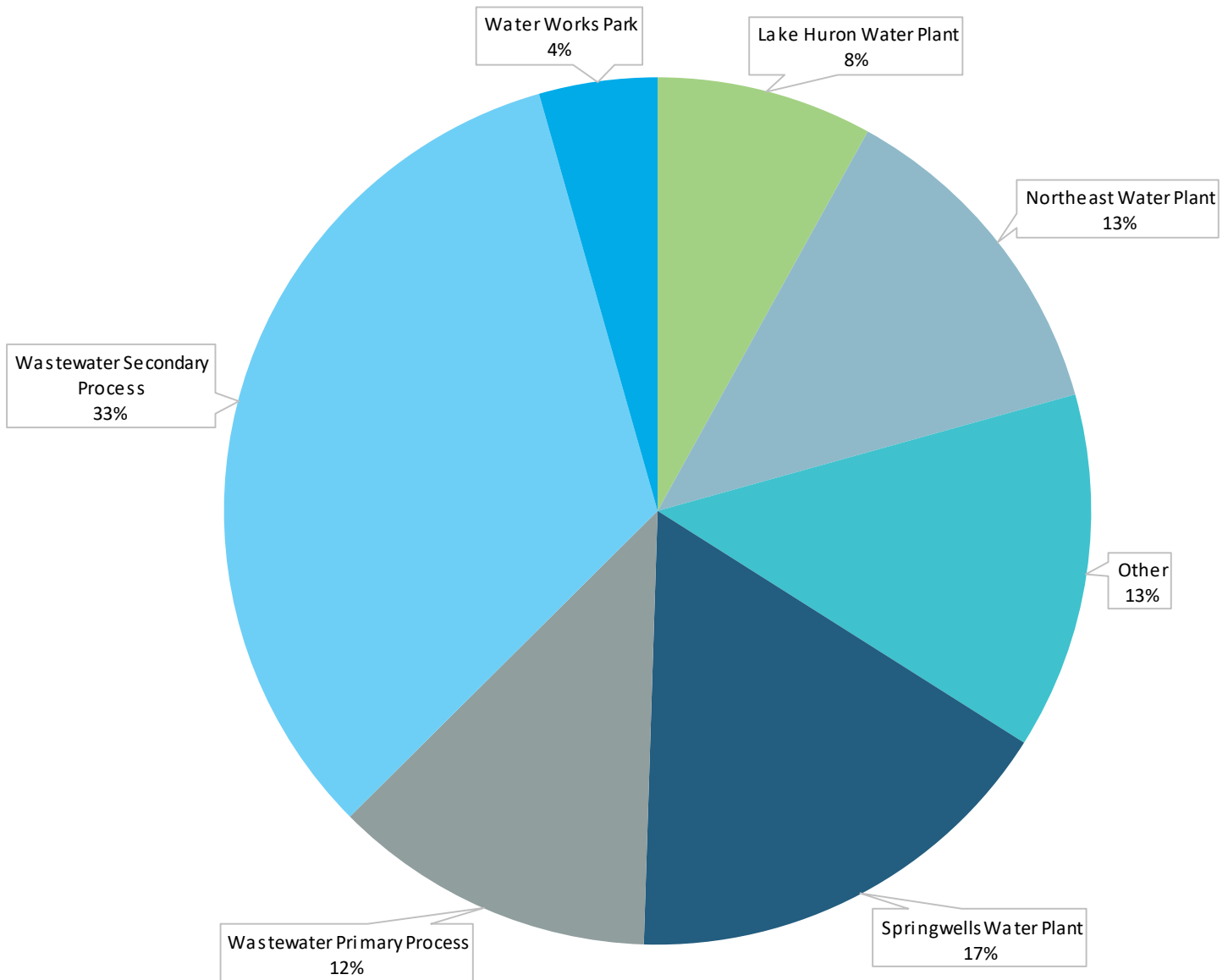




### Chart 2 - Chemical Spend

Chemical spend is **\$2,145,602** through August 31, 2018. The allocation is shown in the chart below.

**Chemical Expenditure by Department as of August 31, 2018**

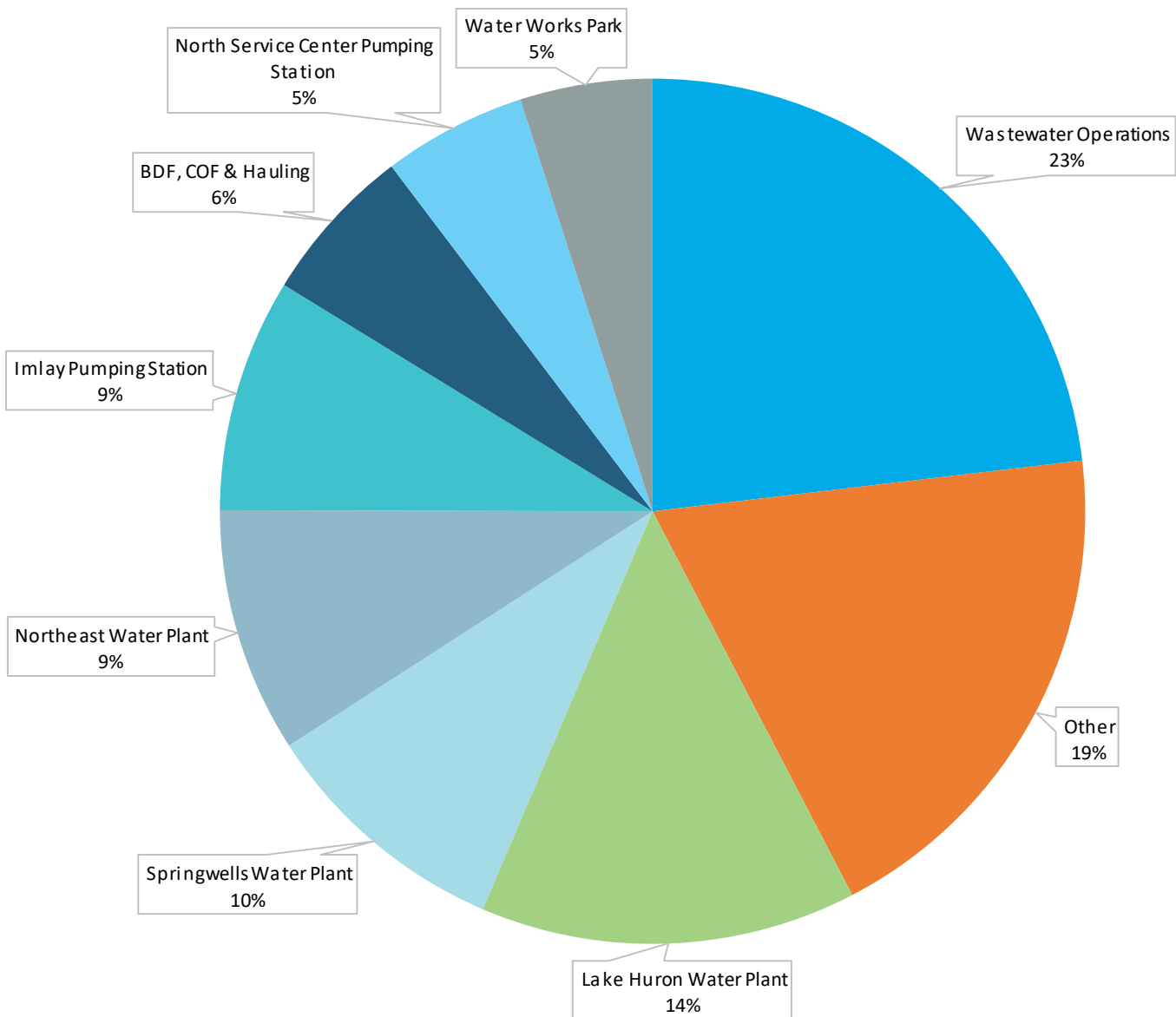


“Other” includes CSO, portions of the Wastewater process and two departments from Water.

### Chart 3 - Utility spend

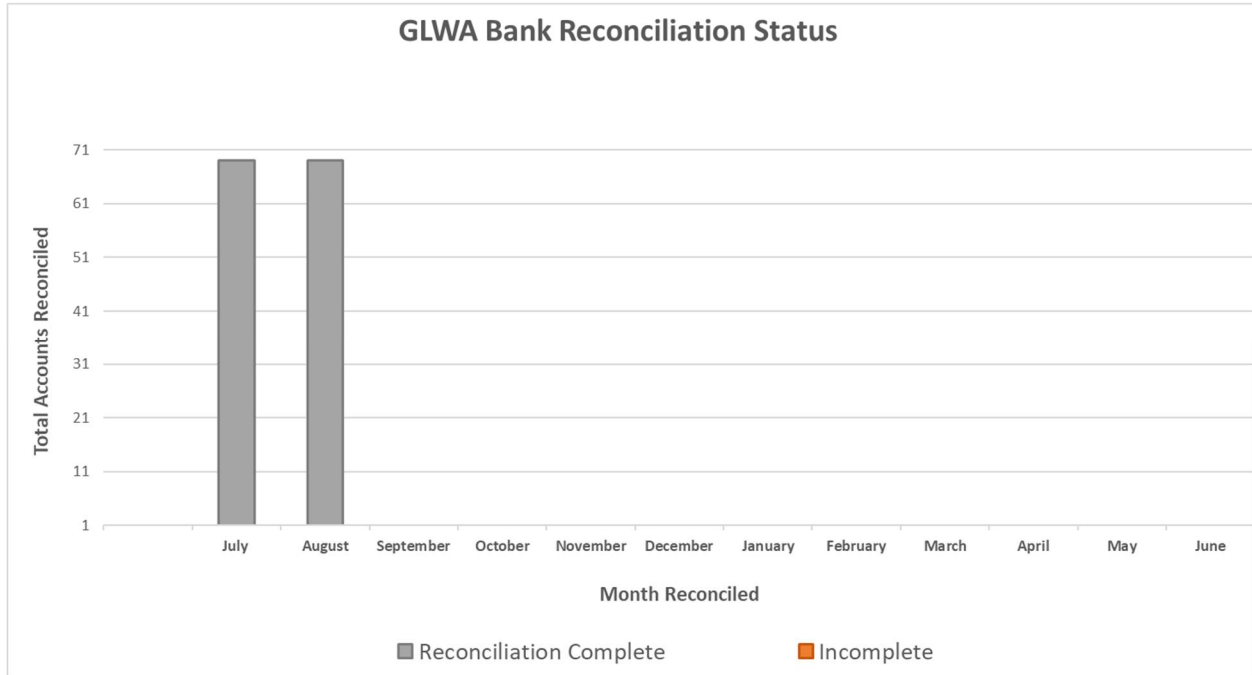
Utility spend is **\$10,734,063** through August 31, 2018. The allocation is shown in the chart below.

**Utility Expenditures by Department as of August 31, 2018**



### Bank Reconciliation Status

A measure of the progress made in the month-end close process which includes bank reconciliations completed soon after month end.



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 Group completes required MBO transfers on the first business day of each month. Treasury completes these transfers 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, 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 April 2018 Memorandum of Understanding but is included to reflect historical activity. Treasury completes annual Extraordinary Repair & Replacement transfers as directed based on budget and year-end fund status.

**Table 1 – GLWA Water Transfers** reflects the required transfers for FY 2019 completed through August 1, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. Since January 1, 2016, MBO transfers for Water totaling \$387,340,322 have been transferred to accounts held by GLWA.

**Table 2 – GLWA Sewer Transfers** reflects the required transfers for FY 2019 completed through August 1, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. Since January 1, 2016, MBO transfers for Sewer totaling \$596,924,878 have been transferred to accounts held by GLWA.

**Table 1 – GLWA Water Transfers**

	WATER					Budget	Extraordinary	Total Water
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP	Stabilization (For Benefit of DWSD)	Repair & Replacement (ER&R)		
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	
<b>FY 2019</b>								
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	
Total FY 2019	\$20,786,950	\$1,008,000	\$1,782,616	\$343,366	\$0	\$0	\$23,920,932	
Total Water Since Jan 1 2016	\$325,281,154	\$19,130,300	\$33,072,712	\$6,563,266	\$2,686,900	\$606,000	\$387,340,332	

**Table 2 – GLWA Sewer Transfers**

SEWER							
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP	Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Water
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
<b>FY 2019</b>							
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
Total FY 2019	\$32,187,000	\$1,804,000	\$2,447,916	\$476,966	\$0	\$0	\$36,915,882
Total Sewer Since Jan 1 2016	\$499,990,796	\$34,304,800	\$45,188,012	\$8,415,570	\$8,246,100	\$779,600	\$596,924,878

## MBO Transfers to Accounts Held by DWSD

**DWSD Transfers:** The Treasury Group completes required MBO transfers on the first business day of each month. Treasury completes these transfers 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. GLWA Public Finance communicates planned transfers in advance of the first business day of each month and GLWA Treasury sends confirmation of transfers made to DWSD Treasury.

