



## **Audit Committee**

**Friday, March 15, 2019 at 8:00 a.m.**

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

### **AGENDA**

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
  - A. February 15, 2019 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
  - A. Update: GLWA and DWSD Shared Services True-Up Status for (Page 5)  
FY 2017 and Summary of Shared Services Billings and Payments
7. NEW BUSINESS
  - A. Annual Update with the Financial Advisor (Page 8)
  - B. FY 2019 Q2 Construction Work-in-Progress Report (Page 57)
  - C. Drinking Water Revolving Fund Project Plan Submittals for the (Page 126)  
14 Mile Transmission Main Loop Project
8. REPORTS
  - A. Monthly Financial Report for December 2018 (Page 130)
  - B. CFO Update (verbal)
9. LOOK AHEAD
  - Next Audit Committee Meetings
    - A. April 26, 2019 at 8 am (Staff request to revisit date)
10. INFORMATION
11. OTHER MATTERS
12. ADJOURNMENT



# Great Lakes Water Authority

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

## Meeting Minutes - Draft

### Audit Committee

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Friday, February 15, 2019

8:00 AM

Water Board Building 5th Floor

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#### 1. Call To Order

Chairman Daddow called the meeting to order at 8:01 a.m.

#### 2. Quorum Call

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

#### 3. Approval of Agenda

Chairman Daddow requested a Motion to approve the Agenda.

**Motion By:** Gary Brown

**Support By:** Brian Baker

**Action:** Approved

The motion carried by a unanimous vote.

#### 4. Approval of Minutes

##### A. [2019-063](#) Approval of Minutes of January 18, 2019

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [January 18 2019 Audit Committee Meeting Minutes](#)

Chairman Daddow requested a Motion to approve the January 18, 2019 Audit Committee Meeting Minutes.

**Motion By:** Brian Baker

**Support By:** Gary Brown

**Action:** Approved

The motion carried by a unanimous vote.

#### 5. Public Comment

Raphael Chirolla requested to have the Audit Committee binders uploaded in Legistar sooner.

#### 6. Old Business

A. [2019-064](#) Proposed FY 2020-2021 Biennial Budget and Five-Year Plan

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Proposed FY 2020-2021 Biennial Budget and Five-Year Plan .pdf](#)

**Motion By:** Gary Brown

**Support By:** Brian Baker

**Action:** Received and Filed

The motion carried by a unanimous vote.

Director Baker made a Motion, Supported by Director Brown, to recommend to the Board a \$5 Million O&M reduction and instruct the administration to come back before the next Board Meeting with the specifics on where that amount will be credited, both water and sewer and the line items, and what the impact of that will be.

B. [2019-065](#) Proposed FY 2020 Charges

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Proposed FY 2020 Schedule of Water and Sewer Service Charges.pdf](#)

**Motion By:** Gary Brown

**Support By:** Brian Baker

**Action:** Received and Filed

The motion carried by a unanimous vote.

C. [2019-066](#) Update: GLWA and DWSD Shared Services True-Up Status for FY 2017 and Summary of Shared Services Billings and Payments

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Shared Services Update 2.15.2019.pdf](#)

**Motion By:** Brian Baker

**Support By:** Gary Brown

**Action:** Received and Filed

The motion carried by a unanimous vote.

7. New Business

- A. [2019-067](#) Reconciliation Committee Update
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Reconciliation Committee Update.pdf](#)
- Motion By: Gary Brown  
Support By: Brian Baker  
Action: Received and Filed  
The motion carried by a unanimous vote.
- B. [2019-068](#) Quarterly Investment Report as of December 31, 2018
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Quarterly Investment Report through December 31, 2018 \(Unaudited\).pdf](#)
- Motion By: Brian Baker  
Support By: Gary Brown  
Action: Received and Filed  
The motion carried by a unanimous vote.
- C. [2019-070](#) Charges Stability and Equity Initiatives Work Plan Review
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Charges Stability and Equity Initiatives Work Plan Review.pdf](#)
- Motion By: Gary Brown  
Support By: Brian Baker  
Action: Received and Filed  
The motion carried by a unanimous vote.
- D. [2019-071](#) Contractual Services and Initiatives Planning
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Contractual Services and Initiatives Planning .pdf](#)
- Motion By: Gary Brown  
Support By: Brian Baker  
Action: Received and Filed  
The motion carried by a unanimous vote.

## 8. Reports

**A. [2019-072](#) Monthly Financial Report for November 2018**

**Sponsors:** Nicolette Bateson

**Indexes:** Finance

**Attachments:** [Monthly Financial Report for November 2018 for 2.15.2019.pdf](#)

**Motion By:** Gary Brown

**Support By:** Brian Baker

**Action:** Received and Filed

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

CFO Update (Verbal)

**There were no further CFO updates.**

**9. Look Ahead**

The next Audit Committee Meeting is scheduled for Friday, March 15, 2019 at 8:00 a.m.

**10. Information**

An Annual Update with the Financial Advisor (PFM) will be given at the March 15, 2019 Audit Committee Meeting.

**11. Other Matters**

**There were no other matters.**

**12. Adjournment**

**Chairman Daddow requested a Motion to Adjourn.**

**Motion By:** Gary Brown

**Support By:** Brian Baker

**Action:** Approved

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

**There being no further business, the meeting was adjourned at 10:51 a.m.**



## Financial Services Audit Committee Communication

**Date:** March 15, 2019

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

**From:** Alicia Haskin, Management Professional – Intergovernmental Relations

**Re:** Update: GLWA and DWSD Shared Services True-Up Status FY 2017

**Background:** The Great Lakes Water Authority (GLWA) and the Detroit Water and Sewerage Department (DWSD) are parties to a Shared Services Agreement (the Agreement) dated December 1, 2015. This agreement provides the framework for shared services for the efficient operation of both entities.

Each month invoices are prepared based on an agreed-upon annual budget. While the intent is for the monthly invoice to represent actual costs, the reality is that the timing of certain vendor invoices and accumulation of internal charges requires a “true-up” process. This process has proven to be a very labor-intensive; however, the goal is to condense the true-up timeline given the experience gained and improvements implemented each fiscal year.

The Shared Service Agreement (Section 5.1) states:

“Each invoice, whether for Services provided regularly or “as-needed,” shall itemize the costs and charges by Services provided under each Service Delivery Schedule and shall provide sufficient detail to the Subscribing Party to identify the Services performed and the basis for the charges. A Performing Party may only charge the Service Costs for Services provided.”

In addition, the parties have come to realize that an exact itemization generates a level of detailed analysis that is not cost-effective to produce. The data and experience garnered from the first three years of the program are leading to a more efficient method of calculating costs while staying true to the intent of Section 5.1 above.

### Fiscal Year 2017

Tables 1, 2 and 3 below identify the current review status for each Shared Service within the scope of the FY2017 true-up based upon DWSD and GLWA staff analysis. Preparation of this update has been a joint effort between DWSD and GLWA to ensure that both parties are aware of the review status. There are still ongoing reviews and discussions regarding the true-up calculations provided by each party.

**Analysis:** DWSD and GLWA Shared Services Teams are meeting every two weeks to bring the FY 2017 Shared Services true up to resolution. At this time, all Shared Services true ups have been provided to the other party. All Shared Service True Ups are in review by the Shared Services Teams.

**Table 1: Legend for Review Status for Shared Services FY 2017 True-Up**

**Provider status:**

<b>1</b>	True up calculation not completed by Shared Services team.
<b>2</b>	True up calculation completed by Shared Services team; under review by Executive Leadership team.
<b>3</b>	True up calculation provided to subscriber.

**Subscriber status:**

<b>4</b>	True up not yet reviewed by Shared Services team.
<b>5</b>	True up being reviewed by Shared Services Team.
<b>6</b>	True up reviewed by Shared Services team; questions sent to provider.
<b>7</b>	True up needs to be escalated due to differing opinions.
<b>8</b>	True up review completed by Shared Services team; under review by Executive Leadership team.
<b>9</b>	True up completed and amount agreed upon or agreed upon difference.

<b>N/A</b>	Shared Service not active at this time.
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**Table 2: Status of Shared Services Provided by DWSD and Billed to GLWA**

Shared Service Description	DWSD (Provider) progress	GLWA (Subscriber) progress
OPS-001 Fleet	3	6
OPS-002 Miss Dig	3	8
OPS-003 As Needed Field Services	3	5
OPS-006 Facilities	3	6
DoIT-001 Financial Information Services	N/A	N/A
DoIT-002 Radios	N/A	N/A
DoIT-003 Customer Service Technology Suite	3	5

Other items to bill not a defined shared service code	DWSD (Provider) progress	GLWA (Subscriber) progress
Fuel	3	6
WAM Invoices	3	9

**Table 3: Status of Shared Services Provided by GLWA and Billed to DWSD**

<b>Shared Service Description</b>	<b>GLWA (Provider) progress</b>	<b>DWSD (Subscriber) progress</b>
OPS-002 Miss Dig	3	8
OPS-004 Water Quality	3	8
OPS-005 Security	3	8
OPS-005 Security Training	3	8
OPS-006 Facilities	3	8
OPS-008 Systems Control Center	3	6
ITS-001 Retail AMR	3	6
ITS-002 Customer Service Tech Suite	3	6
ITS-003 See Click Fix	3	6
ITS-004 WAM	3	6
ITS-005 Mobile Work Force	3	6
ITS-006 ESRI-GIS	3	6
ITS-007 DADS	3	6
ITS-008 TIBCO	3	6
ITS-009 IT Infrastructure	3	6
LS-001-A Joint Litigation and Defense, LS-001-B Environment, LS-002 Environment, LS-003 Contract Drafting	3	8

<b>Other items to bill not a defined shared service code</b>	<b>GLWA (Provider) progress</b>	<b>DWSD (Subscriber) progress</b>
DWSD-R Staff Training by GLWA	3	5
Bank Fees	3	8
Lakeshore Invoices	3	8
Public Finance	3	6

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





## Financial Services Audit Committee Communication

**Date:** March 15, 2019

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

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

**Re:** PFM Financial Advisors Annual Update

**Background:** Every year the Great Lakes Water Authority (GLWA) receives an annual market update from its financial advisor, PFM Financial Advisors (PFM). The included presentation provides a current bond market update, commentary on the SEC Rule 15c2-12 amendment, current water and sewer debt profiles and potential refunding opportunities. The presentation also includes updates to the rating agency scorecards and GLWA peer comparisons, based on GLWA's audited FY 2018 financial statements.

**Analysis:** Key takeaways from the PFM presentation include the following.

- **Current Market:** The AAA Rated Municipal Market Data (MMD) rates remain well below historical averages, with the 30-year MMD remaining in the historically low range;
- **Amendments to Rule 15c2-12:** On August 31, 2018 the SEC posted amendments to the rule that became effective on February 27, 2019. The amendments add two new events to the list of reportable events for new continuing disclosure agreements:
  - *"Incurrence of a financial obligation of the issuer or obligated person, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a financial obligation of the issuer or obligated person, any of which affect security holders, if material"; and*
  - *"Default, event of acceleration, termination event, modification of terms or other similar events under the terms of the financial obligation of the issuer or obligated person, any of which reflect financial difficulties."*
- **Previous Bond Refundings:** Since 2014, GLWA (previous to January 1, 2016, DWSD) has saved over \$677 million in debt service payments as a result of water and sewer bond refundings.
- **Future Bond Refundings:** GLWA has three water bond issues totaling a par amount of \$366.0 million that are callable July 1, 2021 and three sewer bond issue totaling a par amount of \$445.4 million that are callable between July 1, 2021 and July 1, 2022 that may be candidates for taxable refundings in FY 2020.

- **Ratings Scorecards:** GLWA's water and sewer ratings were last updated in September 2018 as part of the 2018 bond issues. Current senior lien ratings are shown below. Based on GLWA's FY 2018 audited results, PFM has updated the ratings scorecards for both Moody's and S&P.

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

- **Peer Comparisons:** Based on GLWA's audited FY 2018 results, PFM has also updated (from the March 16, 2018 Audit Committee presentation) the comparison of peer utilities. The peer utilities include Atlanta (W&S), Baltimore (W&S), Chicago (Water), DC Water (W&S), Louisville MSD (Sewer), Miami-Dade County (W&S), MSD of Greater Cincinnati (Sewer), Philadelphia (W&S) and San Francisco PUC (W&S).

**Budget Impact:** GLWA management does not anticipate the issuance of any water or sewer refunding bonds during FY 2019. The proposed FY 2020 water and sewer budgets also do not include the potential impacts of any refunding bond issues, but to the extent bond refundings are recommended by PFM and approved by the GLWA Board of Directors, the FY 2020 debt service budgets would be amended accordingly, based on actual results.

**Proposed Action:** Receive and file the PFM presentation.



# Municipal Market Update and 2019 Outlook

**Presented by:**  
**Dan Hartman, Managing Director**

**March 15, 2019**

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PFM Financial Advisors LLC

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555 Briarwood Circle  
Suite 333  
Ann Arbor, MI 48108

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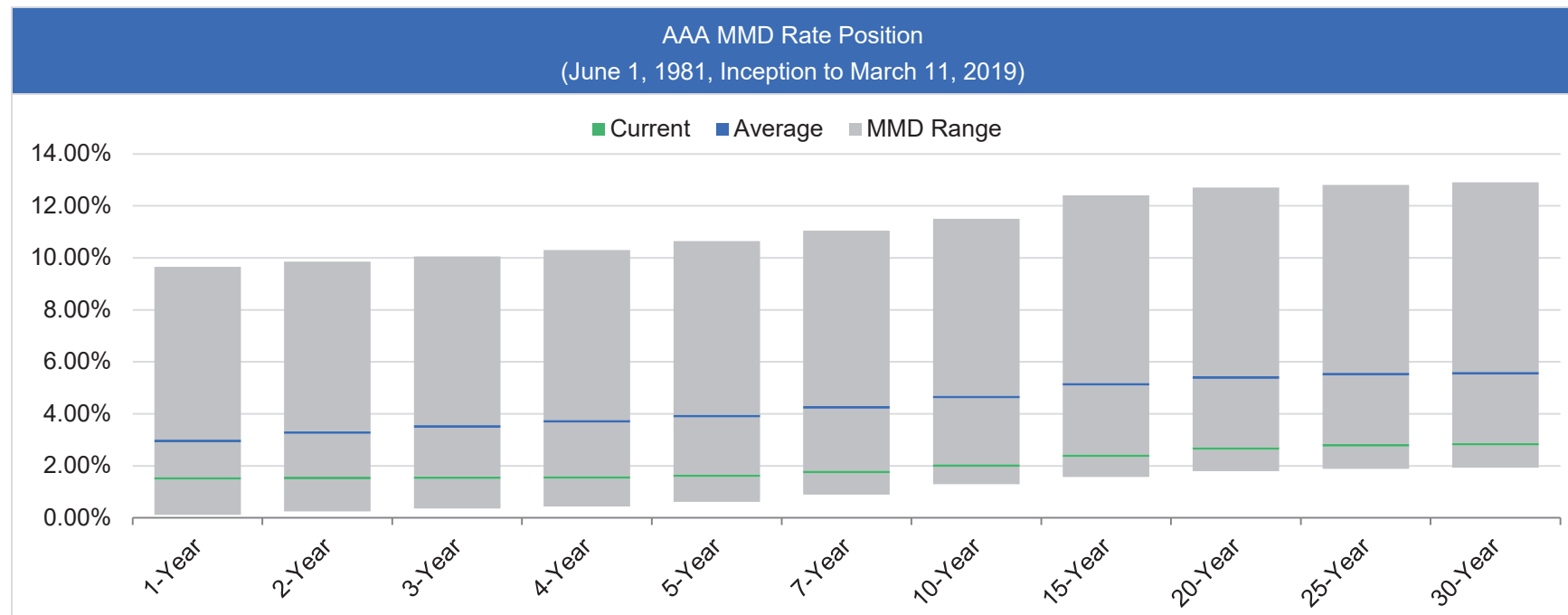
734.994.9710  
[pfm.com](http://pfm.com)



# Municipal Market Update



## AAA MMD Position Since Inception



Summary of March 11, 2019 vs. Historical (since Inception) MMD Rates											
Statistic	1-Year	2-Year	3-Year	4-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	30-Year
March 11, 2019	1.57%	1.58%	1.59%	1.61%	1.67%	1.82%	2.06%	2.44%	2.72%	2.84%	2.89%
Historical Average	3.01%	3.33%	3.57%	3.77%	3.96%	4.30%	4.70%	5.19%	5.45%	5.58%	5.61%
Spread to Average	-1.44%	-1.75%	-1.98%	-2.16%	-2.29%	-2.48%	-2.64%	-2.75%	-2.73%	-2.74%	-2.72%
Minimum	0.11%	0.25%	0.36%	0.44%	0.62%	0.89%	1.29%	1.57%	1.80%	1.88%	1.93%
Maximum	9.65%	9.85%	10.05%	10.30%	10.65%	11.05%	11.50%	12.40%	12.70%	12.80%	12.90%
% of Time Lower	31.67%	27.82%	24.63%	22.56%	19.72%	13.51%	9.04%	7.47%	7.54%	6.66%	6.24%

Source: Thomson Reuters



## Current Interest Rate Snapshot

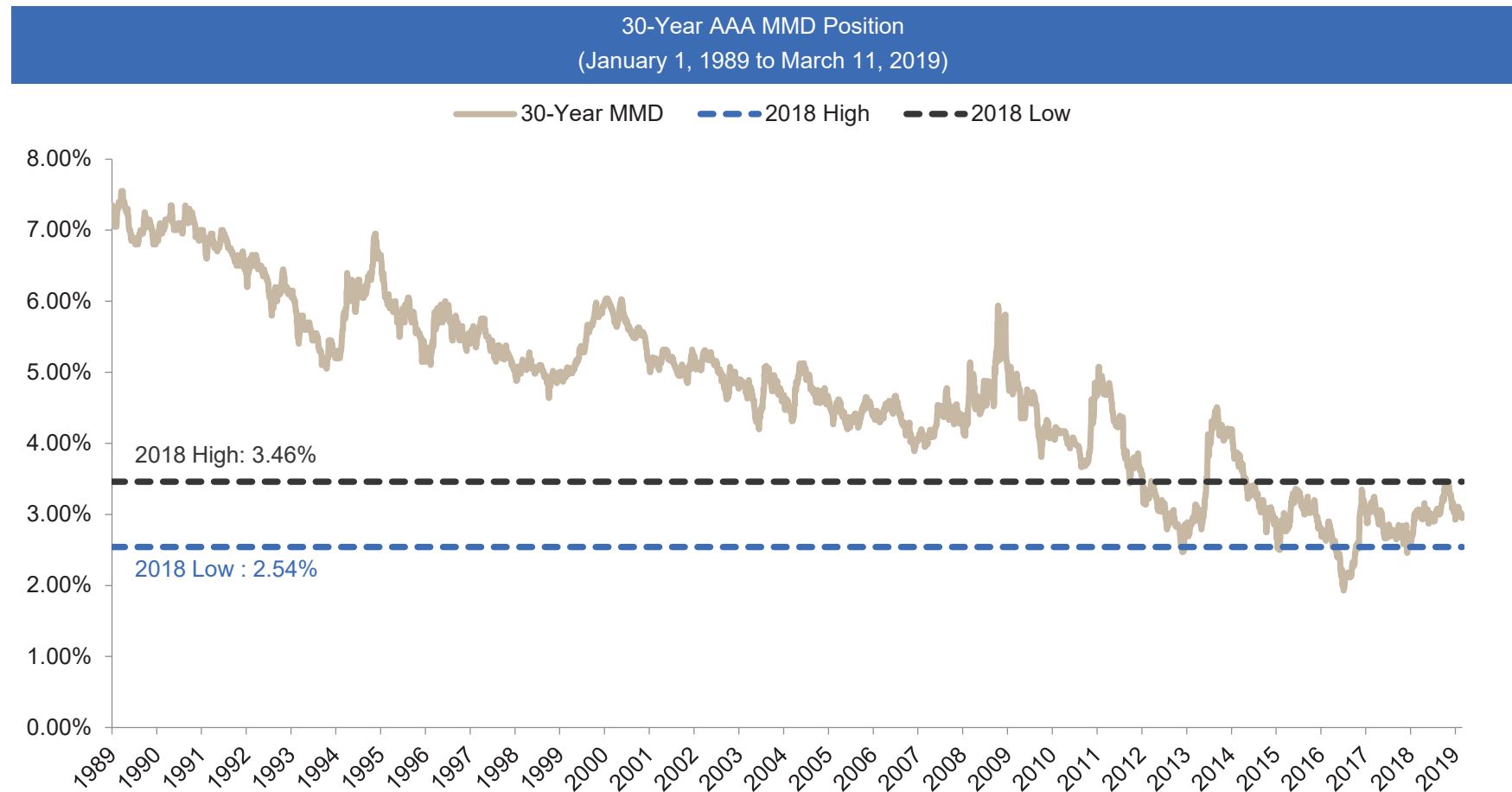
March 11, 2019															
Year	Maturity	UST	AAA MMD	AA MMD	AA Spread	A MMD	A Spread	Year	Maturity	UST	AAA MMD	AA MMD	AA Spread	A MMD	A Spread
1-Year	2019	2.53%	1.57%	1.58%	0.01%	1.77%	0.20%	16-Year	2034	-	2.50%	2.70%	0.20%	2.99%	0.49%
2-Year	2020	2.48%	1.58%	1.60%	0.02%	1.83%	0.25%	17-Year	2035	-	2.56%	2.76%	0.20%	3.05%	0.49%
3-Year	2021	2.45%	1.59%	1.62%	0.03%	1.88%	0.29%	18-Year	2036	-	2.62%	2.83%	0.21%	3.12%	0.50%
4-Year	2022	-	1.61%	1.66%	0.05%	1.95%	0.34%	19-Year	2037	-	2.67%	2.88%	0.21%	3.17%	0.50%
5-Year	2023	2.44%	1.67%	1.73%	0.06%	2.04%	0.37%	20-Year	2038	2.93%	2.72%	2.93%	0.21%	3.22%	0.50%
6-Year	2024	-	1.75%	1.83%	0.08%	2.13%	0.38%	21-Year	2039	-	2.76%	2.97%	0.21%	3.27%	0.51%
7-Year	2025	-	1.82%	1.91%	0.09%	2.21%	0.39%	22-Year	2040	-	2.79%	3.00%	0.21%	3.30%	0.51%
8-Year	2026	-	1.90%	2.02%	0.12%	2.31%	0.41%	23-Year	2041	-	2.81%	3.02%	0.21%	3.32%	0.51%
9-Year	2027	-	1.97%	2.11%	0.14%	2.39%	0.42%	24-Year	2042	-	2.83%	3.04%	0.21%	3.34%	0.51%
10-Year	2028	2.64%	2.06%	2.22%	0.16%	2.49%	0.43%	25-Year	2043	-	2.84%	3.05%	0.21%	3.35%	0.51%
11-Year	2029	-	2.17%	2.36%	0.19%	2.61%	0.44%	26-Year	2044	-	2.85%	3.06%	0.21%	3.36%	0.51%
12-Year	2030	-	2.27%	2.46%	0.19%	2.72%	0.45%	27-Year	2045	-	2.86%	3.07%	0.21%	3.37%	0.51%
13-Year	2031	-	2.34%	2.54%	0.20%	2.80%	0.46%	28-Year	2046	-	2.87%	3.08%	0.21%	3.38%	0.51%
14-Year	2032	-	2.40%	2.60%	0.20%	2.86%	0.46%	29-Year	2047	-	2.88%	3.09%	0.21%	3.39%	0.51%
15-Year	2033	2.84%	2.44%	2.64%	0.20%	2.92%	0.48%	30-Year	2048	3.03%	2.89%	3.10%	0.21%	3.40%	0.51%

Source: Thomson Reuters



## Interest Rates in 2018

Long-term interest rates in 2018 remained within a historically low range, with the 30-year MMD remaining between a maximum of 3.46% and a minimum of 2.54%

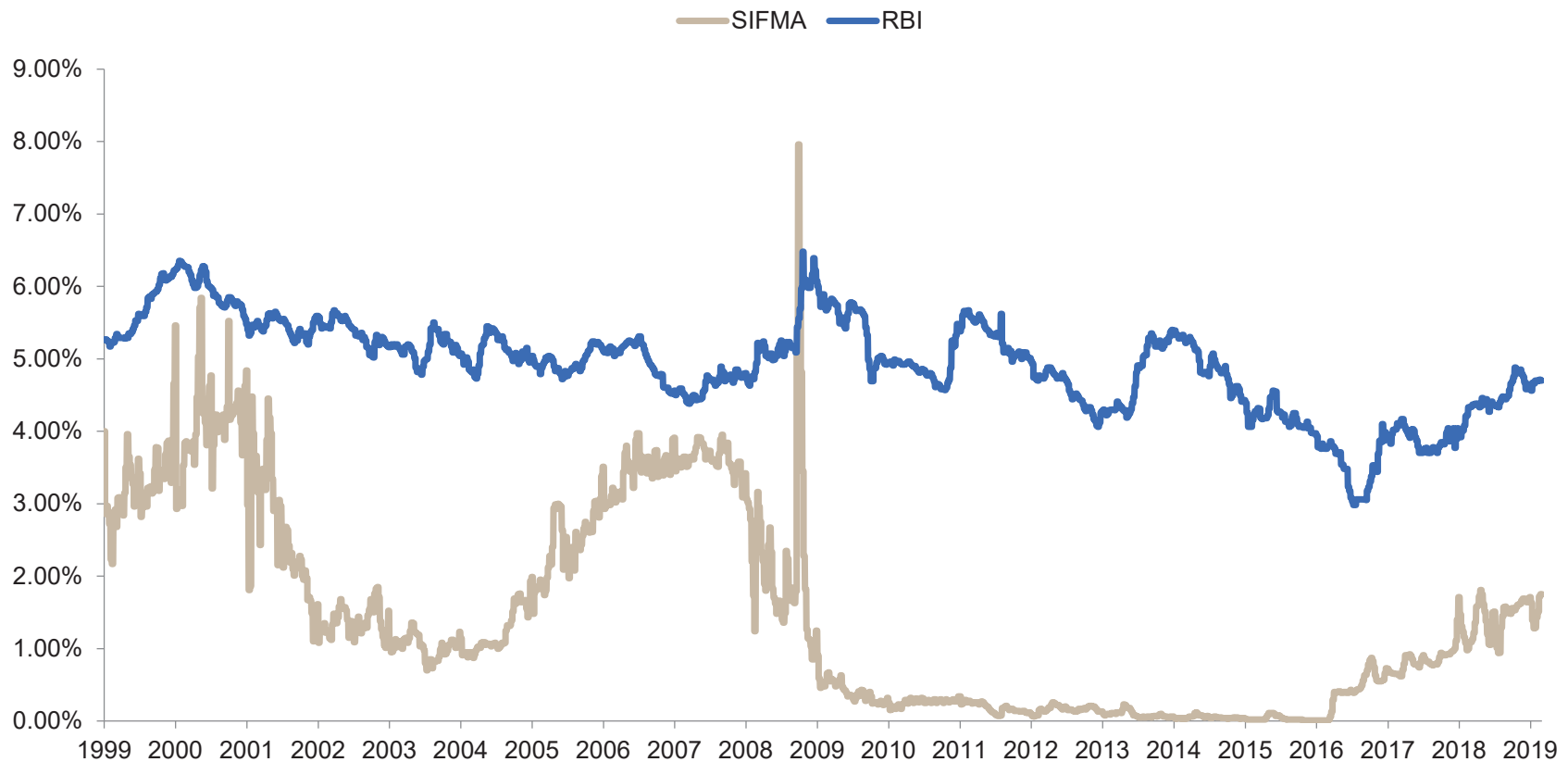




## Short-Term and Long-Term Tax-Exempt Interest Rate History

SIFMA has remained at levels significantly below the Bond Buyer Revenue Bond Index since 2009, although short-term rates have ticked up over the last several years

SIFMA vs. RBI (January 1, 1999 – March 11, 2019)

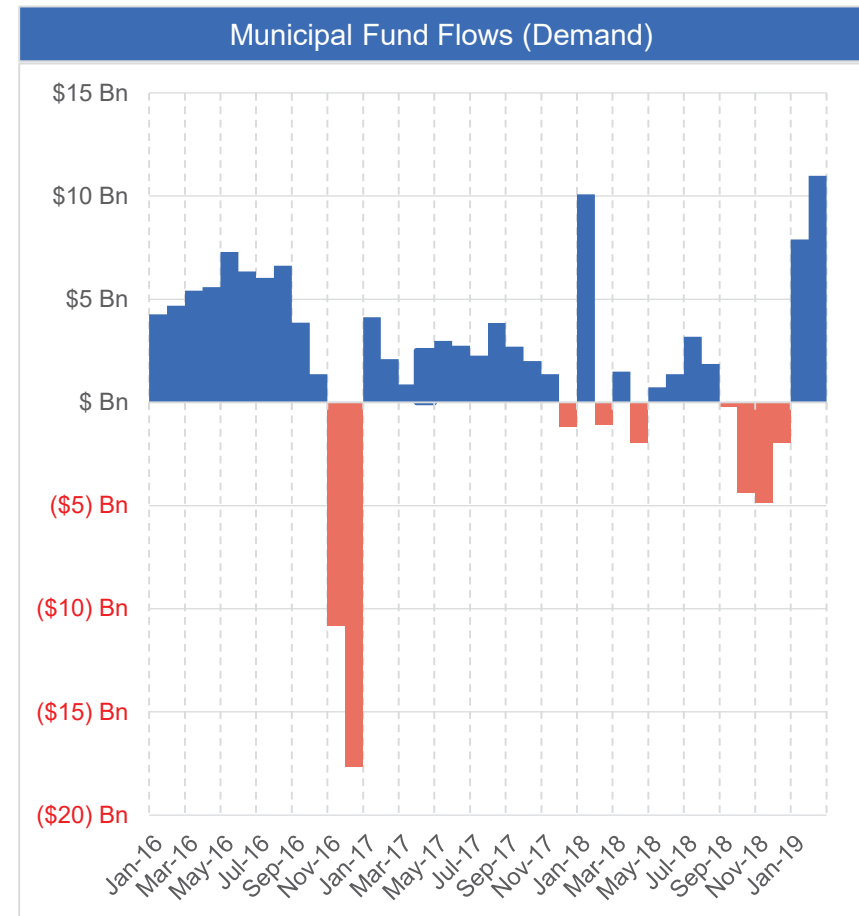
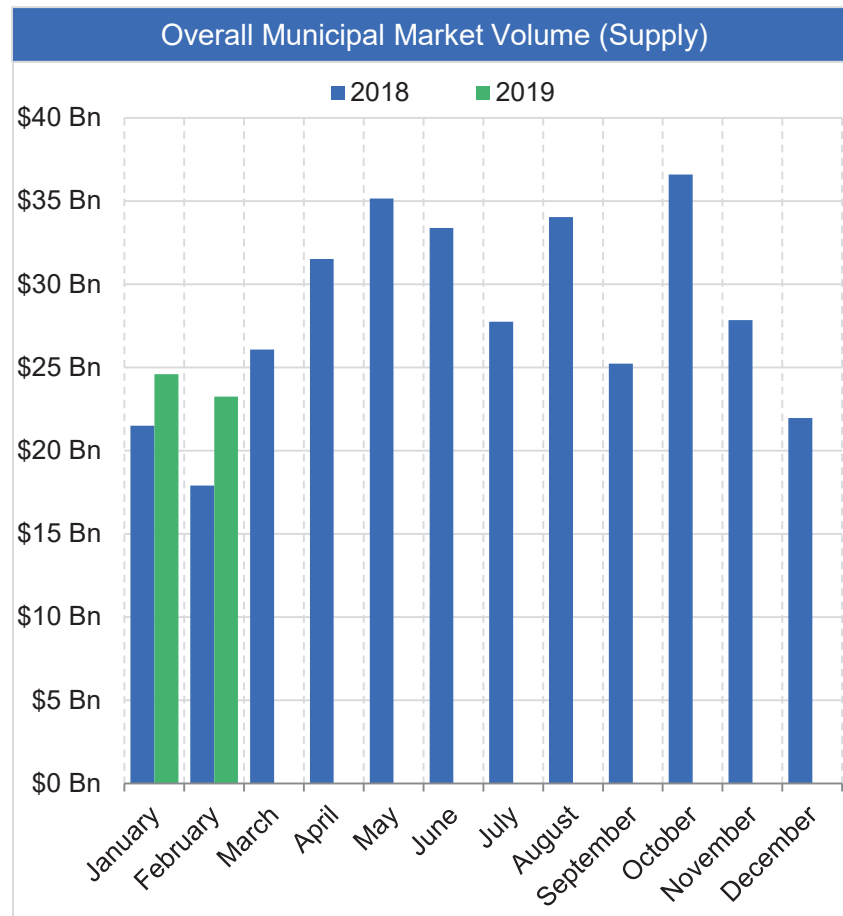






## Municipal Market Supply & Demand

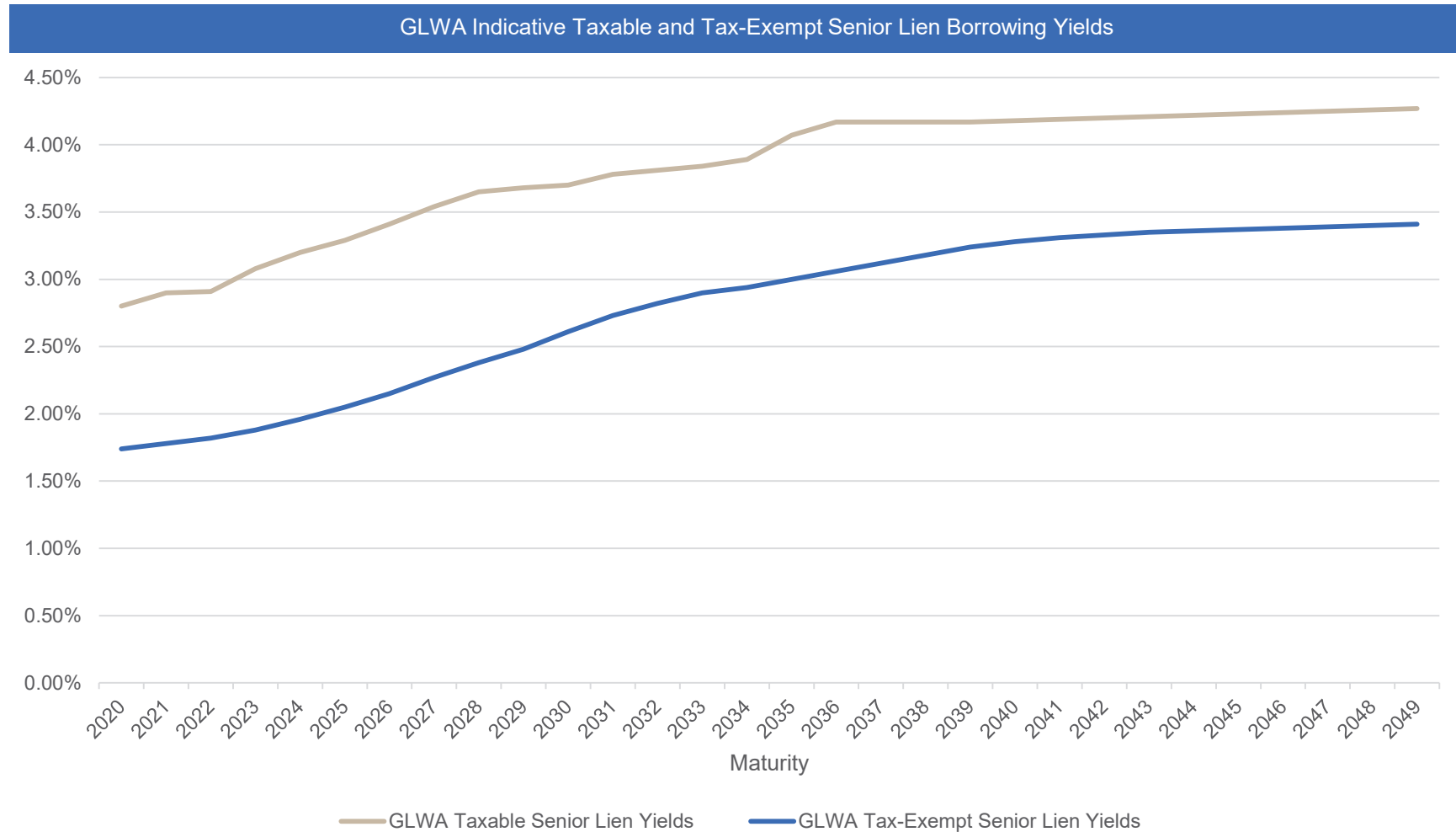
Municipal bond issuance was up 29.89% in February (year-over-year) and is up 21.43% year-to-date through the end of February.



Source: Bond Buyer, Investment Company Institute



## GLWA Taxable and Tax-Exempt Borrowing Rates



Indicative interest rates as of February 27, 2019. Tax-exempt borrowing yields assume 5% premium coupon structure with a ten year par call. Taxable borrowing yields assume a par coupon structure with a make whole call.