Monthly transfers for Operations & Maintenance and 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 3 – DWSD Water Transfers** reflects the required transfers for FY 2019 completed through August 1, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. For FY 2016, \$2,326,900 of the lease payment was directed to offset a portion of debt service.

For FY 2018, a DWSD budget adjustment resulted in a reduction in the lease transfer of \$1,875,000. For FY 2019, \$3,949,200 of the lease payment will be directed to offset a portion of debt service. This offset will be recognized over the year as a reduction in the monthly transfer amount. Since January 1, 2016, MBO transfers for Water totaling \$180,654,754 have been transferred to accounts held by DWSD.

**Table 4 – DWSD Sewer Transfers** reflects the required transfers for FY 2019 completed through August 1, 2018. The total transfers for FY 2016, FY 2017, and FY 2018 are also included to reflect historical activity. For FY 2016, \$19,991,500 of the lease payment was directed to offset a portion of debt service.

For FY 2018, a DWSD budget adjustment resulted in a reduction in the lease transfer of \$9,166,664. For FY 2019, \$4,864,00 of the lease payment will be directed to offset a portion of debt service. This offset will be recognized over the year as a reduction in the monthly transfer amount. Since January 1, 2016, MBO transfers for Sewer totaling \$199,351,778 have been transferred to accounts held by DWSD.

**Table 3 – DWSD Water Transfers**

WATER				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Water
Total FY 2016	\$ 26,185,600	\$ 4,262,700	\$ 20,173,100	\$ 50,621,400
Total FY 2017	\$ 33,596,400	\$ 4,262,400	\$ 22,500,000	\$ 60,358,800
Total FY 2018	\$ 35,059,704	\$ 4,272,000	\$ 20,625,000	\$ 59,956,704
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
Total FY 2019	\$ 5,914,050	\$ 712,000	\$ 3,091,800	\$ 9,717,850
Total Water Since Jan 1 2016	\$ 100,755,754	\$ 13,509,100	\$ 66,389,900	\$ 180,654,754

**Table 4 – DWSD Sewer Transfers**

SEWER				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Sewer
Total FY 2016	\$ 19,774,300	\$ 2,861,800	\$ 7,508,500	\$ 30,144,600
Total FY 2017	\$ 41,535,600	\$ 2,862,000	\$ 27,500,000	\$ 71,897,600
Total FY 2018	\$ 60,517,992	\$ 2,856,000	\$ 18,333,336	\$ 81,707,328
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
Total FY 2019	\$ 11,353,584	\$ 476,000	\$ 3,772,666	\$ 15,602,250
Total Sewer Since Jan 1 2016	\$ 133,181,476	\$ 9,055,800	\$ 57,114,502	\$ 199,351,778

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 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	80
Emergency	1
Older Contracts	6
Total	87

\* 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 August 31, 2018, the billed usage was at 104.47% of budget and billed revenue at 102.53% of budget. Billings and usage from the City of Flint are included as they were assumed in the FY 2019 Budget.

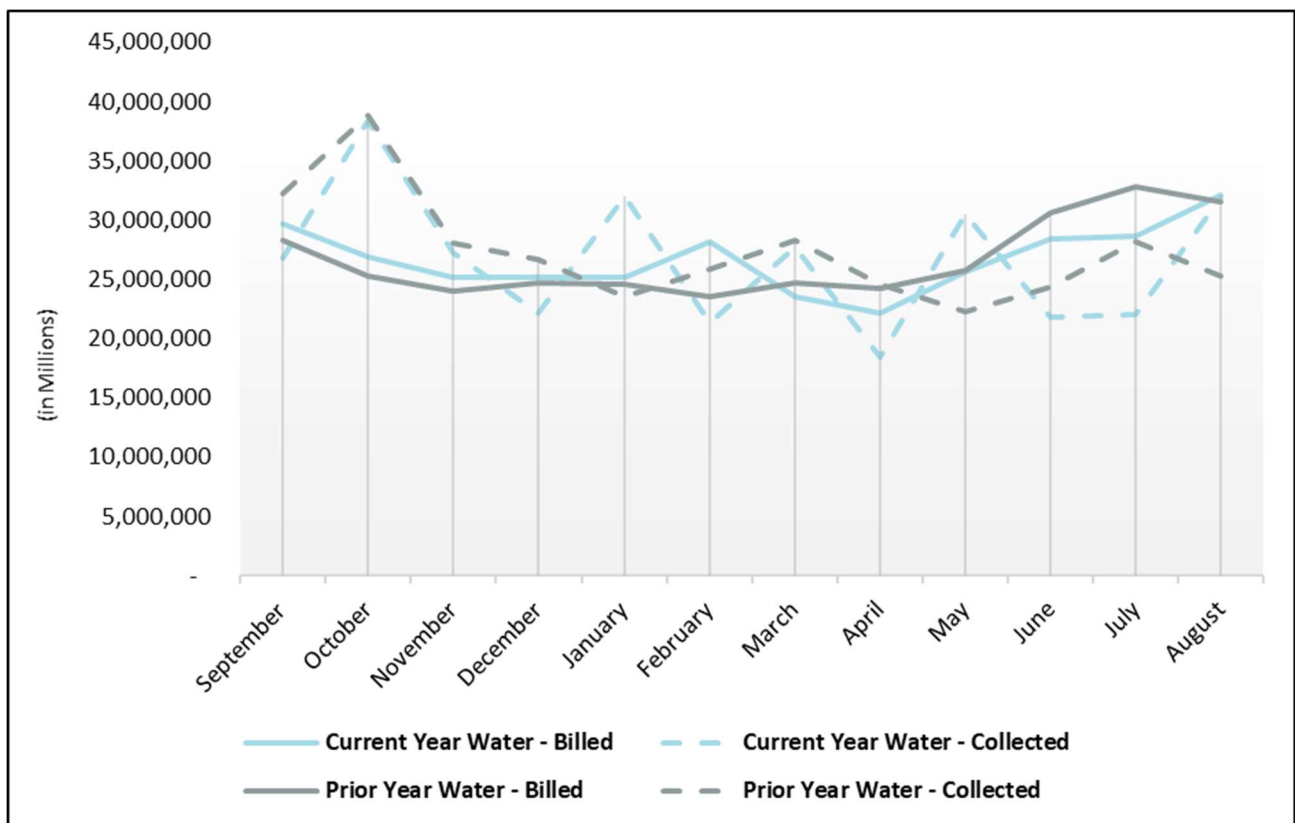
**Wholesale Water Collections:** The collections represent payments made by wholesale customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA’s Master Bond Ordinance.

**Chart 1 - Wholesale Water Collections** shows collections by month for the past 12 months compared to billings for the same calendar months to depict net cashflow from water charges for that time period. Variability in collections in the current year are associated with timing of the billing cycle. Bills for December, February and August were posted later than usual due to holiday conflicts and higher volumes of meter reads requiring review (due to meter issues and water main breaks). While at times unavoidable, the GLWA billing team is identifying steps to prevent delays wherever possible.

**Table 1 – FY 2019 Wholesale Water Billings Report**

WHOLESALE WATER CUSTOMERS*								
Month	FY 2019 - Budget			FY 2019 - Actual			Variance	
	Volume Mcf	Revenue \$	Unit Revenue \$/Mcf	Volume Mcf	Revenue \$	Unit Revenue \$/Mcf	Volume Mcf	Revenue \$
July	1,632,120	30,347,500	18.59	1,800,256	32,122,653	17.84	168,136	1,775,153
August	1,518,130	29,405,800	19.37	1,490,896	29,144,135	19.55	(27,234)	(261,665)
September	1,354,440	27,424,800	20.25					
October	1,091,580	24,826,000	22.74					
November	912,260	23,273,500	25.51					
December	1,002,110	23,912,600	23.86					
January	1,019,240	24,133,400	23.68					
February	885,170	23,021,600	26.01					
March	1,000,060	23,933,100	23.93					
April	952,450	23,568,200	24.74					
May	1,116,620	25,296,500	22.65					
June	1,557,060	29,624,900	19.03					
<b>Total</b>	<b>14,041,240</b>	<b>308,767,900</b>	<b>21.99</b>	<b>3,291,152</b>	<b>61,266,789</b>	<b>18.62</b>	<b>140,902</b>	<b>1,513,489</b>
Subtotals ytd	3,150,250	59,753,300	18.97	3,291,152	61,266,789	18.62	140,902	1,513,489
Achievement of Budget				104.47%		102.53%		

\* Includes Revenues and Usage from the City of Flint.

**Chart 1 - Wholesale Water Collections**




## GLWA 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	18

*\*\* 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 2 - Wholesale Sewer Billings** shows 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 August 31, 2018.

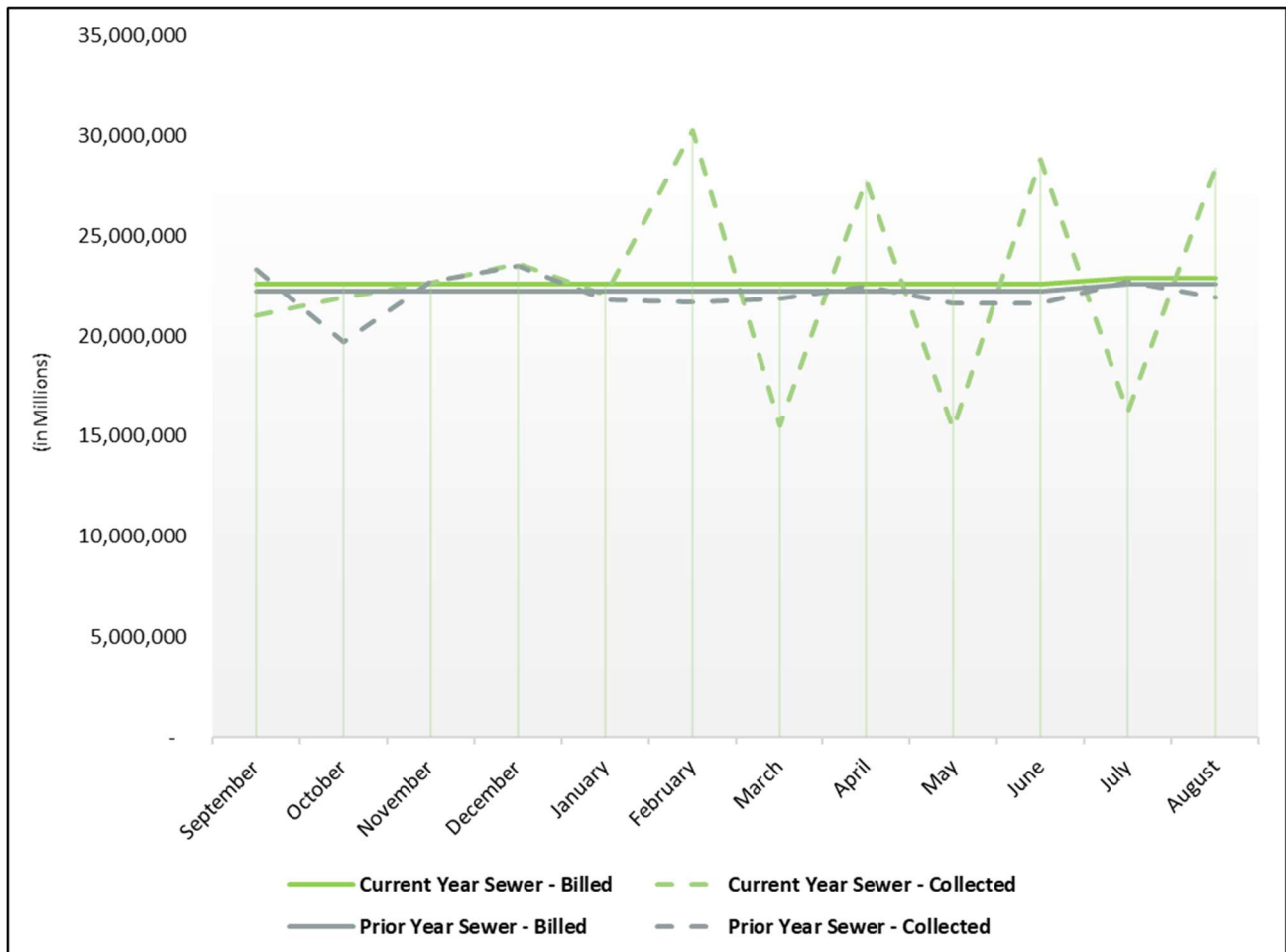
**Wholesale Sewer Collections:** The collections represent payments made by wholesale customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA’s Master Bond Ordinance.

**Chart 2 - Wholesale Sewer Collections** shows collections by month for the past 12 months compared to billings for the same calendar months to depict net cashflow from wholesale sewer charges for that time period.

The shift in wholesale sewer collection patterns is largely attributable to the timing of payments received from one customer. Starting in February 2018, Wayne County’s (Rouge Valley, NE Wayne and Wayne County #3) payments were received just after the first of the calendar month for one invoice (showing no collection for the previous month) and the subsequent invoice was paid in the same calendar month. This pattern has continued through August 31, 2018. At no time during this period has Wayne County been over 45 days delinquent in its sewer payments to GLWA. Given the payment amount of \$6.8 million, this produces a “spiking” effect on the chart.

**Table 2 – FY 2019 Wholesale Sewer Billings Report**

WHOLESALE SEWER CUSTOMERS						
Month	FY 2019 - Budget		FY 2019 - Actual		Variance	
	Volume Mcf	Revenue \$	Volume Mcf	Revenue \$	Volume Mcf	Revenue \$
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		N/A	
October	N/A	22,912,800	N/A		N/A	
November	N/A	22,912,800	N/A		N/A	
December	N/A	22,912,800	N/A		N/A	
January	N/A	22,912,800	N/A		N/A	
February	N/A	22,912,800	N/A		N/A	
March	N/A	22,912,800	N/A		N/A	
April	N/A	22,912,800	N/A		N/A	
May	N/A	22,912,800	N/A		N/A	
June	N/A	22,912,800	N/A		N/A	
<b>Total</b>		274,953,600		45,825,600		0
<b>Subtotals ytd</b>		45,825,600		45,825,600		0
<i>Achievement of Budget</i>				100.00%		

**Chart 2 - Wholesale Sewer Collections**


## 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.

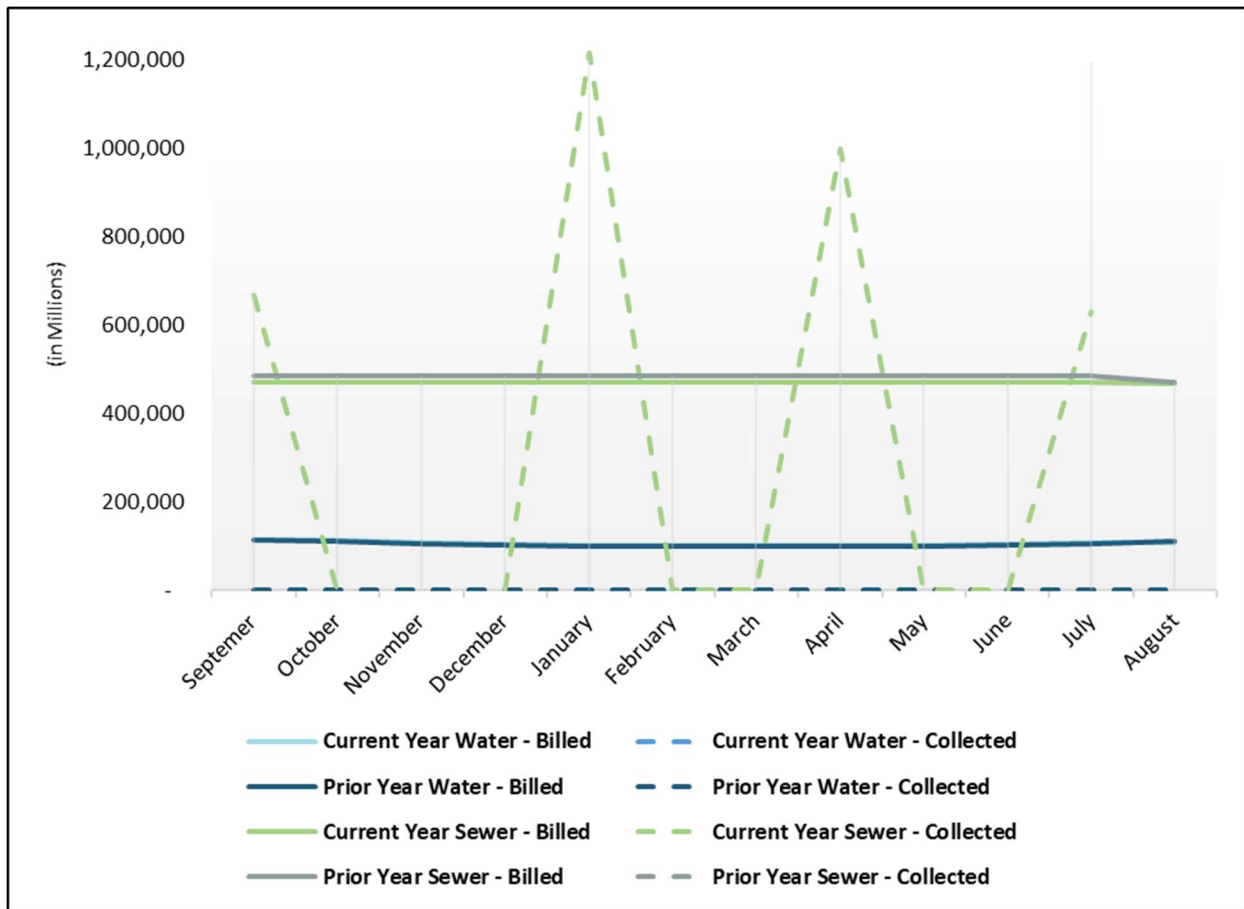
As of August 31, 2018, Highland Park had a delinquent balance of \$39.4 million, including \$31.4 million for wastewater treatment services, \$1.6 million for industrial waste control services, and \$6.3 million for water supply services.

**Table 3 - City of Highland Park Billings and Collections Since 2012** provides a life-to-date summary of the billing and collection history for Highland Park from June 30, 2012 to August 31, 2018. Please note the numbers below reflect the month the billing was sent and not the month the service was provided.

**Chart 3 - City of Highland Park Billings and Collections – Past Twelve Months** is provided to depict Highland Park’s most current performance specific to Water and Sewer. Payments received-to-date are applied to Sewer at this time.

**Table 3 - City of Highland Park Billings and Collections Since 2012**

	Water	Sewer	IWC	Cumulative Total
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	(65,652)	(2,206,211)	-	(2,271,863)
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	-	(1,612,633)	-	(1,612,633)
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	-	(1,444,623)	-	(1,444,623)
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	-	(2,022,335)	-	(2,022,335)
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	-	(2,309,186)	-	(2,309,186)
June 30, 2017 Balance	\$ 4,835,070	\$ 29,548,335	\$ 1,543,550	\$ 35,926,954
FY 2018 Billings (12 Months)	1,277,179	5,657,101	80,472	7,014,752
FY 2018 Payments (12 Months)	-	(4,108,108)	-	(4,108,108)
June 30, 2018 Balance	\$ 6,112,248	\$ 31,097,327	\$ 1,624,022	\$ 38,833,597
FY 2019 Billings (2 Months)	218,219	938,100	10,986	1,167,305
FY 2019 Payments (2 Months)	-	(629,017)	-	(629,017)
<b>Balance as of July 31, 2018</b>	<b>\$ 6,330,467</b>	<b>\$ 31,406,410</b>	<b>\$ 1,635,009</b>	<b>\$ 39,371,886</b>

**Chart 3 - City of Highland Park Water & Sewer Billings and Collections – Past Twelve Months**


**Note:** Current and prior year water billing amounts are very close so the two lines are nearly overlapping when reviewed at this high-level.

## Water & Sewer System Wholesale Accounts Receivable Aging Report

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

**Table 4 - Wholesale Accounts Receivable Aging Report Summary** is a summary of the total, current and non-current receivables by category as of August 31, 2018.

**Table 5 - Wholesale Accounts Receivable Aging Report, Net of Highland Park** is the same summary *without* the past due balances for the City of Highland Park.

**Table 6 - 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 4 - Wholesale Accounts Receivable Aging Report Summary**

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 45,094,133.76	\$ 38,954,410.27	\$ 133,423.84	\$ 101,149.16	\$ 5,905,150.49
Sewer	\$ 47,102,010.28	\$ 14,110,399.50	\$ 2,523,300.00	\$ 470,200.00	\$ 29,998,110.78
IWC	\$ 2,898,694.39	\$ 502,738.94	\$ 132,867.60	\$ 64,840.04	\$ 2,198,247.81
Pollutant Surcharge	\$ 1,781,434.74	\$ 1,403,790.08	\$ 54,021.52	\$ 38,701.70	\$ 284,921.44
<b>Total</b>	<b>\$ 96,876,273.17</b>	<b>\$ 54,971,338.79</b>	<b>\$ 2,843,612.96</b>	<b>\$ 674,890.90</b>	<b>\$ 38,386,430.52</b>
	100.00%	56.74%	2.94%	0.70%	39.62%

**Table 5 - Wholesale Accounts Receivable Aging Report, Net of Highland Park**

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 38,763,666.87	\$ 38,736,191.34	\$ 27,475.53	\$ -	\$ -
Sewer	\$ 15,695,599.50	\$ 13,642,499.50	\$ 2,053,100.00	\$ -	\$ -
IWC	\$ 1,263,685.48	\$ 498,506.08	\$ 126,114.08	\$ 58,109.24	\$ 580,956.08
Pollutant Surcharge	\$ 1,781,434.74	\$ 1,403,790.08	\$ 54,021.52	\$ 38,701.70	\$ 284,921.44
<b>Total</b>	<b>\$ 57,504,386.59</b>	<b>\$ 54,280,987.00</b>	<b>\$ 2,260,711.13</b>	<b>\$ 96,810.94</b>	<b>\$ 865,877.52</b>
	100.00%	94.39%	3.93%	0.17%	1.51%

**Table 6 - Wholesale Accounts Receivable Aging Report, Net of Highland Park and WTUA**

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 38,763,666.87	\$ 38,736,191.34	\$ 27,475.53	\$ -	\$ -
Sewer	\$ 15,695,599.50	\$ 13,642,499.50	\$ 2,053,100.00	\$ -	\$ -
IWC	\$ 530,139.16	\$ 462,134.32	\$ 68,004.84	\$ -	\$ -
Pollutant Surcharge	\$ 1,781,434.74	\$ 1,403,790.08	\$ 54,021.52	\$ 38,701.70	\$ 284,921.44
<b>Total</b>	<b>\$ 56,770,840.27</b>	<b>\$ 54,244,615.24</b>	<b>\$ 2,202,601.89</b>	<b>\$ 38,701.70</b>	<b>\$ 284,921.44</b>
	100.00%	95.55%	3.88%	0.07%	0.50%