## Interest Rate Forecasts

- The Federal Reserve signaled a slowdown in rate increases in 2019, with the following language first included in the January FOMC statement:
  - *“In light of global economic and financial developments and muted inflation pressures, the Committee will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate to support these outcomes”*

Bond Yield Forecast (As of March 11, 2019)							
Average Forecasts	Current	Q1 19	Q2 19	Q3 19	Q4 19	Q1 20	Q2 20
30-Year UST	3.03%	3.10%	3.17%	3.25%	3.29%	3.36%	3.39%
10-Year UST	2.64%	2.82%	2.91%	2.99%	3.03%	3.08%	3.09%
5-Year UST	2.44%	2.65%	2.77%	2.83%	2.87%	2.92%	2.96%
2-Year UST	2.47%	2.63%	2.74%	2.81%	2.86%	2.88%	2.91%
3M LIBOR	2.60%	2.72%	2.81%	2.89%	2.95%	2.99%	2.99%
Fed Funds Target Rate (Upper)	2.50%	2.50%	2.60%	2.70%	2.80%	2.80%	2.80%
Fed Funds Target Rate (Lower)	2.25%	2.25%	2.37%	2.46%	2.55%	2.54%	2.55%



# **Amendment to SEC Rule 15c2-12**



## Amendments to Rule 15c2-12

- On August 31, 2018 the SEC posted amendments for Rule 15c2-12 of the Securities Exchange Act to the Federal Register that became effective on February 27, 2019
- The Amendments add two new events to the list of reportable events for which issuers would be obligated through new continuing disclosure agreements to report on EMMA within 10 days of occurrence
  - 1) *“Incurrence of a **financial obligation** of the issuer or obligated person, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a financial obligation of the issuer or obligated person, any of which affect security holders, if material”*
  - 2) *“Default, event of acceleration, termination event, modification of terms or other similar events under the terms of the **financial obligation** of the issuer or obligated person, any of which reflect financial difficulties.”*
- Definition of “financial obligation” becomes important for determining compliance with the amended rule
  - *“The term “financial obligation” means a (i) debt obligation; (ii) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (iii) guarantee of (i) or (ii). The term financial obligation shall not include municipal securities as to which a final official statement has been provided to the MSRB consistent with this rule.”*
  - Includes direct placements and bank loans – but also captures other types of financial transactions, such as capital leases, interest rate swaps, guarantees, etc.
- SEC has declined to provide further clarity on materiality but did state that issuers should use the same analysis regularly made when preparing disclosure documents



## Rationale and Background on the Amendments

- Concern that issuers were not properly disclosing the existence or terms of their bank loans and private placements initially highlighted in Securities and Exchange Commission (“SEC”) report issued in July 2012
- GASB requires some debt information to be disclosed in notes to financial statements, but not necessarily the level of detail about particular covenants, events of default, remedies, priority rights, etc. for market participants to make informed investment decisions
- Issuers may agree to terms when incurring financial obligations that were not previously required to be disclosed even though they could adversely affect existing bondholders
  - Bank loan covenants and events of default can be different from or set at higher levels than those applicable to outstanding bonds, thereby enabling the bank to assert remedies prior to other bondholders
  - Recent changes to federal tax laws have triggered provisions commonly found in direct placements relating to the rate at which a direct placement will bear interest

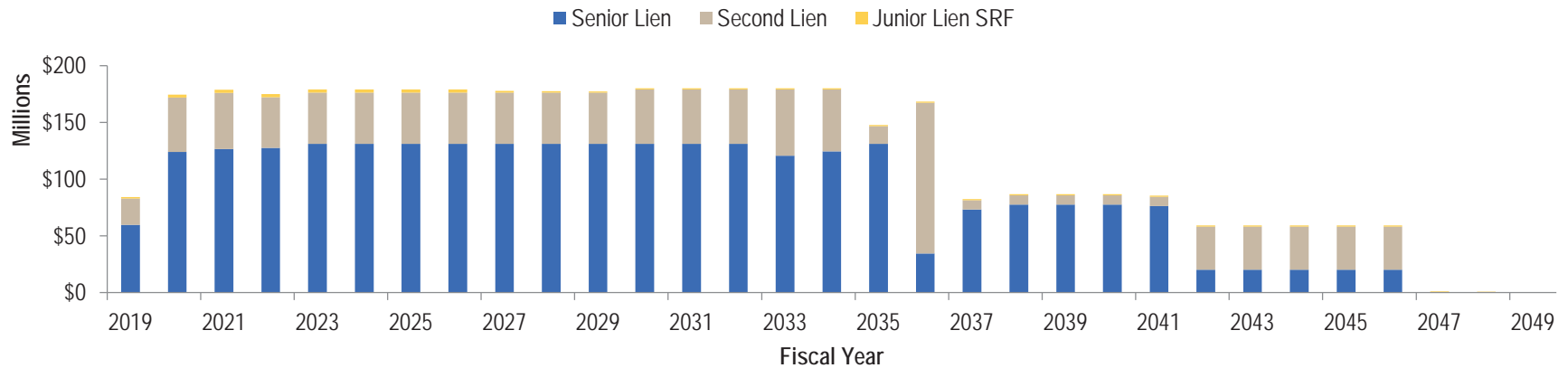


# Status of GLWA Debt Profile

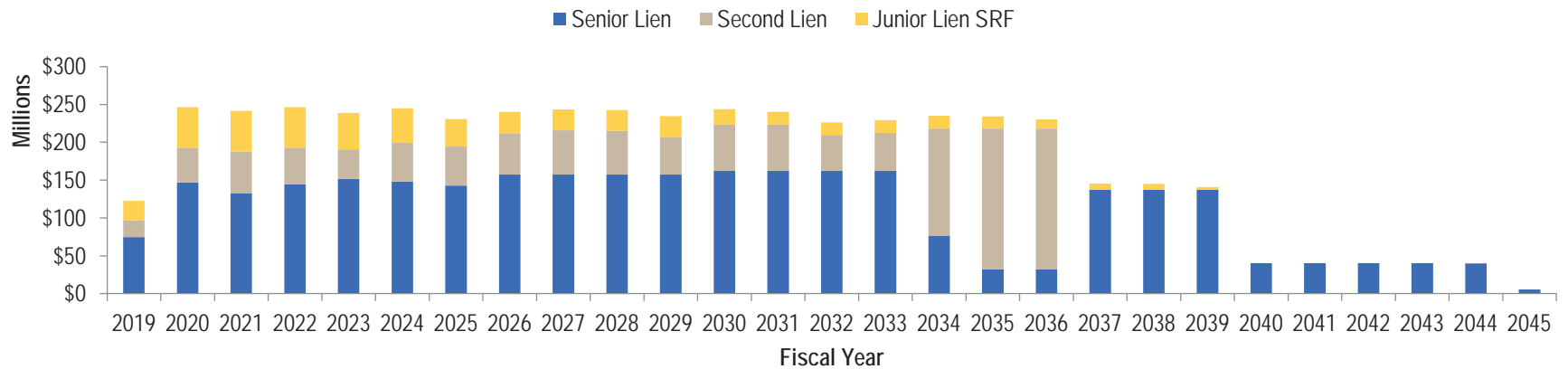


## GLWA Current Debt Structure as of January 1, 2019

### Water



### Sewer

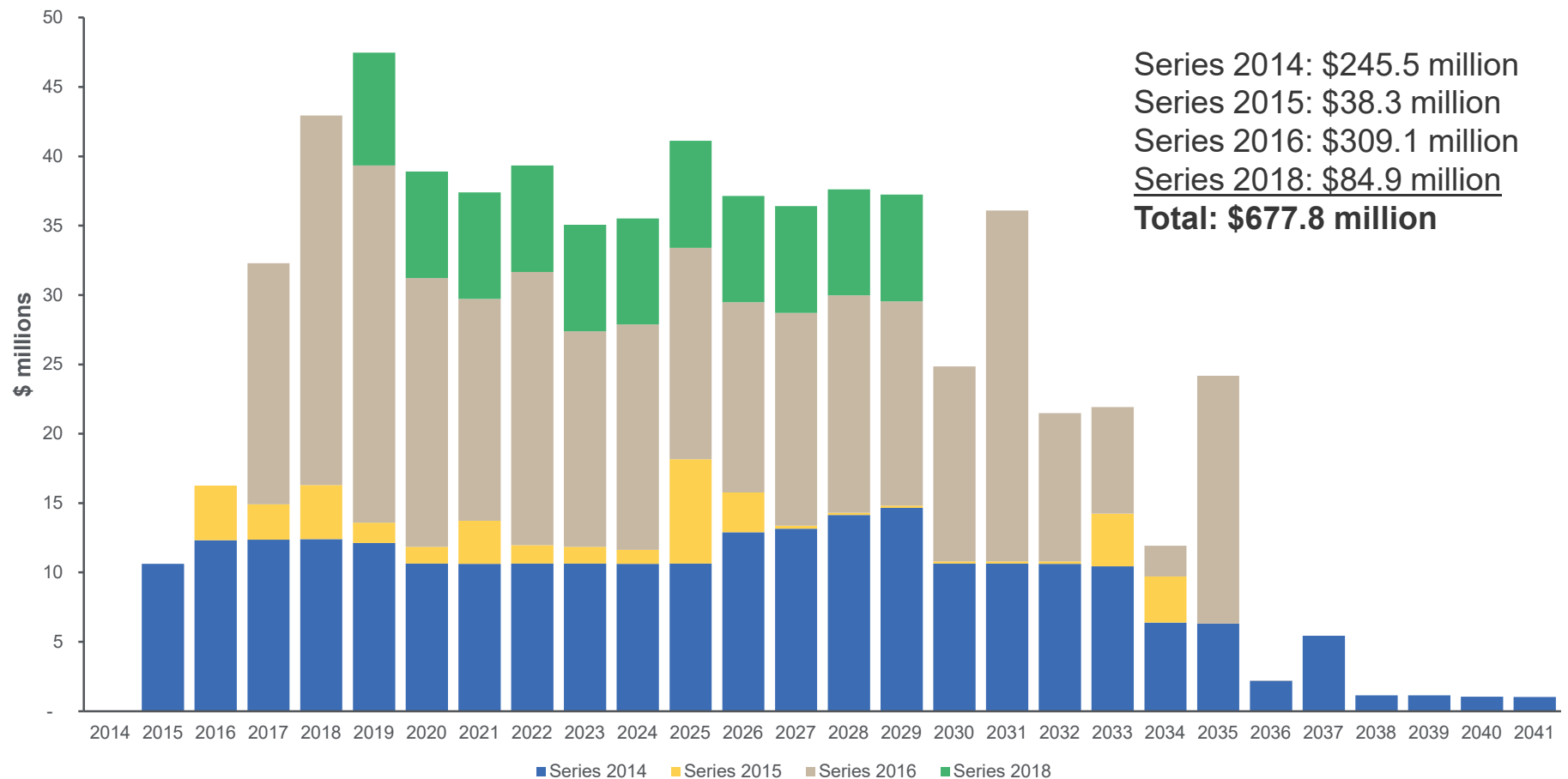






## History of Debt Service Savings Achieved Since 2014

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





## GLWA Fixed Rate Callable Debt (Call Dates Through 2022)

Water						
Series Name	Indenture	Lien	Tax Status	Outstanding (\$000s)	Next Call Date	Callable Par (\$000s)
Series 2011A Senior	Water	Senior	Tax-Exempt	293,970	7/1/2021	289,605
Series 2011B Senior	Water	Senior	Taxable	3,950	7/1/2021	2,295
Series 2011C Senior	Water	Senior	Tax-Exempt	75,145	7/1/2021	74,125

Sewer						
Series Name	Indenture	Lien	Tax Status	Outstanding (\$000s)	Next Call Date	Callable Par (\$000s)
Series 2012A Senior	Sewer	Senior	Tax-Exempt	495,175	7/1/2022	437,795
Series 2014C-1 Senior	Sewer	Senior	Tax-Exempt	123,220	7/1/2022	123,200
Series 2014C-2 Senior	Sewer	Senior	AMT	27,470	7/1/2022	27,450
Series 2005A Sec.(Call Mod) <sup>1</sup>	Sewer	Second	Tax-Exempt	31,785	7/1/2021	31,785
Series 2006B Sec.(Call Mod) <sup>2</sup>	Sewer	Second	Tax-Exempt	55,000	7/1/2021	55,000

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

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

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



## Taxable Advance Refunding Candidate Summary

	Sewer System Debt Generating Savings (Taxable Advance Refunding)			Water System Debt Generating Savings (Taxable Advance Refunding)		
Refunded Series	Series	Call Date	Par (\$000s)	Series	Call Date	Par (\$000s)
Senior	2012A	7/1/2022	358,595	2011A	7/1/2021	289,605
				2011B	7/1/2021	2,295
				2011C	7/1/2021	74,125
<b>Total Senior</b>			<b>358,595</b>			<b>366,025</b>
Second	2005A	7/1/2021	31,785	-	-	-
	2006B	7/1/2021	30,870			
<b>Total Second</b>			<b>62,655</b>			<b>-</b>
<b>Total Refunded</b>			<b>421,250</b>			<b>366,025</b>



## Refunding Opportunities in the Wake of Tax Reform

- The elimination of tax-exempt advance refundings and the subsequent dependence on taxable bonds to advance refund outstanding debt has generally led to increased cost and decreased the viability of issuing traditional advance refunding bonds
- Despite increased borrowing costs, savings is available to GLWA by issuing taxable advance refunding bonds
- While taxable advance refundings allow GLWA to generate debt service savings by taking advantage of current low interest rates, GLWA would forgo the benefit of tax-exempt financing
- If rates stayed the same as they are now, tax-exempt current refundings at the call dates could generate up to \$34 million of additional savings for Water and \$55 million of additional savings for Sewer on an NPV basis
- This represents an implied interest rate penalty of up to 150 basis points for “locking in” savings today vs waiting and taking on interest rate risk
- Current refundings (within 90 days of call date on refunded debt) will be more efficient than advance refundings (no additional escrow cost) and ultimately could afford more savings than tax-exempt advance refundings that are no longer permissible due to tax reform
- Does involve more interest rate risk for GLWA between now and current refunding date
- GLWA would get the benefit of “moving down the curve” for financing rates, and could always look at taxable advance refunding options
- Effective on March 1, Department of Treasury suspended the sale of SLGS as part of “extraordinary measures” to prevent the United States from defaulting on its obligations, which requires open market escrows for any defeasance or taxable refunding currently.



## Water – Senior Series 2011A/B/C (Taxable Advance Refunding)

Water – Senior Lien   Series 2011A   Refunding Screen   (\$ in 000s)								
Maturity	Candidate			New Yield	PV Savings		Negative Arb. (\$ in 000s)	Savings Efficiency
	Par (\$ in 000s)	Rate	Call Date		\$ in 000s	%		
7/1/2027	3,930	5.25%	7/1/2021	3.54%	212	5.41%	82	72.2%
7/1/2031	14,540	5.00%	7/1/2021	3.70%	753	5.18%	347	68.5%
7/1/2036	27,855	5.00%	7/1/2021	4.03%	1,428	5.13%	842	62.9%
7/1/2037	20,845	5.75%	7/1/2021	4.17%	2,599	12.47%	692	79.0%
7/1/2041	222,435	5.25%	7/1/2021	4.18%	18,374	8.26%	7,375	71.4%
	<b>289,605</b>				<b>23,366</b>	<b>8.07%</b>	<b>9,338</b>	<b>71.4%</b>

Water – Senior Lien   Series 2011B   Refunding Screen   (\$ in 000s)								
Maturity	Candidate			New Yield	PV Savings		Negative Arb. (\$ in 000s)	Savings Efficiency
	Par (\$ in 000s)	Rate	Call Date		\$ in 000s	%		
7/1/2033	2,295	5.25%	7/1/2021	3.49%	213	9.28%	46	82.2%
	<b>2,295</b>				<b>213</b>	<b>9.28%</b>	<b>46</b>	<b>82.2%</b>

Water – Senior Lien   Series 2011C   Refunding Screen   (\$ in 000s)								
Maturity	Candidate			New Yield	PV Savings		Negative Arb. (\$ in 000s)	Savings Efficiency
	Par (\$ in 000s)	Rate	Call Date		\$ in 000s	%		
7/1/2023	2,000	5.25%	7/1/2021	3.08%	34	1.69%	23	59.0%
7/1/2024	10,490	5.25%	7/1/2021	3.20%	313	2.99%	148	67.9%
7/1/2025	9,645	5.25%	7/1/2021	3.29%	403	4.18%	153	72.4%
7/1/2027	5,000	5.25%	7/1/2021	3.54%	270	5.41%	104	72.2%
7/1/2027	4,585	4.50%	7/1/2021	3.54%	77	1.69%	94	45.1%
7/1/2041	42,405	5.00%	7/1/2021	4.18%	2,196	5.18%	1,401	61.1%
	<b>74,125</b>				<b>3,294</b>	<b>4.44%</b>	<b>1,924</b>	<b>63.1%</b>



## Base Case Taxable Advance Refunding – Water System

### Savings Summary

- Over \$42 million in gross cashflow savings can be achieved (>\$27 million present value)
- Potential to accelerate savings as desired

### Refunding Candidates

- Includes all bonds generating >3% savings<sup>1</sup>
- Refunding on a tax-exempt basis not an option under current tax law

### Assumptions

- Uninsured, matched lien refunding
- Interest rates as of February 28, 2019
- Contribution of accrued interest from DS fund
- Conservatively assumes no DSRF release
- SLGS escrow as of February 28, 2019
- Savings structured for level aggregate savings by lien
- Par coupon structure
- Assumes make whole call option

### Refunding Results

Delivery Date:	7/1/2019
Call Date:	MWC
Advance Refunded Par (\$):	366,025,000
NPV Savings (\$):	27,665,093
NPV Savings as % :	7.56%
Negative Arbitrage (\$) <sup>2</sup> :	(11,608,444)
Escrow Efficiency <sup>2</sup> :	70.4%
TIC:	4.15%
WAM:	17.6 yrs
Refunded Bonds WAM:	18.0 yrs

Date	Prior Net Cashflow (\$)	Refunding DS (\$)	Savings (\$)
7/1/2020	19,091,363	17,180,959	1,910,404
7/1/2021	19,091,363	17,183,819	1,907,544
7/1/2022	19,296,363	17,388,869	1,907,494
7/1/2023	21,294,063	19,386,489	1,907,574
7/1/2024	29,626,163	27,717,909	1,908,254
7/1/2025	28,229,938	26,319,309	1,910,629
7/1/2026	18,037,475	16,127,704	1,909,772
7/1/2027	31,553,175	29,642,406	1,910,769
7/1/2028	21,258,125	19,349,990	1,908,135
7/1/2029	21,042,925	19,132,270	1,910,655
7/1/2030	20,293,075	18,383,886	1,909,189
7/1/2031	20,250,375	18,339,986	1,910,389
7/1/2032	20,095,825	18,187,412	1,908,413
7/1/2033	20,039,625	18,127,246	1,912,379
7/1/2034	19,746,925	17,835,822	1,911,103
7/1/2035	19,696,425	17,785,796	1,910,630
7/1/2036	28,909,175	27,001,278	1,907,897
7/1/2037	43,511,675	41,603,922	1,907,754
7/1/2038	73,184,588	71,272,517	1,912,071
7/1/2039	73,186,800	71,277,373	1,909,427
7/1/2040	73,191,225	71,281,729	1,909,497
7/1/2041	71,899,250	69,989,633	1,909,618
	712,525,913	670,516,321	42,009,592



## Sewer – Senior Series 2012A (Taxable Advance Refunding)

Sewer – Senior Lien   Series 2012A   Refunding Screen   (\$ in 000s)								
Maturity	Candidate		Call Date	New Yield	PV Savings		Negative Arb. (\$ in 000s)	Savings Efficiency
	Par (\$ in 000s)	Rate			\$ in 000s	%		
7/1/2023	17,985	5.00%	7/1/2022	3.08%	(213)	-1.18%	326	-
7/1/2026	9,170	5.25%	7/1/2022	3.41%	210	2.29%	255	45.1%
7/1/2027	2,310	5.25%	7/1/2022	3.54%	63	2.74%	73	46.4%
7/1/2032	65,730	5.00%	7/1/2022	3.78%	2,253	3.43%	2,517	47.2%
7/1/2039	292,865	5.25%	7/1/2022	4.17%	14,655	5.00%	14,554	50.2%
7/1/2039	49,735	5.00%	7/1/2022	4.17%	1,228	2.47%	2,464	33.3%
	<b>358,595</b>				<b>16,907</b>	<b>4.71%</b>	<b>17,071</b>	<b>49.8%</b>



## Sewer – Second Series 2005A / 2006B (Taxable Advance Refunding)

Sewer – Second Lien   Series 2005A   Refunding Screen   (\$ in 000s)								
Maturity	Candidate			New Yield	PV Savings		Negative Arb. (\$ in 000s)	Savings Efficiency
	Par (\$ in 000s)	Rate	Call Date		\$ in 000s	%		
7/1/2034	15,490	5.00%	7/1/2021	3.99%	835	5.39%	456	64.7%
7/1/2035	16,295	5.00%	7/1/2021	4.17%	602	3.69%	536	52.9%
	<b>31,785</b>				<b>1,437</b>	<b>4.52%</b>	<b>992</b>	<b>59.2%</b>

Sewer – Second Lien   Series 2006B   Refunding Screen   (\$ in 000s)								
Maturity	Candidate			New Yield	PV Savings		Negative Arb. (\$ in 000s)	Savings Efficiency
	Par (\$ in 000s)	Rate	Call Date		\$ in 000s	%		
7/1/2034	7,890	5.00%	7/1/2021	3.99%	425	5.39%	232	64.7%
7/1/2035	22,980	5.00%	7/1/2021	4.17%	849	3.69%	756	52.9%
7/1/2036	24,130	5.00%	7/1/2021	4.27%	684	2.83%	840	44.9%
	<b>30,870</b>				<b>1,274</b>	<b>4.13%</b>	<b>988</b>	<b>56.3%</b>





## Base Case Taxable Refunding – Sewer System

### Savings Summary

- Nearly \$30 million in gross cashflow savings can be achieved (>\$20 million present value)
- Potential to accelerate savings as desired

### Refunding Candidates

- Includes all bonds generating >3% savings<sup>1</sup>
- Refunding on a tax-exempt basis not an option under current tax law

### Assumptions

- Uninsured, matched lien refunding
- Interest rates as of February 28, 2019
- Contribution of accrued interest from DS fund
- Conservatively assumes no DSRF release
- SLGS escrow as of February 28, 2019
- Savings structured for level aggregate savings by lien
- Par coupon structure
- Assumes make whole call option

### Refunding Results

Delivery Date:	7/1/2019
Call Date:	MWC
Advance Refunded Par (\$):	421,250,000
NPV Savings (\$):	20,652,291
NPV Savings as % :	4.90%
Negative Arbitrage (\$) <sup>1</sup> :	(19,025,527)
Escrow Efficiency <sup>1</sup> :	52.0%
TIC:	4.14%
WAM:	16.8 yrs
Refunded Bonds WAM:	17.4 yrs

Date	Prior Net Cashflow (\$)	Refunding DS (\$)	Savings (\$)
7/1/2020	21,794,663	20,258,480	1,536,183
7/1/2021	21,794,663	20,255,130	1,539,533
7/1/2022	21,794,663	20,253,750	1,540,913
7/1/2023	21,794,663	20,260,733	1,533,930
7/1/2024	21,794,663	20,257,773	1,536,890
7/1/2025	21,794,663	20,255,798	1,538,865
7/1/2026	21,794,663	20,260,107	1,534,556
7/1/2027	21,794,663	20,259,631	1,535,032
7/1/2028	27,809,663	26,273,989	1,535,674
7/1/2029	23,013,913	21,478,714	1,535,199
7/1/2030	27,817,913	26,281,379	1,536,534
7/1/2031	34,882,913	33,345,509	1,537,404
7/1/2032	58,418,663	56,883,544	1,535,119
7/1/2033	18,508,163	16,971,830	1,536,333
7/1/2034	43,358,163	41,821,839	1,536,324
7/1/2035	57,976,988	56,438,157	1,538,831
7/1/2036	16,622,638	15,322,507	1,300,131
7/1/2037	106,489,138	105,189,696	1,299,442
7/1/2038	106,458,788	105,159,094	1,299,694
7/1/2039	106,418,275	105,117,947	1,300,328
	802,132,513	772,345,604	29,786,909

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



# **Rating Agency Water & Sewer Sector Views and Scorecards**



## Moody's Water & Sewer Sector Outlook

- Anticipate **overall stability** in 2019 supported by strong rate management and liquidity, balanced by significant capital needs driven by deferred investment
- Strengthening debt service coverage levels, with growing net revenues outpacing debt service costs; although a credit positive, this is unlikely unsustainable in the long run as utilities address deferred investments
- Liquidity, pivotal to the sector's stability, will continue to strengthen as utilities accumulate reserves for future rate stabilization, unexpected system shocks and capital needs
- While strong debt service coverage and liquidity better equip systems to meet immediate operating challenges, Moody's expects large capital needs to accumulate as the rate of sector infrastructure investment remains low
  - Incremental investment continues to lag system depreciation, evidenced by a declining trend in the median useful life of all systems
  - Sufficient funding of system investment is becoming an increasingly important factor within the sector
- Accelerating large-scale capital investment will require expansion of low-interest financing options, as increasing rates at a pace that fully addresses capital funding needs could be politically untenable

Source: Moody's Report, "2019 outlook stable as debt service coverage strengthens but capital needs rise" December 5, 2018.



## Fitch's Water & Sewer Sector Outlook

- **Stable outlook**, with the key factors in the sector's performance stability being essentiality of the services, lack of competition, and generally autonomous rate-setting authority
- Fitch expects revenues will climb between 2% and 4% in 2019 based on anticipated adjustments by rated credits, flat consumption patterns and moderate economic expansion nationally, helping to offset rising operating and debt costs and preserve good coverage and robust reserves
- Despite slight increase in capital spending anticipated in 2019, sustained capital investment increases will be necessary to preserve service levels and meet future demands over the intermediate term
- Affordability cushion lower than in prior years but remains overall
  - With utilities anticipating ongoing rate adjustments that continue to outpace CPI, affordability is becoming an increasing focus and could pressure finance and debt ratios over time
- With user charges continuing to outpace inflationary growth, the issue of affordability is becoming an increasing focus among sector stakeholders and could pressure finance and debt ratios beyond the outlook period
- Low cost of capital is a credit positive and should remain favorable over the near-term
- Regulatory environment is expected to remain stable, although delayed revisions to the Lead & Copper Rule expected to be released in Q12019 could have significant implications for water utilities
- Increased volatility in weather extremes has potential to escalate sector capital needs

Source: Fitch "2019 Outlook: Water and Sewer Sector" December 6, 2018. "Sector Briefing: Water and Sewer" October 2018.



## Standard & Poor's Water & Sewer Sector Outlook

- Status of the sector is currently strong in spite of political and economic turmoil
  - Credit increases still outpace credit downgrades in 2018
- Bill affordability and debt service coverage are two factors most likely to erode in 2019 and are most likely to impact ratings
  - Increasing fixed costs and increasing personnel costs for current and retired employees are leading causes
- Management and governance is an area that can stabilize or relieve utilities under ratings stress
- **Willingness to raise rates** - which remain the sole source of operating revenues for nearly every utility - is cited as an ever-important issue

S&P Credit Risks and Opportunities	
Risks	Opportunities
<ul style="list-style-type: none"><li>• A federal infrastructure package, if any, that keeps the focus on surface and air transportation</li><li>• Succession planning in a tight labor market, increasing personnel costs</li><li>• Bearish and volatile equity markets that aren't helping close pension funding gaps</li><li>• Rising interest rates possibly curtailing non-mandatory capital expenditures (capex), increasing the risk of deferred maintenance</li></ul>	<ul style="list-style-type: none"><li>• Highly rated and well-run state revolving funds (SRFs) remaining a popular alternative to municipal bonds for many borrowers</li><li>• Very low likelihood of new or stronger environmental regulations</li><li>• Some recent federal legislation that was or is likely to be helpful</li></ul>

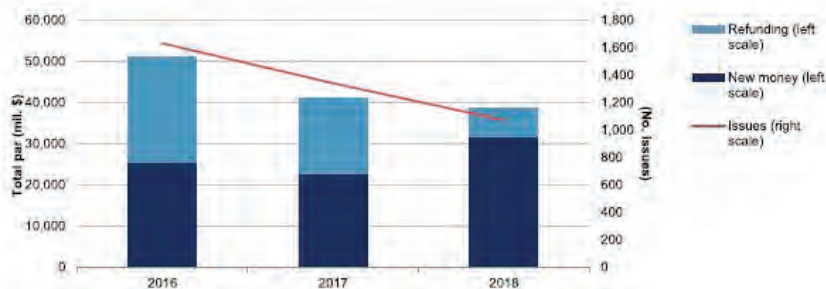


## Standard & Poor's Water & Sewer Sector Outlook (cont'd)

- Slowing economy unlikely to hurt utility credit quality under anything but extreme circumstances
- If utilities receive more flexibility in implementing corrective action, debt use and rate increases would be more spread out
- Even with tight state budgets, state bond banks and federal SRF's remain highly rated and well capitalized

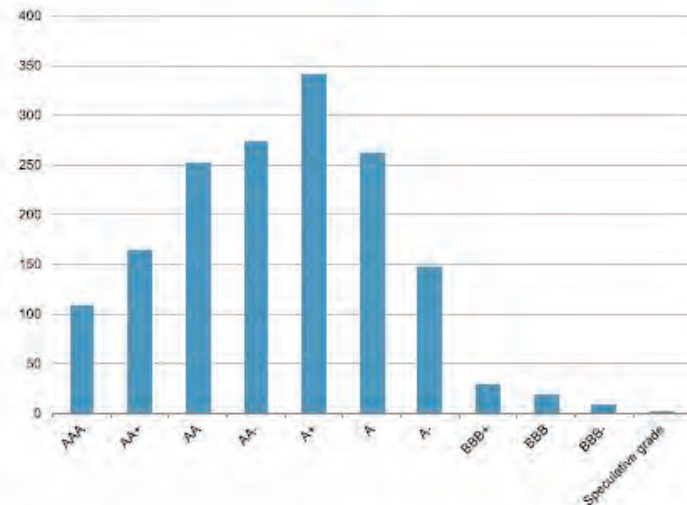
S&P Rating Trends						
	2013	2014	2015	2016	2017	2018
Ratings outstanding	1,509	1,568	1,638	1,650	1,578	1,605
% ratings that changed during the year	3.90%	4.40%	8.61%	13.94%	7.79%	4.78%
Upgrades to downgrades	2.9x	2.0x	2.1x	1.9x	1.8x	1.8x
Positive outlooks	26	23	31	14	4	12
Non-stable outlooks	49	55	70	42	10	27

Revenue Bond Trends



Source: Bond Buyer municipal market data and S&P Global Ratings.  
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Ratings Distribution



Source: S&P Global Ratings. Data as of Dec. 31, 2018.  
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Source: S&P Report, "U.S. Municipal Water and Sewer Utilities 2019 Sector Outlook: Stable, Although Potential Disruptions Are Not Making Planning Easy" January 15, 2019.



## Current Water and Sewer Ratings

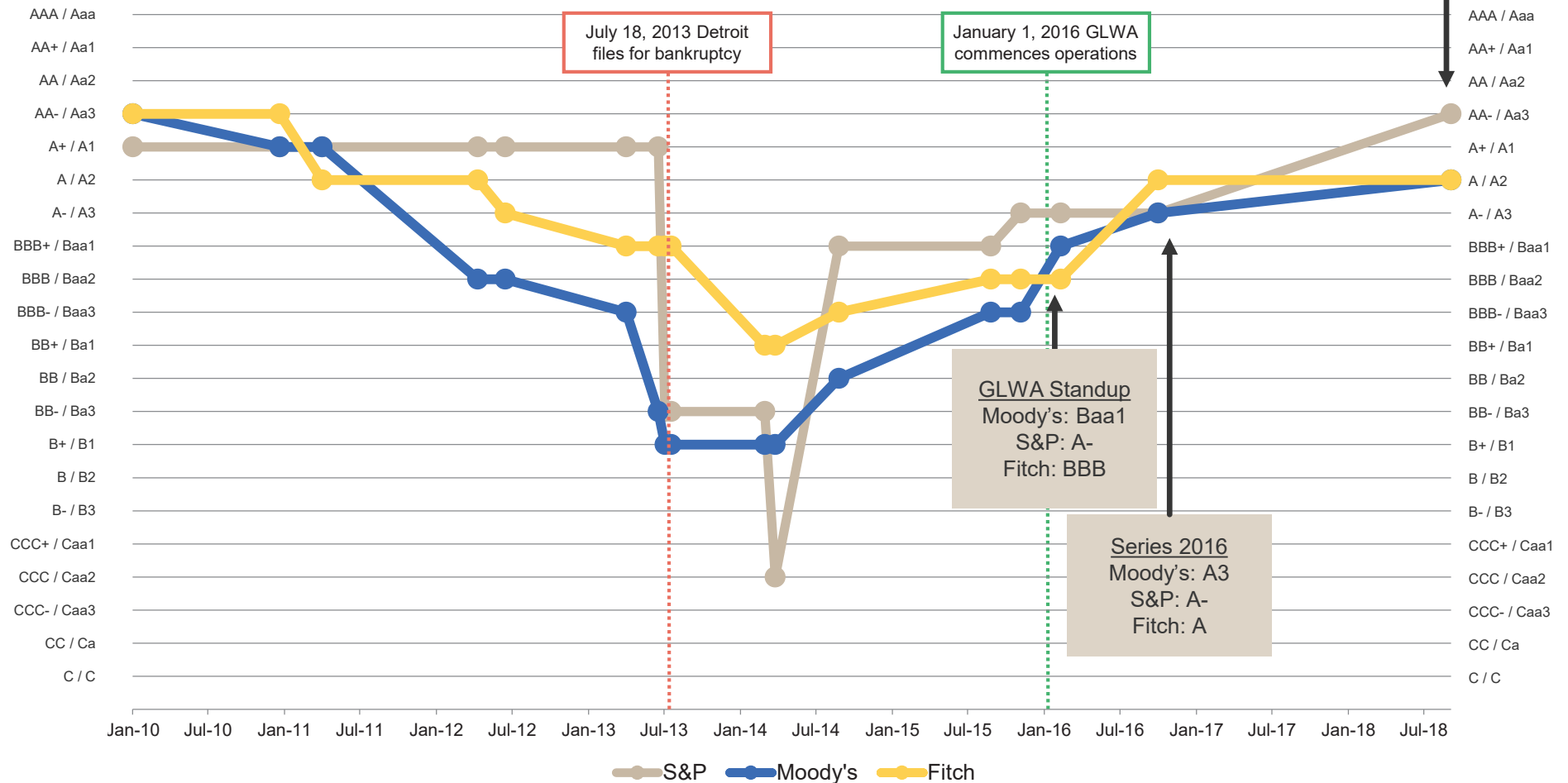
Water			
	Moody's	S&P	Fitch
Senior Lien	A2	AA-	A
Second Lien	A3	A+	A-
Outlook	Stable	Stable	Positive

Sewer			
	Moody's	S&P	Fitch
Senior Lien	A2	A+	A
Second Lien	A3	A	A-
Outlook	Stable	Positive	Positive



# History of Senior Lien Water and Sewer Ratings

## GLWA Senior Lien Ratings History (DWSD Prior to January 1, 2016)







## Current Rating Agency Views

Summary of Rating Agency Views		
Moody's Investors Service Andrew Van Dyke Dobos / Matt Butler	Standard & Poor's Scott Garrigan / Ted Chapman	Fitch Ratings Doug Scott / Eva Rippeteau
A2 (Sr.) / A3 (2nd) Stable Outlook	Water: AA- (Sr.) / A+ (2nd); Sewer: A+ (Sr.) / A- (2nd) Positive Outlook	A (Sr.) / A- (2nd) Positive Outlook
Strengths		
<ul style="list-style-type: none"> <li>— Very wide service area that includes a population of 3.8 million</li> <li>— Commitment to revenue enhancements will likely support sound debt service coverage and healthy liquidity</li> <li>— GLWA management team has implemented operating adjustments to cut costs and improve financial metrics, and is committed to continued efforts</li> <li>— Simplified monthly fixed rate structure mitigates declining usage while providing stable cash flow throughout the year</li> </ul>	<ul style="list-style-type: none"> <li>— Diverse revenue stream from a large number of wholesale customers</li> <li>— Revenues from both wholesale customers and the DWSD retail system that are mostly fixed</li> <li>— Oversight through an agency relationship and cooperation with DWSD</li> <li>— Strong overall management and governance functions, including comprehensive internal policies and controls</li> <li>— Financial performance continues to exceed projections</li> <li>— GLWA is not under any regulatory-driven capital costs from consent orders or consent decrees</li> <li>— Limited future exposure to pension cost escalation from legacy Detroit obligations</li> </ul>	<ul style="list-style-type: none"> <li>— Essential service provider in expansive service territory</li> <li>— Strong rate adjustment history in support of financial and capital needs</li> <li>— Over 75% of operating revenues coming from suburban customers with higher wealth metrics</li> <li>— All system funds and accounts are separate and distinct Detroit funds including the city's general fund</li> <li>— Changes in rate setting practices and reserve accumulation should help to insulate GLWA from high city retail delinquencies</li> </ul>
Challenges		
<ul style="list-style-type: none"> <li>— Declining water consumption trend</li> <li>— High leverage will moderate slowly given outstanding capital improvement needs and plans to issue debt</li> <li>— High combined operating needs and fixed costs leave little margin to miss revenue targets</li> <li>— Economic and demographic weaknesses in portions of the service area</li> </ul>	<ul style="list-style-type: none"> <li>— Ongoing negative revenue variances from the DWSD local sewer system</li> <li>— Significant economic stress and a "very weak economy" in Detroit, which could continue to place downward pressure on utility collection rates</li> <li>— Large amount of accounts receivable and high allowances for doubtful accounts</li> <li>— Significantly less affordable rates for customers living in Detroit compared to suburban residents</li> <li>— System leverage that is high and unlikely to abate significantly</li> </ul>	<ul style="list-style-type: none"> <li>— Debt load is expected to remain elevated for the foreseeable future</li> <li>— Continued annual rate adjustments are needed to meet rising debt service obligations and sustain financial performance</li> </ul>



## Moody's Water & Sewer Utility Scorecard (Water System)

Scoring on Moody's Municipal Utility Methodology										
Factor	Description	Weight	Aaa 0.50-1.49	Aa 1.50-2.49	A 2.50-3.49	Baa 3.50-4.49	Ba 4.50-5.49	GLWA Input	Category Score	GLWA Score
System Characteristics (30%)	Asset Condition - Remaining Useful Life (Net Fixed Assets / Annual Depreciation)	10%	> 75 Years	75 years ≥ n > 25 years	25 years ≥ n > 12 years	12 years ≥ n > 9 years	9 years ≥ n > 6 years	14 years	3	0.300
	System Size: (O&M in 000s)	7.5%	> \$65 million	\$65 M ≥ n > \$30 M	\$30 M ≥ n > \$10 M	\$10 M ≥ n > \$3 M	\$3 M ≥ n > \$1 M	\$167.0 million	1	0.075
	Service Area Wealth: MFI	12.5%	> 150% of US median	150% to 90% of US Median	90% to 75% of US Median	75% to 50% of US Median	50% to 40% of US Median	101.2%	2	0.250
Financial Strength and Liquidity (40%)	Annual Debt Service Coverage	15%	> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	1.5x	3	0.450
	Days Cash on Hand	15%	> 250 days	250 days ≥ n > 150 days	150 days ≥ n > 35 days	35 days ≥ n > 15 days	15 days ≥ n > 7 days	693 days	1	0.150
	Debt to Operating Revenues	10%	Less than 2.00x	2.00x < n ≤ 4.00x	4.00X < n ≤ 7.00X	7.00X < n ≤ 8.00X	8.00X < n ≤ 9.00X	5.4x	3	0.300
Management of System (20%)	Rate Management	10%	Excellent rate setting; no material political, practical, or regulatory limit to rate increases	Strong rate setting; little material political, practical, or regulatory limit to rate increases	Average rate setting; some material political, practical, or regulatory limit to rate increases	Adequate rate setting; political, practical, or regulatory impediments place material limits to rate increases	Below average rate setting; political, practical, or regulatory impediments place material limits to rate increases	Average rate setting	3	0.300
	Regulatory Compliance and Capital Planning	10%	Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single year Capital Improvement Plan	Not fully addressing compliance issues; Limited or weak capital planning	Addressing compliance Issues	3	0.300
Legal Provisions (10%)	Rate Covenant	5%	>1.30x	1.30x ≥ n > 1.20x	1.20x ≥ n > 1.10x	1.10x ≥ n > 1.00x	≤ 1.00x	1.20x	3	0.150
	Debt Service Reserve Requirement	5%	DSRF funded at MADS	DSRF funded at lesser of standard 3 prong test	DSRF funded at less than 3 prong test	No explicit DSRF	No explicit DSRF	Lesser of 3 test	2	0.100
(Aa3 = 2.17 to 2.50; A1 = 2.50 to 2.83)										2.375

Source: Moody's Municipal Utility Debt Methodology, October 2017. Data from Series 2018 Moody's Report and Moody's Financial Ratio Analysis database as of February 27, 2019, updated where available with GLWA FY18 results.



## Moody's Water & Sewer Utility Scorecard (Sewer System)

Scoring on Moody's Municipal Utility Methodology										
Factor	Description	Weight	Aaa 0.50-1.49	Aa 1.50-2.49	A 2.50-3.49	Baa 3.50-4.49	Ba 4.50-5.49	GLWA Input	Category Score	GLWA Score
System Characteristics (30%)	Asset Condition - Remaining Useful Life (Net Fixed Assets / Annual Depreciation)	10%	> 75 Years	75 years ≥ n > 25 years	25 years ≥ n > 12 years	12 years ≥ n > 9 years	9 years ≥ n > 6 years	15 years	3	0.300
	System Size: (O&M in 000s)	7.5%	> \$65 million	\$65 M ≥ n > \$30 M	\$30 M ≥ n > \$10 M	\$10 M ≥ n > \$3 M	\$3 M ≥ n > \$1 M	\$265.3 million	1	0.075
	Service Area Wealth: MFI	12.5%	> 150% of US median	150% to 90% of US Median	90% to 75% of US Median	75% to 50% of US Median	50% to 40% of US Median	101.2%	2	0.250
Financial Strength and Liquidity (40%)	Annual Debt Service Coverage	15%	> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	1.3x	3	0.450
	Days Cash on Hand	15%	> 250 days	250 days ≥ n > 150 days	150 days ≥ n > 35 days	35 days ≥ n > 15 days	15 days ≥ n > 7 days	287 days	1	0.150
	Debt to Operating Revenues	10%	Less than 2.00x	2.00x < n ≤ 4.00x	4.00X < n ≤ 7.00X	7.00X < n ≤ 8.00X	8.00X < n ≤ 9.00X	5.4x	3	0.300
Management of System (20%)	Rate Management	10%	Excellent rate setting; no material political, practical, or regulatory limit to rate increases	Strong rate setting; little material political, practical, or regulatory limit to rate increases	Average rate setting; some material political, practical, or regulatory limit to rate increases	Adequate rate setting; political, practical, or regulatory impediments place material limits to rate increases	Below average rate setting; political, practical, or regulatory impediments place material limits to rate increases	Average rate setting	3	0.300
	Regulatory Compliance and Capital Planning	10%	Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single year Capital Improvement Plan	Not fully addressing compliance issues; Limited or weak capital planning	Addressing compliance Issues	3	0.300
Legal Provisions (10%)	Rate Covenant	5%	>1.30x	1.30x ≥ n > 1.20x	1.20x ≥ n > 1.10x	1.10x ≥ n > 1.00x	≤ 1.00x	1.20x	3	0.150
	Debt Service Reserve Requirement	5%	DSRF funded at MADS	DSRF funded at lesser of standard 3 prong test	DSRF funded at less than 3 prong test	No explicit DSRF	No explicit DSRF	Lesser of 3 test	2	0.100
(Aa3 = 2.17 to 2.50; A1 = 2.50 to 2.83)										2.375

Source: Moody's Municipal Utility Debt Methodology, October 2017. Data from Series 2018 Moody's Report and Moody's Financial Ratio Analysis database as of February 27, 2019, updated where available with GLWA FY18 results.