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$220,330.25	\$220,330.25	\$0.00	\$0.00	\$0.00
ASH TOWNSHIP	\$74,473.25	\$74,473.25	\$0.00	\$0.00	\$0.00
BELLEVILLE	\$29,464.00	\$29,464.00	\$0.00	\$0.00	\$0.00
BERLIN TOWNSHIP	\$73,083.12	\$73,083.12	\$0.00	\$0.00	\$0.00
BROWNSTOWN TOWNSHIP	\$397,109.59	\$397,109.59	\$0.00	\$0.00	\$0.00
BRUCE TOWNSHIP	\$22,572.01	\$22,572.01	\$0.00	\$0.00	\$0.00
BURTCHVILLE TOWNSHIP	\$68,468.02	\$68,468.02	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$2,291,441.80	\$2,291,441.80	\$0.00	\$0.00	\$0.00
CENTER LINE	\$39,815.19	\$39,815.19	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$430,912.09	\$430,912.09	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$825,548.87	\$825,548.87	\$0.00	\$0.00	\$0.00
COMMERCE TOWNSHIP	\$427,758.97	\$427,758.97	\$0.00	\$0.00	\$0.00
DEARBORN	\$1,823,570.62	\$1,823,570.62	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$330,582.47	\$330,582.47	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$133,445.34	\$133,445.34	\$0.00	\$0.00	\$0.00
ECORSE	\$136,263.12	\$136,263.12	\$0.00	\$0.00	\$0.00
FARMINGTON	\$95,764.49	\$95,764.49	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$969,793.33	\$969,793.33	\$0.00	\$0.00	\$0.00
FERNDALE	\$174,372.10	\$174,372.10	\$0.00	\$0.00	\$0.00
FLAT ROCK	\$114,681.85	\$114,681.85	\$0.00	\$0.00	\$0.00
FLINT	\$313,464.33	\$313,464.33	\$0.00	\$0.00	\$0.00
FRASER	\$114,711.78	\$114,711.78	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$156,878.70	\$156,878.70	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
GENESEE COUNTY DRAIN COMM	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GIBRALTAR	\$29,024.74	\$29,024.74	\$0.00	\$0.00	\$0.00
GREENWOOD TOWNSHIP	\$67,733.21	\$67,733.21	\$0.00	\$0.00	\$0.00
GROSSE ILE TOWNSHIP	\$143,609.44	\$143,609.44	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$157,681.71	\$157,681.71	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$80,281.05	\$80,281.05	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$155,108.63	\$155,108.63	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$61,653.19	\$61,653.19	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$80,425.66	\$80,425.66	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$153,533.37	\$153,533.37	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$62,265.22	\$62,265.22	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$6,330,466.89	\$218,218.93	\$105,948.31	\$101,149.16	\$5,905,150.49
HURON TOWNSHIP	\$145,880.40	\$145,880.40	\$0.00	\$0.00	\$0.00
IMLAY CITY	\$131,660.64	\$131,660.64	\$0.00	\$0.00	\$0.00
IMLAY TOWNSHIP	\$1,368.32	\$1,368.32	\$0.00	\$0.00	\$0.00
INKSTER	\$105,853.32	\$105,853.32	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$30,421.76	\$30,421.76	\$0.00	\$0.00	\$0.00
LAPEER	\$130,240.26	\$130,240.26	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$27,056.13	\$27,056.13	\$0.00	\$0.00	\$0.00
LINCOLN PARK	\$210,984.95	\$210,984.95	\$0.00	\$0.00	\$0.00
LIVONIA	\$1,543,640.97	\$1,543,640.97	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$1,362,970.13	\$1,362,970.13	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MADISON HEIGHTS	\$183,477.52	\$183,477.52	\$0.00	\$0.00	\$0.00
MAYFIELD TOWNSHIP	\$5,616.29	\$5,616.29	\$0.00	\$0.00	\$0.00
MELVINDALE	\$109,918.60	\$109,918.60	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$66,403.84	\$66,403.84	\$0.00	\$0.00	\$0.00
NOCWA	\$2,493,966.48	\$2,493,966.48	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$76,398.99	\$76,398.99	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$694,235.99	\$694,235.99	\$0.00	\$0.00	\$0.00
NOVI	\$1,083,535.80	\$1,083,535.80	\$0.00	\$0.00	\$0.00
OAK PARK	\$233,615.44	\$233,615.44	\$0.00	\$0.00	\$0.00
OAKLAND CO DR COM	\$5,002.05	\$5,002.05	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$107,896.21	\$107,896.21	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$493,273.72	\$493,273.72	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$282,781.05	\$282,781.05	\$0.00	\$0.00	\$0.00
RIVER ROUGE	\$61,329.29	\$61,329.29	\$0.00	\$0.00	\$0.00
RIVERVIEW	\$169,616.89	\$169,616.89	\$0.00	\$0.00	\$0.00
ROCKWOOD	\$30,022.32	\$30,022.32	\$0.00	\$0.00	\$0.00
ROMEO	\$25,036.25	\$25,036.25	\$0.00	\$0.00	\$0.00
ROMULUS	\$386,029.67	\$386,029.67	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$464,794.68	\$464,794.68	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$20,715.51	\$20,715.51	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$1,644,164.56	\$1,644,164.56	\$0.00	\$0.00	\$0.00
SOCWA	\$4,599,107.86	\$4,599,107.86	\$0.00	\$0.00	\$0.00
SOUTH ROCKWOOD	\$9,113.42	\$9,113.42	\$0.00	\$0.00	\$0.00



GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHGATE	\$209,004.27	\$209,004.27	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$266,066.74	\$266,066.74	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$1,550,916.10	\$1,550,916.10	\$0.00	\$0.00	\$0.00
SUMPTER TOWNSHIP	\$64,154.90	\$64,154.90	\$0.00	\$0.00	\$0.00
SYLVAN LAKE	\$23,304.93	\$23,304.93	\$0.00	\$0.00	\$0.00
TAYLOR	\$433,678.15	\$433,678.15	\$0.00	\$0.00	\$0.00
TRENTON	\$393,698.44	\$393,698.44	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$1,518,019.41	\$1,518,019.41	\$0.00	\$0.00	\$0.00
UTICA	\$56,833.87	\$56,833.87	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$642,516.66	\$615,041.13	\$27,475.53	\$0.00	\$0.00
VILLAGE OF ALMONT	\$21,454.13	\$21,454.13	\$0.00	\$0.00	\$0.00
WALLED LAKE	\$91,302.65	\$91,302.65	\$0.00	\$0.00	\$0.00
WARREN	\$998,542.35	\$998,542.35	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$278,150.22	\$278,150.22	\$0.00	\$0.00	\$0.00
WAYNE	\$261,232.20	\$261,232.20	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$2,126,222.97	\$2,126,222.97	\$0.00	\$0.00	\$0.00
WESTLAND	\$1,168,991.19	\$1,168,991.19	\$0.00	\$0.00	\$0.00
WIXOM	\$275,484.38	\$275,484.38	\$0.00	\$0.00	\$0.00
WOODHAVEN	\$165,229.11	\$165,229.11	\$0.00	\$0.00	\$0.00
YCUA	\$1,026,913.38	\$1,026,913.38	\$0.00	\$0.00	\$0.00
<b>TOTAL WATER ACCOUNTS</b>	<b>\$45,094,133.76</b>	<b>\$38,954,410.27</b>	<b>\$133,423.84</b>	<b>\$101,149.16</b>	<b>\$5,905,150.49</b>

GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 8/31/2018

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	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$150,100.00	\$150,100.00	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$18,200.00	\$18,200.00	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$31,406,410.78	\$467,900.00	\$470,200.00	\$470,200.00	\$29,998,110.78
MELVINDALE	\$126,900.00	\$126,900.00	\$0.00	\$0.00	\$0.00
OAKLAND COUNTY GWK DD	\$3,747,700.00	\$3,747,700.00	\$0.00	\$0.00	\$0.00
OMID	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$21,700.00	\$21,700.00	\$0.00	\$0.00	\$0.00
ROUGE VALLEY	\$4,480,100.00	\$4,480,100.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY N.E.	\$4,109,100.00	\$2,056,000.00	\$2,053,100.00	\$0.00	\$0.00
WAYNE COUNTY-AREA #3	\$4,100.00	\$4,100.00	\$0.00	\$0.00	\$0.00
<b>TOTAL SEWER ACCOUNTS</b>	<b>\$47,102,010.28</b>	<b>\$14,110,399.50</b>	<b>\$2,523,300.00</b>	<b>\$470,200.00</b>	<b>\$29,998,110.78</b>

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 8/31/2018

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)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AUBURN HILLS (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BERKLEY	\$2,901.33	\$2,901.33	\$0.00	\$0.00	\$0.00
BEVERLY HILLS	\$999.14	\$999.14	\$0.00	\$0.00	\$0.00
BINGHAM FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BIRMINGHAM (E-F)	\$2,376.69	\$2,376.69	\$0.00	\$0.00	\$0.00
BIRMINGHAM (SEOC)	\$14,503.48	\$5,588.72	\$8,914.76	\$0.00	\$0.00
BLOOMFIELD HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BLOOMFIELD TOWNSHIP	\$7,351.35	\$7,351.35	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$384,472.22	\$19,066.46	\$30,461.84	\$30,461.84	\$304,482.08
CENTER LINE	\$3,683.10	\$3,683.10	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$12,152.47	\$12,152.47	\$0.00	\$0.00	\$0.00
CITY OF FARMINGTON (E-F)	\$279.12	\$279.12	\$0.00	\$0.00	\$0.00
CITY OF ROCHESTER	\$3,725.23	\$3,725.23	\$0.00	\$0.00	\$0.00
CLARKSTON	\$307.71	\$307.71	\$0.00	\$0.00	\$0.00
CLAWSON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$25,553.79	\$25,445.87	\$107.92	\$0.00	\$0.00
DEARBORN	\$36,586.53	\$36,586.53	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$9,462.92	\$9,462.92	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$106.64	\$106.64	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$6,355.09	\$6,355.09	\$0.00	\$0.00	\$0.00
FARMINGTON	\$2,886.83	\$2,886.83	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FARMINGTON HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FERNDALE	\$8,904.91	\$8,904.91	\$0.00	\$0.00	\$0.00
FRASER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$1,580.76	\$1,580.76	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$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	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$4,175.13	\$4,175.13	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$1,892.64	\$1,892.64	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$8,150.92	\$3,138.32	\$5,012.60	\$0.00	\$0.00
HAZEL PARK	\$3,390.73	\$3,390.73	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$1,635,008.91	\$4,232.86	\$6,753.52	\$6,730.80	\$1,617,291.73
HUNTINGTON WOODS	\$286.18	\$286.18	\$0.00	\$0.00	\$0.00
INDEPENDENCE	\$4,791.68	\$4,791.68	\$0.00	\$0.00	\$0.00
INKSTER	\$5,559.87	\$5,559.87	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$0.00	\$0.00	\$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	\$488.87	\$488.87	\$0.00	\$0.00	\$0.00
LIVONIA	\$40,179.29	\$40,179.29	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MACOMB TWP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELVINDALE	\$9,429.27	\$3,629.99	\$5,799.28	\$0.00	\$0.00
NEW HAVEN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$2,160.97	\$2,160.97	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$92,261.87	\$4,574.03	\$7,307.32	\$7,307.32	\$73,073.20
NOVI	\$17,256.62	\$17,256.62	\$0.00	\$0.00	\$0.00
OAK PARK	\$17,848.54	\$6,769.70	\$11,078.84	\$0.00	\$0.00
OAKLAND TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ORCHARD LAKE VILLAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ORION TOWNSHIP (C-O)	\$5,424.95	\$5,424.95	\$0.00	\$0.00	\$0.00
OXFORD TOWNSHIP	\$961.69	\$961.69	\$0.00	\$0.00	\$0.00
OXFORD VILLAGE	\$1,259.16	\$1,259.16	\$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	\$256,812.23	\$12,731.27	\$20,340.08	\$20,340.08	\$203,400.80
REDFORD TOWNSHIP	\$12,612.40	\$12,440.96	\$171.44	\$0.00	\$0.00
ROCHESTER HILLS	\$18,292.48	\$18,292.48	\$0.00	\$0.00	\$0.00
ROMULUS	\$926.07	\$926.07	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$14,195.09	\$14,195.09	\$0.00	\$0.00	\$0.00
ROYAL OAK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$12,007.58	\$12,007.58	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHFIELD (E-F)	\$28,230.26	\$28,230.26	\$0.00	\$0.00	\$0.00
SOUTHFIELD (SEOC)	\$3,798.88	\$3,798.88	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$12,146.92	\$12,146.92	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$31,212.30	\$31,212.30	\$0.00	\$0.00	\$0.00
TROY (E-F)	\$384.09	\$384.09	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$37,013.43	\$37,013.43	\$0.00	\$0.00	\$0.00
UTICA	\$2,938.01	\$2,938.01	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$2,044.19	\$2,044.19	\$0.00	\$0.00	\$0.00
VILLAGE OF FRANKLIN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$1,381.10	\$1,381.10	\$0.00	\$0.00	\$0.00
WATERFORD TOWNSHIP	\$12,382.30	\$12,382.30	\$0.00	\$0.00	\$0.00
WAYNE	\$5,017.87	\$5,017.87	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$944.01	\$944.01	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (E-F)	\$6,307.99	\$6,307.99	\$0.00	\$0.00	\$0.00
WESTLAND	\$60,051.71	\$23,131.71	\$36,920.00	\$0.00	\$0.00
<b>TOTAL IWC ACCOUNTS</b>	<b>\$2,898,694.39</b>	<b>\$502,738.94</b>	<b>\$132,867.60</b>	<b>\$64,840.04</b>	<b>\$2,198,247.81</b>

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
HOUGHTON INTERNATIONAL INC.	\$3,878.84	\$3,878.84	\$0.00	\$0.00	\$0.00
FORMING TECH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GLOBAL TITANIUM, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$275.99	\$275.99	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$165.06	\$165.06	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$3,920.54	\$3,920.54	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CHRYSLER STERLING STAMPING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO	\$7,409.09	\$7,409.09	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,022.62	\$1,022.62	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,669.44	\$1,669.44	\$0.00	\$0.00	\$0.00
PLATING SPEC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CAPITAL REPRODUCTIONS	\$3.54	\$0.00	\$2.04	\$0.00	\$1.50
J & G FOOD PRODUCTS, INC.	\$58.75	\$58.75	\$0.00	\$0.00	\$0.00
FORMING TECH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BLACK LOTUS BREWING CO.	\$102.13	\$72.91	\$0.00	\$0.00	\$29.22
PETRO ENVIRON TECH, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PINE TREE ACRES, INC.	\$16,071.93	\$16,071.93	\$0.00	\$0.00	\$0.00
RIVER ROUGE BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
U-METCO, INC.	\$1,243.93	\$1,243.93	\$0.00	\$0.00	\$0.00
3M COMPANY	\$4,832.27	\$4,832.27	\$0.00	\$0.00	\$0.00
BREW DETROIT	\$5,569.46	\$5,569.46	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
UNITED FISH DISTRIBUTORS	\$13.35	\$13.35	\$0.00	\$0.00	\$0.00
PRODUCTION SPRING, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LEAR CORPORATION DBA EAGLE C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNITED TECH ESSEX GROUP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
A & R PACKING CO., LLC	\$5,269.94	\$5,269.94	\$0.00	\$0.00	\$0.00
LA JALISCIENSE, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$1,251.43	\$1,251.43	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$64.06	\$0.00	\$64.06	\$0.00	\$0.00
DETRONIC INDUSTRIES, INC.	\$127.12	\$127.12	\$0.00	\$0.00	\$0.00
ADVANCE ENGINEERING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$45,860.60	\$45,860.60	\$0.00	\$0.00	\$0.00
SEAFARE FOODS, INC.	\$44.62	\$44.62	\$0.00	\$0.00	\$0.00
DETROIT BEER	\$123.65	\$123.65	\$0.00	\$0.00	\$0.00
HACIENDA MEXICAN FOODS	\$4,561.27	\$1,193.36	\$694.54	\$590.50	\$2,082.87
MOTOR CITY BREWING WORKS	\$ (23.25)	\$0.00	\$ (23.25)	\$0.00	\$0.00
TRAFFIC JAM & SNUG	\$ (0.48)	\$0.00	\$0.00	\$0.00	\$ (0.48)
BOZEK'S MARKET	\$72.73	\$72.73	\$0.00	\$0.00	\$0.00
PERSONAL UNIFORM SERVICE, IN	\$105.81	\$86.39	\$19.42	\$0.00	\$0.00
CLASSIC CONTAINER CORP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTH CENTER BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EXTRUDEHODE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00



GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FOUNDERS BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BAYS MICHIGAN CORPORATION	\$319.63	\$319.63	\$0.00	\$0.00	\$0.00
MIBA HYDRAMECHANICA CORP.	\$239.39	\$239.39	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHERN LAKES SEAFOOD & MEAT	\$46.71	\$46.71	\$0.00	\$0.00	\$0.00
RAY'S ICE CREAM CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HUNTINGTON CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AXLE BREWING COMPANY, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARON INDUSTRIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HOME STYLE FOOD INC.	\$6,130.26	\$6,130.26	\$0.00	\$0.00	\$0.00
RED SPOT PAINT #409139	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INDUSTRIAL METAL COATING	\$651.55	\$651.55	\$0.00	\$0.00	\$0.00
THE CROWN GROUP-LIVONIA PLANT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COUNTRY FRESH DAIRY CO.	\$63,319.21	\$63,319.21	\$0.00	\$0.00	\$0.00
ETON ST BREWERY- GRIFFIN CLAF	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MINNIE MARIE BAKERS, INC	\$3,668.63	\$3,668.63	\$0.00	\$0.00	\$0.00
MACDERMID, INC.	\$4,516.40	\$4,516.40	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FITZGERALD FINISHING LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GLOBAL TITANIUM, INC.	\$4,785.50	\$4,785.50	\$0.00	\$0.00	\$0.00
ACME RUSTPROOF	\$92.87	\$92.87	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MISTER UNIFORM & MAT RENTALS	\$589.30	\$28.32	\$32.47	\$25.90	\$502.61
KAR NUT PRODUCTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
THE ROYAL OAK BREWERY	\$(1,666.16)	\$0.00	\$0.00	\$0.00	\$(1,666.16)
EQ DETROIT, INC.	\$1,558.55	\$1,558.55	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$11,216.84	\$11,216.84	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$(1,238.68)	\$0.00	\$0.00	\$0.00	\$(1,238.68)
EQ DETROIT, INC.	\$(4,588.68)	\$0.00	\$0.00	\$0.00	\$(4,588.68)
HOUGHTON INTERNATIONAL INC.	\$402.80	\$402.80	\$0.00	\$0.00	\$0.00
ALGAL SCIENTIFIC CORPORATION	\$16,533.05	\$2,989.64	\$1,516.53	\$1,266.73	\$10,760.15
US ECOLOGY MICHIGAN	\$(2,676.25)	\$0.00	\$0.00	\$0.00	\$(2,676.25)
ALPHA STAMPING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
POWER VAC OF MICHIGAN, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FARMINGTON BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CITY LAUNDRY, INC.	\$14.27	\$14.27	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$875.63	\$875.63	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FAYGO BEVERAGES, INC.	\$340,510.46	\$69,969.97	\$32,235.09	\$30,509.90	\$207,795.50
BETTER MADE SNACK FOOD	\$27,274.58	\$27,274.58	\$0.00	\$0.00	\$0.00
BROADWAY MKT CORNED BEEF	\$(109.87)	\$0.00	\$0.00	\$0.00	\$(109.87)
QUALA SERVICES, LLC	\$290.77	\$290.77	\$0.00	\$0.00	\$0.00
DARLING INGREDIENTS, INC.	\$6,527.19	\$6,527.19	\$0.00	\$0.00	\$0.00
CF BURGER CREAMERY	\$18,879.14	\$18,879.14	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$2,481.59	\$2,481.59	\$0.00	\$0.00	\$0.00
WIGLEY'S MEAT PROCESS	\$592.70	\$592.70	\$0.00	\$0.00	\$0.00
INTEGRATED PACKAGING CORP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
JAMEX BREWING CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SHERWOOD BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DIFCO LABORATORIES, INC.	\$10,576.77	\$10,576.77	\$0.00	\$0.00	\$0.00
KOWALSKI SAUSAGES, CO.	\$764.25	\$764.25	\$0.00	\$0.00	\$0.00
PREMIER PLATING, LLC	\$2,479.55	\$0.00	\$0.00	\$0.00	\$2,479.55
UNITED MEAT & DELI	\$190.24	\$190.24	\$0.00	\$0.00	\$0.00
MICHIGAN DAIRY	\$106,604.11	\$106,604.11	\$0.00	\$0.00	\$0.00
B. NEKTAR MEADERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BAFFIN BREWING COMPANY	\$528.31	\$0.00	\$0.00	\$0.00	\$528.31
DETROIT RIVERTOWN BREWERY CC	\$1,252.62	\$1,252.62	\$0.00	\$0.00	\$0.00
SWEETHEART BAKERY, INC.	\$638.93	\$150.63	\$80.66	\$77.78	\$329.86
DETROIT METRO WC AIRPORT	\$603,467.18	\$603,467.18	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$1,464.38	\$1,464.38	\$0.00	\$0.00	\$0.00
ATWATER IN THE PARK	\$72.56	\$72.56	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS PROD BREWERY	\$2,546.54	\$1,348.02	\$0.00	\$0.00	\$1,198.52
LIBERTY STREET PROD. BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CANTON BREW WORKS	\$70.31	\$70.31	\$0.00	\$0.00	\$0.00
ROAK BREWING CO. LLC	\$2,796.70	\$823.50	\$0.00	\$0.00	\$1,973.20
METROPOLITAN BAKERY	\$522.16	\$522.16	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
AEVITAS SPECIALITY SERVICES	\$32,959.50	\$20,733.32	\$12,226.18	\$0.00	\$0.00
VERNDALE PRODUCTS	\$15,551.78	\$15,551.78	\$0.00	\$0.00	\$0.00
PEPSI COLA, INC.	\$39,477.48	\$39,477.48	\$0.00	\$0.00	\$0.00
PELLERITO FOODS INC.	\$2,038.66	\$2,038.66	\$0.00	\$0.00	\$0.00
MICHIGAN SOY PRODUCTS CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BASTONE BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CROSS CHEMICAL COMPANY, INC.	\$2,459.84	\$0.00	\$913.53	\$0.00	\$1,546.31
ITALIAN BUTTER BREAD STICKS	\$11.08	\$11.08	\$0.00	\$0.00	\$0.00
DETROIT LINEN SERVICE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SMITH-WATKINS, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOM LAUNDRY CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN BREWING	\$56.14	\$56.14	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$6,732.97	\$6,732.97	\$0.00	\$0.00	\$0.00
OLIVER HATCH CONSTRUCTION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNIQUE LINEN SERVICES, INC.	\$78.71	\$78.71	\$0.00	\$0.00	\$0.00
FORD NEW MODEL PROGRAM	\$1,145.79	\$1,145.79	\$0.00	\$0.00	\$0.00
E.W. GROBBEL'S SONS, INC.	\$3,200.39	\$3,200.39	\$0.00	\$0.00	\$0.00
ISLAMIC SLAUGHTER HOUSE	\$1,075.76	\$1,075.76	\$0.00	\$0.00	\$0.00
GENERAL LINEN SUPPLY CO.	\$63,296.20	\$12,404.62	\$5,900.00	\$5,959.07	\$39,032.51
KVF TROY CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BATCH BREWING COMPANY	\$ (502.36)	\$0.00	\$0.00	\$0.00	\$ (502.36)
ADVANCED RESOURCE RECOVERY	\$999.83	\$999.83	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
CINTAS CORP. - MACOMB TWP.	\$58,446.30	\$58,446.30	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELLO MEATS INC, - KUBISCH S	\$111.90	\$111.90	\$0.00	\$0.00	\$0.00
S & D PACKING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EASTERN MARKET BREWING COMP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KUBISCH SAUSAGE CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
USHER OIL SERVICES	\$5,407.80	\$5,407.80	\$0.00	\$0.00	\$0.00
RTT	\$23,718.60	\$574.68	\$0.00	\$0.00	\$23,143.92
MILANO BAKERY	\$2,146.68	\$2,146.68	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BEIRUT BAKERY, INC.	\$65.41	\$0.00	\$0.00	\$65.41	\$0.00
MCGEAN CHEMICALS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNITED LINEN SERVICE, LLC.	\$309.99	\$309.99	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT SAUSAGES CO INC	\$16.78	\$16.78	\$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
HENKEL CORPORATION	\$543.19	\$0.00	\$151.94	\$0.00	\$391.25
AACTRON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARTZ BAKERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$775.84	\$775.84	\$0.00	\$0.00	\$0.00
ALL CHEM CORP, LLC.	\$(126.78)	\$0.00	\$0.00	\$0.00	\$(126.78)
GRANITE CITY FOOD & BREWERY	\$478.37	\$129.33	\$0.00	\$137.02	\$212.02

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE**

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MICHIGAN PROD. MACHINING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GREAT BARABOO BREWING CO.	\$(2,319.23)	\$0.00	\$0.00	\$0.00	\$(2,319.23)
US ECOLOGY ROMULUS, INC.	\$3,789.88	\$3,789.88	\$0.00	\$0.00	\$0.00
CHRYSLER STERLING STAMPING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BROOKS BREWING, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
VERNOR FOOD PRODUCTS	\$70.01	\$70.01	\$0.00	\$0.00	\$0.00
DAVE'S SAUSAGE FACTORY 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CHILANGO'S BAKERY	\$2,023.21	\$44.47	\$27.12	\$22.34	\$1,929.28
JPT PROPERTIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EXTRUDE HONE CORPORATION	\$156.04	\$156.04	\$0.00	\$0.00	\$0.00
OAKWOOD BAKERY	\$335.86	\$335.86	\$0.00	\$0.00	\$0.00
COCA-COLA REFRESHMENTS USA,	\$2,510.87	\$2,510.87	\$0.00	\$0.00	\$0.00
LILY'S SEAFOOD GRILL & BREWE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS BEER COMPANY	\$271.46	\$271.46	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS, INC.	\$6,183.37	\$6,183.37	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MILTON CHILI CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO.	\$3,074.51	\$3,074.51	\$0.00	\$0.00	\$0.00
SPRAYTEK, INC.	\$4,084.94	\$39.17	\$22.60	\$17.24	\$4,005.93
MCNICHOLS POLISHING & ANODIZ	\$29.81	\$0.00	\$0.00	\$29.81	\$0.00
DIVERSIFIED CHEM TECH. INC.	\$154.95	\$154.95	\$0.00	\$0.00	\$0.00
WOODWARD AVENUE BREWERS	\$158.59	\$0.00	\$158.59	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE

Balances as of 8/31/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MIDWEST WIRE PRODUCTS, INC.	\$ (2.94)	\$0.00	\$0.00	\$0.00	\$ (2.94)
DEARBORN SAUSAGE CO., INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACADEMY PACKING CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ENVIROSOLIDS, L.L.C.	\$161,320.77	\$161,320.77	\$0.00	\$0.00	\$0.00
AUTOMOTIVE FINISH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HOOD CLEANERS	\$210.36	\$0.00	\$0.00	\$0.00	\$210.36
AMERICAN WASTE TECH INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>TOTAL POLLUTANT SURCHARGE</b>	<b>\$1,781,434.74</b>	<b>\$1,403,790.08</b>	<b>\$54,021.52</b>	<b>\$38,701.70</b>	<b>\$284,921.44</b>

**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. FY 2019 DWSD Retail Water Revenue Billings and Collections
2. FY 2019 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** shows the FY 2019 water usage and billed revenue which are provided by DWSD staff. As of August 31, 2018, the DWSD usage was at 111.25% of the budget and billed revenue was at 106.56% 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.