## S&P Retail Water & Sewer Utility Ratings Framework

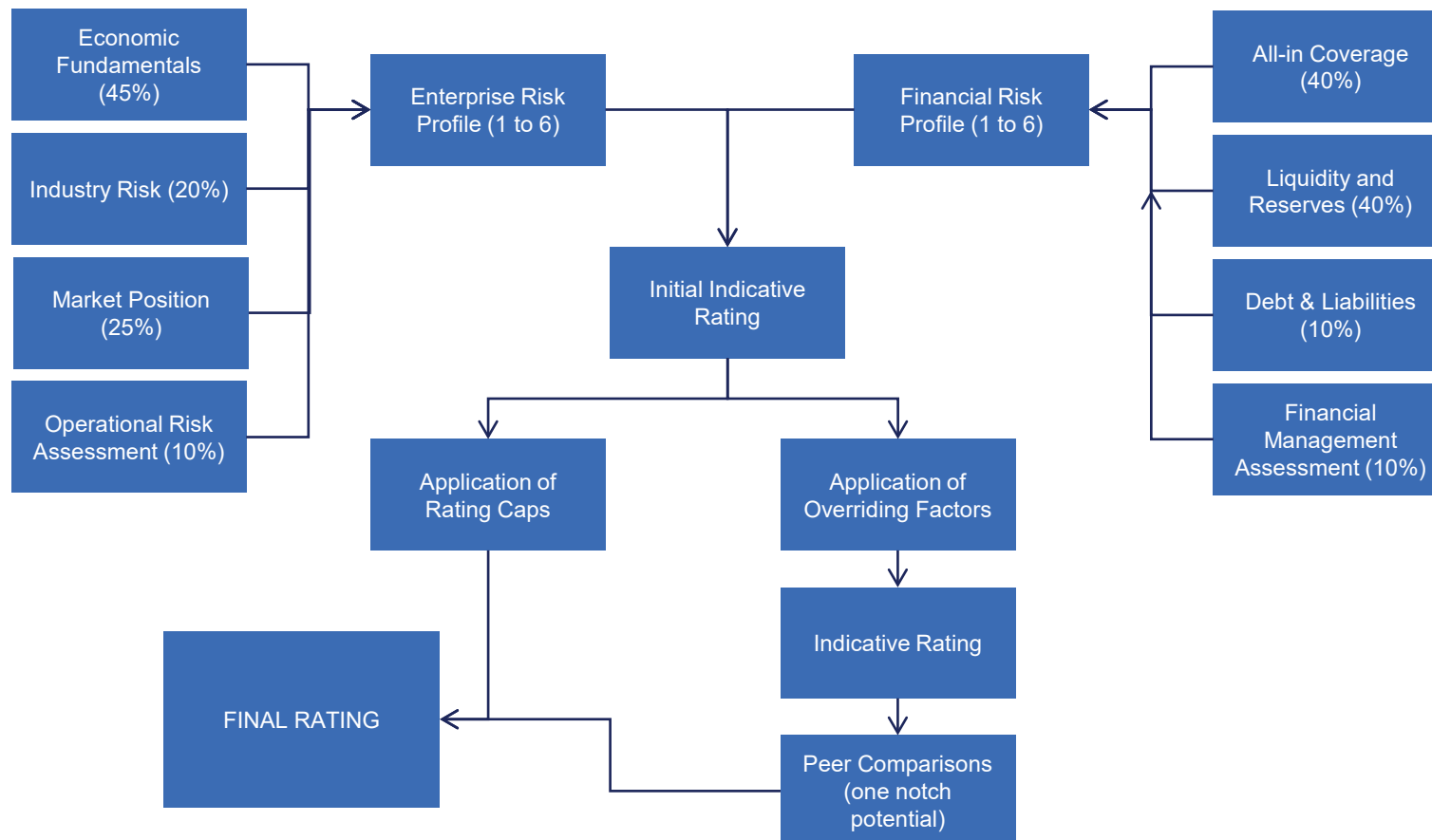
- S&P uses a hybrid approach to the rating process for GLWA, whereby retail metrics are considered but within the context of the Wholesale Utility Criteria
- Rating caps and overriding factors are applied after initial score calculated and can result in a substantially different final rating from initial indicative rating
- The weighted average of the two individual factors are rounded to the nearest whole number and the interaction between the Enterprise Risk Profile and the Financial Risk Profile determines the initial indicative rating for the Utility issuer (see table below)

		Financial Risk Profile					
		Extremely Strong 1	Very Strong 2	Strong 3	Adequate 4	Vulnerable 5	Highly Vulnerable 6
Enterprise Risk Profile	Extremely Strong 1	AAA	AA+	AA-	A	BBB+ / BBB	BB+ / BB
	Very Strong 2	AA+	AA / AA-	A+	A-	BBB / BBB-	BB / BB-
	Strong 3	AA-	A+	A	BBB+ / BBB	BBB- / BB+	BB-
	Adequate 4	A	A / A-	A- / BBB+	BBB / BBB-	BB	B+
	Vulnerable 5	BBB+	BBB / BBB-	BBB- / BB+	BB	BB-	B
	Highly Vulnerable 6	BBB-	BB	BB-	B+	B	B-

Source: S&P U.S. Public Finance Waterworks; Sanitary Sewer, And Drainage Utility Systems: Methodology & Assumptions" January 19, 2016.



## S&P Retail Water & Sewer Utility Scorecard Calculation



Source: S&P U.S. Public Finance Waterworks; Sanitary Sewer, And Drainage Utility Systems: Methodology & Assumptions" January 19, 2016.



## S&P Retail Water & Sewer Utility Scorecard

Enterprise Risk Profile									
Description	Weight	1	2	3	4	5	6	Pos / Neg	GLWA
Enterprise Risk Profile		Extremely Strong	Very Strong	Strong	Adequate	Vulnerable	Highly Vulnerable	Notching Factors	Score
Economic Fundamentals	45%	Stronger than US rate of GDP growth and/or >100%/125% of US median household effective buying income	Same/weaker rate than US rate of GDP growth and/or >100%/125% of US median household effective buying income	Same as US rate of GDP growth and 75-100% of US median household effective buying income	Same or weaker rate of US GDP growth and 50-75% of US median household effective buying income	Weaker rate of US GDP growth and 35-75% of US median household effective buying income	Weaker rate of US GDP growth and <35% of US median household effective buying income	Economies of scale	(3 – 1) = 2
Industry Risk	20%	Very low competitive risk of "1" applied to most utilities, given monopolies with autonomy over rates	-	-	-	-	-		1
Market Position	25%	Utility bill less than 2.25% of Median Household Effective Buying Income and less than 10% of service population living in poverty	Utility bill less than 2.25-4.50% of Median Household Effective Buying Income and less than 20% of service population living in poverty	Utility bill 4.50%+ of Median Household Effective Buying Income and less than 30% of service population living in poverty	Utility bill 4.50%+ of Median Household Effective Buying Income and less than 30% of service population living in poverty	Utility bill more than 2.00% of Median Household Effective Buying Income and more than 20-30%+ of service population living in poverty	Utility bill more than 2.00% of Median Household Effective Buying Income and more than 30% of service population living in poverty		Retail Metric
Operational Management Assessment	10%	Strong management, including secure water supply and system capacity. Mgmt communicates long term needs and strategic goals. Multi year, preapproved rate actions.	Strong management, with water supply and system capacity sufficient for existing customer base. Public out reach and transparency on planning. Rate actions done year to year.	Good management, with water supply and system capacity sufficient for existing customer base. Public out reach and transparency on planning. Rate actions done year to year.	Adequate management, with water supply and system capacity needs in 10-20 years. Management depth and breadth limited. Rate actions driven by legal covenants.	Management capabilities limited, with water supply and system capacity not sufficient current. Management depth limited, with reliance on outside parties. Rate actions only driven by weak condition.	-		2

Note: S&P uses a hybrid approach to the rating process for GLWA, whereby retail metrics are considered but within the context of the Wholesale Utility Criteria

Source: S&P U.S. Public Finance Waterworks; Sanitary Sewer, And Drainage Utility Systems: Methodology & Assumptions" January 19, 2016. Certain data from Series 2018 Rating Report. Indicative scores are PFM's interpretation of methodology; actual implementation may differ.



## S&P Retail Water & Sewer Utility Scorecard (Cont'd)

Financial Risk Profile								
Description	Weight	1	2	3	4	5	6	GLWA
Financial Risk Profile		Extremely Strong	Very Strong	Strong	Adequate	Vulnerable	Highly Vulnerable	Score
All-in Annual Debt Service Coverage	40%	Greater than 1.60X	1.40X to < 1.60X (Water)	1.20X to < 1.40X (Sewer)	1.10X to < 1.20X	1.00X to < 1.10X	<1.00X	2 - 3
Liquidity and Reserves	40%	Greater than 150 days and more than \$75 million	90- 150 days and between \$20-\$75 million	60-90 days and between \$5-\$20 million	30-60 days and between \$1-\$5 million	15-30 days and \$1 million	<15 days and \$500,000	1
Debt and Liabilities	10%	Up to 20%	20% to 35%	35% to 50%	50% to 65%	65% to 80%	>80%	6
Financial Management Assessment	10%	Strong revenue and expense tracking and budget monitoring. Good long-term financial planning and assessment. Formal financial, investment and debt policies.	Revenue and expense tracking and budget monitoring but less robust. Good financial planning but limited in term. Formal financial, investment and debt policies, but may be lacking in certain areas.	Revenue and expense tracking done but with optimistic assumptions. Financial planning but limited updates. Some formal finance policies, but may be lacking in certain areas.	Revenue and expense projections exist, but with optimistic assumptions and limited testing. Financial planning done, but may not be realistic. Finance and investments driven by state requirements.	Revenue and expense projections ignore shortfalls, with no formal review. No long term financial planning done. Absence of formal or informal policies with use of riskier structures.	-	1

Note: S&P uses a hybrid approach to the rating process for GLWA, whereby retail metrics are considered but within the context of the Wholesale Utility Criteria



# Peer Comparison and Comparable Utility Metrics





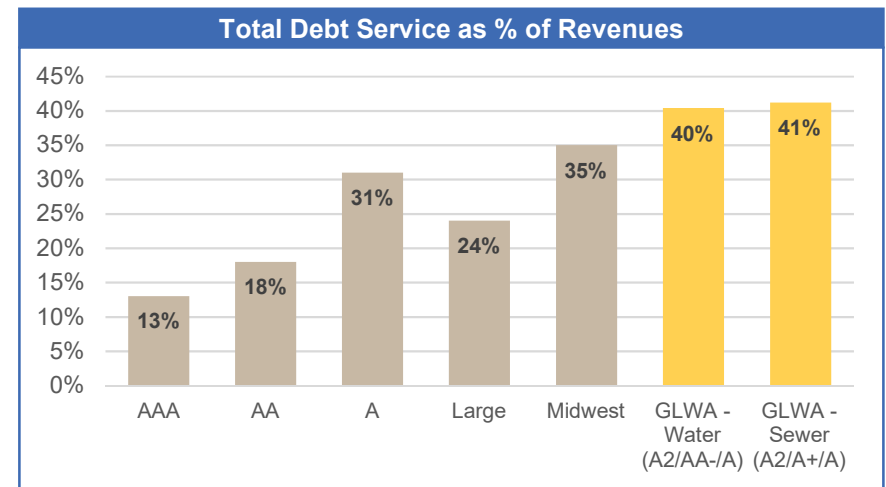
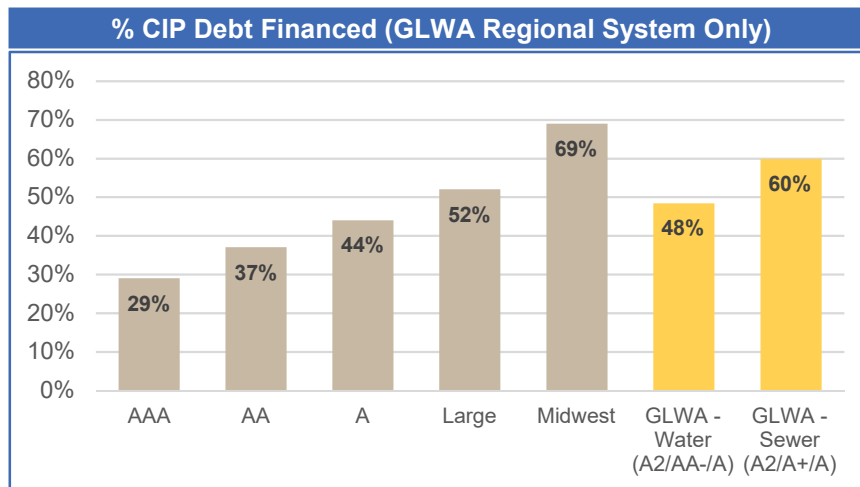
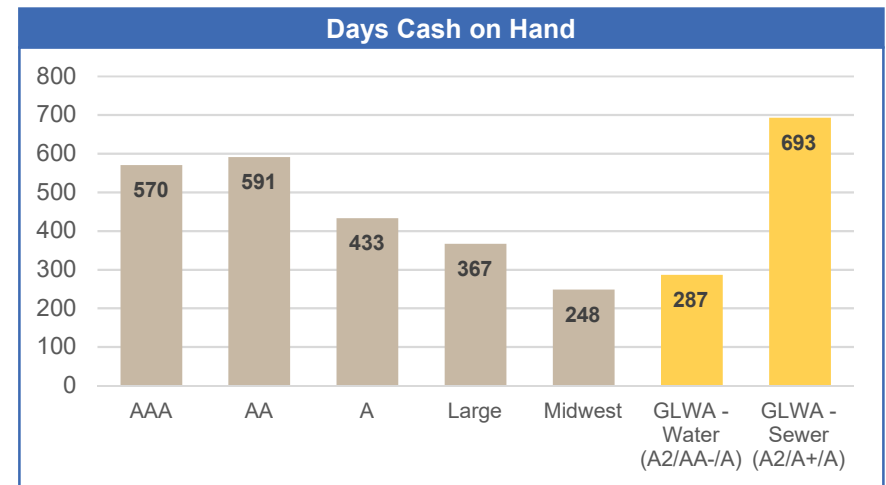
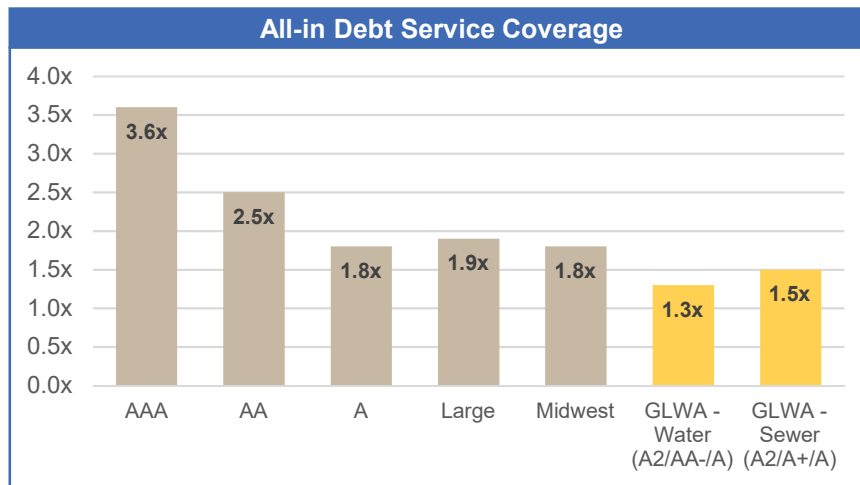
## Key Financial Metrics for GLWA

The maintenance of key financial metrics is critically important to GLWA's ongoing positioning for rating upgrades and its objective of lowering GLWA's fixed costs for both the Water and Sewer enterprises.

- GLWA highest senior lien water and sewer ratings of A2/AA-/A remain among the lower half of utility ratings nationally
- GLWA continues to push forward with efforts to improve all bond ratings up to AA category ratings for both the water and sewer sectors, recognizing that debt service (for planned new money and refinancing bonds) accounts for close to 50% of the annual budget
- With continued improvement in senior lien bond ratings for water and sewer, significant reductions in fixed cost could be achieved relative to the maintenance of current ratings
- GLWA has identified a group of peer utilities against which it is benchmarking performance and establishing targets for key metric of debt service coverage and liquidity to improve bond ratings
- GLWA is also using rating agency medians on a broader range of variables to assess the progress for the upgrade of its senior lien bond ratings
- Ongoing benchmarking and continued progress in improving key financial metrics of GLWA are critical to the achievement of lower debt service cost and a path to higher credit quality



## Financial Metrics Compared to 2019 Fitch Medians

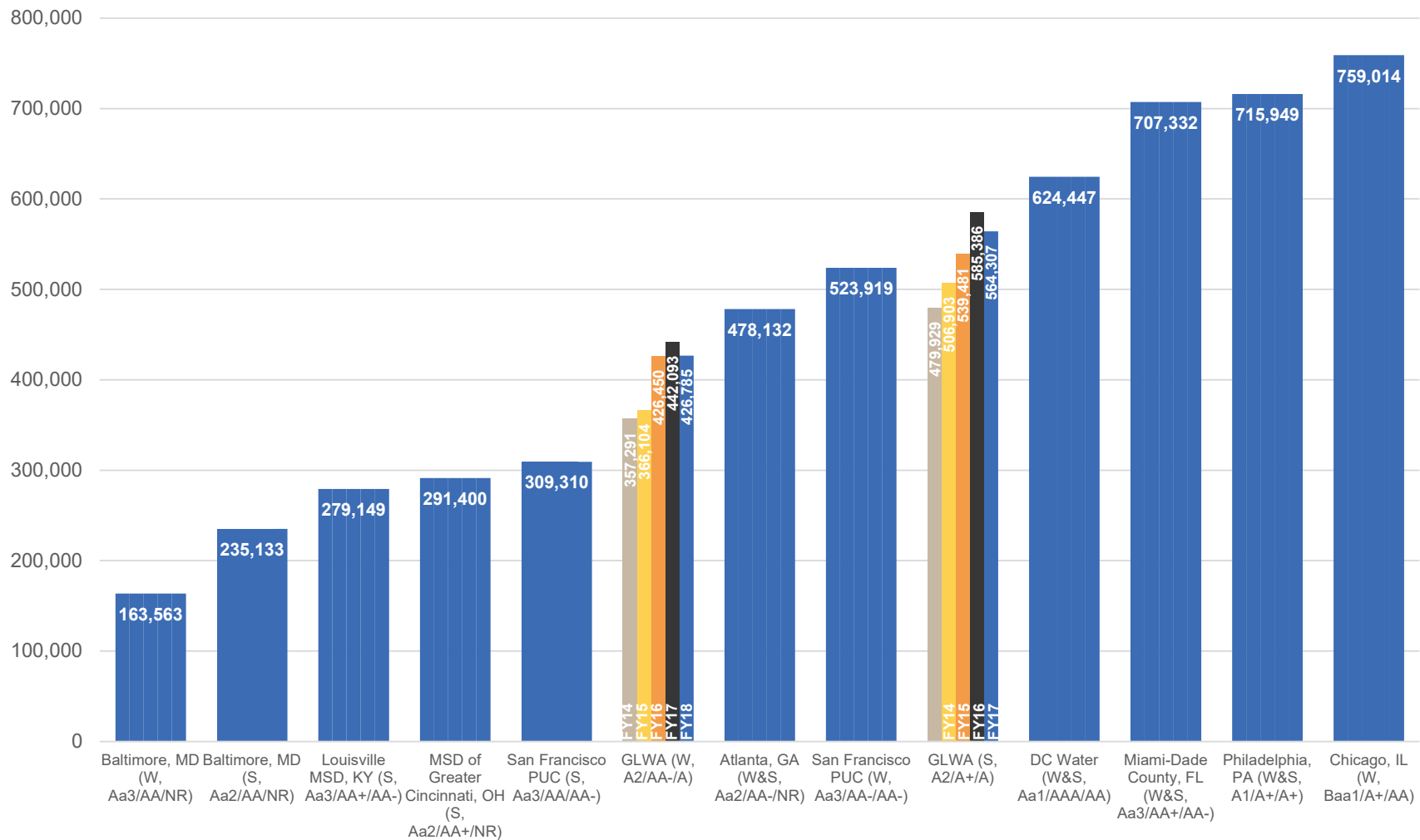


**NOTE: GLWA Calculation based on a Capital Spending rate of 75%.**

*Note: Fitch median data as provided by Fitch in "2019 Water and Sewer Medians" report, dated November 12, 2018. GLWA figures for All-in Debt Service Coverage, Days Cash on Hand, and Total Debt Services as % of Revenues data as of FY2018 and calculated based on FY2018 financial statements. % CIP Debt Financed data as proposed in FY20 and FY21 Biennial Budget as of February 15, 2019 and is for regional system only, excluding any capital expenditures and bond financings for DWSD.*

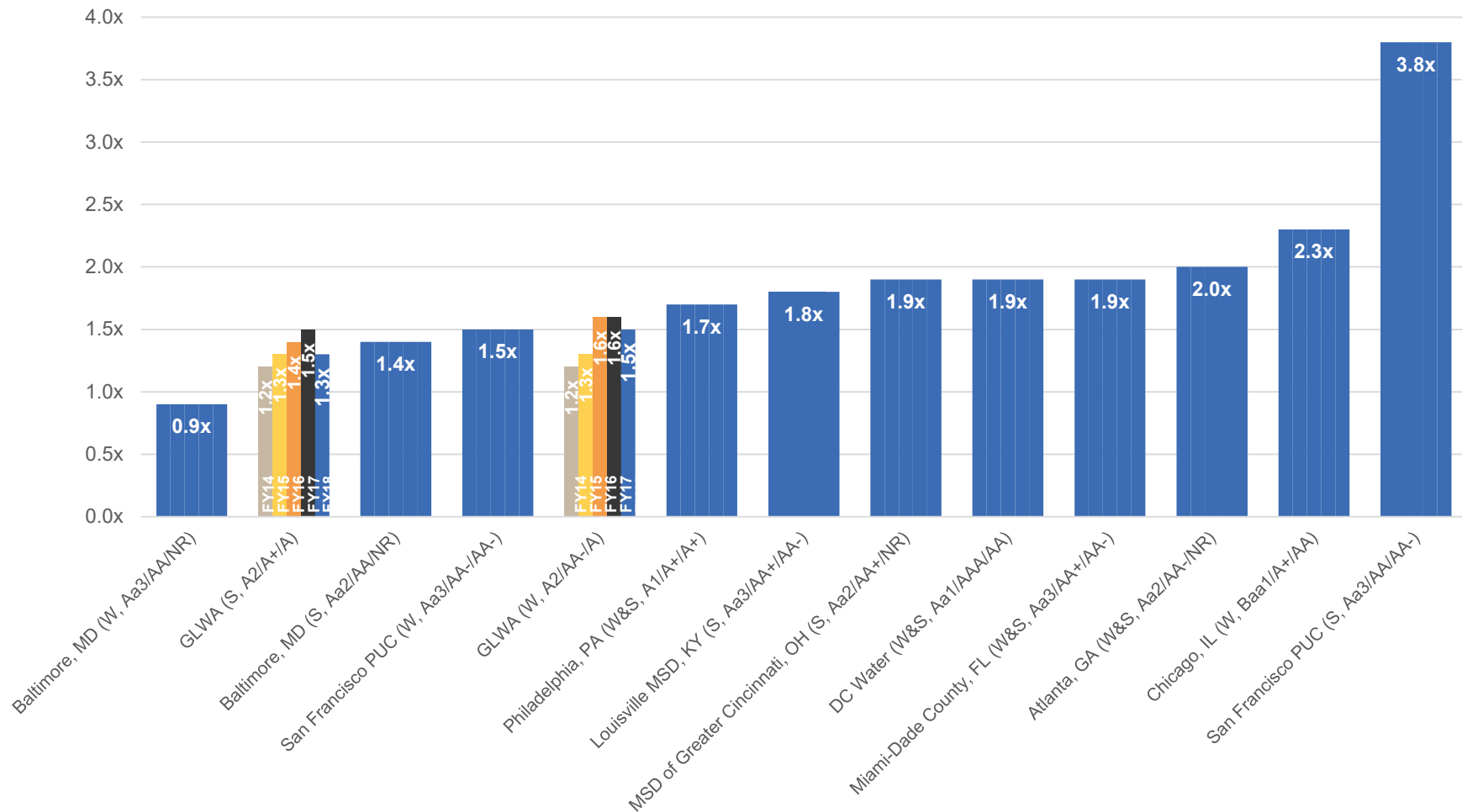


## Peer Comparison of Total Operating Revenues





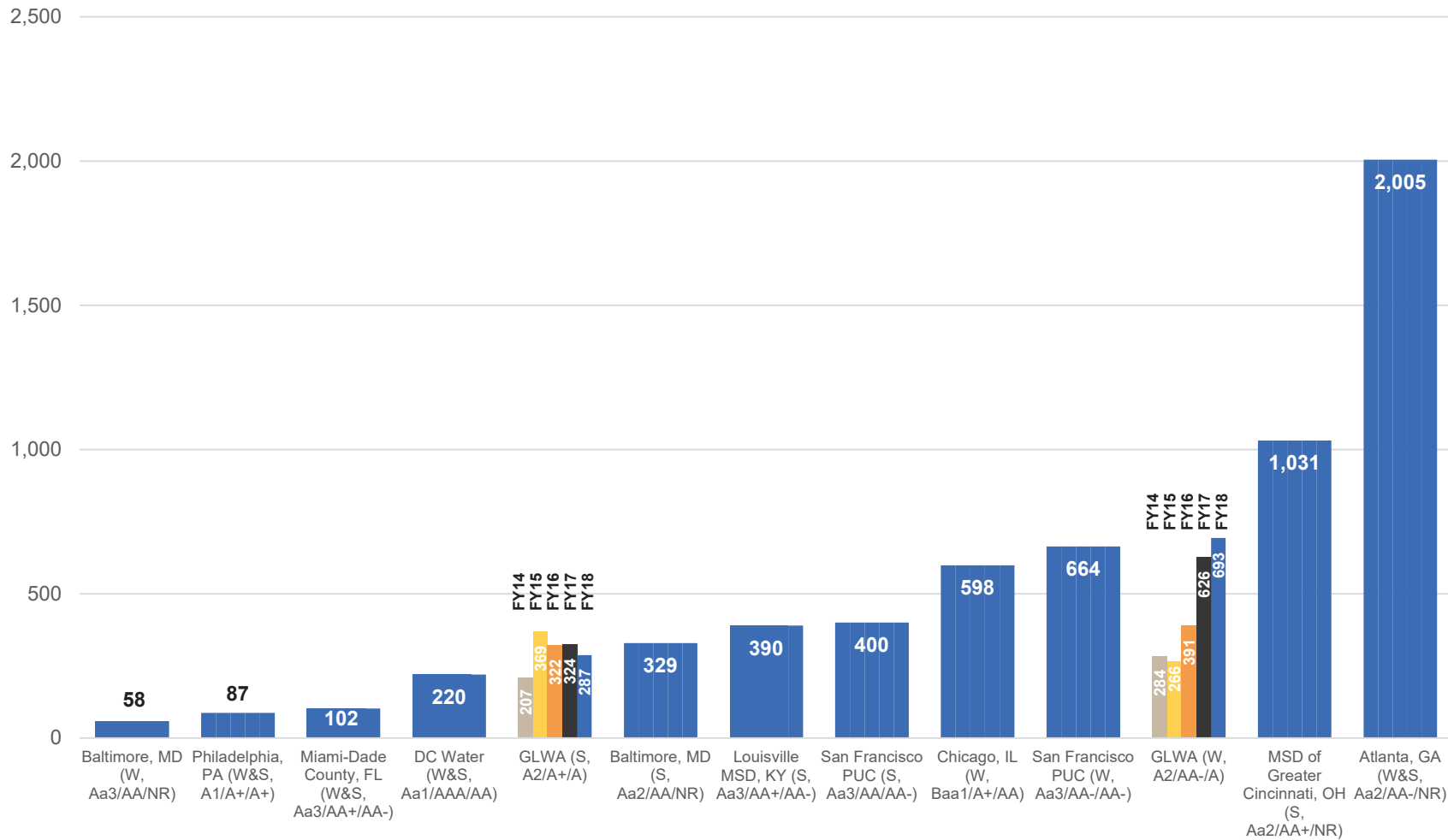
## Peer Comparison of Total Debt Service Coverage



Source: Moody's Financial Ratio Analysis database, as of February 28, 2019. FY2018 GLWA data calculated based on FY2018 financial statements. Chicago, DC Water, Miami-Dade County, Baltimore Water, Baltimore Sewer, MSD of Greater Cincinnati, and Philadelphia data as of FY2017. All other data as of FY2018. DWSD Data shown as GLWA for FY14-15. FY16 and on includes combined data for GLWA and DWSD.



## Peer Comparison of Unrestricted Days Cash and Investments



Source: Moody's Financial Ratio Analysis database, as of February 28, 2019. FY2018 GLWA data calculated based on FY2018 financial statements. Chicago, DC Water, Miami-Dade County, Baltimore Water, Baltimore Sewer, MSD of Greater Cincinnati, and Philadelphia data as of FY2017. All other data as of FY2018. DWSD Data shown as GLWA for FY14-15. FY16 and on includes combined data for GLWA and DWSD.



## Summary of GLWA Liquidity (Moody's Methodology)

	Water System		Sewer System	
Source	FY 2018 Amount	Days Cash & Investments (days)	FY 2018 Amount	Days Cash & Investments (days)
Receiving Fund	\$36.8 million	81	\$24.9 million	34
Operations and Maintenance Fund	\$31.9 million	70	\$77.2 million	106
Extraordinary Repair and Replacement	\$27.5 million	60	\$44.0 million	61
Improvement & Extension Account - Regional	\$220.8 million	483	\$62.4 million	86
<b>Total Unrestricted Liquidity</b>	<b>\$317.0 million</b>	<b>693</b>	<b>\$208.5 million</b>	<b>287</b>

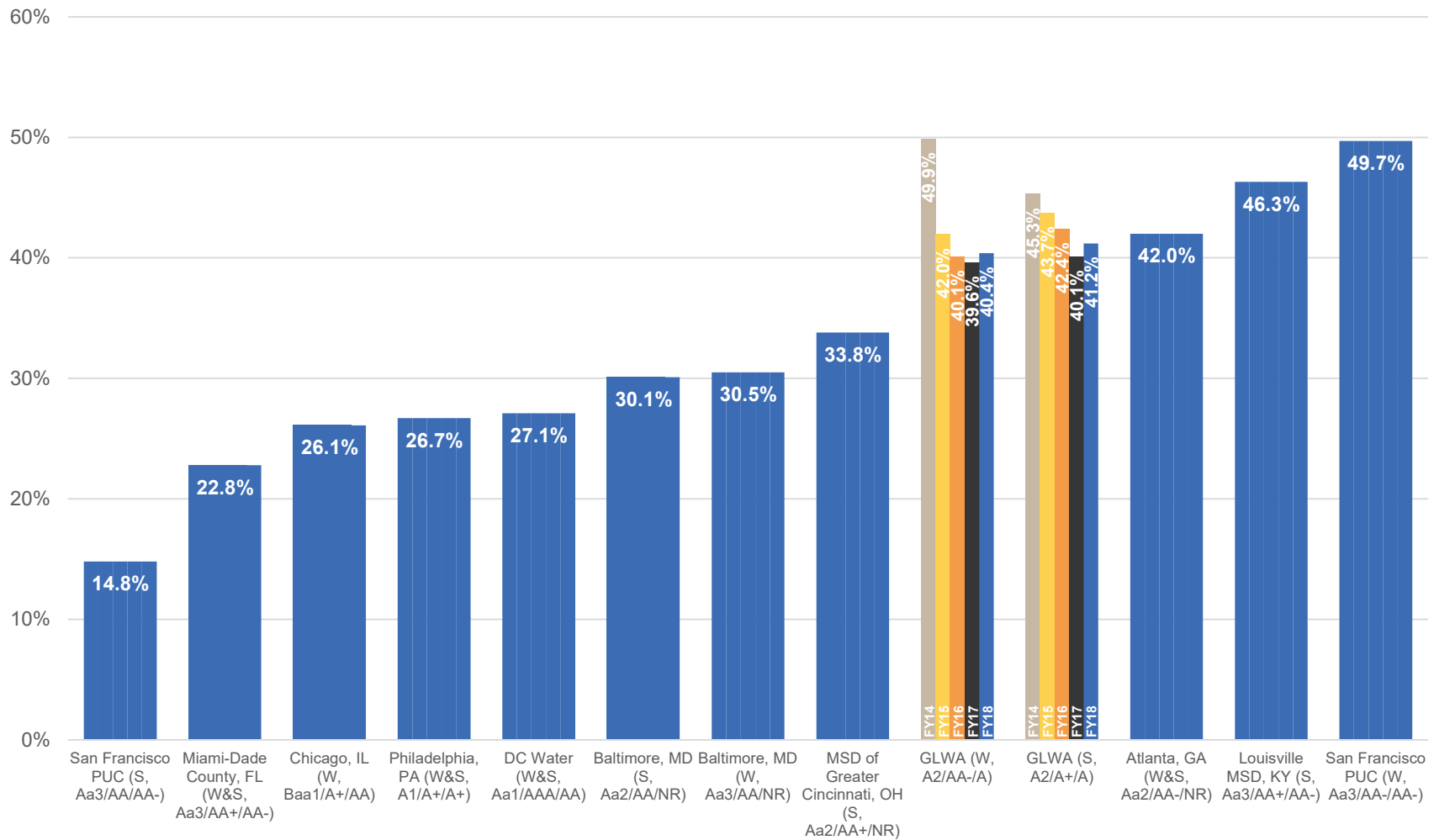
Operating Expense	FY 2018 Amount	FY 2018 Amount
Transfer to O&M Fund – Regional	\$127.6 million	\$201.9 million
Transfer to O&M Fund – Local	\$39.3 million	\$63.4 million
<b>Total Operating Transfers</b>	<b>\$167.0 million</b>	<b>\$265.3 million</b>

Source: FY2018 financial statements

Note: Moody's Days Cash Calculation includes O&M transfers related to the local system but excludes local system liquidity.



## Peer Comparison of Debt Service as a % of Operating Revenues



Source: Moody's Financial Ratio Analysis database, as of February 28, 2019. FY2018 GLWA data calculated based on FY2018 financial statements. Chicago, DC Water, Miami-Dade County, Baltimore Water, Baltimore Sewer, MSD of Greater Cincinnati, and Philadelphia data as of FY2017. All other data as of FY2018. DWSD Data shown as GLWA for FY13-15. FY16 and on includes combined data for GLWA and DWSD.



# SEC Continuing Disclosure 15c2-12 Amendments

**Special Report** September 2018

On Friday, August 31, the Securities and Exchange Commission (SEC) posted amendments for Rule 15c2-12 of the Securities Exchange Act to the Federal Registrar. These amendments address the continuing disclosure of two new events that issuers, or other obligated individuals, must file with the Municipal Securities Rulemaking Board (MSRB) in a timely matter. The SEC believes the additions will improve the transparency of an issuer's financial situation by providing investors greater insight on their liquidity, creditworthiness and the rights of a security holder. Compliance with these amendments will begin on February 27, 2019.

To be compliant with the new amendments to Rule 15c2-12, Continuing Disclosure Agreements (CDAs) executed on or after the compliance date must include the two new events in addition to existing continuing disclosure undertakings.

The two events now requiring continued disclosure are as follows:

1. *"Incurrence of a financial obligation of the issuer or obligated person, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a financial obligation of the issuer or obligated person, any of which affect security holders, if material." (Event 15)*
2. *"Default, event of acceleration, termination event, modification of terms or other similar events under the terms of the financial obligation of the issuer or obligated person, any of which reflect financial difficulties." (Event 16)*

With respect to what constitutes "material," the SEC has declined to provide further clarity. However, the SEC did comment that, in determining materiality, issuers should use the same analysis regularly made when preparing disclosure documents, stating that issuers should "consider whether financial obligations or terms of such financial obligations would affect security holders" and "would be important to a reasonable investor when making an investment decision."

PFM cannot endorse or provide legal advice. However, we strongly encourage our clients to seek guidance from their bond and/or disclosure counsel to better understand the effect these amendments might have on post-issuance procedures and also to determine materiality. Before the first offering including a CDA executed on or after February 27, 2019, to comply with Event 16 above upon sale, industry experts have suggested that preparations include meeting with their respective bond and/or disclosure counsel to:<sup>1</sup>

- Identify all existing financial obligations.

"Financial obligations" do NOT include ordinary obligations included in the normal course of business or municipal securities as to which a final official statement has been provided to the MSRB consistent with Rule 15c2-12, but do include the following:

---

<sup>1</sup> The source for the following recommendations is Paul S. Maco, Edward Fierro, Britt Cass Steckman, "This time is different: What you need to know now about the new Rule 15c2-12 events," Bond Buyer, August, 28, 2018. Accessed September 6, 2018. <https://www.bondbuyer.com/opinion/what-you-need-to-know-now-about-the-new-rule-15c2-12-events>





1. Debt obligations
  2. Derivative instruments
  3. Guarantees of debt obligations and derivative instruments
  4. Leases to the extent that leases operate as a vehicle to borrow money
- Review financial obligations with bond and/or disclosure counsel to determine if material.
  - Review agreements associated with each financial obligation and identify any covenants, remedies, events of default, priority rights, etc., with bond and/or disclosure counsel to determine if material.
  - Create a chart or spreadsheet itemizing each existing material financial obligation, together with any agreements to covenants, remedies, events of default, priority of rights, etc., determined to affect security holders.
  - Maintain records evidencing a review of each financial obligation.

Experts also suggest that after the first offering including a CDA executed on or after February 27, 2019, to comply with Event 15 above, clients should meet with their respective bond and/or disclosure counsel to:

- Assess each new financial obligation prior to or upon incurrence to determine what is material and requires filing of a notice
- Assess whether any agreements associated with each financial obligation affect security holders and are material and require filing of a notice
- Prepare and file such notices on EMMA, reflecting either or both instances specified above including a description of the material terms of the financial obligation within 10 business days of incurrence
- Add to the chart or spreadsheet any new material financial obligation or material agreements to covenants, events of default, remedies, priority rights, etc., that affect security holders
- Periodically review the chart or spreadsheet and analyze for the occurrence of a default, event of acceleration, termination event, modification of terms, or similar events, and upon occurrence, determine whether such events reflect financial difficulties
- To the extent events reflect financial difficulties, file notice of event on EMMA within 10 business days of occurrence.

### Questions for Discussion with Counsel

1. What format or documents (specifically) need to be included in the disclosure?
2. If all of our debt is with the same bank (one investor), is there a requirement to provide disclosure?
3. If we do not have a public rating, and no intention of issuing public bonds, does this apply?
4. Staff is already overworked, and I am not sure this is something we can get to in the next year. What penalty (if any) would there be if we just ignored this altogether?
5. What level of debt is included in the requirement? Clearly not a copier lease, but what is the threshold?
6. Do I post pre-existing loan documents, or just new documents?

### Other Resources

#### [Federal Registrar – Amendments to Municipal Securities Disclosure](#)

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## **Financial Services Audit Committee Communication**

**Date:** March 15, 2018

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

**From:** Andrew Sosnoski, Manager, Construction Accounting & Financial Reporting

**Re:** FY 2019 Q2 Construction Work-in-Progress Report through December 31, 2018

**Background:** The quarterly construction work-in-progress (CWIP) provides information and analysis related to the execution of the Great Lakes Water Authority capital improvement program (CIP).

**Analysis:** The attached documents summarize the FY 2019 Q2 CWIP activity and provides a detailed snapshot to inform decision makers and stakeholders.

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



**Construction Work-in-Progress Quarterly Report  
(Unaudited)**

**As of December 31, 2018**

**For questions, please contact:**

**Andrew Sosnoski**

**Construction Accounting and Financial Reporting Manager**

**Phone: 313.999.2585**

**Email: [Andrew.Sosnoski@glwater.org](mailto:Andrew.Sosnoski@glwater.org)**

**Issued 3.08.2019**

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**March 15th, 2019****To Our Stakeholders:**

The contents of this report represent the financial presentation of construction work-in-progress activity for the Great Lakes Water Authority (GLWA) as of December 31, 2018. The information in this report presents a detailed snapshot and is important as we track the execution of the FY 2019–2023 Capital Improvement Plan (CIP) and develop the FY 2020–2024 CIP.

As we continue to refine this report to better communicate pertinent information to inform decision makers and stakeholders, content and formatting may be changed. We have successfully implemented a technology solution to improve direct labor capture accuracy, timeliness and ease in which labor costs are captured. This solution, named BigTime, was successfully launched in July 2018. Additionally, we have revamped the Construction Work-in-Progress (CWIP) rollforward in a manner we believe will be found more useful.

**Report Contents and Organization**

This report is divided into two sections: one for the Water System and one for the Wastewater System as identified in the table of contents. Each section includes analysis and reporting of the following:

*Executive Summary:* Presentation of spend information is necessary to report our progress on CIP projects.

*Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Projects:* A combination of commentary and analysis provides further insight into risk factors and project status. An excerpt from the CIP for each of the selected projects follows the commentary as further background information.

*Construction Work-in-Progress Rollforward:* This table provides a list of all projects in the CIP along with financial activity. This table may be used to revisit priorities, workload, and phasing.

*Spending Plan Amendment Summary:* The award of CIP contracts and the related execution thereof may result in deviations from the amount and timing of planned spend. Spending plan amendments are prepared to fund the related increase or decrease with either an adjustment to Capital Reserve or Program / Allowance accounts to amend the board approved fiscal year planned spend accordingly and to inform decision makers in the development of future Capital Improvement Plans.

## Financial Information

All project amounts are unaudited. This means that direct contractor costs are generally included in these totals with most pay estimates entered through December 31, 2018. There may, however, be some pay estimates that lag. The totals do not include indirect overhead.

## Budget vs. Plan

Generally, GLWA's CIP projects span two or more fiscal years. The GLWA Board of Directors adopts a biennial "budget" and a five-year capital improvement "plan".

- ✓ The adopted **budget** relates to operations and maintenance expense, annual fixed commitments such as debt service, and incremental adjustments to reserves. The budget provides authority to spend within defined amounts. The budget is also referred to as the "revenue requirement" for the utility.
- ✓ The CIP "budget" for the same biennial budget period above is based on the first two years of the CIP. Funding for these projects are established in the financial plan through a combination of bond proceeds and Improvement & Extension fund reserves
- ✓ After contracts are awarded at amounts variant from the CIP plan and more reliable anticipated spend data becomes available, the amended budget for the current fiscal year may increase or decrease by way of "Capital Reserve" budget amendments.
- ✓ The five-year capital improvement **plan** is a rolling plan that is updated at an administrative tracking level as projects move from estimated to actual bid numbers. An updated mid-cycle CIP would be presented to the Board for approval if the prioritization strategy was revised and/or the plan was in need of material revisions.

**Future Enhancements**

This report presents information that is readily available. Currently under development are enhancements that will provide the opportunity for improved CWIP reporting.

*Monthly Capital Spend Projections* – Implementation of an integrated master schedule of projects utilizing Primavera P6 is underway. The integrated master schedule, which is intended to be updated monthly, will provide a monthly snapshot of cost and schedule information related to the execution of projects as compared to our plan. In addition to an increased visibility to project status and spend, this joint effort with our engineering partners will also allow for improved accuracy of our Key Performance Indicator on rate of spending and more reliable communication with Treasury regarding monthly capital spend projections to allow for investment optimization.

*Look Ahead Reporting* – By way of the integrated master schedule, communication of planned scope development timing, planned durations for RFB/RFP solicitations as well as any planned design or construction starts/finish dates may be presented for a desired look ahead period.

## WATER SYSTEM

### Executive Summary

The rate of spend is a key performance indicator. The development of the FY 2019-2023 and related CIP budget for FY 2019 were based on anticipation of FY 2019 activity resulting in 100% of planned spend. The Water System spend for the period ending December 31, 2018 is 100.3% of the FY 2019 prorated board approved CIP spend and 89.8% of the FY 2019 amended spend. Detailed analysis behind the reasons and projects for which planned spend is amended from \$66,038,000 to \$73,707,885 is provided in the subsequent Spending Plan Amendment Summary section of this report. Numerous project designs have already and or will soon complete that will allow for the increased rate of construction spend to continue in FY 2019 and beyond.