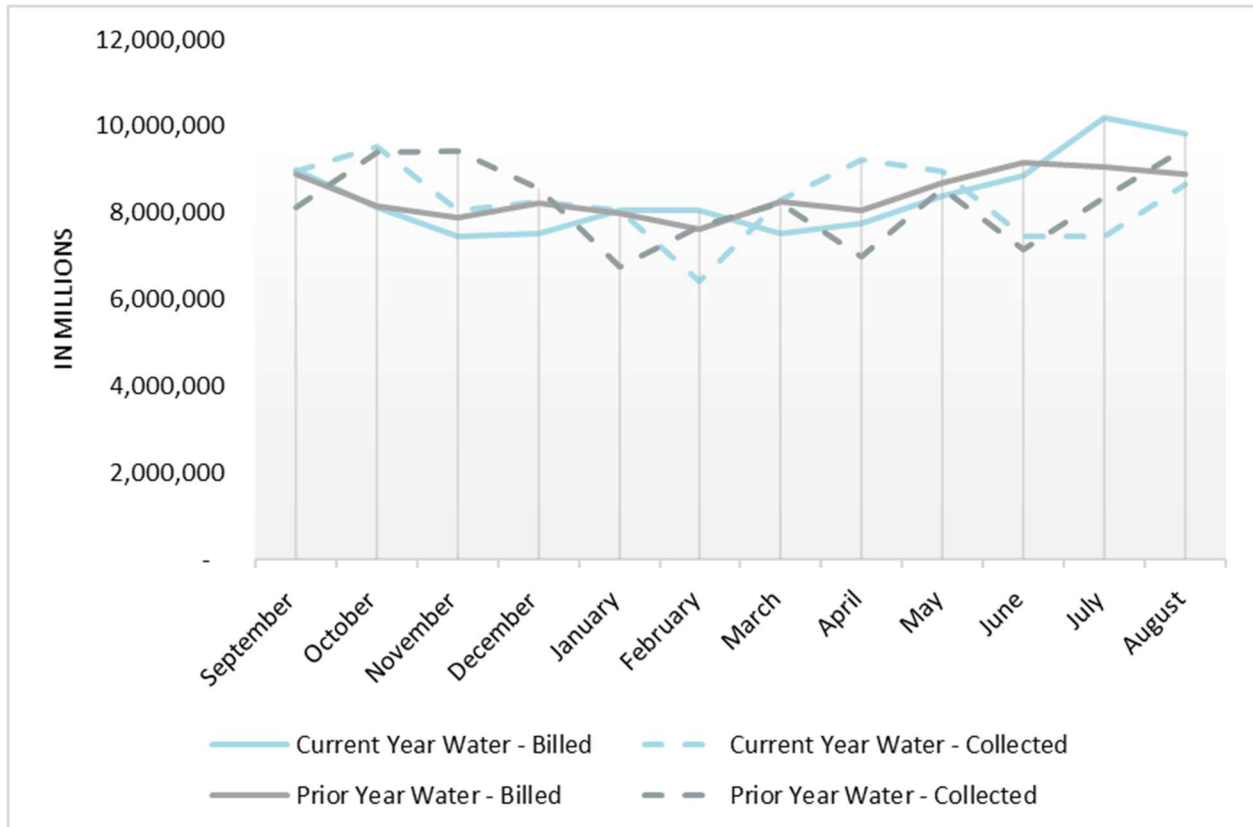
**Chart 1 - Retail Water Collections** shows collections by month for the past 12 months compared to billings for the same calendar months to depict net cashflow from water charges for that time period.



**Table 1 – DWSD Retail Water Billings**

RETAIL WATER CUSTOMERS								
Month	FY 2019 - Budget			FY 2019 - Actual			Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue (1)	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	32.09	29,376	455,449
September	270,500	8,494,300	31.40					
October	233,800	8,165,900	34.93					
November	224,500	7,750,100	34.52					
December	206,500	8,224,900	39.83					
January	226,600	7,978,800	35.21					
February	216,400	7,980,200	36.88					
March	213,300	8,163,900	38.27					
April	223,100	7,856,900	35.22					
May	211,000	9,109,200	43.17					
June	240,200	9,063,600	37.73					
<b>Total</b>	<b>2,808,000</b>	<b>101,590,000</b>	<b>36.18</b>	<b>603,089</b>	<b>20,036,558</b>	<b>33.22</b>	<b>60,989</b>	<b>1,234,358</b>
Subtotals ytd	542,100	18,802,200	34.68	603,089	20,036,558	33.22	60,989	1,234,358
Achievement of Budget				111.25%	106.56%			

(1) Retail Revenues include Miscellaneous Revenues and Penalties

**Chart 1 – DWSD Retail Water Collections**


## 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 2 - DWSD Retail Sewer Billings** shows the FY 2019 sewer billed revenue which are provided by DWSD staff. As of August 31, 2018, the DWSD usage was at 110.30% of the budget and billed revenue was at 100.58% of budget.

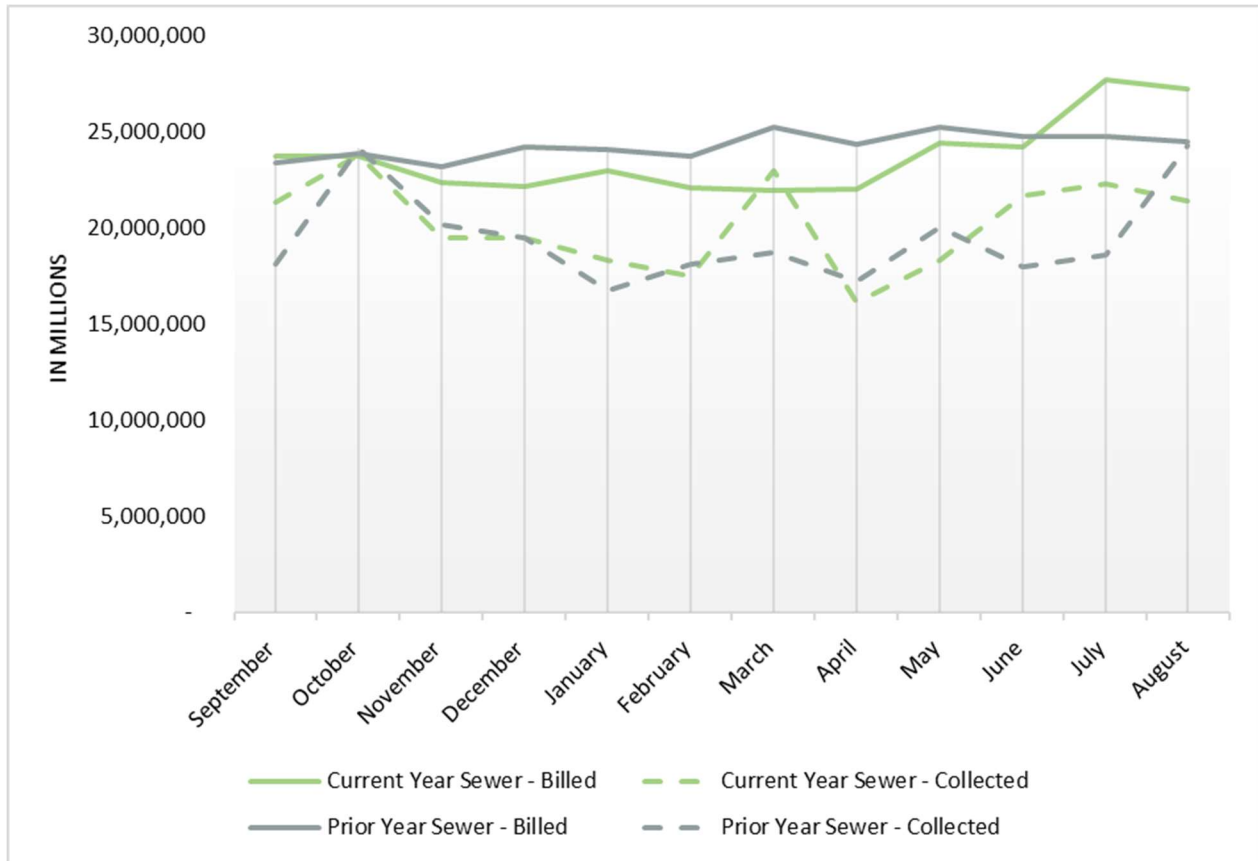
**DWSD Retail Sewer Collections:** The collections represent payments made by DWSD retail customers. These receipts are deposited directly into a lockbox with a trustee for administration of the flow of funds defined by GLWA's Master Bond Ordinance.

**Chart 2 – DWSD Retail Sewer Collections** shows collections by month for the past 12 months compared to billings for the same calendar months to depict net cashflow from water charges for that time period.

**Table 2 - DWSD Retail Sewer Billings**

RETAIL SEWER CUSTOMERS						
Month	FY 2019 - Budget		FY 2019 - Actual		Variance	
	Volume	Revenue	Volume	Revenue	Volume	Revenue
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
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				
October	211,000	25,177,200				
November	197,600	23,861,000				
December	182,400	25,293,500				
January	198,600	24,852,800				
February	191,600	25,329,400				
March	191,000	25,474,500				
April	197,300	24,789,700				
May	187,300	26,205,200				
June	210,300	26,730,700				
<b>Total</b>	2,493,000	307,737,100	536,387	54,974,769	50,087	319,169
<i>Subtotals ytd</i>	486,300	54,655,600	536,387	54,974,769	50,087	319,169
<i>Achievement of Budget</i>			110.30%	100.58%		

(1) Retail Revenues include Miscellaneous Revenues and Penalties

**Chart 2 – DWSD Retail Sewer Collections**


## DWSD Retail Water and Sewer Accounts Receivable Aging Report

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

**Table 3** is a summary of the total, current and non-current Water receivables by category as of August 31, 2018. This does not include pre-bifurcation receivables transferred to DWSD as part of the April 2018 Memorandum of Understanding.

**Table 4** is a summary of the total, current and non-current Sewer receivables by category as of August 31, 2018. This does not include pre-bifurcation receivables transferred to DWSD as part of the April 2018 Memorandum of Understanding.