		FY 2018 Amended Budget	FY 2018 Activity	FY 2018 as a Percent of Budget	FY 2019 Budget	FY 2019 Prorated (Six Months)	FY 2019 Activity (Six Months) (Unaudited)	FY 2019 as a Percent of Prorated Budget (Six Months) (Unaudited)
<b>Water System Projects</b>								
FY 2018 CIP Project Requests	\$	137,655,000	\$	37,013,482	26.9%			
FY 2018 CIP Realigned Forecast as per 2019 CIP		40,043,000		37,013,482	92.4%			
FY 2019 Board Approved CIP Spend					\$ 66,038,000	\$ 33,019,000	\$ 33,103,669	100.3%
FY 2019 Amended Spend					73,707,885	36,853,943	33,103,669	89.8%

It should be noted that these interim reports have been prepared on a modified cash basis. This means that expenses may lag in vendor invoice receipt and posting. Known expenses, material in nature, have been accrued.



### Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Projects

Of the total Water System Construction Bond spend for FY 2019 to date, **four projects account for \$15.5 million or 46.8% of the total spend.** Those projects are summarized in the following table. An analysis of each project and its related CIP summary follow the table. Note that the last page of this report provides a Glossary of Acronyms.

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP		Life-to-Date Through June 30, 2018		FY 2019 Amended Spend		FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)	
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	\$	8,642,000	\$	1,864,811	\$	3,666,000	\$	3,471,528	10.5%
Project 114001- Springwells WTP 1958 Filter Rehabilitation		93,464,000		66,571,119		4,452,000		3,731,734	11.3%
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement		2,906,000		1,123,542		2,420,000		2,761,119	8.3%
Project 116002- PA, SW and NE Raw Water Tunnel Improvements		33,079,000		2,177,985		9,042,000		5,525,787	16.7%
Selected Projects as a Percentage of the Total	\$	138,091,000	\$	71,737,457	\$	19,580,000	\$	15,490,168	46.8%
Total					\$	73,707,885	\$	33,103,669	100.0%

The following analysis provides brief highlights related to these projects.

**Project 111002 – LH WTP Miscellaneous Mechanical HVAC Improvements**

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
<b>Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements</b>	\$ 8,642,000	\$ 1,864,811	\$ 3,666,000	\$ 3,471,528	<b>10.5%</b>

**Project Engineer/Manager:** Brian VanHall

**Manager:** Grant Gartrell

**Total Budget:** \$8,642,000

**Timeline:** May 2020

**FY 2019 Last Pay Estimate Processed:** December 20, 2018

**Key Contracts/Vendors:** CON-212 Detroit Contracting, Inc.

**Project Description:** Replacement of existing heating, ventilating and air-conditioning systems with new, energy efficient mechanical HVAC systems.

**Purpose:** The existing heating and cooling systems at Lake Huron are beyond their life expectancy and no longer cost effective to maintain and are not energy efficient. The new heating and cooling systems will be optimized based on plant use and using new energy efficient equipment. The existing dehumidifiers are no longer effective at removing moisture from the pipe gallery and the environment has ideal conditions for increasing the rate of corrosion of the process water piping. The new dehumidifier will be more efficient and will control humidity below conditions ideal for corrosion and the new technology is easier to service. New fans will be installed in the filter gallery to reduce the humidity levels during the summer.

**Status:** The project is proceeding in accordance with the established schedule. The roof-based HVAC equipment was successfully placed using a helicopter in accordance with the plan on October 23, 2018. The rooftop fans in the filter gallery have been installed and the FRP ducting is on track to be finished before Spring 2019. The new hydronic piping in the filter and pipe gallery is installed and being utilize for heating this winter.

**Project 111002 – LH WTP Miscellaneous Mechanical HVAC Improvements**

**Additional Project Manager Comments:** There are no additional comments to provide at this time.

**Additional Construction Accounting & Financial Reporting Team Comments:** The construction phase projected FY 19 spend of \$4,825,000.00 with a planned budgeted spend of \$3,666,000.00 creates a \$1,159,000.00 variance due to project acceleration. This project has been fully budgeted for in total over the life of the project.

**FY 2019-2023 CIP Page 3 for Project 111002- LH WTP Miscellaneous Mechanical HVAC Improvements**

CIP Number: 111002

Old CIP No.: 1280

Project Title: LH WTP Miscellaneous Mechanical HVAC Improvements

Project Status: Active

Budget: Water

Classification Lvl 1: Water

Classification Lvl 2: Treatment Plants & Facilities

Classification Lvl 3: Lake Huron

Project Location: Saint Clair County

☐ Innovation

☐ Water MP Right Sizing

☐ Reliability/Redundancy

Project Score 77



The photo shows the condition of the heating system hot water piping buildup which necessitates the complete replacement of the hot water radiant system in the filter building and other areas of the LH WTP.

**Project Significance:** Existing heating, ventilating and air-conditioning systems Lake Huron are 40 years old and are either not operable or energy-inefficient. Thus, replacement with new, energy efficient mechanical HVAC systems is needed.

**Project Engineer/Manager:** Todd King

**Manager:** Grant Gartrell

**Scope of Work:** The work includes replacement of the existing Natural Gas-Fired hot water boilers, back flow preventers, and dehumidification units with related accessories.

**Challenges:** Heating system modifications will be seasonally dependent.

Phase Expenses								
PHASE	Construction				Contract No	CON-182	Phase Status	Future Planned Start
Phase Title	CON-182, Miscellaneous Mechanical Improvements at Lake Huron WTP, C1							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	165	0	0	0	0	0	0	
PHASE	Study and Design and Construction Assistance				Contract No	CS-1732	Phase Status	Active
Phase Title	CS-1732, Miscellaneous Mechanical Improvements at Lake Huron WTP							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	233	131	131	13	0	0	0	
PHASE	Construction				Contract No	CON-212	Phase Status	New
Phase Title	CON-212, LH WTP Electrical & Mechanical Process Improvements, C2							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	383	3,535	3,742	0	0		0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	781	3,666	3,873	13	0	0	0	

**FY 2019-2023 CIP Page 3 for Project 111002- LH WTP Miscellaneous Mechanical HVAC Improvements**

CIP Number: 111002

**Phase Tasks and Dates**

Phase Category	C
Budget	Water
Phase Status	New
Contract No	CON-212
Cost Est Class	

**Construction**

Task Name	Start Date	Duration	End Date
Scope Development	11/15/2016	90	2/13/2017
Procurement	2/14/2017	365	2/14/2018
Project Execution	2/15/2018	798	4/23/2020
Project Closeout	4/24/2020	90	7/23/2020

Phase Category	C
Budget	Water
Phase Status	Future Planned Start
Contract No	CON-182
Cost Est Class	

**Construction**

Task Name	Start Date	Duration	End Date
Scope Development	8/27/2016	90	11/25/2016
Procurement	11/26/2016	365	11/26/2017
Project Execution	11/27/2017	179	5/25/2018
Project Closeout	5/26/2018	90	8/24/2018

Phase Category	S/D/CA
Budget	Water
Phase Status	Active
Contract No	CS-1732
Cost Est Class	

**Study and Design and Construction Assistance**

Task Name	Start Date	Duration	End Date
Scope Development	2/21/2015	90	5/22/2015
Procurement	5/23/2015	365	5/22/2016
Project Execution	5/23/2016	1431	4/23/2020
Project Closeout	4/24/2020	90	7/23/2020

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		270	1,030	3,130	3,050	422				7,902
2019	18	291	781	3,666	3,873	13	0	0	0	8,642

Description of CIP Changes added GLWA costs; made relatively minor increase to overall budget to account for inflation.

**Project 114001 – Springwells Water Treatment Plant 1958 Filter Rehabilitation**

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
<b>Project 114001- Springwells WTP 1958 Filter Rehabilitation</b>	93,464,000	66,571,119	4,452,000	3,731,734	<b>11.3%</b>

**Project Engineer/Manager:** Grant Gartrell

**Manager:** Grant Gartrell

**Total Construction and Construction Assistance Budget:** \$77,422,000

**Timeline:** To be completed by November 2018

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contracts/Vendors:** SP-563 Walsh Construction; CS-1425 & CS-200 CDM Michigan

**Project Description:** Installation of new filter media, underdrains, filter valves and rate controllers; replace the existing filter control console and hydraulic controls at Springwells Water Treatment Plant.

**Purpose:** Rehabilitation of both filter trains to restore filtration capacity and sustain the useful service life of the process treatment infrastructure.

**Status:** Construction nears completion for the renovation of the laboratory and offices in the administration building, including installation of new heating, ventilation and air-conditioning equipment, the 1958 breezeway, constant-level washwater tank fill control valves, and the replacement of the phosphoric acid feed system. Preparation for the initial installation began on the high-pressure water pumping unit and is scheduled for install in February 2019. Work is beginning on the upgrade to the plant's distribution control system and related instrumentation serving both the 1930 and 1958 filters and chemical feed systems as well as other plant systems. Key final steps include startup and commissioning of the dehumidification, ventilation and heating systems for the 1930 and 1958 filter gallery buildings and final operation demonstration testing of the reconstructed 1958 filters.



**Project 114001 – Springwells Water Treatment Plant 1958 Filter Rehabilitation**

**Additional Project Manager Comments:** There are no additional comments to provide at this time.

**Additional Construction Accounting & Financial Reporting Team Comments:** Total project budget per the Board approved CIP schedule does not include the historical, pre-fiscal year 2017 budget for the design contract CS-1425 nor the allocation of the Water Treatment Plant Allowance to fund CS-200 the Owner's Representative (RPR) consultant contract. The design contract has a total budget amount of \$6,500,000.

**FY 2019-2023 CIP Page 38 for Project 114001- Springwells WTP 1958 Filter Rehabilitation and Auxiliary Facilities**

CIP Number: 114001

Old CIP No.: 917

Project Title: **SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities**

Project Status: Active

Budget: Water

Classification Lvl 1: Water

Classification Lvl 2: Treatment Plants & Facilities

Classification Lvl 3: Springwells

Project Location: Wayne County - Outside Detroit

- ☐ Innovation  
☐ Water MP Right Sizing  
☐ Reliability/Redundancy

Project Score 62.2



Springwells filter building

**Project Significance:** Rehabilitation of Springwells WTP 1958 Filters and 1930s failed filters to provide the WTP with a renovated capacity of 295 MGD

**Project Engineer/Manager:** Eric Kramp

**Manager:** Grant Gartrell

**Scope of Work:** This project includes the study, design (CS-1425) and construction assistance of improvements to the Springwells WTP that includes the replacement of Phosphoric Acid Feed System, rehabilitation of the 1958 Filters, rehabilitation of failed 1930s Filters, Update of Operation and Maintenance Manuals, and addition of polymer systems and controls. Provide construction services to furnish and install new filter media, underdrains, filter valves, and rate controllers; replace the existing filter control consoles, hydraulic control valves with electric control valves, enclosures; add appurtenances to enable automatic backwashing of the filters; provide a Filter Aid Polymer System to the 1930 and 1958 filter complexes; Programmable Logic Controller-based controls for automatic control of the polymer system; install a local instrumentation and controls system.

**Challenges:** N/A - Active

Phase Expenses								
PHASE	Construction				Contract No	SP-563	Phase Status	Active
Phase Title SP-563, Walsh, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities ©								
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	6,327	3,028	0	0	0	0	0	
PHASE	Study and Design and Construction Assistance				Contract No	CS-1425	Phase Status	Active
Phase Title CS-1425, CDM, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities (E1 & E2)								
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	479	118	0	0	0	0	0	
PHASE	Construction Assistance				Contract No	CS-200	Phase Status	Active
Phase Title CS-200, CDM, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities (E3)								
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	445	355						



**FY 2019-2023 CIP Page 39 for Project 114001- Springwells WTP 1958 Filter Rehabilitation and Auxiliary Facilities**

**CIP Number: 114001**

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	56,759	20,353	310							77,422
2019	71,252	11,430	7,281	3,501	0	0	0	0	0	93,464

Description of CIP Changes	Updated construction based on actual invoicing to date from Walsh; extended completion due to anticipated change order for time only; added GLWA costs.
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**Project 114012-Springwells WTP 1930 Filter Building Roof Replacement**

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
<b>Project 114012-Springwells WTP 1930 Filter Building Roof Replacement</b>	2,906,000	1,123,542	2,420,000	2,761,119	<b>8.3%</b>

**Project Engineer/Manager:** Peter Fromm

**Manager:** Paula Anderson

**Total Budget:** \$2,906,000

**Timeline:** Spring 2019

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contracts/Vendors:** DB-093 Schreiber Corporation

**Project Description:** A design-build project that includes the inspection/investigation of the old roof, design, and the replacement of the 1930 Filter Building roof. Project also included the inspection of roof drains before and after construction in addition to replacement of the gutters.

**Purpose:** The 1930 Filter Building Roof System was failing and causing water to leak into the 1930 Filter Building.

**Status:** The contract started on April 18, 2018. The contractor has completed the work and Substantial Completion was given on Tuesday December 11, 2018. The project is in the close-out phase and will be completed on or before April 17, 2019.

**Additional Project Manager Comments:** There are no additional comments to provide at this time.

**Additional Construction Accounting & Financial Reporting Team Comments:** Project to close and be capitalized in fiscal year 2019.

**FY 2019-2023 CIP Page 62 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement**

CIP Number: 114012

Old CIP No.: 1320

Project Title: **SPW WTP Water Treatment Plant 1930 Filter Building-Roof Replacement**

Project Status: Active

Budget: Water

Classification Lvl 1: Water

Classification Lvl 2: Treatment Plants & Facilities

Classification Lvl 3: Springwells

Project Location: Wayne County - Outside Detroit

☐ Innovation

☐ Water MP Right Sizing

☐ Reliability/Redundancy

Project Score 61



Filter Building roof

**Project Significance:** The existing roof over the 1930 filters is leaking in places and poses water quality concerns due to roof leaks.

**Project Engineer/Manager:** Paula Anderson

**Manager:** Paula Anderson

**Scope of Work:** This project encompasses replacement of the existing 1930 Filter Building roofing system, including the built-up roofing material, flashing, roof drains/conductors and sealing cap stones to prevent water from penetrating the building envelop and causing water damage. Construction activity under Contract SP-563 in 2014-2015 revealed that water damage has been on-going and is causing clerestory window lintel deterioration. Additionally, construction traffic under Contract SP-563 has shown the built-up material to be blistering and spongy.

**Challenges:** Seasonal construction work, and construction will require working around new rooftop equipment installed under SP-563.

**Phase Expenses**

PHASE	Design and Build				Contract No	NA	Phase Status	Under Procurement
Phase Title	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	486	2,420	0	0	0	0	0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	486	2,420	0	0	0	0	0	

**Phase Tasks and Dates**

Phase Category	DB	Design and Build			
Budget	Water				
Phase Status	Under Procurement				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	10/1/2017	91	12/31/2017
		Procurement	12/31/2017	272	9/29/2018
		Project Execution	9/29/2018	456	12/29/2019

**FY 2019-2023 CIP Page 63 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement**

CIP Number: 114012

Task Name	Start Date	Duration	End Date
Project Closeout	12/29/2019	90	3/28/2020

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		3,000								3,000
2019			486	2,420	0	0	0	0	0	2,906

Description of CIP Changes: Changes made due to delay in getting bid documents released for bidding purposes.

**Project 116002 – PA, SW and NE Raw Water Tunnel Improvements**

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
<b>Project 116002- PA, SW and NE Raw Water Tunnel Improvements</b>	33,079,000	2,177,985	9,042,000	5,525,787	<b>16.7%</b>

**Project Engineer/Manger:** Todd King

**Manager:** Grant Gartrell

**Total Budget:** \$33,079,000

**Timeline:** The detailed investigation and preliminary design work under this contract was scheduled to be completed by March 2019. Due to GLWA requested delays in diver deployment during warm weather months, the current project completion (i.e. 30-percent design) is scheduled to be completed by June 2019. Once the preliminary design is complete, the vendor will submit a guaranteed maximum price (GMP) for the construction of the raw water tunnel rehabilitation and improvements work which is tentatively scheduled to be completed by 2021.

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contracts/Vendors:** DB-150 / Ballard Marine Construction

**Project Description:** This is a progressive design build project delivery that involves the detailed inspection, design and construction of the improvements to the Pennsylvania, Northeast and Springwells raw water tunnels.

**Purpose:** Rehabilitate sections of the Pennsylvania, Northeast and Springwells raw water tunnels where substantial deterioration in the form of cracking and ovality have been observed.

**Status:** The contract started on January 29, 2018. The supplemental inspection by remote operated vehicles for the repair areas for all three tunnels has been completed. The geotechnical investigation for the repair areas for all three tunnels has been completed. The supplemental diver inspection, coring, and crack mapping for the Pennsylvania, Springwells and Northeast tunnels has been completed. A preliminary findings meeting was held in mid-January 2019. Three conceptual alternatives were developed that included: (1) repair in the wet; (2)

**Project 116002 – PA, SW and NE Raw Water Tunnel Improvements**

dewatering and repair in the dry; and (3) construct bypass tunnels to facilitate repair. The conceptual alternatives are being evaluated as of this writing. The estimated order-of-magnitude cost will be presented once the preferred alternative is selected.

**Additional Project Manager Comments:** The draft report will be made available to the Board on request when submitted and initial comments by GLWA staff have been addressed. Independent geotechnical support is being provided to GLWA by FK Engineers.

**Additional Construction Accounting & Financial Reporting Team Comments:** There are no additional comments to provide at this time.

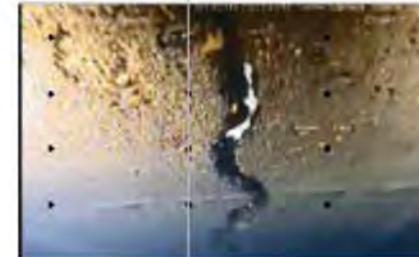


**FY 2019-2023 CIP Page 80 for Project 116002 - PA, SW and NE Raw Water Tunnel Improvements**

CIP Number: 116002  
Old CIP No.: 1327  
Project Title: **Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements**

Project Status: Active  
Budget: Water  
Classification Lvl 1: Water  
Classification Lvl 2: Treatment Plants & Facilities  
Classification Lvl 3: General Purpose  
Project Location: City of Detroit

- ☐ Innovation  
☐ Water MP Right Sizing  
☐ Reliability/Redundancy



Crown cracks are especially concerning in the Springwells Raw Water Tunnel

**Project Significance:** Project critical to production at Springwells WTP during repurposing of Northeast WTP as recommended by the 2015 WMPU. Contract CS-1623 identified problem areas on the raw water supply system that compromised the system's ability to meet demands during the repurposing of Northeast WTP.

**Project Engineer/Manager:** Todd King  
**Manager:** Grant Gartrell

**Scope of Work:** The scope of work is to conduct supplemental investigations to design the repairs for the sections of tunnel identified in CS-1623 as having structural concerns. Three areas were identified with the highest concern being a portion of the Springwells Tunnel near the Springwells WTP.

**Challenges:** The tunnels are approximately 80 feet below the surface of the Detroit River. This poses challenges for assessing the extent of damage to the structures, as well as repair. Dewatering the tunnels to repair them will create extensive stresses that must be considered prior to performing the work. Maintaining a supply of raw water to Springwells, Northeast and Water Works Park throughout construction to meet finished water production requirements/demands of the system. Specialized/complicated construction.

Phase Expenses								
PHASE	Design and Build				Contract No	DB-150	Phase Status	Active
Phase Title	DB-150 Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	3,625	9,042	5,468	5,468	5,468	3,998		
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	3,625	9,042	5,468	5,468	5,468	3,998		

Phase Tasks and Dates				
Phase Category	DB	Design and Build		
Budget	Water			
Phase Status	Active			
	Task Name	Start Date	Duration	End Date

**FY 2019-2023 CIP Page 81 for Project 116002 - PA, SW and NE Raw Water Tunnel Improvements**

**CIP Number: 116002**

Contract No	DB-150	Task Name	Start Date	Duration	End Date
Cost Est Class		Procurement	2/14/2017	365	2/14/2018
		Project Execution	2/15/2018	1796	1/16/2023
		Project Closeout	1/17/2023	90	4/17/2023

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		500	2,000	10,000	15,000	4,900				32,400
2019		10	3,625	9,042	5,468	5,468	5,468	3,998		33,079

Description of CIP Changes    This project now includes CIP 116001 that was previously included in the CIP 2018-2022 with projected expenses of \$2,5M.



## Construction Work-in-Progress Rollforward

The purpose of the construction work-in-progress (CWIP) rollforward is to analyze the current year activity for each project in relation to the overall capital improvement program as well as the project portfolio overall.

As part of our project life cycle review the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. No projects have been identified for Q2 FY 2019 capitalization, but the following projects have been identified and planned for Q3 capitalization:

<u>Project</u>	<u>Contract</u>	<u>Description</u>
114012	DB-093	Springwells Filter Building Roof Replacement
114015	SCP-DB-112	Springwells Emergency Grating and Structural Steel
122001	WS-681	Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road
122002	DWS-891	Pressure Regulating Valve Vault Improvements
122012	WS-684A	36-Inch Water Main on Telegraph Road, Cherry Hill to Warren Avenue
170117	SCP-NE-007	Instrument Air Compressor Systems Replacement at NE WTP

\$**175.0** million is in CWIP as of December 31, 2018 as shown in the table beginning on the next page.

The order of the report on the subsequent pages is in ascending order by CIP project number.

# Water System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority

Water System Construction Work-in-Progress (CWIP) FY 2019 Rollforward

Unaudited Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31, 2018	Life to Date Activity / Total Project Estimate
4430	DWSD: Contract Replacement Water Main	\$ -	\$ 75,804	\$ -	\$ -	\$ (75,804)	\$ -	\$ -	\$ -	0%
7412	SRF WS-693 Water System Improvements	-	3,390,974	-	-	-	3,390,974	-	3,390,974	0%
111001	Energy Management: Lake Huron Water Treatment Plant Low Lift Pumping Improvements	52,388,000	-	-	-	9,806	9,806	-	9,806	0%
111002	LHWTP Backflow Replacement	8,642,000	1,864,811	3,666,000	3,666,000	3,471,528	5,336,339	155,348	5,491,687	64%
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	4,832,000	62,685	414,000	2,728,786	1,265,432	1,328,117	-	1,328,117	27%
111005	Miscellaneous Concrete Improvements at the Lake Huron WTP	755,000	-	-	-	-	-	757,395	757,395	100%
111006	Replacement of Filter Instrumentation and Raw Water Flow Metering Improvements at Lake	26,315,000	734,756	43,000	43,000	26,974	761,730	-	761,730	3%
111007	Lake Huron WTP-Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	7,084,000	283,989	212,000	212,000	320,505	604,495	-	604,495	9%
111008	LHWTP Architectural Programming - Lab	300,000	-	-	-	106	106	-	106	0%
111009	Lake Huron WTP-35 MGD HLP, Flow Meters	-	-	-	-	3,212	3,212	-	3,212	0%

# Water System

## Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
112001	Yard Piping Replacement at Northeast Water Treatment Plant	2,800,000	-	-	-	-	-	-	-	0%
112002	Low Lift Pumping Plant Caisson Rehabilitation at Northeast WTP	1,717,000	472,953	831,000	831,000	385,286	858,239	-	858,239	50%
112003	NE WTP High Lift Pumping Electrical	62,265,000	-	-	-	-	-	-	-	0%
112004	NE WTP Relocation of Service Line	2,460,000	-	-	-	1,687	1,687	-	1,687	0%
113001	Southwest Water Treatment Plant, Sludge Treatment & Waste Wash water Treatment Facilit	40,000	39,885	-	-	(39,885)	-	-	-	0%
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	5,484,000	249,447	1,157,000	1,238,000	98,514	347,961	-	347,961	6%
113003	Replacement of Butterfly Valves	148,286,000	-	-	-	159	159	-	159	0%
113004	Residual Handling Facility's Decant Flow Modifications at Southwest WTP	3,352,000	198,431	1,054,000	1,054,000	576,550	774,981	-	774,981	23%
113005	Residuals Management	1,145,000	-	-	-	-	-	-	-	0%
113006	SW WTP Chloring Scrubber	7,032,000	-	-	-	-	-	-	-	0%
113007	Architectural and Building Mechanical	37,336,000	-	-	-	-	-	-	-	0%
114001	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities	93,464,000	66,571,119	3,501,000	4,452,000	3,731,734	70,302,853	22,738,455	93,041,307	100%

## Water System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
114002	Springwells Water Treatment Plant - Low Lift and High Lift Pump Station	85,503,000	498,042	1,433,000	1,433,000	1,107,269	1,605,311	-	1,605,311	2%
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP	7,159,000	3,444,814	2,506,000	2,813,000	1,810,007	5,254,821	-	5,254,821	73%
114004	Miscellaneous Concrete Improvements at Springwells WTP	495,000	-	-	-	-	-	494,399	494,399	100%
114005	Springwells WTP Admin Building Improvements	8,125,000	-	30,000	26,610	5,919	5,919	-	5,919	0%
114006	Replacement of Rapid Mix Units at Springwells WTP 1958 Process Train	1,722,000	176,992	1,284,000	1,284,000	538,530	715,522	-	715,522	42%
114007	Powder Activated Carbon Systems	3,939,000	-	-	-	-	-	-	-	0%
114008	1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements at Springwells WTP	17,107,000	-	424,000	424,000	34,002	34,002	-	34,002	0%
114009	Springwells Water Treatment Plant Service Area Redundancy Study	338,000	311,129	-	-	-	311,129	-	311,129	92%
114010	Yard Piping Improvements	110,129,000	-	-	-	303	303	-	303	0%
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	11,621,000	473,029	1,406,000	3,066,452	13,406	486,435	-	486,435	4%

## Water System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
114012	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement	2,906,000	1,123,542	2,420,000	2,420,000	2,761,119	3,884,661	-	3,884,661	134%
114013	Springwells Reservoir Fill Line Improvements	6,508,000	332,385	2,469,000	2,469,000	486,551	818,936	-	818,936	13%
114015	Emergency Grating Replacement at Springwells WTP	2,772,000	203,833	11,000	556,186	627,129	830,961	2,533,164	3,364,125	121%
115001	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	71,051,000	681,626	968,000	968,000	494,035	1,175,661	-	1,175,661	2%
115002	Miscellaneous Concrete and Road Improvements at Waterworks Park WTP	1,951,000	-	-	-	-	-	1,983,592	1,983,592	102%
115003	Comprehensive Condition Assessment at Waterworks Park WTP	546,000	439,606	262,000	262,000	51,950	491,556	-	491,556	90%
115004	Water Works Park WTP Chlorine System Upgrade	7,049,000	2,526,753	3,124,000	3,124,000	2,205,611	4,732,364	-	4,732,364	67%
116002	Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements based on	33,079,000	2,177,985	9,042,000	9,042,000	5,525,787	7,703,772	-	7,703,772	23%
122001	Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road	35,384,000	33,565,809	-	-	331,350	33,897,158	-	33,897,158	96%

## Water System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget	CWIP Balance	FY 2019	FY 2019	FY 2019	CWIP Balance,	Life To Date	Life to Date	Life to Date
		Estimate From						Capitalization		Activity /
		FY 2019 - 2023 CIP	July 1, 2018	Board Approved	Amended Spend	Activity through	December 31, 2018	through	Activity through	Total
				CIP Spend		December 31, 2018	(Unaudited)	December 31, 2018	December 31 2018	Project
122002	Replacement of Five (5) PRV Pits of Treated Water Transmission System	2,367,000	1,844,499	-	641,494	641,675	2,486,174	-	2,486,174	105%
122003	New Waterworks Park to Northeast Transmission Main	130,879,000	1,655,004	1,372,000	1,882,701	543,307	2,198,311	-	2,198,311	2%
122004	96-inch Main Relocation, Isolation Valves Installations, and New Parallel Main	132,667,000	1,129,751	1,797,000	1,797,000	550,896	1,680,646	-	1,680,646	1%
122005	Replacement Schoolcraft Watermain	13,805,000	3,960	50,000	50,000	40,863	44,823	-	44,823	0%
122006	Transmission System Water Main Work-Wick Road Parallel Water Main	24,319,000	126,146	1,743,000	1,743,000	94,620	220,766	-	220,766	1%
122007	Design and Construction of a new Newburgh Road 24" Main along Newburgh Road between Ch	5,247,000	-	653,000	653,000	-	-	-	-	0%
122009	Water System Improvements in Joy Road from Southfield Road to Trinity	107,000	106,881	-	-	-	106,881	-	106,881	100%
122010	Water Main Replacement within the City of Detroit - Joy Rd from Greenfield to Schaefer	16,000	-	-	-	-	-	-	-	0%
122011	Park-Merriman Water Main-Final Phase	6,209,000	156,338	955,000	1,055,000	111,182	267,520	-	267,520	4%
122012	36-inch Water Main in Telegraph Road	10,385,000	9,418,001	3,000	130,187	559,620	9,977,621	-	9,977,621	96%

## Water System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
122013	Lyon Township Transmission Main Extension Project	54,426,000	-	-	-	8,855	8,855	-	8,855	0%
122014	48-Inch Water Main Installation at Vining and Wick Roads in Romulus	4,243,000	-	-	-	-	-	4,011,084	4,011,084	95%
122015	30-Inch Water Main	2,743,000	-	-	-	-	-	2,460,774	2,460,774	90%
122016	Downriver Transmission Loop	37,197,000	-	-	-	11,413	11,413	-	11,413	0%
132001	Wick Road Station Rehabilitation	147,000	130,253	-	-	-	130,253	-	130,253	89%
132002	Replacement of Switchgear at Joy Road Pumping Station	669,000	-	-	-	-	-	669,196	669,196	100%
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	1,538,000	138,390	1,229,000	1,576,744	10,642	149,032	-	149,032	10%
132004	Hydraulic Surge Control for North Service Center Pumping Station	232,000	214,771	-	-	-	214,771	-	214,771	93%
132006	Pressure and Control Improvements at the Electric, Ford Road, Michigan, and West Chica	2,609,000	161,460	245,000	245,000	106,285	267,746	-	267,746	10%
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	557,000	9,170	38,000	44,800	66,588	75,758	-	75,758	14%
132008	Needs Assessment Study for all Water Booster Pumping Stations	1,933,000	912,550	1,178,000	1,178,000	669,146	1,581,696	-	1,581,696	82%

## Water System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31, 2018	Life to Date Activity / Total Project Estimate
132009	Study Phase Services for Proposed East Service Center Booster Pumping Station and Rese	10,000	10,313	-	-	(10,313)	-	-	-	0%
132010	West Service Center/Duval Rd Division Valve Upgrades	37,136,000	-	-	240,890	255,469	255,469	-	255,469	1%
132012	Ypsilanti PS Improvements	9,147,000	3,648	93,000	93,000	11,534	15,182	-	15,182	0%
132013	Project Cancelled	1,558,000	-	-	-	-	-	-	-	0%
132014	Adams Road Booster Pumping Improvements	5,676,000	-	-	-	-	-	-	-	0%
132015	Newburgh BPS	12,170,000	-	-	-	-	-	-	-	0%
132016	North Service Center BPS Improvements	24,920,000	-	-	-	-	-	-	-	0%
132017	North Service Center BPS - On-Site & Off	5,076,000	-	-	-	-	-	-	-	0%
132018	Schoolcraft BPS	10,564,000	-	-	-	-	-	-	-	0%
132019	Wick Road BPS - Switchgear	5,570,000	-	-	-	-	-	-	-	0%
132020	Franklin BPS - Isolation Gate Valves	10,170,000	-	-	-	-	-	-	-	0%
132021	Imlay BPS - Replace VFDs, Pumps & Motors	12,109,000	-	-	-	-	-	-	-	0%
132022	Joy Road BPS - Replace Reservoir Pumps	6,109,000	-	-	-	-	-	-	-	0%
132023	Project Cancelled	19,109,000	-	-	-	163	163	-	163	0%
132024	Project Cancelled	19,109,000	-	-	-	327	327	-	327	0%
161001	Comprehensive Water Master Plan Update	330,000	-	-	-	-	-	330,349	330,349	100%



## Water System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
170100	Allowance: WTP/Pump Station	39,872,000	-	4,296,000	-	-	-	-	-	0%
170102	Water Production Plant Flow Metering Improvements at NE, SP & SW WTP	-	335,197	-	-	13,937	349,135	-	349,135	0%
170103	Belle Isle Water Supply Intake and Ice Boom Improvements	-	-	-	-	3,278	3,278	286,596	289,874	0%
170104	Orion and Newburgh Pumping Stations Improvements	-	364,343	-	2,167,000	1,026,755	1,391,098	-	1,391,098	0%
170108	DWS-063 Adams Road	-	625	-	-	-	625	-	625	0%
170109	Inspection of Raw Water Intakes and Tunnels	-	3,054,241	-	3,000	20,606	3,074,847	-	3,074,847	0%
170110	Raw Water Sampling Improvements	-	2,926	-	-	-	2,926	-	2,926	0%
170117	Instrument Air Compressor Systems Replacement at NE-WTP	-	226,483	-	-	-	226,483	-	226,483	0%
170120	Phosphoric Acid Feed System Improvements at Southwest WTP	-	130,688	-	460,000	382,628	513,316	-	513,316	0%
170121	Franklin PS Valve Rehab	-	-	-	1,000,000	2,479	2,479	-	2,479	0%
170122	Meter Pit at Brownstown Township	-	-	-	159,000	97,806	97,806	-	97,806	0%
170200	As Needed Construction Materials, Environmental Media and Special Allowance	1,788,000	-	472,000	472,000	-	-	-	-	0%
170201	Construction & Environmental Testing	-	1,609	-	93,310	9,261	10,870	-	10,870	0%

## Water System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
170300	Water Treatment Plant Automation Program	7,801,000	-	61,000	-	-	-	-	-	0%
170301	Water Plant Automation	-	1,376,747	-	296,225	20,448	1,397,194	-	1,397,194	0%
170400	Water Transmission Improvement Program	11,804,000	-	1,000,000	1,000,000	-	-	-	-	0%
170401	Emergency Bypass Around Ypsilanti Station	-	-	-	-	38,816	38,816	-	38,816	0%
170402	Emergency Manned Visual Inspection 84-Inch Transmission Main	-	156,020	-	-	-	156,020	-	156,020	0%
170500	Transmission System Valve Assessment and Rehabilitation/Replacem ent Program	22,000,000	-	4,000,000	-	-	-	-	-	0%
170502	Transmission System Valve Assessment and Rehabilitation/Replacem e	-	248,175	-	4,000,000	1,917,278	2,165,453	3,182,318	5,347,772	0%
170600	Water Transmission Main Asset Assessment Program	26,133,000	-	2,501,000	2,501,000	-	-	-	-	0%
170701	Booster Station & Reservoirs Program Management	14,331,000	-	-	-	-	-	12,976,698	12,976,698	91%
170800	Reservoir Inspection, Design and Rehabilitation Program	19,099,000	-	472,000	-	-	-	-	-	0%
170801	Reservoir Inspection, Design and Rehabilitation	-	-	-	489,500	4,389	4,389	-	4,389	0%

## Water System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement Program	20,500,000	-	4,613,000	-	-	-	-	-	0%
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement	-	-	-	4,613,000	-	-	-	-	0%
171000	LH - WTP Sanitary Improvements Program	488,000	-	45,000	45,000	-	-	-	-	0%
171100	NE - WTP Sanitary Improvements	796,000	-	75,000	75,000	-	-	-	-	0%
171200	SW - WTP Sanitary Survey Improvements Program	717,000	-	6,000	6,000	-	-	-	-	0%
171300	WWP - WTP Sanitary Improvements Program	488,000	-	45,000	45,000	-	-	-	-	0%
171400	Energy Management Program	7,000,000	-	-	-	-	-	-	-	0%
171500	Roof Replacement - Var Water Facilities Program	27,246,000	-	-	-	-	-	-	-	0%
171501	Roof Replacement - Var Water Facilities	-	50,420	111,000	111,000	47,171	97,592	-	97,592	0%
351001	Water Facility Lighting Renovations	-	-	1,172,000	1,172,000	5,941	5,941	-	5,941	0%
361002	Data Center Reliability/Availability Improvements	-	16,080	-	-	-	16,080	-	16,080	0%
380400	As-needed CIP Implementation Assistance and Related Services	-	-	803,000	803,000	-	-	-	-	0%

## Water System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
380600	General Engineering Services Allowance	-	-	276,000	276,000	-	-	-	-	0%
380601	Alfred Benesh:General Engineer	-	674	-	-	-	674	-	674	0%
380700	As-needed Engineering Services for Concrete Testing, Geotechnical Soil Borings, other Testing Services, and Related Services Allowance	-	-	477,000	477,000	-	-	-	-	0%
380701	Engineering Svc Concrete Testing, Soil Borings	-	-	-	-	71,830	71,830	-	71,830	0%
<b>Total</b>		<b>\$ 1,684,202,000</b>	<b>\$ 141,885,761</b>	<b>\$ 66,038,000</b>	<b>\$ 73,707,885</b>	<b>\$ 33,103,669</b>	<b>\$ 174,989,430</b>	<b>\$ 57,057,350</b>	<b>\$ 232,046,780</b>	<b>14%</b>
Net FY 2019 Spending Plan Amendments					\$ 7,669,885					

\*Projects with activity and no current fiscal year board approved CIP spend are being evaluated for spending plan amendments with amendments anticipated prior to Q3 FY 2019 CWIP. As GLWA Engineers commence on developing scopes for projects ahead of the FY 2019 CIP Plan the related salaries and benefits are identified in the FY 2019 activity and accumulated to the associated CIP Project CWIP account which has resulted in a number of instances where FY 19 activity exists on projects without amended spend.

## **FY 2019 Spending Plan Amendment Summary**

The purpose of the Spending Plan Amendment Summary is to illustrate the amendments to the current fiscal year spend for each project with a spending plan amendment resulting in an amended spend amount or the use of allowance and program funding for a specific project necessitated by contract award.

The award of CIP contracts and the related execution thereof may result in deviation from the amount and timing of planned spend. Acknowledging the aforementioned deviation, spending plan amendments are prepared to fund the related increase or decrease either to or from the Capital Reserve to amend the board approved fiscal year planned spend accordingly and to inform decision makers in the development of future Capital Improvement Plans. Similar to the spending plan amendments prepared for the Capital Reserve, spending plan amendments are also prepared for contracts that are planned or funded by way of the CIP Program and Allowance accounts. As additional contracts are awarded and other project information becomes available additional spending plan amendments to the Capital Reserve will be prepared to amend the planned spend for FY 2019.

\$7.67 million of Capital Reserve spending plan amendments have been prepared as of December 31, 2018 as shown in the table on the next page along with spending plan amendments detailing the assignment of funding within Program and Allowance accounts.

The order of the report on the subsequent page is in ascending order by CIP project number.

# Water System

## Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority  
 Water System FY 2019 Spending Plan Amendment Summary - Due to Changes in Project Cost and/or Timing  
 Unaudited Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Capital Reserve	Program / Allowance	Grand Total
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	\$ 2,314,786	\$ -	\$ 2,314,786
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	81,000	-	81,000
114001	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities	951,000	-	951,000
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP	-	307,000	307,000
114005	Springwells WTP Admin Building Improvements	(3,390)	-	(3,390)
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	1,660,452	-	1,660,452
114015	Emergency Grating Replacement at Springwells WTP	-	545,186	545,186
122002	Replacement of Five (5) PRV Pits of Treated Water Transmission System	641,494	-	641,494
122003	New Waterworks Park to Northeast Transmission Main	510,701	-	510,701
122011	Park-Merriman Water Main-Final Phase	100,000	-	100,000
122012	36-inch Water Main in Telegraph Road	127,187	-	127,187
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	347,744	-	347,744
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	-	6,800	6,800
132010	West Service Center/Duval Rd Division Valve Upgrades	-	240,890	240,890
170100	Allowance: WTP/Pump Station	686,186	(4,982,186)	(4,296,000)
170104	Orion and Newburgh Pumping Stations Improvements	-	2,167,000	2,167,000
170109	Inspection of Raw Water Intakes and Tunnels	-	3,000	3,000
170120	Phosphoric Acid Feed System Improvements at Southwest WTP	-	460,000	460,000
170121	Franklin PS Valve Rehab	-	1,000,000	1,000,000
170122	Meter Pit at Brownstown Township	-	159,000	159,000
170201	Construction & Environmental Testing	-	93,310	93,310
170300	Water Treatment Plant Automation Program	235,225	(296,225)	(61,000)
170301	Water Plant Automation	-	296,225	296,225
170500	Transmission System Valve Assessment and Rehabilitation/Replacement Program	-	(4,000,000)	(4,000,000)
170502	Transmission System Valve Assessment and Rehabilitation/Replaceme	-	4,000,000	4,000,000
170800	Reservoir Inspection, Design and Rehabilitation Program	-	(472,000)	(472,000)
170801	Reservoir Inspection, Design and Rehabilitation	17,500	472,000	489,500
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement Program	-	(4,613,000)	(4,613,000)
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement	-	4,613,000	4,613,000
<b>Grand Total</b>		<b>\$ 7,669,885</b>	<b>\$ -</b>	<b>\$ 7,669,885</b>

## WASTEWATER SYSTEM

### Executive Summary

The rate of spend is a key performance indicator. The development of the FY 2019-2023 and related CIP budget for FY 2019 were based on anticipation of FY 2019 activity resulting in 100% of planned spend. The Wastewater System spend for the period ending December 31, 2018 is 80% of the FY 2019 prorated board approved CIP spend and 79.3% of the FY 2019 amended spend. Detailed analysis behind the reasons and projects for which planned spend is amended from \$105,183,000 to \$106,081,010 is provided in the subsequent Spending Plan Amendment Summary section of this report. Numerous project designs have already and or will soon complete that will allow for the increased rate of construction spend to continue in FY 2019 and beyond.