**Table 3 – DWSD Retail Accounts Receivable Aging Report – Water**

Sales Class	# of Accounts	Avg. Balance	Current	> 30 Days	> 60 Days	> 180 Days	TOTAL A/R BALANCE
RESIDENTIAL	190,326	\$ 110.03	\$ 4,024,479	\$ 1,467,847	\$ 3,771,673	\$ 11,678,384	\$ 20,942,383
			19.2%	7.0%	18.0%	55.8%	100.0%
COMMERCIAL	12,501	386.44	2,915,297	267,369	633,973	1,014,297	4,830,937
			60.3%	5.5%	13.1%	21.0%	100.0%
INDUSTRIAL	1,259	520.70	1,025,174	148,317	(38,026)	(479,903)	655,563
			156.4%	22.6%	(5.8%)	(73.2%)	100.0%
TAX EXEMPT	408	1,988.89	430,223	173,960	202,016	5,268	811,467
			53.0%	21.4%	24.9%	0.6%	100.0%
FAITH BASED	639	357.14	38,868	9,962	46,948	132,437	228,215
			17.0%	4.4%	20.6%	58.0%	100.0%
CITY OF DETROIT	1,108	534.11	176,159	234,224	70,539	110,867	591,789
			29.8%	39.6%	11.9%	18.7%	100.0%
WAYNE STATE	3	(77.14)	60	-	(292)	-	(231)
			(26.0%)	0.0%	126.0%	0.0%	100.0%
<b>Total</b>	<b>206,244</b>	<b>\$ 136.05</b>	<b>\$ 8,610,261</b>	<b>\$ 2,301,680</b>	<b>\$ 4,686,831</b>	<b>\$ 12,461,349</b>	<b>\$ 28,060,122</b>
% of Total DWSD A/R			30.7%	8.2%	16.7%	44.4%	100.0%

**Table 4 – DWSD Retail Accounts Receivable Aging Report – Sewer**

Sales Class	# of Accounts	Avg. Balance	Current	> 30 Days	> 60 Days	> 180 Days	TOTAL A/R BALANCE
RESIDENTIAL	236,476	\$ 230.91	\$ 10,527,671	\$ 3,695,071	\$ 10,637,257	\$ 29,743,948	\$ 54,603,947
			19.3%	6.8%	19.5%	54.5%	100.0%
COMMERCIAL	22,446	1,031.40	7,256,254	1,751,119	4,778,071	9,365,437	23,150,881
			31.3%	7.6%	20.6%	40.5%	100.0%
INDUSTRIAL	3,711	3,112.35	3,588,147	850,682	1,585,725	5,525,378	11,549,932
			31.1%	7.4%	13.7%	47.8%	100.0%
TAX EXEMPT	1,848	3,563.85	1,638,517	987,812	1,424,520	2,535,150	6,586,000
			24.9%	15.0%	21.6%	38.5%	100.0%
FAITH BASED	2,460	633.29	185,485	64,970	482,273	825,169	1,557,897
			11.9%	4.2%	31.0%	53.0%	100.0%
CITY OF DETROIT	2,738	2,631.54	930,237	684,654	2,446,738	3,143,535	7,205,165
			12.9%	9.5%	34.0%	43.6%	100.0%
WAYNE STATE	6	(1,415.25)	100	(9,513)	1,395	(473)	(8,491)
			(1.2%)	112.0%	(16.4%)	5.6%	100.0%
HIGHWAY DRAINAGE	2	981,588.93	257,193	195,370	586,111	924,504	1,963,178
			13.1%	10.0%	29.9%	47.1%	100.0%
<b>Total</b>	<b>269,687</b>	<b>\$ 395.30</b>	<b>\$ 24,383,603</b>	<b>\$ 8,220,167</b>	<b>\$ 21,942,091</b>	<b>\$ 52,062,648</b>	<b>\$ 106,608,509</b>
% of Total DWSD A/R			22.9%	7.7%	20.6%	48.8%	100.0%

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 and Receipts
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) 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. This report begins with the operational effective date of the GLWA on January 1, 2016.

**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 only two months of activity to date.

Through August 31, 2018 the water fund cash receipts exceeded MBO disbursements by 118% with a ratio of 111% since January 1, 2016. Through August 31, 2018, the sewer fund cash receipts exceeded MBO disbursements by 105% and by a ratio of 103% since January 1, 2016.

**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.

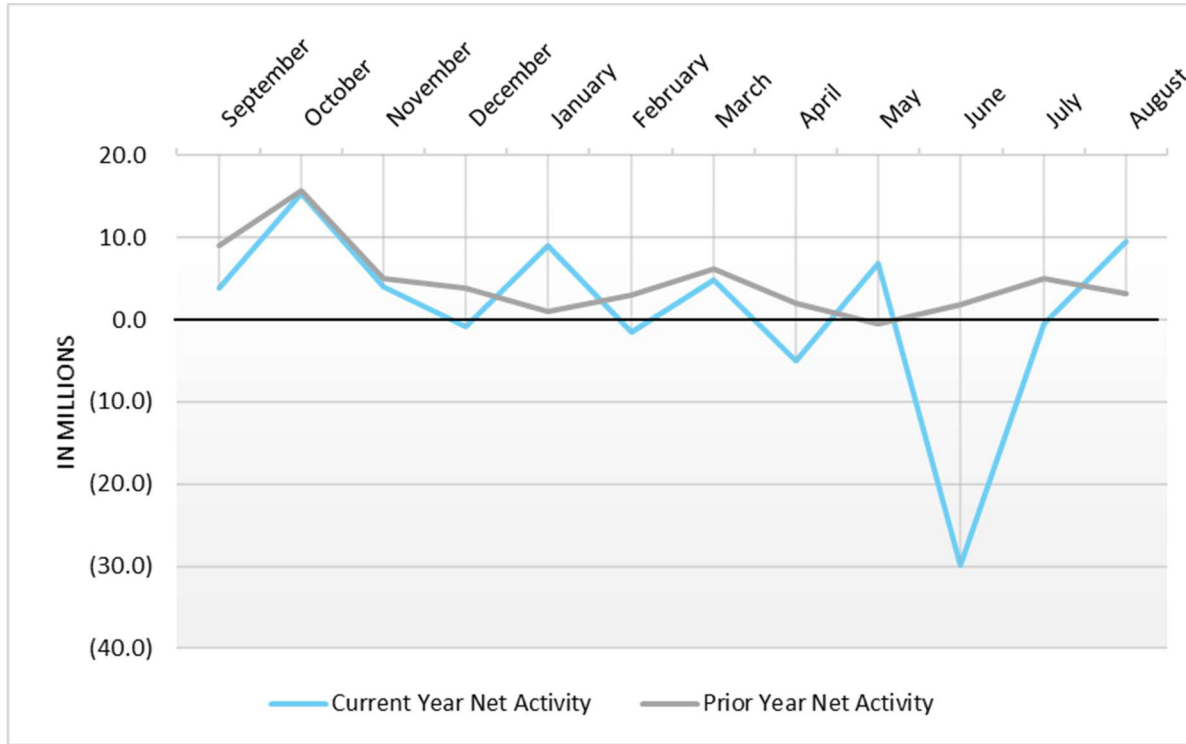
**Chart 2 – GLWA 12-Month Net Receipts – Sewer** outlines monthly cash receipt trends across two points of reference for the regional sewer system—current year and prior year. The black line at the zero highlights the minimum goal for net receipts.

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

	FY 2016	FY 2017	FY 2018 (Prelim)	FY 2019-to- Date	Life-to-Date Total
<b>Water</b>					
1 Receipts	\$ 149,624,282	352,432,096	337,488,663	57,968,695	897,513,736
2 MOU Adjustments	-	-	-	-	-
3 Adjusted Receipts	149,624,282	352,432,096	337,488,663	57,968,695	897,513,736
4 Disbursements	146,191,756	288,268,172	321,841,172	48,950,422	805,251,522
5 Net Receipts	\$ 3,432,526	64,163,924	15,647,491	9,018,273	92,262,214
6 <i>Ratio of Receipts to Disbursements</i>	102%	122%	105%	118%	111%
<b>Sewer</b>					
7 Receipts	\$ 232,310,973	469,205,156	474,946,332	79,106,541	1,255,569,002
8 MOU Adjustments	-	-	-	-	-
9 Adjusted Receipts	232,310,973	469,205,156	474,946,332	79,106,541	1,255,569,002
10 Disbursements	219,471,583	440,859,613	480,278,006	75,613,705	1,216,222,907
11 Net Receipts	\$ 12,839,390	28,345,543	(5,331,674)	3,492,836	39,346,095
12 <i>Ratio of Receipts to Disbursements</i>	106%	106%	99%	105%	103%
<b>Combined</b>					
13 Receipts	\$ 381,935,255	821,637,252	812,434,995	137,075,236	2,153,082,738
14 MOU Adjustments	-	-	-	-	-
15 Adjusted Receipts	381,935,255	821,637,252	812,434,995	137,075,236	2,153,082,738
16 Disbursements	365,663,339	729,127,785	802,119,178	124,564,127	2,021,474,429
17 Net Receipts	\$ 16,271,916	92,509,467	10,315,817	12,511,109	131,608,309
18 <i>Ratio of Receipts to Disbursements</i>	104%	113%	101%	110%	107%

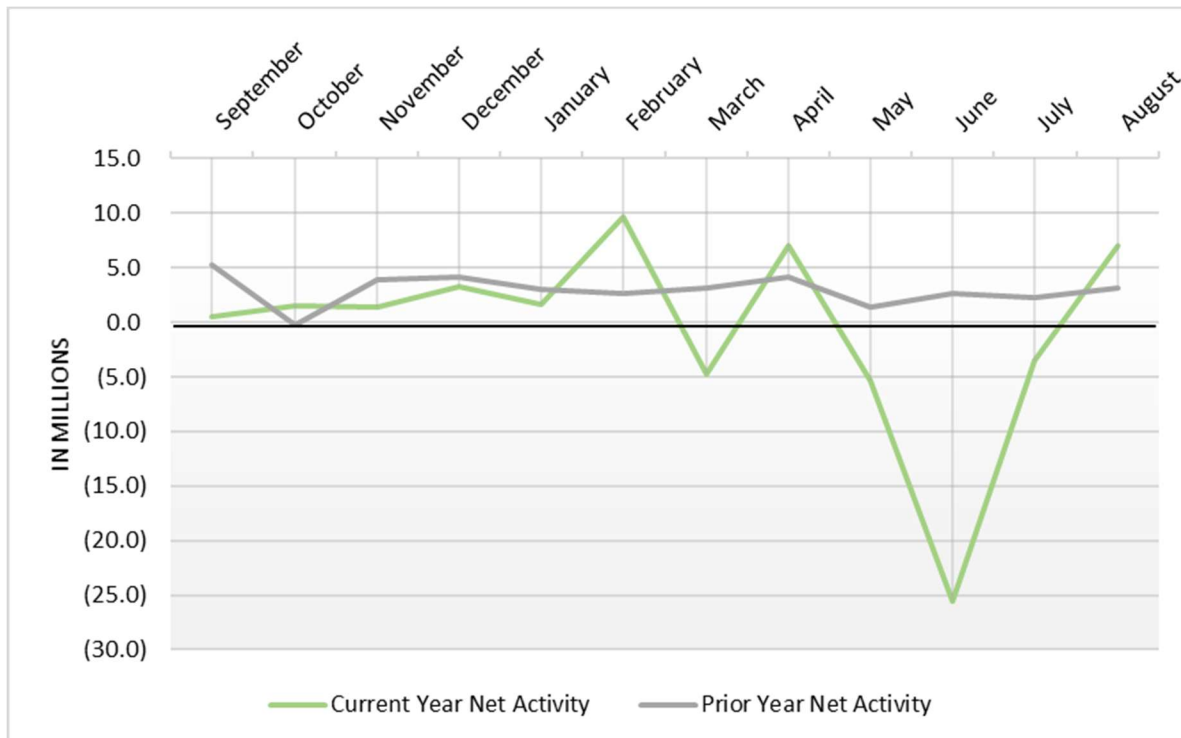
*MOU Adjustments applies to DWSD and is shown here for consistency.*

**Chart 1 – GLWA 12-Month Net Receipts - Water**



**Note:** June 2018 net activity reflects a year-end improvement and extension fund transfer.

**Chart 2 – GLWA 12-Month Net Receipts – Sewer**



**Note:** June 2018 net activity reflects a year-end improvement and extension fund transfer.

## 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) 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. This report begins with the operational effective date of the GLWA on January 1, 2016.

**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 only two months of activity to date.

Through August 31, 2018 the local water fund cash receipts fell slightly short of MBO disbursements at 99% with a historical ratio of cash receipts exceeding MBO disbursements at 103% since January 1, 2016.

Through August 31, 2018, the local sewer fund cash receipts fell short of MBO disbursements at 92% with a slightly improved, historic shortfall of 95% since January 1, 2016. The Reconciliation Committee is discussing this shortfall and a remediation plan 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.

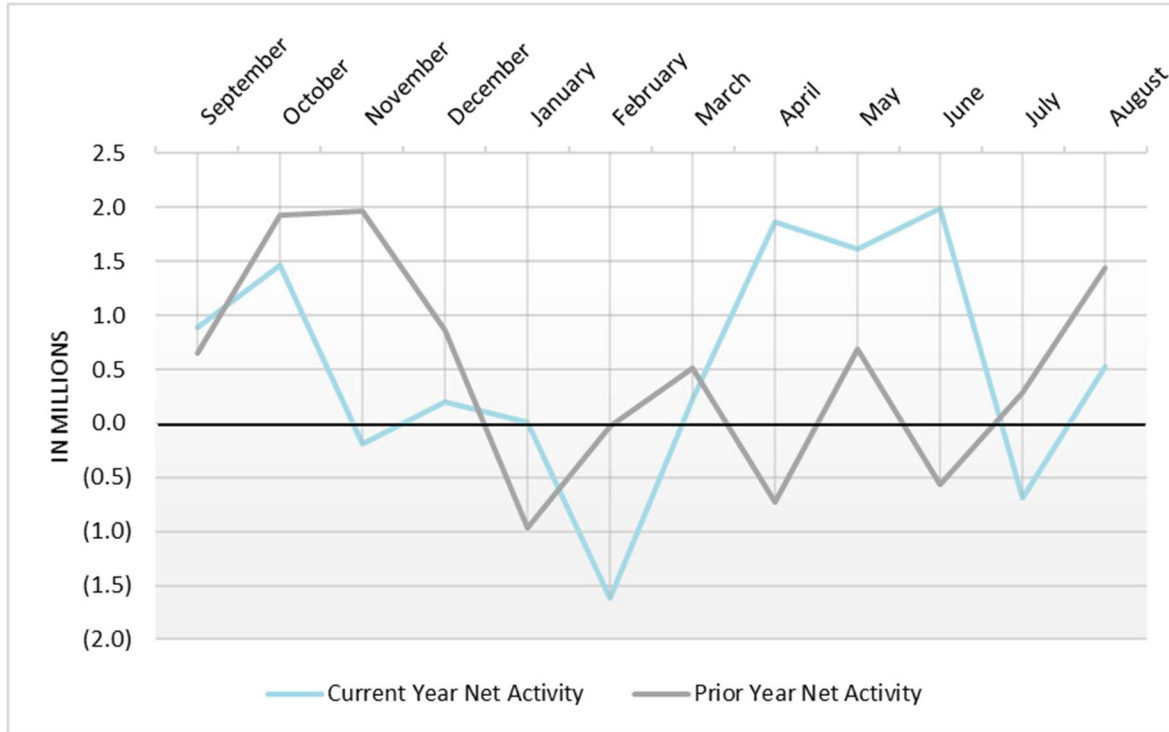
**Chart 4 – DWSD 12-Month Net Receipts – Sewer** outlines monthly activity trends across two points of reference for the local sewer system—current year and prior year. The black line at the zero highlights the breakeven goal for net receipts.



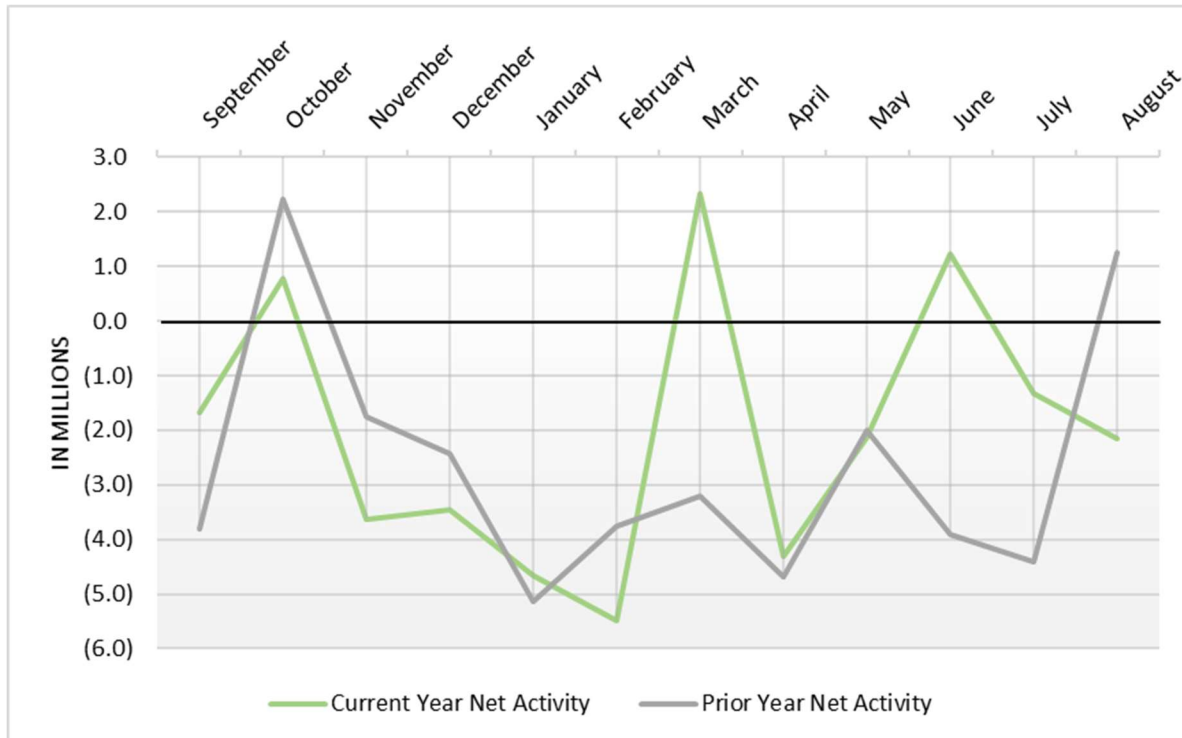
**Table 2 – DWSD Net Cash Flows from Trust Receipts & Disbursements**

	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 (Prelim)</b>	<b>FY 2019-to- Date</b>	<b>Life-to-Date Total</b>
<b>Water</b>					
1 Receipts	\$ 26,201,881	96,451,105	101,228,746	16,778,922	240,660,655
2 MOU Adjustments	18,446,100	-	-	-	18,446,100
3 Adjusted Receipts	44,647,981	96,451,105	101,228,746	16,778,922	259,106,755
4 Disbursements	47,809,552	93,066,144	93,049,457	16,940,650	250,865,803
5 Net Receipts	\$ (3,161,571)	3,384,961	8,179,289	(161,728)	8,240,951
6 <i>Ratio of Receipts to Disbursements</i>	93%	104%	109%	99%	103%
<b>Sewer</b>					
7 Receipts	\$ 65,256,734	233,723,367	242,094,524	44,556,131	585,630,756
8 MOU Adjustments	55,755,100	-	-	-	55,755,100
9 Adjusted Receipts	121,011,834	233,723,367	242,094,524	44,556,131	641,385,856
10 Disbursements	122,297,300	261,963,973	266,217,826	48,013,425	698,492,524
11 Net Receipts	\$ (1,285,466)	(28,240,606)	(24,123,302)	(3,457,294)	(57,106,668)
12 <i>Ratio of Receipts to Disbursements</i>	99%	89%	91%	93%	92%
<b>Combined</b>					
13 Receipts	\$ 91,458,615	330,174,472	343,323,270	61,335,053	826,291,411
14 MOU Adjustments	74,201,200	-	-	-	74,201,200
15 Adjusted Receipts	165,659,815	330,174,472	343,323,270	61,335,053	900,492,611
16 Disbursements	170,106,852	355,030,117	359,267,283	64,954,075	949,358,327
17 Net Receipts	\$ (4,447,037)	(24,855,645)	(15,944,013)	(3,619,022)	(48,865,716)
18 <i>Ratio of Receipts to Disbursements</i>	97%	93%	96%	94%	95%

**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) activities which are further separated by the water system and the sewage disposal system.

**Table 3 – 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 only two months of activity to date.

Through August 31, 2018 the combined water system cash receipts exceeded MBO disbursements by 113% with a ratio of 110% since January 1, 2016. Through August 31, 2018, the combined sewer system cash receipts exceeded MBO disbursements by 100% and fell short slightly by a ratio of 99% since January 1, 2016.

**Table 3 – Combined Net Cash Flows from Trust Receipts & Disbursements**

	FY 2016	FY 2017	FY 2018 (Prelim)	FY 2019-to- Date	Life-to-Date Total
<b>Water</b>					
1 Receipts	\$ 175,826,163	\$ 448,883,201	\$ 438,717,409	\$ 74,747,617	1,138,174,391
2 MOU Adjustments	\$ 18,446,100	\$ -	\$ -	\$ -	18,446,100
3 Adjusted Receipts	194,272,263	448,883,201	438,717,409	74,747,617	1,156,620,491
4 Disbursements	194,001,308	381,334,316	414,890,629	65,891,072	1,056,117,325
5 Net Receipts	\$ 270,955	67,548,885	23,826,780	8,856,545	100,503,165
6 <i>Ratio of Receipts to Disbursements</i>	100%	118%	106%	113%	110%
<b>Sewer</b>					
7 Receipts	\$ 297,567,707	\$ 702,928,523	\$ 717,040,856	\$ 123,662,672	1,841,199,758
8 MOU Adjustments	\$ 55,755,100	\$ -	\$ -	\$ -	55,755,100
9 Adjusted Receipts	353,322,807	702,928,523	717,040,856	123,662,672	1,896,954,858
10 Disbursements	341,768,883	702,823,586	746,495,832	123,627,130	1,914,715,431
11 Net Receipts	\$ 11,553,924	\$ 104,937	\$ (29,454,976)	\$ 35,542	(17,760,573)
12 <i>Ratio of Receipts to Disbursements</i>	103%	100%	96%	100%	99%
<b>Combined</b>					
13 Receipts	\$ 473,393,870	\$ 1,151,811,724	\$ 1,155,758,265	\$ 198,410,289	2,979,374,149
14 MOU Adjustments	\$ 74,201,200	\$ -	\$ -	\$ -	74,201,200
15 Adjusted Receipts	547,595,070	1,151,811,724	1,155,758,265	198,410,289	3,053,575,349
16 Disbursements	535,770,191	1,084,157,902	1,161,386,461	189,518,202	2,970,832,756
17 Net Receipts	\$ 11,824,879	\$ 67,653,822	\$ (5,628,196)	\$ 8,892,087	82,742,593
18 <i>Ratio of Receipts to Disbursements</i>	102%	106%	100%	105%	103%



## Financial Services Audit Committee Communication

### AUDIT COMMITTEE ANNUAL MEETING SCHEDULE

(As of October 26, 2018 – Subject to Change)

Meetings begin at 8:00 a.m. on the third Friday of the month (unless noted otherwise) and are held at the Water Board Building, 735 Randolph, 5<sup>th</sup> floor, Detroit, MI 48226.

January 18, 2019

February 15, 2019

March 15, 2019

April 26, 2019

May 17, 2019

June 21, 2019

July 19, 2019

August 16, 2019

September 20, 2019

October 18, 2019

November 15, 2019

December 20, 2019

Audit Committee materials are posted online at <http://www.glwater.org/finances/audit-committee-documents/>

Any questions regarding this meeting notice or Audit Committee agendas may be directed to Office of the Chief Financial Officer at 313.999.4149 or to Ms. Phyllis Walsh at [phyllis.walsh@glwater.org](mailto:phyllis.walsh@glwater.org).

**Office of the Chief Executive**

735 Randolph Street, Suite 1900

Detroit, Michigan 48226

October 1, 2018

Dear Member Partner:

Over the next few months, the Great Lakes Water Authority (GLWA) will host its annual charges rollout meetings for Fiscal Year 2020. I would like to extend my personal invitation for your participation in these important discussions. I have found that member engagement in the rollout meetings is the best way to ensure that our members are aware of what goes into the charge development process and has a voice in the process. We will present and discuss how our capital improvement plan (CIP) and Budget form the basis for GLWA's proposed Revenue Requirements and how the Units of Service for each of our members is used to determine each members' charges in alignment with the Service Agreements.

Please mark your calendar for the meetings outlined below so that you can join us in these critical discussions:

- **Rollout Meeting #1 (Water and Sewer Capital Improvement Plan)**
  - Thursday, October 25, 2018
  - Lathrup Village Community Center - 27400 Southfield Rd., Lathrup Village, MI
  - This meeting will replace the previously scheduled Asset Management/CIP Work Group meeting on October 23, 2018
  - Water and Sewer – 10:30 a.m. to 2:00 p.m.
- **Rollout Meeting #2 (Units of Service)**
  - Thursday, November 29, 2018
  - SEMCOG – 1001 Woodward Ave., Detroit, MI 48226 Suite 1400
  - Water Only – 10:30 a.m. to 12:00 p.m.
- **Rollout Meeting #3 (Proposed FY 2020 Revenue Requirements)**
  - Thursday, January 10, 2019
  - Summit on the Park - 46000 Summit Pkwy., Canton, MI 48188
  - Water - 10:30 a.m. to 12:00 p.m.
  - Lunch Briefing: 12:00 to 12:30 p.m.
  - Sewer - 12:30 p.m. to 2:00 p.m.
- **Rollout Meeting #4 (Proposed FY 2020 Service Charges)**
  - Thursday, January 24, 2019
  - Macomb County Community College 14500 Twelve Mile Rd., Warren, MI 48088
  - Water - 10:30 a.m. to 12:00 p.m.
  - Lunch Briefing: 12:00 to 12:30 p.m.
  - Sewer - 12:30 p.m. to 2:00 p.m.

The GLWA Member Outreach Team will send meeting notices and agendas for each of these meetings. The meeting information can also be found on the Member Outreach Portal at <https://outreach.glwater.org> under “events.” Please contact Member Outreach at [outreach@glwater.org](mailto:outreach@glwater.org) or 313.964.9301 if you have any questions or would like to add members of your team to the Outreach Portal to receive meeting notices.

I look forward to seeing you at each of these meetings and to receiving your valuable input as we move through the annual charge development process for FY 2020.

Sincerely,



Sue F. McCormick  
Chief Executive Officer