							FY 2019 as a Percent of Prorated Budget (Six Months) (Unaudited)
	FY 2018 Amended Budget	FY 2018 Activity	FY 2018 as a Percent of Budget	FY 2019 Budget	FY 2019 Prorated (Six Months)	FY 2019 Activity (Six Months) (Unaudited)	
Wastewater System Projects							
FY 2018 CIP Project Requests	\$ 160,746,000	69,567,318	43.3%				
FY 2018 CIP Realigned Forecast as per 2019 CIP	70,632,000	69,567,318	98.5%				
FY 2019 Board Approved CIP Spend				\$ 105,183,000	52,591,500	42,063,136	80.0%
FY 2019 Amended Spend				\$ 106,081,010	53,040,505	42,063,136	79.3%

It should be noted that these interim reports have been prepared on a modified cash basis. This means that expenses may lag in vendor invoice receipt and posting. Known expenses, material in nature, have been accrued.

### Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Project

Of the total Wastewater System Construction Bond spend for FY 2019 to date, **five projects account for \$32.5 million or 77.3% of the total spend**. Those projects are summarized in the following table. An analysis of each project and its related CIP summary follow the table. Note that the last page of this report provides a Glossary of Acronyms.

Wastewater System Projects	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
<b>Project 211001: Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery</b>	\$ 54,037,000	\$ 25,098,344	\$ 16,308,000	\$ 10,408,427	<b>24.7%</b>
<b>Project 212003: Aeration System Improvements</b>	18,320,000	11,850,544	2,569,000	3,662,476	<b>8.7%</b>
<b>Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract</b>	47,466,000	26,440,608	15,817,000	11,032,341	<b>26.2%</b>
<b>Project 213007: WRRF Modification to Incinerator Sludge Systems at Complex-II</b>	22,187,000	2,329,474	6,883,404	3,832,956	<b>9.1%</b>
<b>Project 222002: Detroit River Interceptor (DRI) Evaluation and Rehabilitation</b>	44,425,000	2,647,174	3,058,010	3,583,528	<b>8.5%</b>
<b>Selected Projects as a Percentage of the Total</b>	<u>\$ 186,435,000</u>	<u>\$ 68,366,144</u>	<u>\$ 45,085,414</u>	<u>\$ 32,519,728</u>	<u><b>77.3%</b></u>
<b>Total</b>			<u><b>\$ 106,081,010</b></u>	<u><b>\$ 42,063,136</b></u>	<u><b>100%</b></u>

The following analysis provides brief highlights related to these projects.



**Project 211001–Rehabilitation of Primary Rectangular Clarifiers**

	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
<b>Wastewater System Projects</b>					
<b>Project 211001: Rehabilitation of Primary Clarifiers</b>					
<b>Rectangular Tanks, Drain Lines, Electrical/Mechanical</b>					
<b>Building and Pipe Gallery</b>	\$ 54,037,000	\$ 25,098,344	\$ 16,308,000	\$ 10,408,427	<b>24.7%</b>

**Project Engineer/Manager:** Nicolas Nicolas

**Manager:** Philip Kora

**Total Project Budget:** \$54,037,000 (\$54,858,000 per 2020 CIP)

**Timeline:** To be completed by May 2020 (Final Completion)

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contracts/Vendors:** PC-757 Toolles Contracting Group; CS-1484 Wade Trim; CS-1432A Alfred Benesch

**Project Description:** The Rehabilitation of Primary Rectangular Clarifiers Tanks, Drain Lines, Electrical/Mechanical Building, Pipe Gallery, and Replacement of Rake Arm assembly for Circular Primary Clarifiers 15 and 16 at the Water Resource Recovery Facility (WRRF).

**Purpose:** To improve the operating and maintenance efficiencies that meets the regulatory National Pollution Discharge Elimination (NPDES) Permit and National Electrical code (NEC) requirements.

**Status:** Rehabilitation of primary rectangular clarifiers 9 through 12 and circular clarifiers 15 and 16 have been completed, commissioned and returned to operation. Rectangular primary clarifiers 7 and 8 were released for contract work on September 11, 2018. Rectangular primary clarifiers 5 and 6 were released for contract work on November 9, 2018. Clarifiers 5,6,7 and 8 are projected to be completed and commissioned by June of 2019. Parts and equipment continue to be delivered to the site for eventual installation in primary rectangular clarifiers 5, 6, 7 and 8 influent gate valves and sludge piping.

**Additional Project Manager Comments:** As of December 31, 2018. 64.03% of contract time (Final Completion) has elapsed and 63% of funds have been spent (\$32,739,993 out of \$51,905,000).

**FY 2019-2023 CIP Section VII Pages 203-204 for Project 211001–Rehabilitation of Primary Rectangular Clarifiers**

CIP Number: 211001

Old CIP No.: 291

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks,  
Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Project Status: Active

☐ Innovation

Budget: Wastewater

☐ Water MP Right Sizing

Classification Lvl 1: Wastewater

Classification Lvl 2: WRRF

☒ Reliability/Redundancy

Classification Lvl 3: Primary Treatment

Project Location: City of Detroit

Project Score



Pipe Gallery

Project Significance: Rehabilitation for meeting NPDES Permit and NEC requirements

Project Engineer/Manager: Nicolas Nicolas

Manager: Philip Kora

Scope of Work: The work to be completed under this project will include installing ventilation and atmospheric control for the pipe gallery; providing new lights and emergency lights, etc.. This work also includes rehabilitation of 12 drain lines from rectangular clarifiers 3-12, circular clarifiers 16 and 16, installation of large manhole with sump pumps to collect drainage and discharge to clarifier, and concrete crack repairs, and rehabilitation work in Electrical/Mechanical Building.

Challenges: N/A - Active

**Phase Expenses**

PHASE	Construction				Contract No	PC-757	Phase Status	Active
Phase Title	PC-757 Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	12,983	16,107	8,671	6,033	0	0	0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	12,983	16,107	8,671	6,033	0	0	0	

**Phase Tasks and Dates**

Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Active				
Contract No	PC-757				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development			
		Procurement			
		Project Execution	7/18/2016	1217	11/17/2019
		Project Closeout	11/18/2019	182	5/18/2020

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

CIP Number: 211001

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		10,848	12,097	20,990	7,968					51,903
2019	14	10,229	12,983	16,107	8,671	6,033	0	0	0	54,037

Description of CIP Changes

**Project 212003-Aeration System Improvements**

	Total Project Budget Estimate per FY 2019 - 2023 CIP		Life-to-Date Through June 30, 2018		FY 2019 Amended Spend		FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Wastewater System Projects								
Project 212003: Aeration System Improvements	\$	18,320,000	\$	11,850,544	\$	2,569,000	\$ 3,662,476	8.7%

**Project Engineer/Manager:** Vinod Sharma

**Manager:** Philip Kora

**Total Project Budget:** \$18,320,000 (\$16,682,000 per 2020 CIP)

**Timeline:** To be completed by March 2019

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contracts/Vendors:** CS-1498, CS-157-Metco Services, PC-796-Weiss Construction

**Project Description:** The Aeration System Improvements will improve the aeration system and provide necessary inter-connections.

**Purpose:** The purpose of the project is to rehabilitate and upgrade the aeration system at WRRF. The scope of work includes replacement of process piping, magnetic flow meters, gate valves, butterfly valves, sluice gates and actuators, and variable frequency drives (VFD). The scope of work also includes installing piping between intermediate lift pump (ILP) No. 7 and aeration basin No. 1 so that ILP No. 7 can feed aeration basin No. 1 in addition to aeration basins 2, 3 & 4.

**Status:** The rehabilitation work associated with Aeration Basin No. 2, 3, and 4 are completed and those basins are put back into operation. Also, VFD for ILP No. 7 is replaced and the 30-day test is scheduled to start in the week of January 28, 2019.

**Additional Project Manager Comments:** As of December 31, 2018, 90% of the contract time has elapsed and 82% of the contract amount has been spent (\$12,943,501.50 out of 15,835,000.00).

**Additional Construction Accounting & Financial Reporting Team Comments:** There are no additional comments to provide at this time.

**FY 2019-2023 CIP Section VII Pages 225-226 for Project 212003-Aeration System Improvements**

**CIP Number:** 212003

**Old CIP No.:** 1194

**Project Title:** WRRF Aeration System Improvements

**Project Status:** Active

**Budget:** Wastewater

**Classification Lvl 1:** Wastewater

**Classification Lvl 2:** WRRF

**Classification Lvl 3:** Secondary Treatment & Disinfection

**Project Location:** City of Detroit

☐ Innovation

☐ Water MP Right Sizing

☒ Reliability/Redundancy

**Project Score**



Equipment for aeration system

**Project Significance:** Improve aeration system and provide necessary inter-connections

**Project Engineer/Manager:** Kashmira Patel

**Manager:** Philip Kora

**Scope of Work:** The scope of work includes study, design, and construction assistance for the oxygen baffle on Bay 10 of A1 & A2 decks, replacement of influent, Return Activated Sludge (RAS) piping, isolation gate and valves for decks Nos. 3 & 4, replace RAS and influent magmeters for Intermediate Lift Pumps (ILP) Nos. 3, 4 & 7. The work also includes replacement of influent gates and operators on Aeration Deck No. 1 & 2.

**Challenges:** N/A - Under Procurement

**Phase Expenses**

<b>PHASE</b>	<b>Construction</b>				<b>Contract No</b>	PC-796	<b>Phase Status</b>	Active
<b>Phase Title</b>	PC-796 Aeration System Improvements							
<b>Phase Total</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24 and Beyond</b>	
	9,087	2,647	2,502	0	0	0	0	

<b>PHASE</b>	<b>Study and Design and Construction Assistance</b>				<b>Contract No</b>	CS-157	<b>Phase Status</b>	Active
<b>Phase Title</b>	CS-157 Aeration System Improvements							
<b>Phase Total</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24 and Beyond</b>	
	186	72	21	0	0	0	0	

<b>FY18-Proj</b>	<b>FY19-Proj</b>	<b>FY20-Proj</b>	<b>FY21-Proj</b>	<b>FY22-Proj</b>	<b>FY23-Proj</b>	<b>FY24 and Beyond</b>
9,273	2,719	2,523	0	0	0	0

**Phase Tasks and Dates**

<b>Phase Category</b>	C	<b>Construction</b>			
<b>Budget</b>	Wastewater				
<b>Phase Status</b>	Active				
<b>Contract No</b>	PC-796				
		<b>Task Name</b>	<b>Start Date</b>	<b>Duration</b>	<b>End Date</b>
		Scope Development			



## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

**CIP Number:** 212003

Cost Est Class			Task Name	Start Date	Duration	End Date
			Procurement			
			Project Execution	10/3/2016	660	7/25/2018
			Project Closeout	7/26/2018	60	9/24/2018

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Phase Category	S/D/CA		Task Name	Start Date	Duration	End Date
Budget	Wastewater		Study and Design and Construction Assistance			
Phase Status	Active		Scope Development			
Contract No	CS-157		Procurement			
Cost Est Class			Project Execution	2/21/2012	2588	3/24/2019
			Project Closeout			

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		2,348	11,197	2,658						16,203
2019	1,903	1,902	9,273	2,719	2,523	0	0	0	0	18,320

Description of CIP Changes: CS- 1498 is changed to CS-157.

**Project 212006-Rouge River Outfall Project**

	Total Project		Life-to-Date		FY 2019	FY 2019
	Budget Estimate		Through		Activity	as a Percent of
	per FY 2019 - 2023		June 30, 2018		(Unaudited)	Spend
Wastewater System Projects	CIP		Amended Spend		(Unaudited)	(Unaudited)
Project 212006: PC-797 Rouge River Outfall						
Disinfection and CS-1781 Oversight Consulting						
Services Contract	\$	47,466,000	\$	26,440,608	\$	11,032,341
						26.2%

**Project Engineer/ Manager:** Philip Kora and Darrel Field (PMA)

**Manager:** Philip Kora

**Total Project Budget:** \$47,466,000 (\$48,033,000 per 2020 CIP)

**Timeline:** To be substantially complete by April 2019

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contracts/Vendors:** CS-1781- PMA Consultants and PC-797-CDM Construction

**Project Description/Purpose:** The Rouge River Outfall Disinfection Project (Phase 2) is MDEQ approved to provide chlorination and de-chlorination to the Rouge River Outfall (RRO) effluent during wet weather events.

**Status:** Construction has progressed sufficiently to place into service the major chemical systems, including chlorine solution diffusers, sodium hypochlorite, and sodium bisulfite unloading, storage and injection systems. Operation of these systems began on January 24, 2019. Initial operating results indicate satisfactory treatment of both dry and wet weather flows. Work remaining includes: completion of the control system; dewatering, cleaning and inspection of the west chlorine contact conduits to allow installation of chlorine solution diffusers and two flow meters; and various other tasks needed for substantial completion of the project. Completion of these construction tasks is targeted for no later than March 17, 2019 to allow fourteen days of demonstration testing before the required Substantial Completion date on April 1, 2019.

**Additional Project Manager Comments:** Excluding allowances, PC-797 base contract work was over 90% complete at the end of 2018. Post-dewatering inspection of the west conduits is expected to provide an indication regarding the remaining work which will be required under allowances to clean and repair the conduits.

**Additional Construction Accounting & Financial and Reporting Team Comments:** There are no additional comments to provide at this time.

**FY 2019-2023 CIP Section VII Pages 231-232 for 212006-Rouge River Outfall Project**

**CIP Number:** 212006  
**Old CIP No.:** 1302  
**Project Title:** WRRF Rouge River Outfall (RRO) Disinfection (Alternative)  
**Project Status:** Active  
**Budget:** Wastewater  
**Classification Lvl 1:** Wastewater  
**Classification Lvl 2:** WRRF  
**Classification Lvl 3:** Secondary Treatment & Disinfe  
**Project Location:** City of Detroit

☐ Innovation  
☐ Water MP Right Sizing  
☒ Reliability/Redundancy

**Project Score**



Plan view of RRO location

**Project Significance:** Provide project oversight and design build services for alternative disinfection services to meet NPDES Permit requirements at existing Rouge River Outfall

**Project Engineer/Manager:** Darrel Field  
**Manager:** Philip Kora

**Scope of Work:** The consultant shall provide comprehensive professional services for project oversight and Owner's representation for the PC-797 RRO Disinfection Progressive Design-Build Contract. The scope of work consists of completing basis of design, design and construction services to develop and implement a solution that will result in 100% disinfection of wet weather flow discharged from WRRF to Detroit River outfall and Rouge River Outfall in order to meet NPDES Permit requirements.

**Challenges:** N/A - Under Procurement

Phase Expenses								
PHASE	Construction Management				Contract No	CS-1781	Phase Status	Under Procurement
Phase Title	CS-1781 Rouge River Outfall (RRO) Disinfection (Alternative)							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	661	597	156	0	0	0	0	
PHASE	Design and Build				Contract No	PC-797	Phase Status	Under Procurement
Phase Title	PC-797 Rouge River Outfall (RRO) Disinfection (Alternative)							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	19,958	15,220	4,001	0	0	0	0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	20,619	15,817	4,157	0	0	0	0	

Phase Tasks and Dates		
Phase Category	CM	Construction Management
Budget	Wastewater	
Phase Status	Under Procurement	



## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

**CIP Number: 212006**

Contract No	CS-1781		
Cost Est Class			
Phase Category	DB	Design and Build	
Budget	Wastewater		
Phase Status	Under Procurement		
Contract No	PC-797		
Cost Est Class			

Task Name	Start Date	Duration	End Date
Project Execution	2/19/2016	1137	4/1/2019
Project Closeout	4/2/2019	273	12/31/2019

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	729	6,530	15,800	15,520	9,020					47,599
2019	912	5,961	20,619	15,817	4,157	0	0	0	0	47,466

Description of CIP Changes	Change Order No.3 has been issued to the Contractor for the phase 2 work (design completion and construction work) for \$38,925,000.
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**Project 213007—Modifications to Incinerator Sludge Feed Systems in Complex II at WRRF**

Wastewater System Projects	Total Project		Life-to-Date		FY 2019		FY 2019
	Budget Estimate		Through		FY 2019		Activity
	per FY 2019 - 2023		June 30, 2018		Amended Spend		(Unaudited)
	CIP						(Unaudited)
Project 213007: WRRF Modification to Incinerator							
Sludge Systems at Complex-II	\$	22,187,000	\$	2,329,474	\$	6,883,404	\$ 3,832,956 9.1%

**Project Engineer/Manager:** Chris Breinling

**Manager:** Philip Kora

**Total Project Budget:** \$22,187,000 (\$20,049,000 per 2020 CIP)

**Timeline:** To be substantially complete in July 2020

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contract/Vendor:** GLWA-CON-197 Weiss Construction; CS-060 Black & Veatch; CS-291 Alfred Benesch

**Project Description:** Modifications to Incinerator Sludge Feed Systems in Complex II at the Water Resource Recovery Facility (WRRF).

**Purpose:** The project purpose is to replace the belt conveyors that were significantly damaged during the March 2016 fire event. The project also includes replacement of a unit substation, motor control centers, and incinerator induced draft fan starters. New VFD-controlled dual shaft screw conveyors will replace outdated screw conveyors installed on all existing Complex II Incinerators, significantly improving incinerator feed control. Internal painting, instrumentation improvements, SFE strainers, and plumbing upgrades will improve sludge processing operations.

**Status:** Major restorative painting is approximately halfway completed within Dewatering Complex II and Incineration Complex II. Structural steel placement for belt conveyor E is complete, with belt conveyor G structural steel placement underway. Approximately half of the unit substation is planned to go into service this month, the remaining components going into service in the coming two months. The remaining motor control centers, belt conveyors, auto strainers, and screw conveyors are planned for the remaining portion of calendar year 2019.

**Additional Project Manager Comments:** As of December 31, 2018, 26% of contract time (Final Completion) has elapsed and 22% of funds have been spent (\$4,049,778.97 out of \$18,631,083.00).

**Additional Construction Accounting & Financial and Reporting Team Comments:** There are no additional comments to provide at this time.

**FY 2019-2023 CIP Section VII Pages 249-250 for 213007-WRRF Modification to Incinerator Sludge Feed Systems at Complex-II**

CIP Number: 213007

Old CIP No.: 1311

Project Title: **WRRF Modification to Incinerator Sludge Feed Systems at Complex -II**

Project Status: Active

Budget: Wastewater

Classification Lvl 1: Wastewater

Classification Lvl 2: WRRF

Classification Lvl 3: Residuals Management

Project Location: City of Detroit

☐ Innovation

☐ Water MP Right Sizing

☒ Reliability/Redundancy

Project Score 87.2



Picture from left to right Sludge Conveyer G Damaged by Fire and Conveyer B in the Complex – II Dewatering Building and Fire Damaged Conveyer H in Complex-II Incinerators Building

**Project Significance:** GLWA have an ongoing study and design of sludge cake conveyance system improvements project after the March 4, 2016 fire incident in Complex –II Incinerators building. The construction of this project will provide a cleaner, fire resistant, reliable and safe sludge feed to the incinerators.

**Project Engineer/Manager:** Beena Chackunkal

**Manager:** Ali Khraizat

**Scope of Work:** The restoration of sludge conveying capacity, which was lost due to the fire damage and to provide improved sludge conveyance from each dewatering facility to the incinerators. Replacement of 19 MCCs and Replacement of the Unit Substation EB-26 in Incineration Complex II.

**Challenges:** Maintaining the sludge conveyance capacity to meet permit requirements during the construction of these improvements, will be the most significant challenge on this project.

Phase Expenses								
PHASE	Construction				Contract No	CON-197	Phase Status	Under Procurement
Phase Title	CON-197 Modification to Incinerator Sludge Feed Systems at Complex -II							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	100	6,685	11,305	3,477	0	0	0	
PHASE	Study and Design and Construction Assistance				Contract No		Phase Status	Active
Phase Title	Wastewater Treatment Plant, Lift Station and Wastewater Collection System Structures Allowance							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	467	102	51	0	0	0	0	
FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond		
567	6,787	11,356	3,477	0	0	0		

CIP Number: 213007

Phase Tasks and Dates																								
Phase Category	C	<b>Construction</b>																						
Budget	Wastewater																							
Phase Status	Under Procurement																							
Contract No	CON-197																							
Cost Est Class																								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Task Name</th> <th>Start Date</th> <th>Duration</th> <th>End Date</th> </tr> </thead> <tbody> <tr> <td>Scope Development</td> <td>8/22/2016</td> <td>430</td> <td>10/26/2017</td> </tr> <tr> <td>Procurement</td> <td>10/30/2017</td> <td>172</td> <td>4/20/2018</td> </tr> <tr> <td>Project Execution</td> <td>4/21/2018</td> <td>1035</td> <td>2/19/2021</td> </tr> <tr> <td>Project Closeout</td> <td>2/20/2021</td> <td>60</td> <td>4/21/2021</td> </tr> </tbody> </table>			Task Name	Start Date	Duration	End Date	Scope Development	8/22/2016	430	10/26/2017	Procurement	10/30/2017	172	4/20/2018	Project Execution	4/21/2018	1035	2/19/2021	Project Closeout	2/20/2021	60	4/21/2021
Task Name	Start Date	Duration	End Date																					
Scope Development	8/22/2016	430	10/26/2017																					
Procurement	10/30/2017	172	4/20/2018																					
Project Execution	4/21/2018	1035	2/19/2021																					
Project Closeout	2/20/2021	60	4/21/2021																					
Phase Category	S/D/CA	<b>Study and Design and Construction Assistance</b>																						
Budget	Wastewater																							
Phase Status	Active																							
Contract No																								
Cost Est Class																								
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Task Name	Start Date	Duration	End Date																					
Scope Development																								
Procurement																								
Project Execution	8/22/2016	1642	2/19/2021																					
Project Closeout	2/20/2021	60	4/21/2021																					

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		1,500	9,600	7,822						18,922
2019			567	6,787	11,356	3,477	0	0	0	22,187

Description of CIP Changes	Additional scope to the previous CIP. Construction of two Small Capital Projects, Replacement of 19 MCCs and Replacement of the unit substation EB-26, were combined with this construction project to avoid multiple shut downs in Incineration Complex II and to coordinate the works more effectively. The estimated cost has also changed.
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**Project 222002–Detroit River Interceptor (DRI) Evaluation and Rehabilitation**

	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Wastewater System Projects					
<b>Project 222002: Detroit River Interceptor (DRI) Evaluation and Rehabilitation</b>	44,425,000	2,647,174	3,508,010	3,583,528	<b>8.5%</b>

**Project Engineer/Manager:** Mini Panicker

**Manager:** Biren Saparia

**Total Project Budget:** \$44,425,000 (\$49,071,000 per 2020 CIP)

**Timeline:** To be substantially complete in July 2020

**FY 2019 Last Pay Estimate Processed:** December 31, 2018

**Key Contract/Vendor:** CON-183 Inland Waters Pollution Control (IWPC); DB-226 Jay Dee Contractors

**Project Description/Purpose:** There are two projects for the rehabilitation of Detroit River Interceptor (DRI) to bring back the structural integrity to acceptable levels.

- CON-183 for the Emergency Rehabilitation of DRI in the Downtown area under the Ren-Cen Center
- DB-226 for the rehabilitation of DRI from Alter Rd. to the WRRF

**Status:**

- Con-183 is in the final stages with the construction to be completed by February 28, 2019.
- DB-226 is a SRF funded Design/Build project. The Guaranteed Maximum Price (GMP) is negotiated for Reach 1 and the construction started on November 13, 2018 as per the SRF schedule. GMP is being negotiated for Reach 2. Reach 3 rehabilitation involves the construction of 3 permanent shafts. The GMP for the shaft construction is also being negotiated.

**Additional Project Manager Comments:** CON-183 final completion date was September 15, 2018, but actual field conditions and unavailability of DRI for work due to the system conditions including wet weather events, delayed the project. New final completion date is February 28, 2019. A change order was processed for \$2.424M due to the increase in the Engineer Directed Cost in the field and lost work days.



**FY 2019-2023 CIP Section VII Pages 274-275 for 2222002-Detroit River Interceptor (DRI) Evaluation and Rehabilitation**

CIP Number: 222002

Old CIP No.: 1329

Project Title: Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Project Status: Active

Budget: Wastewater

Classification Lvl 1: Wastewater

Classification Lvl 2: Field Services

Classification Lvl 3: Interceptors

Project Location: City of Detroit

☐ Innovation

☐ Water MP Right Sizing

☒ Reliability/Redundancy

Project Score 65.4



Visual inspection of a large sewer

**Project Significance:** Evaluation of the existing condition of the Detroit River interceptor (DRI), and rehabilitation/replacement of portions based on the evaluation results are essential to optimize the transportation capacity of the GLWA collection system and to increase its service life.

**Project Engineer/Manager:** Mini Panicker

**Manager:** Biren Saparia

**Scope of Work:** Preliminary Scope of Work of the Project is as follows: Review the existing records, investigate the existing conditions , provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

**Challenges:** DRI may have flow control challenges for both inspection and rehabilitation. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

**Phase Expenses**

PHASE	Design and Build				Contract No	Con-183	Phase Status	Pending Close-out
Phase Title	Con-183 Detroit River Interceptor (DRI) Evaluation and Rehabilitation							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	2,232	0	0	0	0	0	0	

PHASE	Design and Build				Contract No	NA	Phase Status	Future Planned Start
Phase Title	Future Projects for DRI under SRF Funding							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
		1,084	8,052	10,187	10,187	10,187	2,491	

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond
2,232	1,084	8,052	10,187	10,187	10,187	2,491

**Phase Tasks and Dates**

Phase Category	DB	Design and Build			
Budget	Wastewater				
Phase Status	Future Planned Start				
		Task Name	Start Date	Duration	End Date

**CIP Number: 222002**

Contract No	NA	Task Name	Start Date	Duration	End Date
Cost Est Class		Procurement	12/31/2017	272	9/29/2018
		Project Execution	9/29/2018	1248	2/28/2022
		Project Closeout	2/28/2022	30	3/30/2022

Phase Category	DB	<b>Design and Build</b>			
Budget	Wastewater	Task Name	Start Date	Duration	End Date
Phase Status	Pending Close-out	Scope Development	10/1/2017	91	12/31/2017
Contract No	Con-183	Procurement	12/31/2017	272	9/29/2018
Cost Est Class		Project Execution	9/29/2018	1248	2/28/2022
		Project Closeout	2/28/2022	90	5/29/2022

**Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		321	10,000	5,000	5,000					20,321
2019		5	2,232	1,084	8,052	10,187	10,187	10,187	2,491	44,425

Description of CIP Changes

CON-183, DRI Repair/Rehabilitation in the Downtown Area is a project that is going for construction in 9/2017. GLWA has requested SRF funding for the rehabilitation of DRI. Availability of this funding is a deciding factor for the execution of the rest of the projects under this program. No projections are made.

Shifted FY2018 & 2019 funds for Future Projects for DRI under SRF Funding

**Construction Work-in-Progress Rollforward**

The purpose of the construction work-in-progress (CWIP) rollforward is to analyze the current year activity for each project in relation to the overall capital improvement program as well as the project portfolio overall.

As part of our project life cycle review, the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. No projects have been identified for Q2 FY 2019 capitalization, but the following projects have been identified for Q3 capitalization:

<u>Project</u>	<u>Contract</u>	<u>Description</u>
260113	Multiple POs	WRRF Fire Remediation
260203	CON-068	Inspection of Collection System – Conner Creek
260301	CON-143	Roof Replacement of Complex II

**\$188.2** million is in CWIP as of December 31, 2018 as shown in the table beginning on the next page.

The order of the report on the subsequent pages is in ascending order by CIP project number.



## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority

Waste Water System Construction Work-in-Progress (CWIP) FY 2019 Rollforward

Unaudited, Pre-Close Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
211001	Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	\$ 54,037,000	\$ 25,098,344	\$ 16,308,000	\$ 16,308,000	\$ 10,408,427	\$ 35,506,771	\$ -	35,506,771	66%
211002	Pump Station No. 2 Pumping Improvments	3,783,000	322,436	2,454,000	2,454,000	265,106	587,542	-	587,542	16%
211003	Rehabilitation of Primary Clarifiers	2,231,000	-	-	-	-	-	-	-	0%
211004	Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements	27,647,000	24,505,435	2,752,000	2,752,000	939,325	25,444,760	-	25,444,760	92%
211005	Pump Station No. 2 Improvements	22,087,000	-	-	-	-	-	-	-	0%
211006	Pump Station No. 1 Improvements	24,120,000	88	500,000	500,000	4,459	4,547	-	4,547	0%
211007	Replacement of Bar Racks and Grit Collection System at Pump Station No. 2	20,563,000	-	7,000	7,000	-	-	-	-	0%
211008	Rehabilitation of Ferric Chloride Feed systems at the Pump Station -1 and Complex B Sludge Lines	12,013,000	12,386	7,000	7,000	28,166	40,552	-	40,552	0%

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
211009	Rehabilitation of the Circular Primary Clarifier Scum Removal System	12,239,000	-	-	-	30	30	-	30	0%
212001	Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers	34,090,000	-	-	-	-	-	34,089,672	34,089,672	100%
212002	Study, Design, & Construction, Management Services for Modified Detroit River Outfall No. 2 - WRRF	10,819,000	10,818,870	-	-	-	10,818,870	-	10,818,870	100%
212003	Aeration System Improvements	18,320,000	11,850,544	2,719,000	2,569,000	3,662,476	15,513,020	-	15,513,020	85%
212004	Project Chlorination/Dechlorination Process Equipment Improvements	5,270,000	116,927	2,101,000	2,101,000	8,576	125,503	-	125,503	2%
212005	Rouge River Outfall No. 2 (RRO-2) Segment 1- WWTP Modifications	252,000	-	-	-	-	-	251,881	251,881	100%
212006	PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	47,466,000	26,440,608	15,817,000	15,817,000	11,032,341	37,472,949	-	37,472,949	79%
212007	Rehabilitation of the Secondary Clarifiers	34,805,000	-	-	-	-	-	-	-	0%

## Wastewater System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
212008	WRRF Rehabilitation of Intermediate Lift	20,516,000	-	-	-	-	-	-	-	0%
213001	Replacement of Belt Filter Presses for Complex I and Upper Level Complex II	36,669,000	-	-	-	-	-	36,669,231	36,669,231	100%
213002	Rehabilitation of Central Offload Facility	19,413,000	982,301	6,447,000	4,947,000	21,380	1,003,681	-	1,003,681	5%
213003	Sewage Sludge Incinerator Air Quality Improvements at WRRF	51,094,000	-	-	-	-	-	36,675,871	36,675,871	72%
213004	Biosolids Dryer Facility at WRRF	2,240,000	-	23,000	23,000	25,747	25,747	2,408,470	2,434,216	109%
213005	Complex I Incinerators Decommissioning and Reusability	4,905,000	42,950	-	-	150,059	193,009	-	193,009	4%
213006	Improvements to Sludge Feed Pumps at Dewatering Facilities	3,857,000	4,856	-	-	2,894	7,750	-	7,750	0%
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	22,187,000	2,329,474	6,787,000	6,883,404	3,832,956	6,162,430	-	6,162,430	28%
213008	Rehabilitation of the Wet and Dry Ash Handling Systems	20,616,000	-	-	-	-	-	-	-	0%
213009	Phosphorous Recovery Facility at the WWRF	-	3,536	-	-	-	3,536	-	3,536	0%

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
214001	Relocation of Industrial Waste Division and Analytical Laboratory Operations	12,947,000	572,845	4,001,000	4,001,000	1,563,550	2,136,395	-	2,136,395	17%
215001	Rehabilitation of Combined Sewer Overflow (CSO) Retention Treatment Basins (RTB), Screening and Disinfection Facilities (SDF)	-	-	-	-	-	-	1,699,489	1,699,489	0%
216001	Underground Electrical Duct Bank Repair and EB-1, EB-2, and EB-10 Primary Power Service Improvements - WRRF	32,669,000	-	-	-	-	-	32,685,875	32,685,875	100%
216002	Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements	850,000	-	-	-	-	-	849,278	849,278	100%
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	5,425,000	439,040	551,000	784,000	58,803	497,842	-	497,842	9%

## Wastewater System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
216005	Rehabilitation of the Main Plant Maintenance Building, Replacement of various Plant Maintenance Areas and Work Environment Improvement.	-	-	-	-	-	-	-	-	0%
216006	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System	54,456,000	-	-	-	2,470	2,470	-	2,470	0%
216007	DTE Primary Electric 3rd Feed Supply Line to the WRRF	6,669,000	40,186	2,002,000	2,002,000	-	40,186	543,500	583,686	9%
222001	Intercommunity Relief Sewer Modifications in Detroit Oakwood District	38,000,000	-	-	-	-	-	-	-	0%
222002	Detroit River Interceptor Evaluation and Rehabilitation	44,425,000	2,647,174	1,084,000	3,508,010	3,583,528	6,230,701	-	6,230,701	14%
222003	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation	26,000,000	-	-	-	-	-	-	-	0%
222004	Collection System Valve Remote Operation Structures Improvements	2,374,000	-	1,019,000	1,019,000	-	-	-	-	0%

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
222005	Collection System Access Hatch Improvements	2,763,000	-	1,000,000	1,000,000	-	-	-	-	0%
222007	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.	21,003,000	-	4,000	4,000	-	-	-	-	0%
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	31,768,000	1,550,604	12,094,000	11,985,000	7,867	1,558,471	-	1,558,471	5%
232002	Freud and Connor Creek Pump Station Improvements	32,482,000	5,052,490	1,192,000	1,192,000	278,195	5,330,685	57,734	5,388,420	17%
232003	Northeast Pump Station Improvements	26,328,000	-	-	-	-	-	-	-	0%
233002	Collection System In System Storage Devices(ISDs) Improvements	3,550,000	-	82,000	82,000	235	235	-	235	0%
251002	Wastewater System Wide Instrumentation & Controls Software and Hardware Upgrade	14,048,000	-	877,000	877,000	71	71	-	71	0%

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget	CWIP Balance	FY 2019 Board Approved	FY 2019 Amended Spend	FY 2019 Activity through	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization	Life to Date Activity	Life to Date Activity / Total
		Estimate from FY2019 - 2023 CIP						through December 31, 2018	through December 31 2018	Project Estimate
260100	Water Resource Recovery Facility (WRRF), Lift Station & Wastewater Collection System Allowance	25,753,000	-	1,100,000	1,003,596	-	-	-	-	0%
260101	Plant-Wide Replacement of Emergency Lighting	-	-	-	-	-	-	1,245,972	1,245,972	0%
260102	Replace Stairs - WWTP	-	-	-	-	-	-	109,082	109,082	0%
260103	Replace 4 DS-706 Centrifuges WWTP	-	-	-	-	-	-	779,079	779,079	0%
260104	Pur Installation of EB-25 Unit WWTP	-	-	-	-	-	-	20,768	20,768	0%
260105	Replace Various Air Distribution Equip	-	-	-	-	-	-	867,574	867,574	0%
260107	Pump Station 2 Replacement	-	-	-	-	-	-	-	-	0%
260108	Sanitary Meter Replacement: Neff Road	-	-	-	-	-	-	376,613	376,613	0%
260110	Black& Veatch:	-	-	-	-	-	-	-	-	0%
260111	W-3 Construct: Overhead Door	-	-	-	-	-	-	551,169	551,169	0%
260112	Connor Creek	-	-	-	-	-	-	353,889	353,889	0%
260113	Fire Remediation	-	19,233,711	-	-	-	19,233,711	-	19,233,711	\$ -

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	77,749,000	-	10,601,000	2,000,000	-	-	-	-	0%
260201	Conveyance System Interceptor Rehab	-	8,912,692	-	8,601,000	1,810,865	10,723,556	-	10,723,556	0%
260202	Conveyance System Interceptor Rehab	-	-	-	-	7,250	7,250	-	7,250	0%
260203	Inland: Sewer Inspection	-	4,642,066	-	-	-	4,642,066	-	4,642,066	0%
260300	Schedule Replacement Program of Critical Assets	11,028,000	-	-	-	-	-	-	-	0%
260301	Roof Replacement of Complex II	-	-	-	-	88,970	88,970	1,672,747	1,761,717	0%
260302	Repair HVAC	-	-	-	-	-	-	-	-	0%
260400	Sewage Meter Design, Installation, Replacement and Rehabilitation Program	8,600,000	-	1,700,000	1,700,000	-	-	-	-	0%



## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
260500	CSO Outfall Rehab	44,337,000	-	507,000	-	-	-	-	-	0%
260502	CSO Outfall Rehab	-	8,799	-	507,000	2,376,032	2,384,830	-	2,384,830	0%
260503	Collection System Backwater Gates	-	-	-	-	362	362	-	362	0%
260600	CSO Facilities Improvements Program	45,221,000	191,848	9,277,000	2,456,000	18,589	210,437	-	210,437	0%
260601	Oakwood Drain Valve Improvements	-	-	-	-	184,145	184,145	-	184,145	0%
260602	CSO Fire Alarm System Improvements	-	-	-	-	163,405	163,405	-	163,405	0%
260603	Conner Creek CSO Basin Rehab	-	243,224	-	6,821,000	1,381,841	1,625,065	-	1,625,065	0%
260604	Baby Creek CSO Rehab	-	45,791	-	-	134,656	180,447	-	180,447	0%
260605	CSO Facilities CA	-	-	-	-	7,056	7,056	-	7,056	0%
260606	Puritan Fenkell Roof Replacement	-	-	-	-	1,185	1,185	-	1,185	0%
260607	Lieb SDF Electrical Improvements	-	-	-	-	2,274	2,274	-	2,274	0%
260609	Seven Mile RTB - Parking Lot / Sitework	-	-	-	-	1,594	1,594	-	1,594	0%
260610	Baby Creek MAU Replacement	-	-	-	-	310	310	-	310	0%
260611	HVAC Improvements at Leib SDF	-	-	-	-	439	439	-	439	0%
331002	Roofing Systems Replacement at GLWA Wastewater Treatment Plant, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)	-	-	286,000	286,000	3,670	3,670	-	3,670	0%

## Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
361001	Consolidated Process Control System Upgrades	-	-	-	-	-	-	315,627	315,627	0%
361002	Data Center Reliability/Availability Improvements	-	-	-	-	-	-	17,253	17,253	0%
361003	SCADA Radio Network Upgrade	-	-	-	-	-	-	852,872	852,872	0%
380400	As-needed CIP Implementation Assistance and Related Services	-	-	803,000	803,000	-	-	-	-	0%
380401	PMA: As Needed CIP Services	-	-	-	-	-	-	-	-	0%
380500	Department-wide General Engineering Services on an As-needed Basis	-	-	114,000	114,000	-	-	-	-	0%
380501	MetcoServices:General Engineer	-	-	-	-	-	-	-	-	0%
380600	General Engineering Services	-	-	51,000	51,000	-	-	-	-	0%
380601	Alfred Benesh:General Engineer	-	632	-	-	3,832	4,464	-	4,464	0%
380701	Engineering Svc Concrete Testing, Soil Borings	-	-	-	-	-	-	-	-	0%



\*Projects with activity and no current fiscal year board approved CIP spend are being evaluated for spending plan amendments with amendments anticipated prior to Q3 FY 2019 CWIP. As GLWA Engineers commence on developing scopes for projects ahead of the FY 2019 CIP Plan the related salaries and benefits are identified in the FY 2019 activity and accumulated to the associated CIP Project CWIP account which has resulted in a number of instances where FY 19 activity exists on projects without amended spend.

## **FY 2019 Spending Plan Amendment Summary**

The purpose of the Spending Plan Amendment Summary is to illustrate the amendments to the current fiscal year spend for each project with a spending plan amendment resulting in an amended spend amount or the use of allowance and program funding for a specific project necessitated by contract award.

The award of CIP contracts and the related execution thereof may result in deviation from the amount and timing of planned spend. Acknowledging the aforementioned deviation, spending plan amendments are prepared to fund the related increase or decrease either to or from the Capital Reserve to amend the board approved fiscal year planned spend accordingly and to inform decision makers in the development of future Capital Improvement Plans. Similar to the spending plan amendments prepared for the Capital Reserve, spending plan amendments are also prepared for contracts that are planned or funded by way of the CIP Program and Allowance accounts. As additional contracts are awarded and other project information becomes available additional spending plan amendments to the Capital Reserve will be prepared to amend the planned spend for FY 2019.

\$.89 million of Capital Reserve spending plan amendments have been prepared as of December 31, 2018 as shown in the table on the next page along with spending plan amendments detailing the assignment of funding within Program and Allowance accounts.

The order of the report on the subsequent page is in ascending order by CIP project number.

## Wastewater System

### Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority  
Wastewater System FY 2019 Spending Plan Amendment Summary - Due to Changes in Project Cost and/or Timing  
Unaudited Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Capital Reserve	Program / Allowance	Grand Total
212003	Aeration System Improvements	\$ (150,000)	\$ -	\$ (150,000)
213002	Rehabilitation of Central Offload Facility	(1,500,000)	-	(1,500,000)
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	-	96,404	96,404
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	233,000	-	233,000
222002	Detroit River Interceptor Evaluation and Rehabilitation	2,424,010	-	2,424,010
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	(109,000)	-	(109,000)
260100	Water Resource Recovery Facility (WRRF), Lift Station & Wastewater Collection System Allowance	-	(96,404)	(96,404)
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	-	(8,601,000)	(8,601,000)
260201	Conveyance System Interceptor Rehab	-	8,601,000	8,601,000
260500	CSO Outfall Rehab	-	(507,000)	(507,000)
260502	CSO Outfall Rehab	-	507,000	507,000
260600	CSO Facilities Improvements	-	(6,821,000)	(6,821,000)
260603	Conner Creek CSO Basin Rehab	-	6,821,000	6,821,000
<b>Grand Total</b>		<b>\$ 898,010</b>	<b>\$ -</b>	<b>\$ 898,010</b>

## Glossary of Acronyms

ACRONYM	DEFINITION	ACRONYM	DEFINITION
CCD	Construction Change Directive	NPDES	National Pollution Discharge Elimination System
CSO	Combined Sewer Overflow	RAS	Return Activated Sludge
CIPP	Cured in Place Pipe Lining	RRO	River Rouge Outfall
DCB	Detailed Cost Breakdown	RTB	Retention Treatment Basin
ESR	Equipment Shutdown Request	SDF	Screening and Disinfection Facility
HPO	High Purity Oxygen	SFE	Screened Final Effluent
ISDs	In System Storage Devices	SPW	Springwells Water Treatment Plant
IWC	Industrial Waste Control	VFD	Variable Frequency Drive
MCC	Motor Control Centers	WRRF	Water Resource Recovery Facility
MDEQ	Michigan Department of Environmental Quality	WTP	Water Treatment Plant
NAB	New Administration Building		
NIEA	North Interceptor East Arm		



## Financial Services Audit Committee Communication

**Date:** March 15, 2019

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

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

**Re:** Drinking Water Revolving Fund (DWRf) Project Plan Submittal for the 14 Mile Water Transmission Main Loop Project

**Background:** The Great Lakes Water Authority (the “GLWA”) has identified one water system project in the proposed FY 2020 to FY 2024 Capital Improvement Plan (CIP) for submittal to the Michigan Department of Environmental Quality (MDEQ) for the DWRf financing program for funding in the state’s 2020 fiscal year. The deadline for submitting all DWRf project plans to MDEQ is May 1, 2019, but prior to submitting the project plan, GLWA must hold a public hearing for the project and present the plan. The public hearing for this project is proposed to be set for April 24, 2019 at 2:00 p.m.

The FY 2020 DWRf Project Plan and public hearing notice for the 14 Mile Water Transmission Main Loop Project will be posted on the GLWA website no later than March 25, 2019 and will be available for viewing at the GLWA main office building 30 days prior to the public hearing. The project plan will be presented at a public hearing and after the public hearing is closed, the included draft resolutions will be scheduled for action by the GLWA Board of Directors at its regularly scheduled meeting also on April 24, 2019. The resolution must be approved and signed to ensure that the finalized Project Plan is assembled, printed, and submitted to the MDEQ by the deadline of May 1, 2019.

**Analysis:** The “14 Mile Water Transmission Main Loop Project – (CIP# 122013)” includes the 14 Mile Road Transmission Main that currently serves West Bloomfield Township, Farmington Hills, Commerce Township, Novi, Walled Lake, and Wixom is a single feed transmission system. If a disruption to service were to occur on this transmission main, many of the users along this main would experience a complete loss of pressure and flow. This project would provide a transmission main loop to the 14 Mile system to increase redundancy on this branch of the system.

The project is comprised of design and construction of 6-7 Miles of transmission main from 8 Mile Road to 14 Mile Road along the Halsted/Haggerty Road corridor in order to back-feed the 14 Mile Transmission system during a break in the transmission system along 14 Mile. The work will also include connections to the yard piping and reservoir fill line at the Haggerty Booster Station as well as a control valve to regulate flows along the transmission

main. These improvements and modifications are detailed in the Project Plan. The estimated cost of the project is \$54,426,000.

**Justification:** GLWA is seeking low interest loan assistance through the DWRP program for this project. Although the Michigan Department of Environmental Quality (MDEQ) interest rate for FY 2020 will not be determined until October 2019, the current year's interest rate of 2.00% is less than the present conventional revenue bond interest rates. Based on the estimated project amount of \$54.4 million, GLWA could save an estimated \$33 million in interest costs and avoided issuance costs, based on a similar open market revenue bond with a 30-year term and 4.50% interest rate, over the life of the 30-year bond issue. This will afford savings to both GLWA and its member partners.

**Budget Impact:** Debt service is anticipated to begin in FY 2021 for this project and will be included as part of the FY 2021 financial plan.

**Proposed Action:** The Audit Committee recommends that the Great Lakes Water Authority Board hold the public hearing on April 24, 2019 for the 14 Mile Road Water Transmission Main Loop Project and approve the resolution to accept and submit the Drinking Water Revolving Fund project plan as presented, at its regular meeting on April 24, 2019.



**GREAT LAKES WATER AUTHORITY  
PUBLIC HEARING NOTICE 14 MILE ROAD TRANSMISSION MAIN LOOP  
FY 2020 DRINKING WATER REVOLVING FUND PROJECTS**

The Great Lakes Water Authority (GLWA) announces a Public Hearing regarding its Project Plan for the proposed 14 Mile Road Transmission Main Loop Project. GLWA will be seeking low interest Drinking Water Revolving Fund (DWRF) loan assistance for FY 2020. The project is comprised of the evaluation, design, and construction of an approximately seven-mile-long drinking water transmission main that will connect the 8 Mile Road Transmission Main to the 14 Mile Road Transmission Main in order to create a loop in the drinking water transmission system.

In recent years, the existing 14 Mile Transmission Main has experienced operational disruptions resulting in water outages for customers in the service area. The 14 Mile Transmission Main provides the only source of water for many communities west of Haggerty Road, including Commerce, Novi, and Wixom. Due to the type of failures that have occurred, there is a potential risk for future failures.

The 14 Mile Transmission Main Loop will drastically improve the redundancy and resiliency of the system. In addition to the approximately seven-mile-long north-south proposed pipeline, the project also includes a reinforcement pipeline parallel to the existing 14 Mile Transmission Main between the Haggerty Pump Station and Decker Road. This pipeline can serve the area while the existing transmission main is being repaired. When it is repaired, there will be two fully functional services along 14 Mile Road.

The total cost of this project is currently estimated at \$54,426,000. The 14 Mile Road Transmission Main Loop Project is eligible for participation under the State of Michigan low interest DWRF loan program.

The Public Hearing will present a description of the recommended project, its evaluation, and estimated costs, as well as the cost per household impact for customer communities. The purpose of the hearing is not only to inform, but to seek and gather input from people that will be affected. Comments and viewpoints from the public are requested.

**THE MEETING WILL BE HELD ON:**

**DATE:** April 24, 2019  
**PLACE:** Great Lake Water Authority  
Water Board Building  
735 Randolph  
5<sup>th</sup> Floor, Board Room  
Detroit, Michigan 48226  
**TIME:** 2:00 p.m.

Information on the Project Plan will be available for review March 22, 2019, at the following locations:

GLWA Website: [www.glwater.org](http://www.glwater.org)

or

**Great Lakes Water Authority  
Water Board Building  
735 Randolph, Suite 1601  
Detroit, MI 48236**

If you have questions or would like to submit written statements for the Public Hearing Record, call or write:

**Mr. Jonathan Wheatley  
Great Lakes Water Authority  
Public Finance  
735 Randolph, Suite 1601  
Detroit, MI 48226**

Statements will be accepted at the above address if received prior to 5:00 p.m., Wednesday, April 24, 2019.

**Great Lakes Water Authority  
Sue F. McCormick  
CEO**

Great Lakes Water Authority  
Resolution

RE: Resolution for the 14 Mile Road Transmission Main Loop Project  
FY 2020 Drinking Water Revolving Fund (DWRf) Project Plan

- Whereas: The 14 Mile Road Transmission Main Loop DWRf Project Plan for the FY 2020 DWRf has been prepared by the GLWA;
- Whereas: The 14 Mile Road Transmission Main is the only source of water for many communities west of Haggerty Road, including Commerce, Novi, and Wixom;
- Whereas: The proposed project will drastically improve the redundancy and resilience of the system and will provide a reinforcement pipeline parallel to the existing 14 Mile Road Transmission Main between the Haggerty Pump Station and Decker Road;
- Whereas: The capital improvement is comprised of the evaluation, design, and construction of an approximately seven-mile-long drinking water transmission loop that will connect the 8 Mile Road Transmission Main to the 14 Mile Road Transmission Main in order to create a loop in the drinking water transmission system;
- Whereas: The FY 2020 DWRf Project Plan has been placed on public notice and a Public Hearing was held on April 24, 2019, at 2:00 p.m. where comments on the recommended project were solicited;
- Whereas: It is the desire of the GLWA Board of Directors to secure low interest loan assistance through the DWRf program; and
- Whereas: Formal action by the GLWA Board of Directors is needed to adopt the recommended FY 2020 DWRf Project Plan for the 14 Mile Road Transmission Main Loop, as a requirement for participation in the State of Michigan's DWRf program.

Now Therefore Be It:

- Resolved That this Board hereby accepts the FY 2020 14 Mile road Transmission Loop project, dated April 2019, and as directs staff members of the GLWA to address all public comments, prepares the responsiveness summary, and publish the final Project Plan; and Be It Further
- Resolved That the Chief Executive Officer (CEO) is authorized to transmit the finally FY 2020 DWRf Project Plan for the 14 Mile Road Transmission Main Loop project to the Michigan Department of Environmental Quality on behalf of the GLWA Board of Directors and take all appropriate steps to secure approval of a low interest loan in accordance with the State of Michigan's DWRf procedures so that the project can proceed expeditiously to construction.

# GLWA

*Great Lakes Water Authority*



## **Monthly Financial Report Binder**

December 2018

**Presented to the  
Great Lakes Water Authority  
Audit Committee  
on March 15, 2019**

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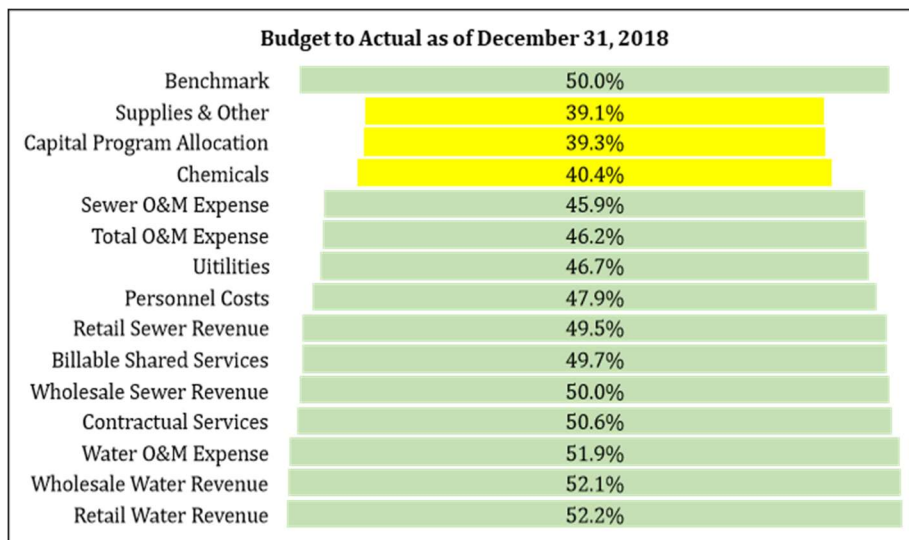
## Revenue and Expense Budget to Actual<sup>1</sup> – Pro-rata Benchmark of 50%

Most categories are within 5% of the pro-rata benchmark.

*Supplies & Other:* Due to timing of one-time or annual expenses.

*Capital Program Allocation:* Ongoing analysis of team member time assigned to maintenance programs versus capitalizable projects.

*Chemicals:* Expected variance as usage does not follow a 1/12<sup>th</sup> monthly budget pattern.



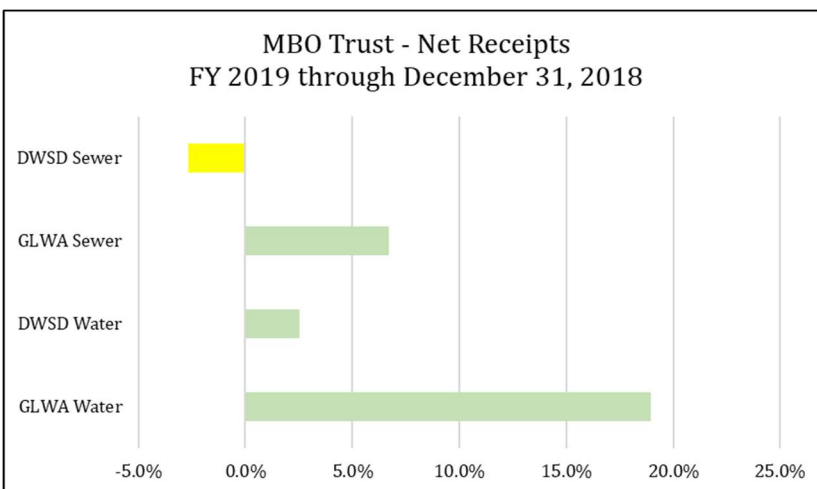
## Master Bond Ordinance Trust Net Receipts

Overall cash flow for GLWA is positive.

DWSD net water cash flows are positive, although DWSD sewer cash flows continue an overall negative trend.

During the development of this report DWSD made a principal payment of nearly \$7 million towards the loan receivable associated with the FY 2016 and FY 2017

sewer cash receipts shortfall of \$29.3 million. This will be reported as part of February 2019 *Trust Receipts and Disbursements* report activity.



## Other Topics

Highland Park's total receivable balance is \$41.7 million. FY 2019 cash receipts equal \$629,000 through December 30, 2018, although a \$2.1 million payment has been subsequently received and will be reflected in the January 2019 report activity.

Questions? Contact the Office of the Chief Financial Officer at [CFO@glwater.org](mailto:CFO@glwater.org)

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

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

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

## Revenue Requirement Budget Basis Analysis

GLWA's annual revenue requirement represents a) the basis for calculating Member Partner 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 reported on an accrual basis. The primary deviation between the revenue requirement basis to the financial reporting basis is the treatment of debt service, legacy pension obligations, and lease related activities. The Revenue Requirement Basis is foundational to GLWA's daily operations, financial plan, and of most interest to key stakeholders.

**Table 1A – Water Revenue Requirement Budget** and **Table 1B – Sewer Revenue Requirement Budget** presents a year-over-year budget to actual performance report. The revenue requirement budget is accounted for in the operations and maintenance fund for each system. Since this report is for December 2018, the pro-rata benchmark is 50.0% (6 of 12 months of the fiscal year).

Items of key interest discussed below are highlighted in gold on Tables 1A (Water) and 1B (Sewer).

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. Detailed schedules related to revenues are provided in the *Wholesale Billings, Collections, and Receivables* section of this financial report binder.
2. The operations and maintenance (O&M) expense for both systems are less than the pro-rata benchmark; the *water* system is slightly under the pro-rata benchmark for FY 2019 at 48.3%, while the *sewer* system O&M expense is at 44.9%. This variance between the funds is partly due to a project in-process to refine centralized and administrative cost allocations. It is likely that this will result in a budget amendment after the December 2018 month-end close.
3. The remaining revenue requirements and debt service for *both* systems are funded on a 1/12<sup>th</sup> basis each month in accordance with the Master Bond Ordinance. In October 2018, the GLWA had a successful bond sale which will provide a positive budget variance for *both* systems. That amendment will be reported in a future budget amendment.
4. Overall total revenue requirements for *both* systems are in line with the benchmark.

5. Investment earnings remain on target for both systems. Detailed analysis of investment earnings activity to date can be found in the *Cash & Investment Income* section of this financial report binder.
6. Other revenues are one-time and unusual items that do not fit an established revenue category. Both the water and sewer systems will vary from budget due to the nature of the items recorded in this category. For example, in FY 2018 the variance reported for the sewer system was due, in large part, to fire remediation insurance proceeds received.

**- continued -**

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

Water System	FY2018 AMENDED BUDGET	FY 2018 THRU 12/31/2017	Percent Year-to- Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 12/31/2018	Percent Year-to- Date
<b>Revenues</b>						
Wholesale Customer Charges	\$ 310,019,800	\$ 170,882,300	55.1%	\$ 307,382,500	\$ 165,078,600	53.7%
Retail Services Agreement	15,130,600	7,565,300	50.0%	20,181,400	10,163,100	50.4%
Investment Earnings	2,932,900	1,462,100	49.9%	3,802,300	1,972,100	51.9%
Other Revenues	35,900	82,400	229.5%	34,300	31,800	92.7%
Transfer In	-	199,900	0.0%	-	2,153,500	0.0%
<b>Total Revenues</b>	<b>\$ 328,119,200</b>	<b>\$ 180,192,000</b>	<b>54.9%</b>	<b>\$ 331,400,500</b>	<b>\$ 179,399,100</b>	<b>54.1%</b>
<b>Revenue Requirements</b>						
Operations & Maintenance Expense	\$ 121,562,500	\$ 37,764,300	31.1%	\$ 121,562,600	\$ 58,671,100	48.3%
O&M Legacy Pension	6,048,000	3,024,000	50.0%	6,048,000	3,024,000	50.0%
Debt Service	135,631,200	67,815,600	50.0%	134,214,600	67,107,300	50.0%
Accelerated Legacy Pension	6,268,300	3,134,150	50.0%	6,268,300	3,134,150	50.0%
Extraordinary Repair & Replacement						
Deposit	1,452,500	726,250	50.0%	-	-	0.0%
Lease Payment	22,500,000	11,250,000	50.0%	22,500,000	11,250,000	50.0%
Operating Reserve Deposit	323,700	161,850	50.0%	-	-	0.0%
Water Residential Assistance Program	1,678,600	839,300	50.0%	1,673,400	836,700	50.0%
Improvement & Extension Fund						
Deposit	32,654,400	16,327,200	50.0%	39,133,600	19,566,800	50.0%
<b>Total Revenue Requirements</b>	<b>\$ 328,119,200</b>	<b>\$ 141,042,650</b>	<b>43.0%</b>	<b>\$ 331,400,500</b>	<b>\$ 163,590,050</b>	<b>49.4%</b>
<b>Net Difference</b>		<b>\$ 39,149,350</b>			<b>\$ 15,809,050</b>	

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

Sewer System	FY2018 AMENDED BUDGET	FY 2018 THRU 12/31/2017	Percent Year-to- Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 12/31/2018	Percent Year-to- Date
<b>Revenues</b>						
Wholesale Customer Charges	\$ 271,429,300	\$ 135,715,800	50.0%	\$ 271,296,300	\$ 137,476,800	50.7%
Retail Services Agreement	178,969,100	89,484,600	50.0%	181,159,300	91,503,800	50.5%
Industrial Waste Control Charges	14,457,700	7,178,000	49.6%	15,005,800	4,607,700	30.7%
Pollutant Surcharges	5,099,000	3,038,700	59.6%	-	3,012,200	0.0%
Other Revenues	370,800	3,622,800	977.0%	480,200	802,300	167.1%
Investment Earnings	2,283,800	1,638,400	71.7%	4,085,700	2,888,000	70.7%
Transfer In	-	23,600	0.0%	-	672,100	0.0%
Bad Debt Expense Recovery	-	-	0.0%	-	-	0.0%
<b>Total Revenues</b>	<b>\$ 472,609,700</b>	<b>\$ 240,701,900</b>	<b>50.9%</b>	<b>\$ 472,027,300</b>	<b>\$ 240,962,900</b>	<b>51.0%</b>
<b>Revenue Requirements</b>						
Operations & Maintenance Expense	\$ 190,988,000	68,916,800	36.1%	\$ 191,079,400	\$ 85,870,600	44.9%
O&M Legacy Pension	10,824,000	5,412,000	50.0%	10,824,000	5,412,000	50.0%
Debt Service	205,859,900	102,929,950	50.0%	214,600,700	107,300,350	50.0%
Accelerated Legacy Pension	11,620,700	5,810,350	50.0%	11,620,700	5,810,350	50.0%
Extraordinary Repair & Replacement						
Deposit	2,283,100	1,141,550	50.0%	-	-	0.0%
Lease Payment	27,500,000	13,750,000	50.0%	27,500,000	13,750,000	50.0%
Operating Reserve Deposit	341,600	170,800	50.0%	-	-	0.0%
Water Residential Assistance Program	2,313,700	1,156,850	50.0%	2,374,100	1,187,050	50.0%
Improvement & Extension Fund						
Deposit	20,878,700	10,439,350	50.0%	14,028,400	7,014,200	50.0%
<b>Total Revenue Requirements</b>	<b>\$ 472,609,700</b>	<b>\$ 209,727,650</b>	<b>44.4%</b>	<b>\$ 472,027,300</b>	<b>\$ 226,344,550</b>	<b>48.0%</b>
<b>Net Difference</b>		<b>\$ 30,974,250</b>			<b>\$ 14,618,350</b>	



## Operations & Maintenance Budget – Major Budget Categories

The year-over-year benchmark ratio as of December 31, 2018, is 50.0% (six months). When comparing FY 2019 to FY 2018 in **Table 2 – Operations & Maintenance Budget – Major Budget Categories**, it appears spending has increased. This is true in some instances; however, the greater impact is that the Financial Reporting & Accounting Team has implemented a full accrual basis for interim financial statements during the latter half of FY 2018. This variance anomaly will decrease as we proceed through FY 2019.

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

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

Major Budget Categories	FY2018 AMENDED BUDGET	FY 2018 THRU 12/31/2017	Percent Year-to- Date	FY 2019 AMENDED BUDGET	FY 2019 THRU 12/31/2018	Percent Year-to- Date
Water	\$ 73,510,500	\$ 19,622,500	26.7%	\$ 66,596,200	\$ 34,552,000	51.9%
Sewer	124,106,400	43,009,400	34.7%	118,318,900	54,265,100	45.9%
Centralized	82,628,700	34,025,900	41.2%	99,044,500	44,250,300	44.7%
Administrative	32,304,900	11,688,300	36.2%	28,682,400	12,715,900	44.3%
Employee Benefits	-	(1,665,000)	0.0%	-	(1,241,600)	0.0%
<b>Total Revenues</b>	<b>\$ 312,550,500</b>	<b>\$ 106,681,100</b>	<b>34.1%</b>	<b>\$ 312,642,000</b>	<b>\$ 144,541,700</b>	<b>46.2%</b>

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

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

In total, the O&M expenses are at 46.2% which is reasonably close to the pro-rata benchmark of 50.0%. This positive variance equates to a dollar amount of \$11.8 million. The expense category commentary is provided below for items highlighted on Table 3.

**Personnel Costs:** The overall category is on target at 47.9% through December 2018.

**Utilities:** The overall category is slightly lower than the benchmark; coming in at 46.7%. Variances in this category are not unexpected given the seasonality of the operations. In comparing FY 2019 to FY 2018 the expenses appear more in line with the budget in FY 2019. This is due in large part to the month-end closing process improvements implemented during the latter half of FY 2018.

**Chemicals:** This category is lower than the benchmark; coming in at 40.4% through December 2018. This variance is not unexpected as usage varies throughout the year. Staff is working on enhancements to future monthly financial reports to correlate spending with operational metrics.

**Supplies & Other:** This category is lower than the benchmark; coming in at 39.1% through December 2018. An internal review is underway to better understand the causes for this variance. Given that the nature of the items in this category are subject to one-time expenses that do not occur evenly throughout the year, this variance is not a concern at this time.

**Contractual Services:** The overall category is on target at 50.6% through December 2018.

**Capital Program Allocation:** This category is lower than the benchmark; coming in at 39.3% through December 2018. In July 2018, GLWA launched a time keeping software (including an app), BigTime, to make it easier for team members to report their time spent on direct capital delivery. New processes are currently being evaluated to better understand staff resource allocation when the budget was developed versus how time is actually incurred – including time allocated to maintenance programs versus capitalizable projects.

**Shared Services:** The shared services reimbursement is comprised of both labor (tracked via BigTime) and expenses, such as annual fees for software licensing. Staff from both GLWA and DWSD have been working together to evaluate and refine the budget for the shared services agreements. In December 2018, adjustments were made to both the billings and accounting accruals to bring them in line with the amended shared services budget. As of December 2018, this category is now on target at 49.7%.

**Table 3 – Expense Variance Analysis**

Expense Categories	FY2018 AMENDED BUDGET	FY 2018 THRU 12/31/2017	Percent Year-to- Date	FY 2019 AMENDED BUDGET	FY 2019 PRORATED AMENDED BUDGET (6 MONTHS)	FY 2019 THRU 12/31/2018	Percent Year-to- Date	FY 2019 PRORATED BUDGET LESS FY 2019 ACTIVITY
<b>Entity-wide</b>								
2.1 Salaries & Wages	\$ 57,113,800	\$ 24,297,500	42.5%	\$ 64,160,400	\$ 32,080,200	\$ 30,025,600	46.8%	\$ 2,054,600
2.2 Workforce								
Development	661,500	248,400	37.6%	740,200	370,100	367,700	49.7%	2,400
2.3 Overtime	6,516,600	3,069,300	47.1%	6,756,300	3,378,150	3,761,300	55.7%	(383,150)
2.4 Employee Benefits	20,998,900	11,228,000	53.5%	22,255,300	11,127,650	12,481,300	56.1%	(1,353,650)
2.5 Transition Services	13,865,100	4,439,300	32.0%	11,189,100	5,616,550	3,723,600	33.3%	1,892,950
2.6 Personnel Transition								
Adjustment	(1,557,200)	-	0.0%	(2,586,200)	(1,293,100)	-	0.0%	(1,293,100)
8.0 Employee Benefits								
Fund	-	(1,665,000)	0.0%	-	-	(1,241,600)	0.0%	1,241,600
Personnel Costs	97,598,700	41,617,500	42.6%	102,515,100	51,279,550	49,117,900	47.9%	2,161,650
3.1 Electric	42,324,400	10,726,600	25.3%	42,132,600	21,066,300	20,952,900	49.7%	113,400
3.2 Gas	7,029,500	1,461,600	20.8%	6,854,400	3,427,200	2,700,100	39.4%	727,100
3.3 Sewage Service	2,030,500	584,100	28.8%	2,544,000	1,272,000	1,035,600	40.7%	236,400
3.4 Water Service	4,587,600	1,800,400	39.2%	5,781,500	2,890,750	2,085,600	36.1%	805,150
Utilities	55,972,000	14,572,700	26.0%	57,312,500	28,656,250	26,774,200	46.7%	1,882,050
4.1 Chemicals	13,340,600	6,360,700	47.7%	16,620,900	8,310,450	6,712,400	40.4%	1,598,050
4.2 Supplies & Other	41,770,900	12,941,000	31.0%	36,405,600	18,202,800	14,230,100	39.1%	3,972,700
4.3 Contractual Services	113,680,100	35,632,100	31.3%	106,342,000	52,987,600	53,814,300	50.6%	(826,700)
5.1 Capital Program								
Allocation	(2,012,900)	(699,900)	34.8%	(4,000,000)	(2,000,000)	(1,570,600)	39.3%	(429,400)
5.2 Shared Services	(10,109,500)	(3,742,900)	37.0%	(9,123,100)	(4,635,750)	(4,536,900)	49.7%	(98,850)
7.0 Unallocated Reserve	2,310,600	-	0.0%	6,569,100	3,520,150	-	0.0%	3,520,150
Total Expenses	\$ 312,550,500	\$ 106,681,200	34.1%	\$ 312,642,100	\$ 156,321,050	\$ 144,541,400	46.2%	\$ 11,779,650

The Basic Financial Statements report includes the following four tables.

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

GLWA utilizes four funds daily. At the macro level for financial reporting purposes, GLWA 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

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

**Table 1 – Statement of Net Position - All Funds Combined  
 As of December 31, 2018**

	Water	Sewage Disposal	Total Business- type Activities	Comparative June 30, 2018
<b>Assets</b>				
Cash (a)	\$ 197,003,000	\$ 213,550,000	\$ 410,553,000	\$ 671,753,000
Investments (a)	367,990,000	277,942,000	645,932,000	343,235,000
Accounts Receivable	110,717,000	101,032,000	211,749,000	191,359,000
Due from Other Funds (b)	6,502,000	-	6,502,000	32,255,000
Other Assets (c)	605,559,000	455,920,000	1,061,479,000	985,888,000
Cash Held FBO DWSD Advance (d)	-	21,943,000	21,943,000	18,468,000
Capital Assets, net of depreciation	1,721,398,000	2,522,981,000	4,244,378,000	4,402,212,000
Construction Work in Process	174,989,000	188,423,000	363,413,000	288,052,000
<b>Total Assets</b>	<b>3,184,158,000</b>	<b>3,781,790,000</b>	<b>6,965,948,000</b>	<b>6,933,222,000</b>
<b>Deferred Inflow (e)</b>	<b>89,576,000</b>	<b>173,308,000</b>	<b>262,885,000</b>	<b>332,992,000</b>
<b>Liabilities</b>				
Liabilities – Short-Term (f)	149,036,000	157,091,000	306,127,000	270,446,000
Due to Other Funds (b)	-	6,502,000	6,502,000	32,255,000
Other Liabilities (g)	2,828,000	6,247,000	9,075,000	8,638,000
Cash Held FBO DWSD (d)	10,174,000	-	10,174,000	8,902,000
Liabilities – Long-Term (h)	3,105,466,000	3,843,937,000	6,949,403,000	6,998,296,000
<b>Total Liabilities</b>	<b>3,267,504,000</b>	<b>4,013,778,000</b>	<b>7,281,282,000</b>	<b>7,318,537,000</b>
<b>Deferred Outflow (e)</b>	<b>66,843,000</b>	<b>57,629,000</b>	<b>124,472,000</b>	<b>126,432,000</b>
<b>Net Position Deficit (i)</b>	<b>\$ (60,612,000)</b>	<b>\$ (116,309,000)</b>	<b>\$ (176,921,000)</b>	<b>\$ (178,755,000)</b>

Totals may be off due to rounding.

In general, the Statement of Net Position reflects a mature organization with no unexpected trends. One item of note as of December 31, 2018 cash balances are lower and investment balances are higher when compared to June 30, 2018 (highlighted in gold on Table 1). In total, cash and investment balances are comparable between the two periods. Cash balances are typically higher at June 30, 2018 to meet annual debt and interest payments, legacy pension obligation payments, and annual operational requirements.

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

### **Footnotes to Statement of Net Position**

- a. *Cash and Investments* include restricted amounts and are reported at book value. Investments at June 30, 2018 are reported at market value.
- b. *Due from Other Funds* and *Due to Other Funds* is shown at the gross level for sub-fund activity.
- c. *Other Assets* primarily consists of the contractual obligation receivable from DWSD related to reimbursement of bonded indebtedness for local system improvements.
- d. *Cash Held FBO Advance (for benefit of) DWSD* and *Cash Held FBO DWSD* represents the net difference between DWSD retail cash received from customers and net financial commitments as outlined in the Master Bond Ordinance.
- e. *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. The accrual basis of revenues and operations and maintenance expense vary from the revenue requirement basis presented in the *Budget to Actual Analysis* and the *Wholesale Billings, Receivables & Collections* sections of the December 2018 Financial Report Binder. Prior year ending balances are provided in the June 30, 2018 column as a reference for comparative purposes. Explanatory notes follow this statement.

**Table 2 – Statement of Revenues, Expenses and Changes in Net Position  
– All Funds Combined  
For the Six Months ended December 31, 2018**

	Water	Percent of Revenue	Sewage Disposal	Percent of Revenue	Total Business- type Activities	Comparative June 30, 2018
<b>Revenue</b>						
Wholesale customer charges	\$ 165,079,000	94.2%	\$ 137,477,000	58.0%	\$ 302,555,000	\$ 592,096,000
Local system charges	10,163,000	5.8%	91,504,000	38.6%	101,667,000	194,100,000
Industrial waste charges	-		4,608,000	1.9%	4,608,000	14,335,000
Other revenue	25,000	0.0%	267,000	0.1%	292,000	4,455,000
Pollutant surcharges	-		3,012,000	1.3%	3,012,000	6,908,000
Bad Debt Recovery	-		-		-	-
<b>Total Revenues</b>	<b>\$ 175,267,000</b>	<b>100.0%</b>	<b>\$ 236,867,000</b>	<b>100.0%</b>	<b>\$ 412,134,000</b>	<b>\$ 811,895,000</b>
<b>Operating Expenses</b>						
Operations and Maintenance Expenses	58,671,000	33.5%	85,871,000	36.3%	144,541,000	284,910,000
Depreciation	73,193,000	41.8%	89,700,000	37.9%	162,893,000	331,242,000
<b>Total Operating Expenses</b>	<b>131,864,000</b>	<b>75.2%</b>	<b>175,571,000</b>	<b>74.1%</b>	<b>307,434,000</b>	<b>616,152,000</b>
Operating Income	43,403,000	24.8%	61,297,000	25.8%	104,700,000	195,743,000
<b>Total Nonoperating (Revenue)/Expense</b>	<b>43,580,000</b>	<b>24.9%</b>	<b>59,286,000</b>	<b>25.0%</b>	<b>102,866,000</b>	<b>271,662,000</b>
<b>Increase/(Decrease) in Net Position</b>	<b>(177,000)</b>	<b>(0.1%)</b>	<b>2,010,000</b>	<b>0.8%</b>	<b>1,834,000</b>	<b>(75,920,000)</b>
Net Position Deficit, Beginning of year	(60,435,000)		(118,319,000)		(178,755,000)	(102,835,000)
<b>Net Position Deficit, End of Year</b>	<b>\$ (60,612,000)</b>		<b>\$(116,309,000)</b>		<b>\$ (176,921,000)</b>	<b>\$ (178,755,000)</b>

Totals may be off due to rounding.

## Water Fund

- ✓ The decrease in Water Fund Net Position is \$177 thousand.
- ✓ Wholesale water customer charges of \$165.0 million account for 94.2% of Water System revenues.
- ✓ Operating expenses of \$131.8 million represent 75.2% of total operating revenue. Depreciation is the largest operating expense at \$73.1 million or 55.5% of operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals \$43.4 million or 24.8% of operating revenue. This represents an increase of \$7.5 million over November year-to-date.
- ✓ The largest category within nonoperating activities is interest expense of \$57.2 million.

## Sewage Disposal Fund

- ✓ The increase in Sewer Net Position was \$2.0 million.
- ✓ Wholesale customer charges of \$137.4 million account for 58.0% of Sewer System revenues. Wholesale customer charges are billed one-twelfth each month based on an agreed-upon historical average “share” of each customer’s historical flows which are formally revisited on a periodic basis. The result is no revenue shortfall or overestimation.
- ✓ Local system (DWSD) charges of \$91.5 million account for 38.6% of total operating revenues. These are also billed at one-twelfth of the annual revenue requirement.
- ✓ Operating expenses of \$175.5 million represent 74.1% of total operating revenue. Depreciation is the largest operating expense at \$89.7 million or 51.1% of total operating expense.
- ✓ Operating income after operating expenses (including depreciation) equals \$61.3 million or 25.8% of operating revenue. This represents an increase of \$4 million over November year-to-date.
- ✓ The largest category within nonoperating activities is interest expense of \$72.2 million.



## Supplemental Schedule of Operations & Maintenance Expenses – All Funds Combined

This Supplemental Schedule of Operations & Maintenance Expenses (O&M) schedule is shown on the next page in Table 3. The accrual basis of operations and maintenance expense may vary from the revenue requirement basis presented in the *Budget to Actual Analysis* section of the December 2018 Financial Report Binder. Explanatory notes follow this schedule.

**Table 3 – Supplemental Schedule of Operations & Maintenance Expenses  
– All Funds Combined  
For the Six Months ended December 31, 2018**

Expenditure	Water	Percent of Total	Sewage Disposal System	Percent of Total	Total Business-type Activities	Percent of Total
Personnel						
Salaries & Wages	\$ 11,781,000	20.1%	\$ 22,336,000	26.0%	\$ 34,116,000	23.6%
Overtime	2,098,000	3.6%	1,663,000	1.9%	3,761,000	2.6%
Benefits	6,412,000	10.9%	4,828,000	5.6%	11,240,000	7.8%
Total Personnel	20,291,000	34.6%	28,827,000	33.6%	49,118,000	34.0%
Utilities						
Electric	14,062,000	24.0%	6,891,000	8.0%	20,953,000	14.5%
Gas	116,000	0.2%	2,584,000	3.0%	2,700,000	1.9%
Sewage	285,000	0.5%	751,000	0.9%	1,036,000	0.7%
Water	1,000	0.0%	2,085,000	2.4%	2,085,000	1.4%
Total Utilities	14,464,000	24.7%	12,310,000	14.3%	26,774,000	18.5%
Chemicals	2,696,000	4.6%	4,016,000	4.7%	6,712,000	4.6%
Supplies and other	4,656,000	7.9%	9,575,000	11.2%	14,231,000	9.8%
Contractual services	21,851,000	37.2%	31,963,000	37.2%	53,815,000	37.2%
Capital program allocation	(965,000)	-1.6%	(606,000)	-0.7%	(1,571,000)	-1.1%
Shared services allocation	(4,322,000)	-7.4%	(216,000)	-0.3%	(4,538,000)	-3.1%
<b>Operations and Maintenance Expenses</b>	<b>\$ 58,671,000</b>	<b>100.0%</b>	<b>\$ 85,871,000</b>	<b>100.0%</b>	<b>\$ 144,541,000</b>	<b>100.0%</b>

Totals may be off due to rounding.

- ✓ Core expenses for water and sewage disposal systems is utilities (18.5% of total O&M expenses) and chemicals (4.6%).
- ✓ Personnel (34.0%) 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 (37.2%) includes:
  - Water System costs of sludge removal and disposal services at the Northeast, Southwest and Springwells Water Treatment Plants (approximately \$4.7 million);



- Sewage Disposal System costs for the operation and maintenance of the biosolids dryer facility (approximately \$7.5 million); and
- Centralized and administrative contractual costs allocated to both systems for information technology, building maintenance, and other services.

## Supplemental Schedule of Nonoperating Expenses – All Funds Combined

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

**Table 4 – Supplemental Schedule of Nonoperating Expenses – All Funds Combined  
For the Six Months ended December 31, 2018**

Nonoperating (Revenue)/Expense	Water	Sewage Disposal	Total Business-type Activities	Comparative June 30, 2018
Interest income contractual obligation	\$ (11,424,000)	\$ (7,509,000)	\$ (18,933,000)	\$ (38,857,000)
Investment earnings	(6,447,000)	(5,557,000)	(12,004,000)	(11,396,000)
Other nonoperating revenue (expense)	(334,000)	6,023,000	5,689,000	(430,000)
Interest expense				
Bonded debt	57,311,000	68,110,000	125,421,000	255,868,000
Lease obligation	8,860,000	10,828,000	19,688,000	39,702,000
Other obligations	2,481,000	796,000	3,277,000	4,825,000
Total interest expense	<u>68,651,000</u>	<u>79,734,000</u>	<u>148,385,000</u>	<u>300,395,000</u>
Other nonoperating expense	716,000	1,135,000	1,851,000	1,684,000
Amortization, issuance costs, debt	(3,351,000)	(3,776,000)	(7,126,000)	(8,684,000)
Amortization, raw water rights	1,783,000	-	1,783,000	2,081,000
(Gain) loss on disposal of capital assets	-	-	-	(2,463,000)
Loss on impairment of capital assets	-	-	-	654,000
Water Residential Assistance Program	-	-	-	3,756,000
Legacy pension expense (income)	<u>(6,014,000)</u>	<u>(10,764,000)</u>	<u>(16,778,000)</u>	<u>24,922,000</u>
<b>Total Nonoperating (Revenue)/Expense</b>	<b><u>\$ 43,580,000</u></b>	<b><u>\$ 59,286,000</u></b>	<b><u>\$ 102,866,000</u></b>	<b><u>\$ 271,662,000</u></b>

Totals may be off due to rounding.

- ✓ 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 relates to the portion of the total GLWA debt obligation attributable to DWSD. This interest income offsets the total debt interest expense paid by GLWA on behalf of both entities monthly.
- ✓ Investment earnings are expected to increase materially from the prior year due to the implementation of an active investment management strategy during the current fiscal year.
- ✓ Investment earnings in this report are reflected on a cost basis and may therefore not agree with the *Cash and Investment Income* section of the December 2018 Financial Report Binder and the *Quarterly Debt Report* which present balances at market value.

- ✓ Legacy Pension expense for FY 2019 is currently being calculated as income due to changes in actuarial assumptions and rates from the June 30, 2018 City of Detroit General Retirement System Component II audited financial statement.
- ✓ Sewer Other Non-operating expense includes the 2018 Memorandum of Understanding (MOU) Item 8 a from June 27, 2018 for a final bad debt lookback adjustment for DWSD of \$6.5 million.

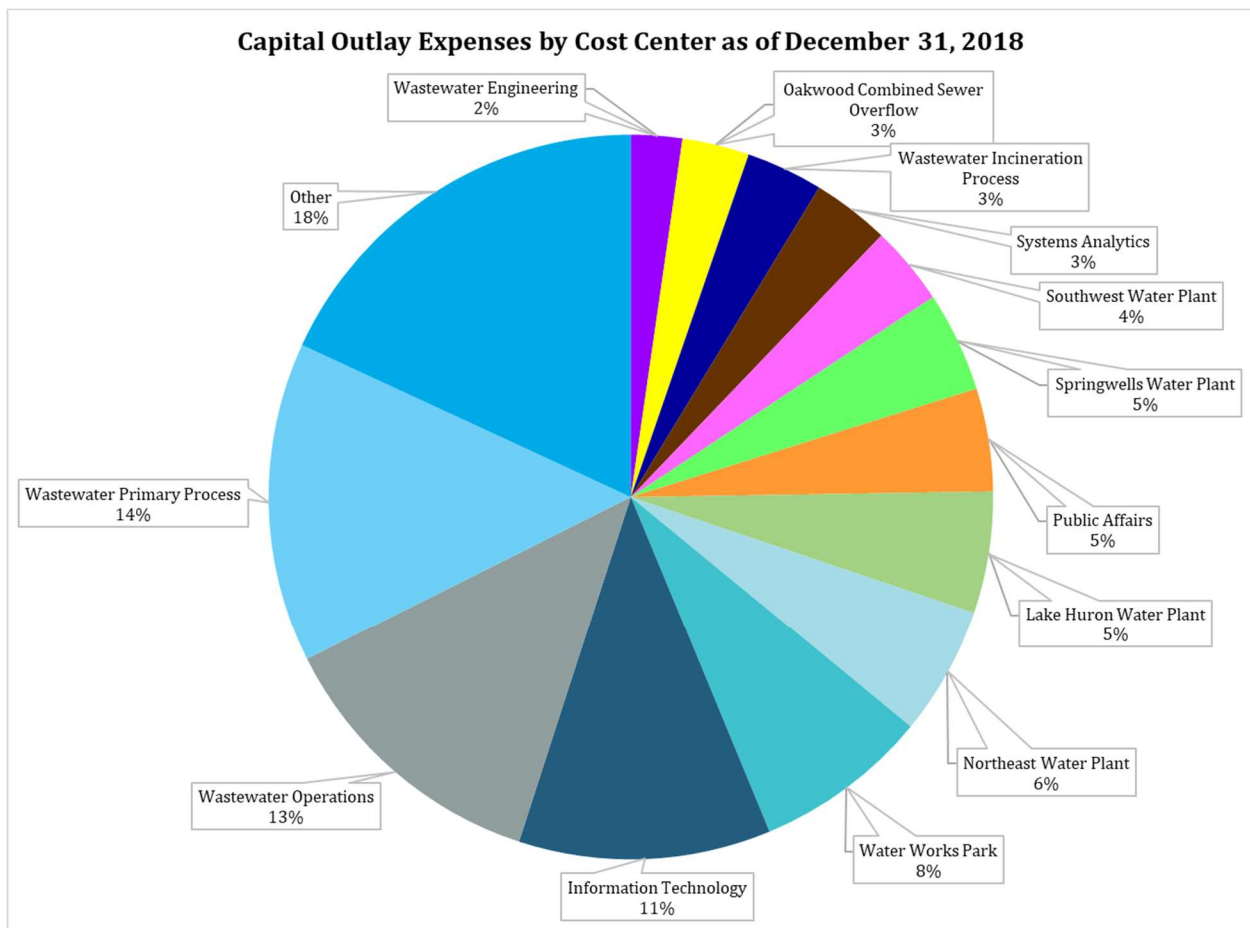
## Financial Activity Charts

### Chart 1 – Capital Outlay – Water and Sewer System Combined

Capital Outlay represents purchases of equipment, software, and small facility improvement projects. It *excludes* any capital investment which is included in the monthly construction work-in-progress report related to the Capital Improvement Program.

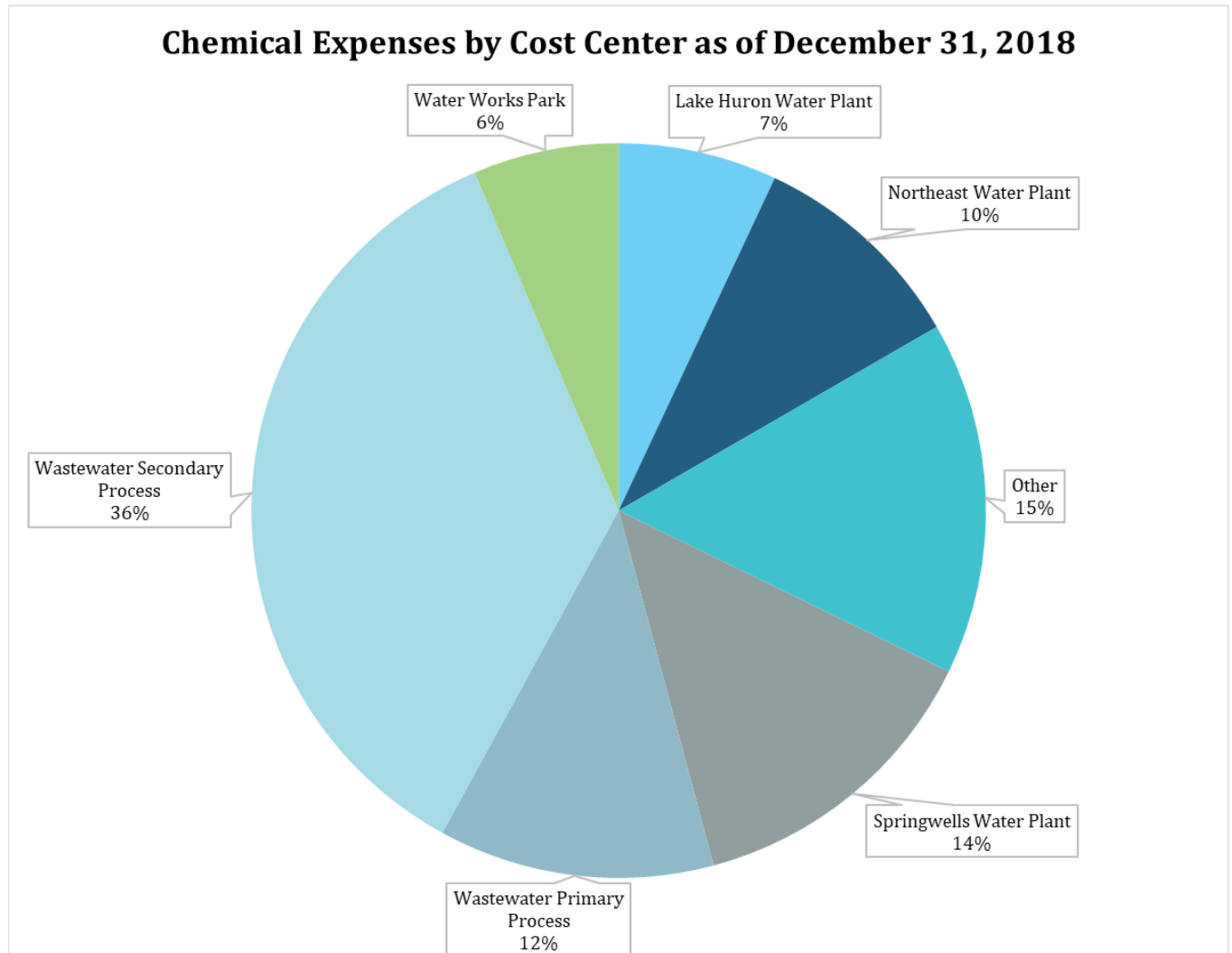
Through December 31, 2018, the capital outlay spend is \$8.7 million. This includes underground storage tanks, dispenser and management system (\$1.5M); grit crane (\$500k); chiller replacement at Water Resource Recovery Facility (\$500k); software (\$400k); low voltage wiring (\$300k); booster pump and expansion tank for Scum building (\$200k); filter upgrade at Water Works Park (\$100k); ozone orbispheres (\$100k); and a water blasting machine (\$80k).

Some items span several months so the entire cost may not have been incurred yet. In addition, items are capitalized only if they meet GLWA's capitalization policy.



### Chart 2 – Chemical Spend

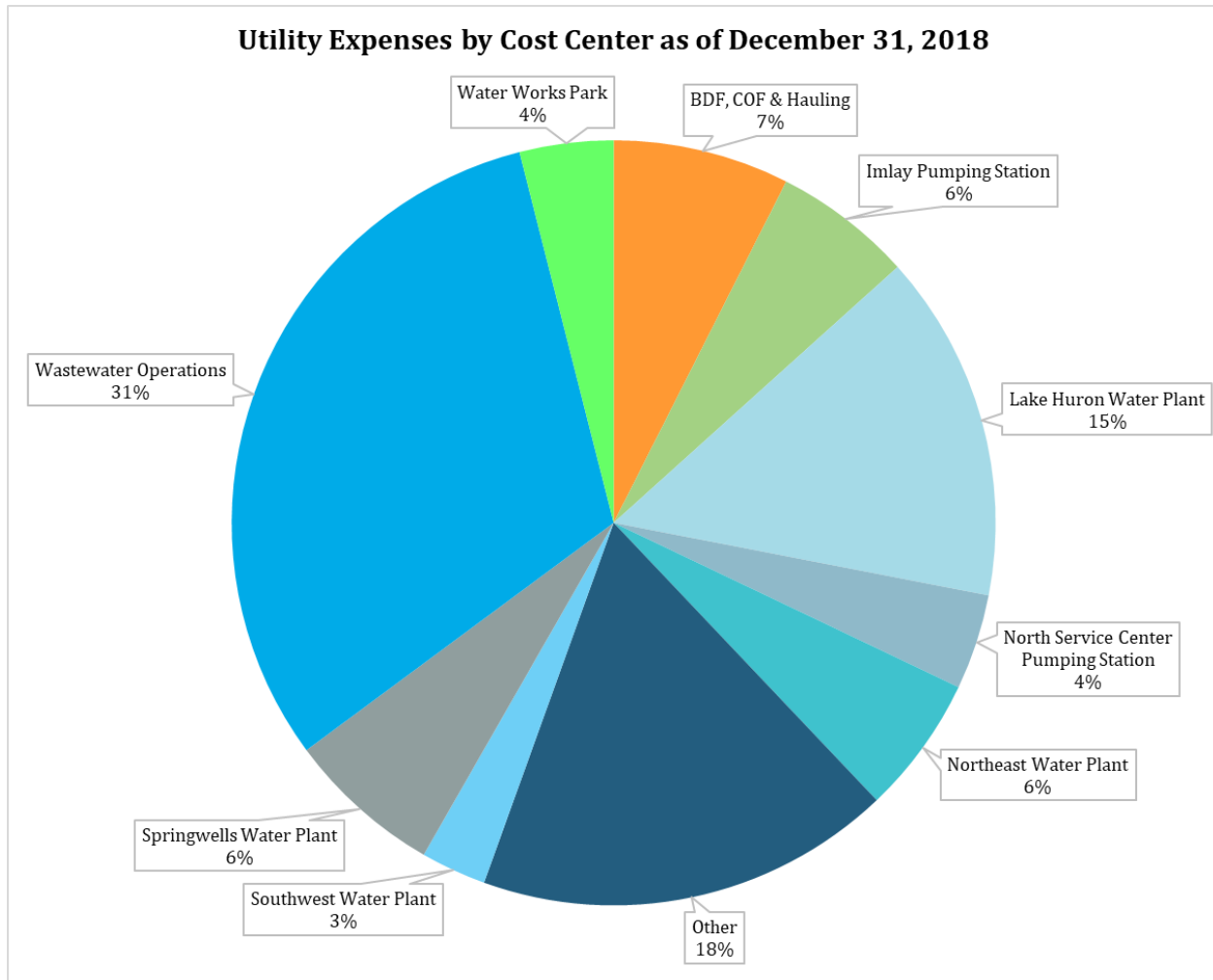
Chemical spend is \$6.7 million through December 31, 2018. The allocation is shown in the chart below.



**Note:** "Other" includes Combined Sewer Overflow (CSO), portions of the Wastewater process and two departments from Water.

### Chart 3 – Utility Spend

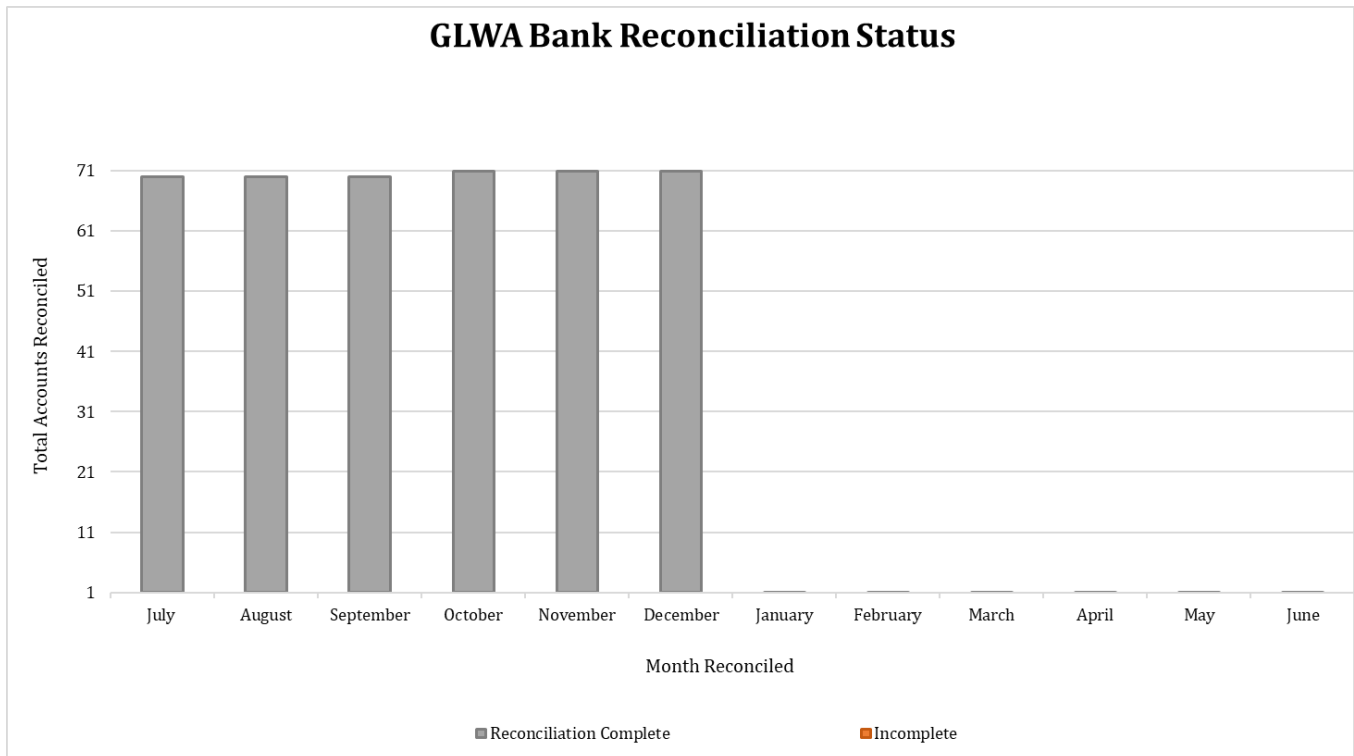
Utility spend is \$26.7 million through December 31, 2018. The allocation is shown in the chart below.



## Financial Operations KPI

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

**Chart 1 – Bank Reconciliation Completion Status**



The Monthly Construction Work in Progress (CWIP) Summary includes the following.

1. Water System Construction Work in Progress costs incurred to date
2. Sewer System Construction Work in Progress costs incurred to date

## **Construction Work in Progress**

Great Lakes Water Authority (GLWA) capital improvement projects generally span two or more years due to size and complexity. Therefore, the GLWA Board of Directors adopts a biennial budget that establishes allowable amounts for construction spending during that period to support a five-year capital improvement plan (CIP). The CIP is a five-year, rolling plan which is updated annually, reviewed, and formally adopted by the GLWA Board of Directors.

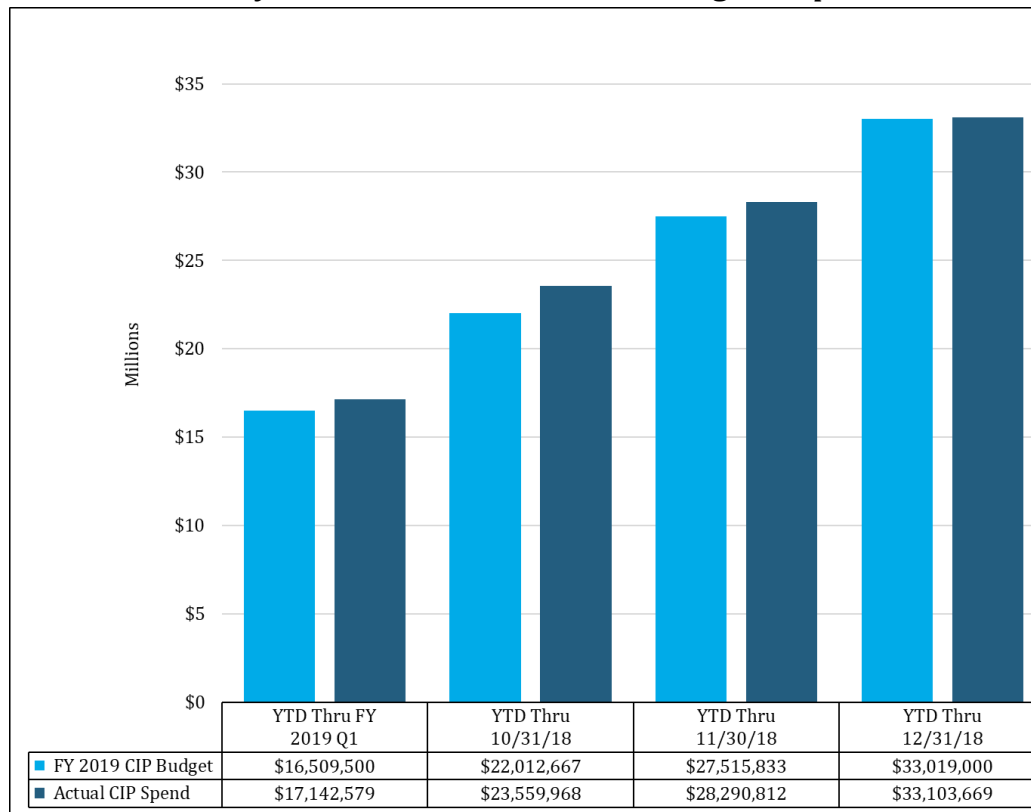
This report presents quarterly and monthly CWIP spending trends against a prorated budget amount. The prorated budget amount is calculated by dividing the total fiscal year 2019 board-approved CIP plan by twelve equal months. It should be noted that these interim reports are prepared on a modified cash basis. Known expenses, where material in nature, have been accrued.

### **Water System CWIP Spend**

As of December 2018, the Water system incurred over \$33.1 million of construction costs to date. This is 100% of the total fiscal year 2019 prorated, budgeted spend and continues a trend of on-target spend. See Chart 1.

### **Sewer System CWIP Spend**

As of December 2018, the Sewer system incurred over \$42 million of construction costs to date. This is 80% of the total fiscal year 2019 prorated, budgeted spend and a steady increase over the prior period. See Chart 2.

**Chart 1 – Water System Construction Work in Progress Spend**

**Chart 2 – Sewer System Construction Work in Progress Spend**




This report includes the following:

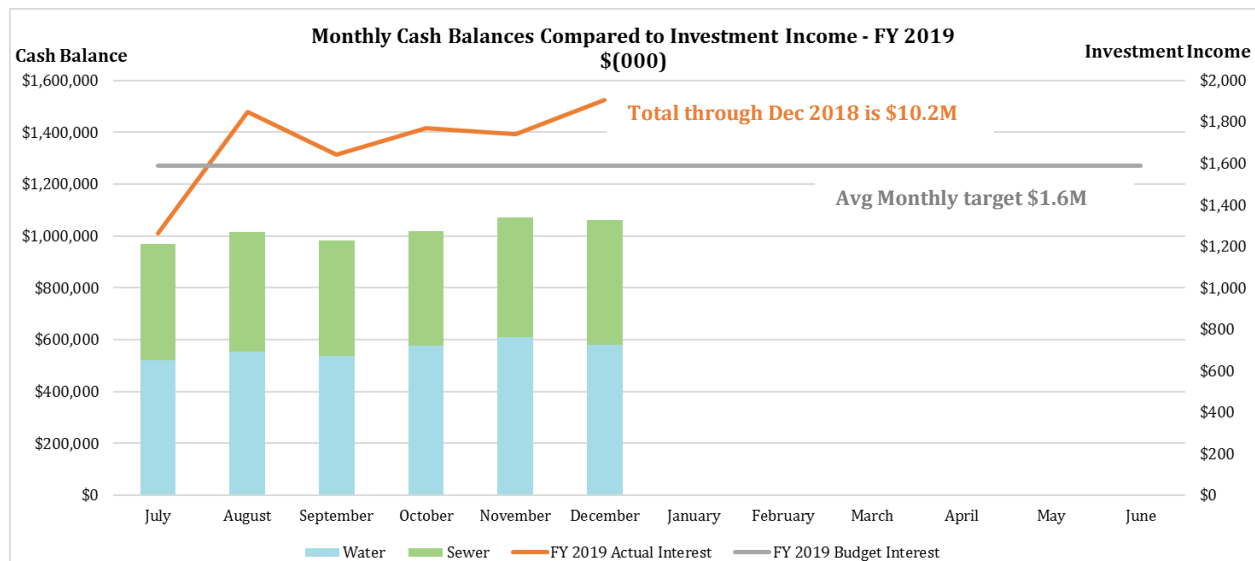
1. Monthly Cash Balances Compared to Investment Income
2. Cash Balance Detail

## Monthly Cash Balances Compared to Investment Income

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

Cash and investment balances change each month based on Master Bond Ordinance (MBO) funding requirements, operational needs, capital spending pace, and mandatory debt payments. Investment income fluctuates monthly based on cash and investment balances as well as market conditions and investment strategy. The cumulative investment earnings through December 2018 of \$10.2 million is 54% of the FY 2019 budget. Based on these earnings to date, GLWA is on target to meet the projection of \$19.0 million for the fiscal year (Chart 1).

**Chart 1 – Monthly Cash Balances Compared to Investment Income – Through December 31, 2018.**



\$(000)	July	August	September	October	November	December	January	February	March	April	May	June
Water	\$520,662	\$553,350	\$538,774	\$578,580	\$611,387	\$579,287						
Sewer	447,079	462,096	444,994	439,564	459,228	481,025						
Total	\$967,740	\$1,015,445	\$983,768	\$1,018,144	\$1,070,616	\$1,060,313						
Investment Income	\$1,264	\$1,849	\$1,640	\$1,769	\$1,742	\$1,904						

## Cash Balance Detail

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

***Funds Held Within Trust:***

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

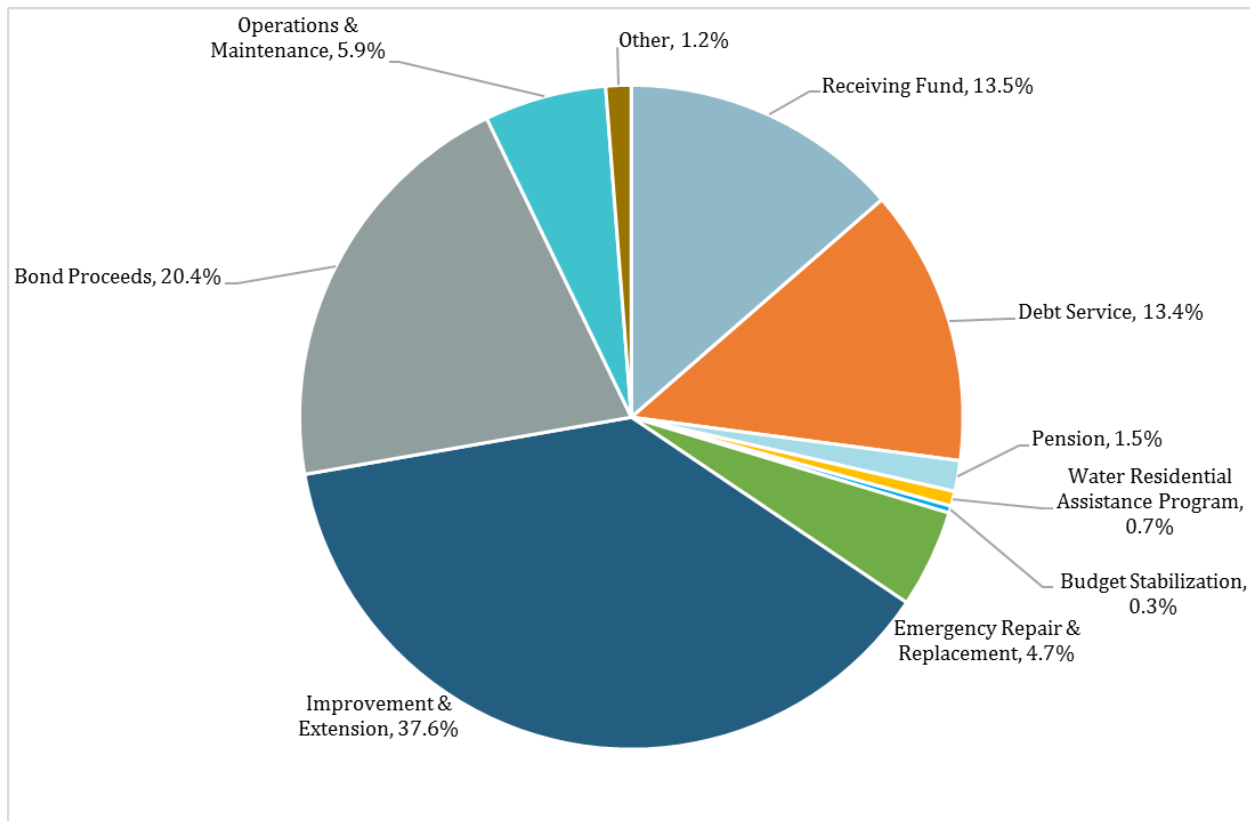
***Funds Held Outside Trust:***

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

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

### ***Chart 2 – Cash Balances - Water Funds as of December 31, 2018***

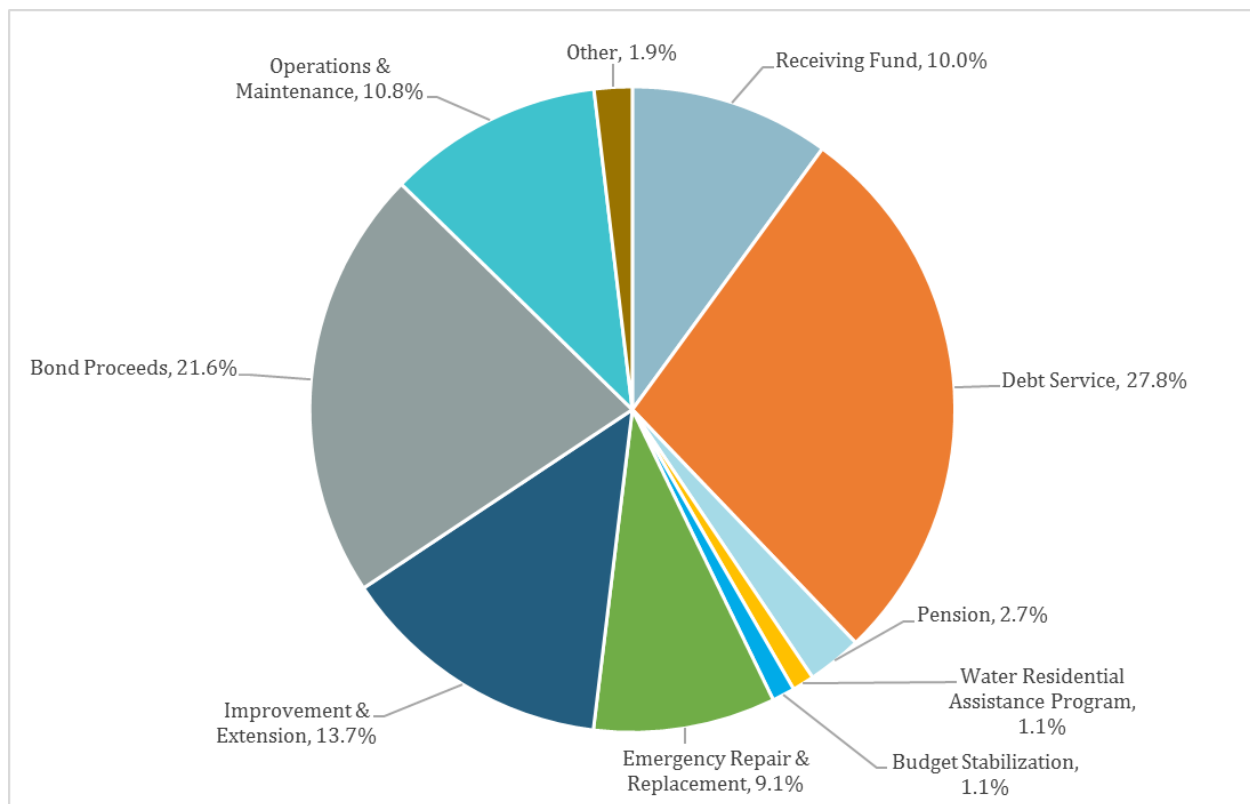
The chart below shows the allocation of the balance among the different categories defined in the section above. The total cash balance for Water Funds as of December 31, 2018 is \$579.3 million. The allocation of balances among the I&E, bond proceeds, and debt service reserve funds reflects GLWA's commitment to funding capital improvements and meeting debt reserve requirements while simultaneously increasing I&E resources to fund pay-as-you capital funding to reduce long-term debt in the future.



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

### **Chart 3 – Cash Balances - Sewer Funds as of December 31, 2018**

The chart below shows the allocation of the balance among the different funds defined in the section above. The total cash balance for Sewer Funds as of December 31, 2018 is \$481.0 million. Like the Water Funds, the allocation of balances among the I&E, bond proceeds, and debt service reserve funds reflects GLWA's commitment to funding capital improvements and meeting debt reserve requirements while simultaneously increasing I&E resources to fund pay-as-you capital funding to reduce long-term debt in the future. The pace for Sewer Funds I&E deposits has been less than budget to address a budget shortfall over multiple years by DWSD. Beginning in February 2019, DWSD began making payments which will replenish the I&E Fund.



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

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 Required Transfers to Accounts Held by GLWA**

**GLWA Transfers:** The Treasury Department 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 (O&M), Pension, and Water Residential Assistance Program (WRAP) are one-twelfth of the annual, budgeted amount. Budget stabilization should not require additional funding due to new, baseline funding levels established as part of the 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 December 3, 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 \$433.6 million have been transferred to accounts held by GLWA. The December O&M transfer amount is less than the previous months due to correction to bring fiscal year to date transfers to the 2019 approved budget level.

***Table 2 – GLWA Sewer Transfers*** reflects the required transfers for FY 2019 completed through December 3, 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 \$669.7 million have been transferred to accounts held by GLWA. The December O&M transfer amount is less than the previous months due to correction to bring fiscal year to date transfers to the 2019 approved budget level.

**Table 1 – GLWA Water Transfers**

	WATER						
	Operations & <u>Maintenance</u>	Pension <u>Sub Account</u>	Pension <u>Obligation</u>	<u>WRAP</u>	Budget Stabilization <i>(For Benefit of DWSD)</i>	Extraordinary Repair & Replacement <i>(ER&amp;R)</i>	Total Water
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
September 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
October 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
November 2018	10,393,475	504,000	891,308	171,683	-	-	11,960,466
December 2018	8,813,927	504,000	891,308	171,683	-	-	10,380,918
Total FY 2019	60,781,302	\$3,024,000	\$5,347,848	\$1,030,098	\$0	\$0	\$70,183,248
Total Water Since Jan 1 2016	\$365,275,506	\$21,146,300	\$36,637,944	\$7,249,998	\$2,686,900	\$606,000	\$433,602,648

**Table 2 – GLWA Sewer Transfers**

	SEWER						
	Operations & <u>Maintenance</u>	Pension <u>Sub Account</u>	Pension <u>Obligation</u>	<u>WRAP</u>	Budget Stabilization <i>(For Benefit of DWSD)</i>	Extraordinary Repair & Replacement <i>(ER&amp;R)</i>	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
September 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
October 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
November 2018	16,093,500	902,000	1,223,958	238,483	-	-	18,457,941
December 2018	15,072,198	902,000	1,223,958	238,483	-	-	17,436,639
Total FY 2019	\$95,539,698	\$5,412,000	\$7,343,748	\$1,430,898	\$0	\$0	\$109,726,344
Total Sewer Since Jan 1 2016	\$563,343,494	\$37,912,800	\$50,083,844	\$9,369,502	\$8,246,100	\$779,600	\$669,735,340

## **MBO Required Transfers to Accounts Held by DWSD**

**DWSD Transfers:** The Treasury Department 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 (O&M) 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 December 3, 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 \$200.1 million have been transferred to accounts held by DWSD.

**Table 4 – DWSD Sewer Transfers** reflects the required transfers for FY 2019 completed through December 3, 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, \$4,864,000 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 \$230.6 million have been transferred to accounts held by DWSD.

**Table 3 – DWSD Water Transfers**

	<b>WATER</b>			
	Operations & <u>Maintenance</u>	<u>Pension</u>	Lease Payment <u>(I&amp;E Fund)</u>	<u>Total Water</u>
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
<b>FY 2019</b>				
July 2018	\$ 2,957,025	\$ 356,000	\$ 1,545,900	\$ 4,858,925
August 2018	2,957,025	356,000	1,545,900	4,858,925
September 2018	2,957,025	356,000	1,545,900	4,858,925
October 2018	2,957,025	356,000	1,545,900	4,858,925
November 2018	2,957,025	356,000	1,545,900	4,858,925
December 2018	2,957,025	356,000	1,545,900	4,858,925
Total FY 2019	\$ 17,742,150	\$ 2,136,000	\$ 9,275,400	\$ 29,153,550
Total Water Since Jan 1 2016	\$ 112,583,854	\$ 14,933,100	\$ 72,573,500	\$ 200,090,454

**Table 4 – DWSD Sewer Transfers**

	<b>SEWER</b>			
	<u>Operations &amp; Maintenance</u>	<u>Pension</u>	<u>Lease Payment (I&amp;E Fund)</u>	<u>Total Sewer</u>
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
<b>FY 2019</b>				
July 2018	\$ 5,676,792	\$ 238,000	\$ 1,886,333	\$ 7,801,125
August 2018	5,676,792	238,000	1,886,333	7,801,125
September 2018	5,676,792	238,000	1,886,333	7,801,125
October 2018	5,676,792	238,000	1,886,333	7,801,125
November 2018	5,676,792	238,000	1,886,333	7,801,125
December 2018	5,676,792	238,000	1,886,333	7,801,125
Total FY 2019	\$ 34,060,752	\$ 1,428,000	\$ 11,317,998	\$ 46,806,750
Total Sewer Since Jan 1 2016	\$ 155,888,644	\$ 10,007,800	\$ 64,659,834	\$ 230,556,278



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

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

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

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

## **DWSD Retail Water Billings and Collections**

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

**Table 1 - DWSD Retail Billings** shows the FY 2019 water usage and billed revenue which are provided by DWSD staff. As of December 31, 2018, the DWSD usage was at 99.85% of the budget and billed revenue was at 103.09% of budget.

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

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

**Note:** DWSD is working on the additional, billings to collections rolling average report requested by the GLWA Audit Committee at the December 21, 2018 meeting. That will be included in this report when made available by DWSD.

**Table 1 – DWSD Retail Water Billings**

RETAIL WATER CUSTOMERS								
Month (1)	FY 2019 - Budget/Goal			FY 2019 - Actual			FY 2019 - Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue (2)	Unit Revenue	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
July	269,000	9,424,500	35.04	300,613	10,203,409	33.94	31,613	778,909
August	273,100	9,377,700	34.34	302,476	9,833,149	32.09	29,376	455,449
September	270,500	8,494,300	31.40	221,531	8,996,692	40.61	(48,969)	502,392
October	233,800	8,165,900	34.93	215,104	8,010,524	37.24	(18,696)	(155,376)
November	224,500	7,750,100	34.52	232,770	8,325,013	35.76	8,270	574,913
December	206,500	8,224,900	39.83	202,686	7,659,930	37.79	(3,814)	(564,970)
January	226,600	7,978,800	35.21					
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>	2,808,000	101,590,000	36.18	1,475,180	53,028,717	35.95	(2,220)	1,591,317
Subtotals ytd	1,477,400	51,437,400	34.82	1,475,180	53,028,717	35.95	(2,220)	1,591,317
Achievement of Budget				99.85%	103.09%			

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

(2) Retail Revenues include Miscellaneous Revenues and Penalties

**Table 2 – DWSD Retail Water Collections**

Water				
Month	Current Year	Prior Year	Variance	Ratio
January	8,066,448	6,744,162	1,322,286	19.61%
February	6,432,245	7,682,509	(1,250,265)	-16.27%
March	8,280,635	8,218,506	62,129	0.76%
April	9,226,675	6,977,199	2,249,477	32.24%
May	8,969,019	8,568,632	400,387	4.67%
June	7,940,939	7,141,568	799,371	11.19%
July	7,375,402	8,357,505	(982,103)	-11.75%
August	8,692,784	9,509,488	(816,704)	-8.59%
September	9,766,449	8,949,906	816,543	9.12%
October	9,015,400	9,528,528	(513,128)	-5.39%
November	7,938,517	8,049,328	(110,811)	-1.38%
December	7,297,698	8,265,636	(967,938)	-11.71%
<b>Rolling, 12-Month Total</b>	99,002,211	97,992,967		
<b>Rolling, 12-Month Average</b>	8,250,184	8,166,081		

## DWSD Retail Sewer Billings and Collections

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

**Table 3 - DWSD Retail Sewer Billings** shows the FY 2019 sewer billed revenue which are provided by DWSD staff. As of December 31, 2018, the DWSD usage was at 103.49% of the budget and billed revenue was at 98.76% of budget.

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

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

**Note:** DWSD is working on the additional, billings to collections rolling average report requested by the GLWA Audit Committee at the December 21, 2018 meeting. That will be included in this report when made available by DWSD.

**Table 3 - DWSD Retail Sewer Billings**

RETAIL SEWER CUSTOMERS						
Month (1)	FY 2019 - Budget/Goal		FY 2019 - Actual		FY 2019 - Variance	
	Volume	Revenue	Volume	Revenue (2)	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$
July	242,100	27,423,400	273,862	27,711,606	31,762	288,206
August	244,200	27,232,200	262,525	27,263,163	18,325	30,963
September	239,600	25,367,500	221,660	25,413,790	(17,940)	46,290
October	211,000	25,177,200	205,267	24,092,209	(5,733)	(1,084,991)
November	197,600	23,861,000	205,806	24,176,849	8,206	315,849
December	182,400	25,293,500	193,791	23,787,394	11,391	(1,506,106)
January	198,600	24,852,800				
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	1,362,911	152,445,011	46,011	(1,909,789)
<b>Subtotals ytd</b>	1,316,900	154,354,800	1,362,911	152,445,011	46,011	(1,909,789)
Achievement of Budget/Goal			103.49%	98.76%		

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

(2) Retail Revenues include Miscellaneous Revenues and Penalties

**Table 4 – DWSD Retail Sewer Collections**

Sewer				
Month	Current Year	Prior Year	Variance	Ratio
January	18,308,458	16,792,983	1,515,475	9.02%
February	17,495,563	18,149,650	(654,087)	-3.60%
March	23,015,525	18,711,974	4,303,552	23.00%
April	16,159,844	17,219,106	(1,059,262)	-6.15%
May	18,341,298	20,046,357	(1,705,059)	-8.51%
June	27,591,834	18,005,548	9,586,286	53.24%
July	21,461,926	18,582,964	2,878,962	15.49%
August	21,746,714	24,263,141	(2,516,427)	-10.37%
September	23,727,505	21,320,358	2,407,147	11.29%
October	23,938,933	23,786,903	152,030	0.64%
November	20,624,039	19,485,270	1,138,769	5.84%
December	19,612,154	19,522,952	89,203	0.46%
<b>Rolling 12-Month Total</b>	<b>252,023,793</b>	<b>235,887,205</b>		
<b>Rolling, 12-Month Average</b>	<b>21,001,983</b>	<b>19,657,267</b>		

**Note:** June current year receipts includes \$5.06 million in annual tax lien collections.

## DWSD Retail Water and Sewer Accounts Receivable Aging Report

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

**Table 5** is a summary of the total, current and non-current Water and Sewer receivables by category as of December 31, 2018. This now includes pre-bifurcation receivables transferred to DWSD as part of the April 2018 Memorandum of Understanding.

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

							Accounts Receivable
Sales Class	# of Accounts	Avg. Balance	Current	> 30 Days	> 60 Days	> 180 Days	Balance
Residential	284,540	\$ 320.18	\$ 14,016,881	\$ 7,048,467	\$ 17,879,698	\$ 52,157,921	\$ 91,102,968
			15.4%	7.7%	19.6%	57.3%	100.0%
Commercial	27,611	1,168.74	8,394,911	2,864,819	7,390,179	13,620,148	32,270,058
			26.0%	8.9%	22.9%	42.2%	100.0%
Industrial	4,654	3,193.31	4,762,011	1,862,311	2,818,623	5,418,742	14,861,688
			32.0%	12.5%	19.0%	36.5%	100.0%
Tax Exempt Entities	6,845	1,181.27	1,580,640	902,746	1,189,963	4,412,472	8,085,821
			19.5%	11.2%	14.7%	54.6%	100.0%
Government Entities	7,732	1,561.79	1,954,708	984,814	2,824,109	6,312,140	12,075,771
			16.2%	8.2%	23.4%	52.3%	100.0%
Subtotal - Active Accounts	331,382	\$ 477.99	\$ 30,709,152	\$ 13,663,158	\$ 32,102,572	\$ 81,921,423	\$ 158,396,305
			19.4%	8.6%	20.3%	51.7%	100.0%
Inactive Accounts	254,372	64.80	92,851	108,547	1,032,576	15,248,687	16,482,661
			0.6%	0.7%	6.3%	92.5%	100.0%
Total	585,754	\$ 298.55	\$ 30,802,003	\$ 13,771,705	\$ 33,135,148	\$ 97,170,110	\$ 174,878,966
% of Total A/R			17.6%	7.9%	18.9%	55.6%	100.0%
Water Fund	220,225	173.81	\$ 7,592,130	\$ 2,901,582	\$ 6,483,570	\$ 21,301,101	\$ 38,278,383
Sewer Fund	284,469	480.19	\$ 23,209,873	\$ 10,870,123	\$ 26,651,578	\$ 75,869,009	\$ 136,600,583
Total	585,754	298.55	\$ 30,802,003	\$ 13,771,705	\$ 33,135,148	\$ 97,170,110	\$ 174,878,966

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

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

## Wholesale Water Billings and Collections

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

### Service Arrangement Type

Model Contract	81
Emergency	1
Older Contracts	5
Total	<u>87</u>

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

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

**Table 1 - Wholesale Water Billings** shows the FY 2019 water billed usage and revenues. As of December 31, 2018, the billed usage was at 100.95% of budget and billed revenue at 100.96% of budget. Billings and usage from the City of Flint are included as they were assumed in the FY 2019 Budget.

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

**Table 2 - Wholesale Water Collections** shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. There is little to no difference in the year-over-year comparison. However, variability in collections month-to-month are associated with timing of the billing cycle. 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 (2)								
Month (1)	FY 2019 - Budget/Goal			FY 2019 - Actual			FY 2019 - Variance	
	Volume	Revenue	Unit	Volume	Revenue	Unit	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
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	1,333,455	27,129,781	20.35	(20,985)	(295,019)
October	1,091,580	24,826,000	22.74	1,027,086	24,636,482	23.99	(64,494)	(189,518)
November	912,260	23,273,500	25.51	933,105	23,659,037	25.36	20,845	385,537
December	1,002,110	23,912,600	23.86	997,281	24,026,786	24.09	(4,829)	114,186
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>	14,041,240	308,767,900	21.99	7,582,079	160,718,875	21.20	71,439	1,528,675
<b>Subtotals ytd</b>	7,510,640	159,190,200	21.20	7,582,079	160,718,875	21.20	71,439	1,528,675
Achievement of Budget				100.95%	100.96%			

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

(2) Includes Revenues and Usage from the City of Flint

**Table 2 - Wholesale Water Collections**

Water				
Month	Current Year	Prior Year	Variance	Ratio
January	32,002,334	23,595,948	8,406,386	35.63%
February	21,352,903	25,840,517	(4,487,613)	-17.37%
March	27,715,696	28,339,011	(623,315)	-2.20%
April	18,489,754	24,583,235	(6,093,480)	-24.79%
May	30,447,581	22,312,189	8,135,392	36.46%
June	21,815,013	24,337,730	(2,522,716)	-10.37%
July	21,923,590	28,138,726	(6,215,136)	-22.09%
August	31,920,586	25,280,453	6,640,133	26.27%
September	26,037,313	26,757,992	(728,038)	-2.72%
October	27,827,722	38,336,777	(10,509,055)	-27.41%
November	29,238,260	27,261,391	1,976,869	7.25%
December	27,720,646	22,125,972	5,594,674	25.29%
<b>Rolling 12-Month Total</b>	316,491,399	316,909,940		
<b>Rolling, 12-Month Average</b>	26,374,283	26,409,162		

## Wholesale Sewer Billings and Collections

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

Service Arrangement Type

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

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

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

**Table 3 - Wholesale Sewer Billings** 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 December 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.

**Table 4 - Wholesale Sewer Collections** shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. The year-over-year increase is attributable to the approved rate increase.

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 December 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 noticeable swings in collection volumes by month.



**Table 3 – FY 2019 Wholesale Sewer Billings Report**

WHOLESALE SEWER CUSTOMERS						
Month (1)	FY 2019 - Budget/Goal		FY 2019 - Actual		FY 2019 - Variance	
	Volume (2)	Revenue	Volume (2)	Revenue	Volume (2)	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$
July	N/A	22,912,800	N/A	22,912,800	N/A	-
August	N/A	22,912,800	N/A	22,912,800	N/A	-
September	N/A	22,912,800	N/A	22,912,800	N/A	-
October	N/A	22,912,800	N/A	22,912,800	N/A	-
November	N/A	22,912,800	N/A	22,912,800	N/A	-
December	N/A	22,912,800	N/A	22,912,800	N/A	-
January	N/A	22,912,800	N/A		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		137,476,800		-
<i>Subtotals ytd</i>		137,476,800		137,476,800		0
<i>Achievement of Budget</i>				100.00%		

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

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

**Table 4 - Wholesale Sewer Collections**

Sewer				
Month	Current Year	Prior Year	Variance	Ratio
January	22,057,972	21,835,338	222,634	1.02%
February	30,280,800	21,659,900	8,620,900	39.80%
March	15,552,000	21,878,700	(6,326,700)	-28.92%
April	27,812,417	22,502,725	5,309,692	23.60%
May	15,342,700	21,620,300	(6,277,600)	-29.04%
June	28,810,500	21,645,500	7,165,000	33.10%
July	16,179,117	22,732,006	(6,552,889)	-28.83%
August	28,384,600	21,949,300	6,435,300	29.32%
September	22,672,400	21,040,913	1,631,487	7.75%
October	16,105,200	21,902,800	(5,797,600)	-26.47%
November	28,633,300	22,662,700	5,970,600	26.35%
December	24,440,000	23,643,400	796,600	3.37%
<b>Rolling 12-Month Total</b>	276,271,006	265,073,582		
<b>Rolling, 12-Month Average</b>	23,022,584	22,089,465		



## 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 December 31, 2018, Highland Park had a delinquent balance of \$41.7 million, including \$33.3 million for wastewater treatment services, \$1.7 million for industrial waste control services, and \$6.7 million for water supply services.

**Table 5 - City of Highland Park Billings and Collections** provides a life-to-date balance summary of the billing and collection history for Highland Park with detail provided for fiscal year 2019 through December 31, 2018. Please note the numbers below reflect the month the billing was sent and not the month the service was provided. A life-to-date summary is provided as an appendix to this monthly financial report.

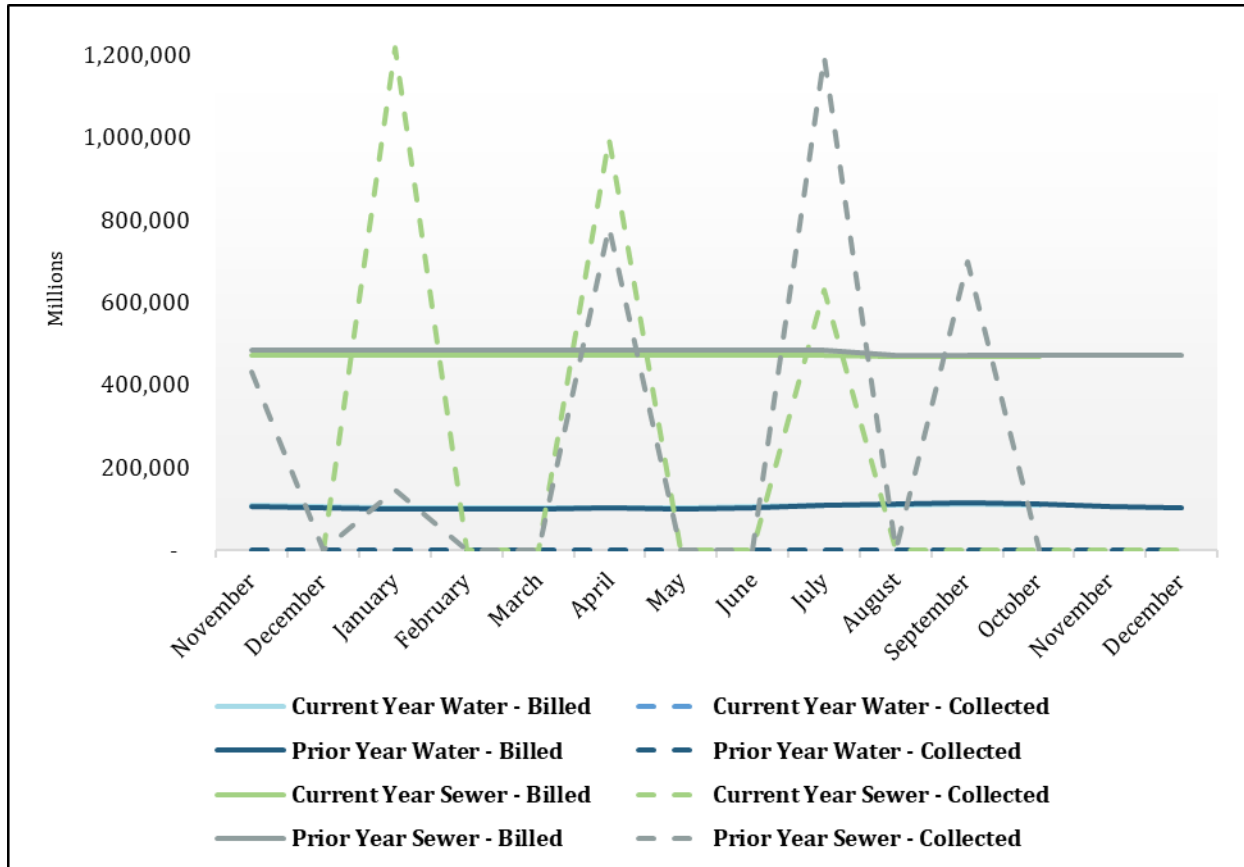
**Chart 1 - City of Highland Park Billings and Collections - Past Twelve Months** is provided to depict Highland Park's most current performance specific to Water and Sewer. Payments received-to-date are applied to Sewer at this time.

**Table 5 - City of Highland Park Billings and Collections**

### City of Highland Park Billings and Payments

	Water	Sewer	IWC
June 30, 2018 Balance	\$ 6,112,248	\$ 31,097,327	\$ 1,624,023
July 2018 Billing	\$ 109,568	\$ 470,200	\$ 6,754
July 2018 Payments	\$ -	\$ (629,017)	\$ -
July 31, 2018 Balance	\$ 6,221,815	\$ 30,938,511	\$ 1,630,776
August 2018 Billing	\$ 108,651	\$ 467,900	\$ 4,233
August 2018 Payments	\$ -	\$ -	\$ -
August 31, 2018 Balance	\$ 6,330,467	\$ 31,406,411	\$ 1,635,009
September 2018 Billing	\$ 109,780	\$ 467,900	\$ 4,261
September 2018 Payments	\$ -	\$ -	\$ -
September 30, 2018 Balance	\$ 6,440,247	\$ 31,874,311	\$ 1,639,270
October 2018 Billing	\$ 109,298	\$ 467,900	\$ 4,281
October 2018 Payments	\$ -	\$ -	\$ -
October 31, 2018 Balance	\$ 6,549,545	\$ 32,342,211	\$ 1,643,551
November 2018 Billing	\$ 104,007	\$ 467,900	\$ 3,963
November 2018 Payments	\$ -	\$ -	\$ -
November 30, 2018 Balance	\$ 6,653,552	\$ 32,810,111	\$ 1,647,514
December 2018 Billing	\$ 101,944	\$ 467,900	\$ 3,961
December 2018 Payments	\$ -	\$ -	\$ -
December 31, 2018 Balance	\$ 6,755,496	\$ 33,278,011	\$ 1,651,474

**Chart 1 - 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.

## Wholesale Water & Sewer Accounts Receivable Aging Report

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

**Table 6 - Wholesale Accounts Receivable Aging Report Summary** is a summary of the total, current and non-current receivables by category as of December 31, 2018.

**Table 7 - Wholesale Accounts Receivable Aging Report, Net of Highland Park** is the same summary *without* the past due balances for the City of Highland Park.

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

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

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 38,827,496.05	\$ 30,784,559.77	\$ 1,399,529.23	\$ 312,940.16	\$ 6,330,466.89
Sewer	\$ 46,902,310.28	\$ 14,092,199.50	\$ 467,900.00	\$ 467,900.00	\$ 31,874,310.78
IWC	\$ 3,063,757.66	\$ 613,916.81	\$ -	\$ 40,652.55	\$ 2,409,188.30
Pollutant Surcharge	\$ 1,181,951.19	\$ 563,657.42	\$ 61,211.29	\$ 76,757.98	\$ 480,324.50
<b>Total</b>	<b>\$ 89,975,515.18</b>	<b>\$ 46,054,333.50</b>	<b>\$ 1,928,640.52</b>	<b>\$ 898,250.69</b>	<b>\$ 41,094,290.47</b>
	100.00%	51.19%	2.14%	1.00%	45.67%

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

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 32,072,000.03	\$ 30,578,608.99	\$ 1,290,231.02	\$ 203,160.02	\$ -
Sewer	\$ 13,624,299.50	\$ 13,624,299.50	\$ -	\$ -	\$ -
IWC	\$ 1,412,283.26	\$ 605,993.42	\$ -	\$ 36,371.76	\$ 769,918.08
Pollutant Surcharge	\$ 1,181,951.19	\$ 563,657.42	\$ 61,211.29	\$ 76,757.98	\$ 480,324.50
<b>Total</b>	<b>\$ 48,290,533.98</b>	<b>\$ 45,372,559.33</b>	<b>\$ 1,351,442.31</b>	<b>\$ 316,289.76</b>	<b>\$ 1,250,242.58</b>
	100.00%	93.96%	2.80%	0.65%	2.59%

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

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 32,072,000.03	\$ 30,578,608.99	\$ 1,290,231.02	\$ 203,160.02	\$ -
Sewer	\$ 13,624,299.50	\$ 13,624,299.50	\$ -	\$ -	\$ -
IWC	\$ 533,249.90	\$ 533,249.90	\$ -	\$ -	\$ -
Pollutant Surcharge	\$ 1,181,951.19	\$ 563,657.42	\$ 61,211.29	\$ 76,757.98	\$ 480,324.50
<b>Total</b>	<b>\$ 47,411,500.62</b>	<b>\$ 45,299,815.81</b>	<b>\$ 1,351,442.31</b>	<b>\$ 279,918.00</b>	<b>\$ 480,324.50</b>
	100.00%	95.55%	2.85%	0.59%	1.01%

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

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

Through December 31, 2018 the water fund cash receipts exceeded MBO disbursements by 23% with a ratio of 13% since January 1, 2016. Through December 31, 2018, the sewer fund cash receipts exceeded MBO disbursements by 7% and by a ratio of 4% since January 1, 2016.

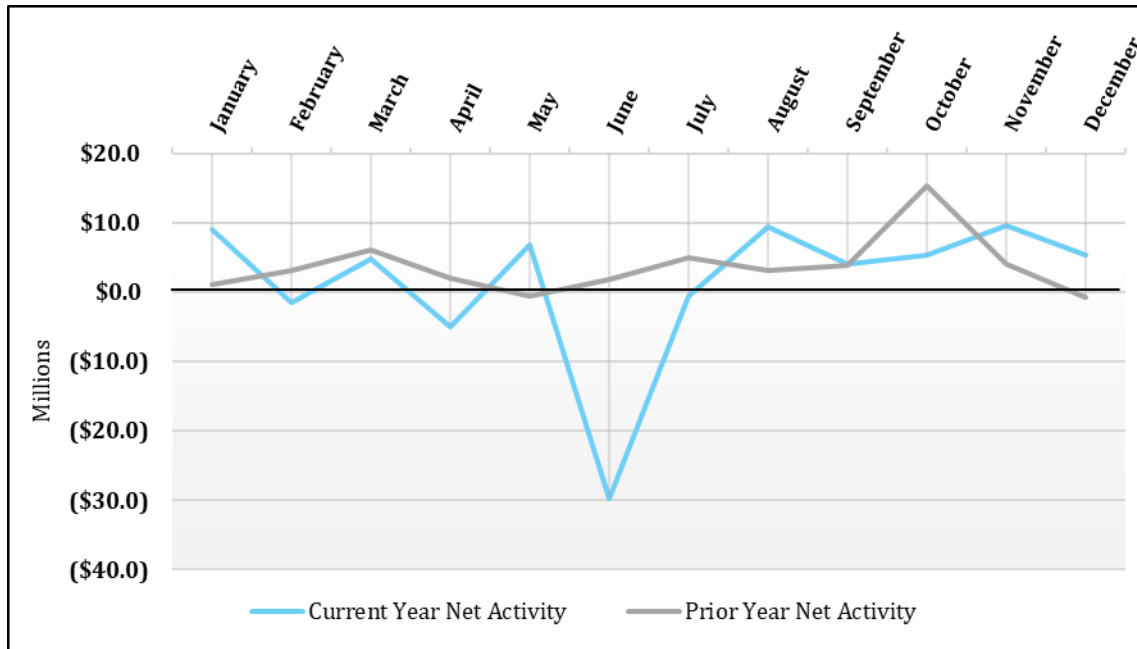
**Chart 1 – GLWA 12-Month Net Receipts – Water** outlines monthly cash receipt trends across two points of reference for the regional water system—current year and prior year. The black line at the zero highlights the minimum goal for net receipts.

**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.

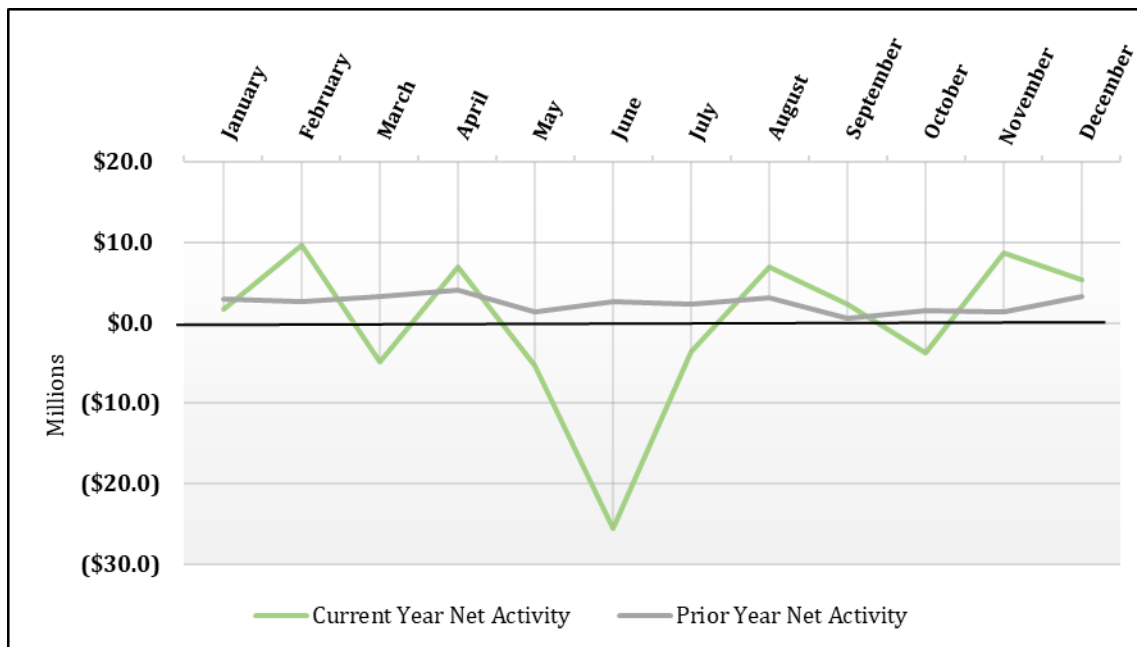
**Table 1 – GLWA Net Cash Flows from Trust Receipts & Disbursements**

	FY 2016	FY 2017	FY 2018	FY 2019-to- Date	Life-to-Date Total
<b>Water</b>					
1 Receipts	\$ 149,624,282	352,432,096	337,488,663	177,829,496	1,017,374,537
2 MOU Adjustments	-	-	-	-	-
3 Adjusted Receipts	149,624,282	352,432,096	337,488,663	177,829,496	1,017,374,537
4 Disbursements	146,191,756	288,268,172	321,841,171	144,124,297	900,425,396
5 Net Receipts	\$ 3,432,526	64,163,924	15,647,492	33,705,199	116,949,141
6 <i>Ratio of Receipts to Disbursements</i>	102%	122%	105%	123%	113%
<b>Sewer</b>					
7 Receipts	\$ 232,310,973	469,205,156	474,946,332	238,860,052	1,415,322,513
8 MOU Adjustments	-	-	-	-	-
9 Adjusted Receipts	232,310,973	469,205,156	474,946,332	238,860,052	1,415,322,513
10 Disbursements	219,471,583	440,859,613	480,278,006	222,882,706	1,363,491,908
11 Net Receipts	\$ 12,839,390	28,345,543	(5,331,674)	15,977,346	51,830,605
12 <i>Ratio of Receipts to Disbursements</i>	106%	106%	99%	107%	104%
<b>Combined</b>					
13 Receipts	\$ 381,935,255	821,637,252	812,434,995	416,689,548	2,432,697,050
14 MOU Adjustments	-	-	-	-	-
15 Adjusted Receipts	381,935,255	821,637,252	812,434,995	416,689,548	2,432,697,050
16 Disbursements	365,663,339	729,127,785	802,119,177	367,007,003	2,263,917,304
17 Net Receipts	\$ 16,271,916	92,509,467	10,315,818	49,682,545	168,779,746
18 <i>Ratio of Receipts to Disbursements</i>	104%	113%	101%	114%	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 or DWSD) activities which are further separated by the water system and the sewage disposal system.

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

Through December 31, 2018 the local water fund cash receipts exceeded MBO disbursements by 3% with a historical ratio of cash receipts exceeding MBO disbursements at 4% since January 1, 2016.

Through December 31, 2018, the local sewer fund cash receipts fell short of MBO disbursements by -2% with a historic shortfall of -6% since January 1, 2016. FY 2019 activity to date reflects a \$6.5 million sewer lookback adjustment completed in December 2018. This was due from GLWA to DWSD as part of the April 2018 MOU.

The Reconciliation Committee also monitors this balance as part of its quarterly meetings and formal repayment terms for recommendation to the GLWA Board of Directors are currently under discussion.

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

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

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

	FY 2016	FY 2017	FY 2018	FY 2019-to-Date	Life-to-Date Total
<b>Water</b>					
1 Receipts	\$ 26,201,881	96,451,105	101,716,017	50,119,222	274,488,225
2 MOU Adjustments	18,446,100	-	-	-	18,446,100
3 Adjusted Receipts	44,647,981	96,451,105	101,716,017	50,119,222	292,934,325
4 Disbursements	47,809,552	93,066,144	93,049,457	48,847,350	282,772,503
5 Net Receipts	\$ (3,161,571)	3,384,961	8,666,560	1,271,872	10,161,822
6 Ratio of Receipts to Disbursements	93%	104%	109%	103%	104%
<b>Sewer</b>					
7 Receipts	\$ 65,256,734	233,723,367	247,975,470	131,272,051	678,227,622
8 MOU Adjustments	55,755,100	-	-	6,527,200	62,282,300
9 Adjusted Receipts	121,011,834	233,723,367	247,975,470	137,799,251	740,509,922
10 Disbursements	122,297,300	261,963,973	266,217,825	141,271,772	791,750,870
11 Net Receipts	\$ (1,285,466)	(28,240,606)	(18,242,355)	(3,472,521)	(51,240,948)
12 Ratio of Receipts to Disbursements	99%	89%	93%	98%	94%
<b>Combined</b>					
13 Receipts	\$ 91,458,615	330,174,472	349,691,487	181,391,273	952,715,847
14 MOU Adjustments	74,201,200	-	-	6,527,200	80,728,400
15 Adjusted Receipts	165,659,815	330,174,472	349,691,487	187,918,473	1,033,444,247
16 Disbursements	170,106,852	355,030,117	359,267,282	190,119,122	1,074,523,373
17 Net Receipts	\$ (4,447,037)	(24,855,645)	(9,575,795)	(2,200,649)	(41,079,126)
18 Ratio of Receipts to Disbursements	97%	93%	97%	99%	96%

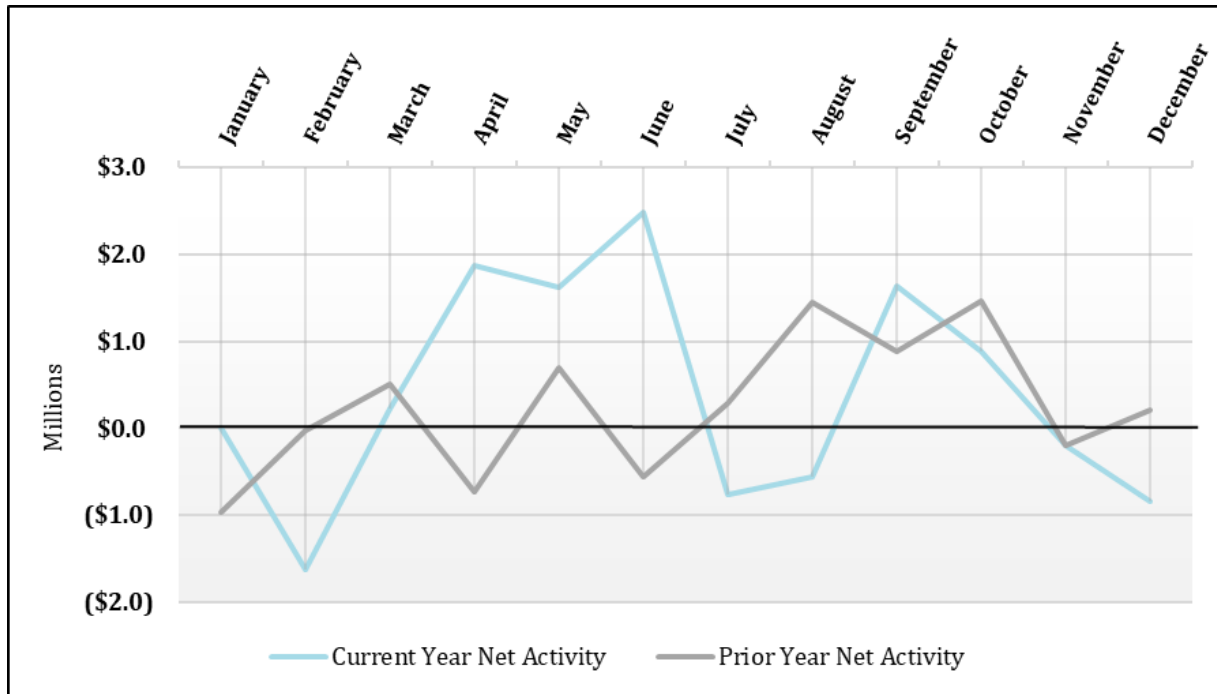
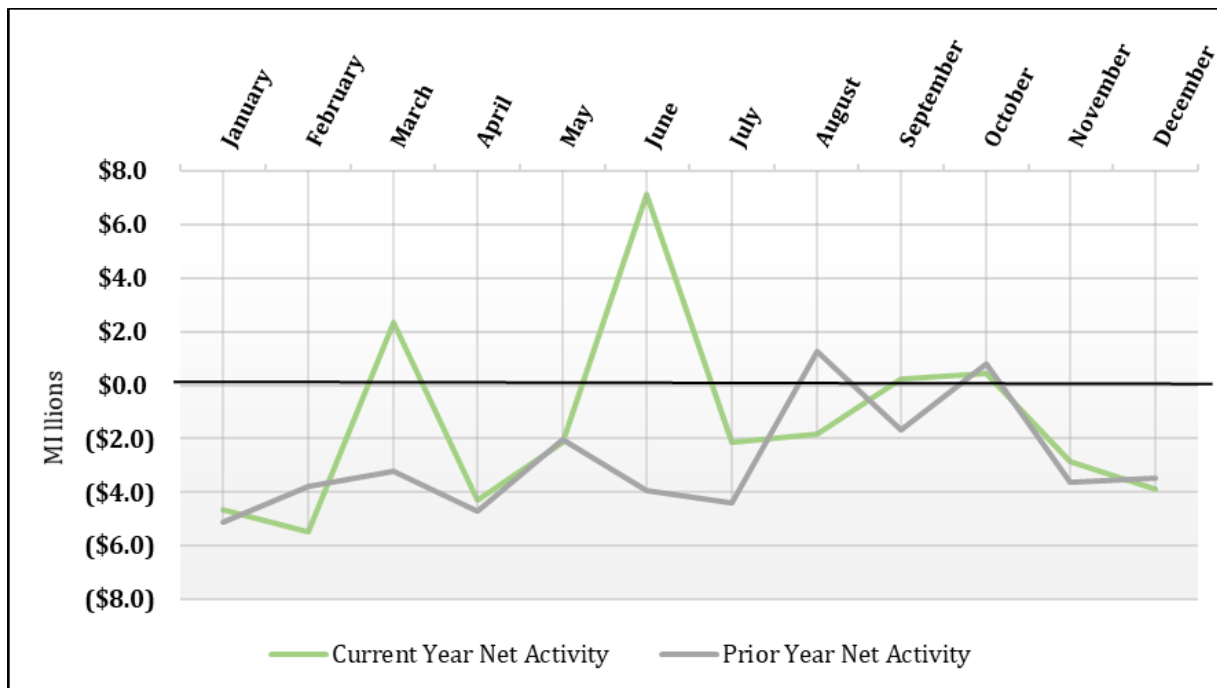
**Note 1:** The \$29,300,000 for the DWSD loan receivable balance is calculated as follows.

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

**29,300,000 FY 2017 Shortfall-to-Date, Rounded**

**Note 2:** During the preparation of this report DWSD made payments totaling approximately \$7 million in principal towards this loan receivable balance. This payment activity will be reflected in the February 2019 TRD report.



**Chart 3 – DWSD 12-Month Net Receipts - Water**

**Chart 4 – DWSD 12-Month Net Receipts – Sewer**


## Combined System Trust Receipts & Disbursements

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

***Table 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 six months of activity to date.

Through December 31, 2018 the combined water system cash receipts exceeded MBO disbursements by 18% with a ratio of 11% since January 1, 2016. Through December 31, 2018, the combined sewer system cash receipts exceeded MBO disbursements by 3% and is functioning at a breakeven status since January 1, 2016.

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

	FY 2016	FY 2017	FY 2018	FY 2019-to-Date	Life-to-Date Total
<b>Water</b>					
1 Receipts	\$ 175,826,163	\$ 448,883,201	\$ 439,204,680	\$ 227,948,718	1,291,862,762
2 MOU Adjustments	\$ 18,446,100	\$ -	\$ -	\$ -	18,446,100
3 Adjusted Receipts	194,272,263	448,883,201	439,204,680	227,948,718	1,310,308,862
4 Disbursements	194,001,308	381,334,316	414,890,628	192,971,647	1,183,197,899
5 Net Receipts	\$ 270,955	67,548,885	24,314,052	34,977,071	127,110,963
6 <i>Ratio of Receipts to Disbursements</i>	100%	118%	106%	118%	111%
<b>Sewer</b>					
7 Receipts	\$ 297,567,707	\$ 702,928,523	\$ 722,921,802	\$ 370,132,103	2,093,550,135
8 MOU Adjustments	\$ 55,755,100	\$ -	\$ -	\$ 6,527,200	62,282,300
9 Adjusted Receipts	353,322,807	702,928,523	722,921,802	376,659,303	2,155,832,435
10 Disbursements	341,768,883	702,823,586	746,495,831	364,154,478	2,155,242,778
11 Net Receipts	\$ 11,553,924	\$ 104,937	\$ (23,574,029)	\$ 12,504,825	589,657
12 <i>Ratio of Receipts to Disbursements</i>	103%	100%	97%	103%	100%
<b>Combined</b>					
13 Receipts	\$ 473,393,870	\$ 1,151,811,724	\$ 1,162,126,482	\$ 598,080,821	3,385,412,897
14 MOU Adjustments	\$ 74,201,200	\$ -	\$ -	\$ 6,527,200	80,728,400
15 Adjusted Receipts	547,595,070	1,151,811,724	1,162,126,482	604,608,021	3,466,141,297
16 Disbursements	535,770,191	1,084,157,902	1,161,386,459	557,126,125	3,338,440,677
17 Net Receipts	\$ 11,824,879	\$ 67,653,822	\$ 740,023	\$ 47,481,896	127,700,620
18 <i>Ratio of Receipts to Disbursements</i>	102%	106%	100%	109%	104%

## APPENDIX

# GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 12/31/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$173,702.18	\$173,702.18	\$0.00	\$0.00	\$0.00
ASH TOWNSHIP	\$194,387.75	\$128,195.81	\$66,191.94	\$0.00	\$0.00
BELLEVILLE	\$25,202.23	\$25,202.23	\$0.00	\$0.00	\$0.00
BERLIN TOWNSHIP	\$57,162.45	\$57,162.45	\$0.00	\$0.00	\$0.00
BROWNSTOWN TOWNSHIP	\$280,013.19	\$280,013.19	\$0.00	\$0.00	\$0.00
BRUCE TOWNSHIP	\$28,137.75	\$28,137.75	\$0.00	\$0.00	\$0.00
BURTCHVILLE TOWNSHIP	\$21,956.64	\$21,956.64	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$749,576.26	\$749,576.26	\$0.00	\$0.00	\$0.00
CENTER LINE	\$36,534.28	\$36,534.28	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$321,383.70	\$321,383.70	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$632,796.23	\$632,796.23	\$0.00	\$0.00	\$0.00
COMMERCE TOWNSHIP	\$272,291.48	\$272,291.48	\$0.00	\$0.00	\$0.00
DEARBORN	\$2,769,217.59	\$1,815,566.03	\$953,651.56	\$0.00	\$0.00
DEARBORN HEIGHTS	\$280,113.52	\$280,113.52	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$254,040.77	\$241,492.38	\$12,548.39	\$0.00	\$0.00
ECORSE	\$128,875.29	\$128,875.29	\$0.00	\$0.00	\$0.00
FARMINGTON	\$77,583.37	\$77,583.37	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$674,868.52	\$674,868.52	\$0.00	\$0.00	\$0.00
FERNDAL	\$160,832.76	\$160,832.76	\$0.00	\$0.00	\$0.00
FLAT ROCK	\$96,848.47	\$96,848.47	\$0.00	\$0.00	\$0.00
FLINT	\$318,161.97	\$318,161.97	\$0.00	\$0.00	\$0.00
FRASER	\$92,528.99	\$92,528.99	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$133,626.18	\$133,626.18	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- WATER ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
GIBRALTAR	\$25,818.52	\$25,818.52	\$0.00	\$0.00	\$0.00
GREENWOOD TOWNSHIP	\$46,458.72	\$46,458.72	\$0.00	\$0.00	\$0.00
GROSSE ILE TOWNSHIP	\$212,675.68	\$212,675.68	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$99,678.91	\$99,678.91	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$46,773.02	\$46,773.02	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$120,901.05	\$120,901.05	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$59,176.14	\$59,176.14	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$65,484.54	\$65,484.54	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$117,547.21	\$117,547.21	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$57,458.17	\$57,458.17	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$6,755,496.02	\$205,950.78	\$109,298.21	\$109,780.14	\$6,330,466.89
HURON TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
IMLAY CITY	\$100,796.23	\$100,796.23	\$0.00	\$0.00	\$0.00
IMLAY TOWNSHIP	\$1,099.54	\$1,099.54	\$0.00	\$0.00	\$0.00
INKSTER	\$202,132.95	\$202,132.95	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$24,152.33	\$24,152.33	\$0.00	\$0.00	\$0.00
LAPEER	\$119,723.19	\$119,723.19	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$26,622.86	\$26,622.86	\$0.00	\$0.00	\$0.00
LINCOLN PARK	\$194,543.86	\$194,543.86	\$0.00	\$0.00	\$0.00
LIVONIA	\$1,074,666.54	\$1,074,666.54	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$810,592.03	\$810,592.03	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$157,868.75	\$157,868.75	\$0.00	\$0.00	\$0.00

# GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 12/31/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MAYFIELD TOWNSHIP	\$5,083.06	\$5,083.06	\$0.00	\$0.00	\$0.00
MELVINDALE	\$53,851.43	\$53,851.43	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$29,787.76	\$29,787.76	\$0.00	\$0.00	\$0.00
NOCWA	\$3,679,452.29	\$3,679,452.29	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$121,101.10	\$121,101.10	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$407,009.04	\$407,009.04	\$0.00	\$0.00	\$0.00
NOVI	\$845,093.23	\$845,093.23	\$0.00	\$0.00	\$0.00
OAK PARK	\$110,236.43	\$110,236.43	\$0.00	\$0.00	\$0.00
OAKLAND CO DR COM	\$5,638.82	\$5,638.82	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$82,387.97	\$82,387.97	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$324,024.02	\$324,024.02	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$244,966.68	\$244,966.68	\$0.00	\$0.00	\$0.00
RIVER ROUGE	\$44,858.61	\$44,858.61	\$0.00	\$0.00	\$0.00
RIVERVIEW	\$72,181.37	\$72,181.37	\$0.00	\$0.00	\$0.00
ROCKWOOD	\$24,430.64	\$24,430.64	\$0.00	\$0.00	\$0.00
ROMEO	\$19,624.39	\$19,624.39	\$0.00	\$0.00	\$0.00
ROMULUS	\$331,273.58	\$331,273.58	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$212,756.49	\$212,756.49	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$17,906.15	\$17,906.15	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$1,006,766.57	\$1,006,766.57	\$0.00	\$0.00	\$0.00
SOCWA	\$3,618,473.42	\$3,618,473.42	\$0.00	\$0.00	\$0.00
SOUTH ROCKWOOD	\$8,473.76	\$8,473.76	\$0.00	\$0.00	\$0.00
SOUTHGATE	\$178,787.06	\$178,787.06	\$0.00	\$0.00	\$0.00

# GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 12/31/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ST. CLAIR SHORES	\$868,798.88	\$407,799.73	\$257,839.13	\$203,160.02	\$0.00
STERLING HEIGHTS	\$1,138,054.99	\$1,138,054.99	\$0.00	\$0.00	\$0.00
SUMPTER TOWNSHIP	\$53,821.72	\$53,821.72	\$0.00	\$0.00	\$0.00
SYLVAN LAKE	\$19,056.41	\$19,056.41	\$0.00	\$0.00	\$0.00
TAYLOR	\$709,629.30	\$709,629.30	\$0.00	\$0.00	\$0.00
TRENTON	\$171,575.88	\$171,575.88	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$1,035,282.55	\$1,035,282.55	\$0.00	\$0.00	\$0.00
UTICA	\$45,273.51	\$45,273.51	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$284,193.77	\$284,193.77	\$0.00	\$0.00	\$0.00
VILLAGE OF ALMONT	\$19,244.58	\$19,244.58	\$0.00	\$0.00	\$0.00
WALLED LAKE	\$153,354.42	\$153,354.42	\$0.00	\$0.00	\$0.00
WARREN	\$1,660,880.20	\$1,660,880.20	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$ (49,314.80)	\$ (49,314.80)	\$0.00	\$0.00	\$0.00
WAYNE	\$231,656.35	\$231,656.35	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$822,248.37	\$822,248.37	\$0.00	\$0.00	\$0.00
WESTLAND	\$1,011,126.78	\$1,011,126.78	\$0.00	\$0.00	\$0.00
WIXOM	\$184,062.64	\$184,062.64	\$0.00	\$0.00	\$0.00
WOODHAVEN	\$123,846.53	\$123,846.53	\$0.00	\$0.00	\$0.00
YCUA	\$801,032.27	\$801,032.27	\$0.00	\$0.00	\$0.00
<b>TOTAL WATER ACCOUNTS</b>	<b>\$38,827,496.05</b>	<b>\$30,784,559.77</b>	<b>\$1,399,529.23</b>	<b>\$312,940.16</b>	<b>\$6,330,466.89</b>



## GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 12/31/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CENTER LINE	\$85,599.50	\$85,599.50	\$0.00	\$0.00	\$0.00
DEARBORN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EVERGREEN-FARMINGTON	\$2,881,500.00	\$2,881,500.00	\$0.00	\$0.00	\$0.00
FARMINGTON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$74,100.00	\$74,100.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$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	\$33,278,010.78	\$467,900.00	\$467,900.00	\$467,900.00	\$31,874,310.78
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	\$0.00	\$0.00	\$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.	\$2,056,000.00	\$2,056,000.00	\$0.00	\$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>\$46,902,310.28</b>	<b>\$14,092,199.50</b>	<b>\$467,900.00</b>	<b>\$467,900.00</b>	<b>\$31,874,310.78</b>

# GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 12/31/18

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)	\$20,240.88	\$20,240.88	\$0.00	\$0.00	\$0.00
AUBURN HILLS (E-F)	\$375.19	\$375.19	\$0.00	\$0.00	\$0.00
BERKLEY	\$2,901.33	\$2,901.33	\$0.00	\$0.00	\$0.00
BEVERLY HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BINGHAM FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BIRMINGHAM (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BIRMINGHAM (SEOC)	\$11,182.78	\$11,182.78	\$0.00	\$0.00	\$0.00
BLOOMFIELD HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BLOOMFIELD TOWNSHIP	\$7,161.14	\$7,161.14	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$460,738.06	\$38,132.92	\$0.00	\$19,066.46	\$403,538.68
CENTER LINE	\$3,683.10	\$3,683.10	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$12,179.14	\$12,179.14	\$0.00	\$0.00	\$0.00
CITY OF FARMINGTON (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CITY OF FERNDALE	\$14,228.40	\$14,228.40	\$0.00	\$0.00	\$0.00
CITY OF ROCHESTER	\$3,725.23	\$3,725.23	\$0.00	\$0.00	\$0.00
CLARKSTON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLAWSON	\$2,763.45	\$2,763.45	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$25,339.22	\$25,339.22	\$0.00	\$0.00	\$0.00
DEARBORN	\$73,218.28	\$73,218.28	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$18,886.43	\$18,886.43	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$106.64	\$106.64	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$12,784.89	\$12,784.89	\$0.00	\$0.00	\$0.00

# GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 12/31/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FARMINGTON	\$2,886.83	\$2,886.83	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FRASER	\$4,960.88	\$4,960.88	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$6,199.25	\$6,199.25	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$1,580.76	\$1,580.76	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$2,088.99	\$2,088.99	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$1,182.65	\$1,182.65	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$318.17	\$318.17	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$2,625.78	\$2,625.78	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$4,175.13	\$4,175.13	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$1,949.52	\$1,949.52	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$3,216.57	\$3,216.57	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$1,651,474.40	\$7,923.39	\$0.00	\$4,280.79	\$1,639,270.22
HUNTINGTON WOODS	\$286.18	\$286.18	\$0.00	\$0.00	\$0.00
INDEPENDENCE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INKSTER	\$11,119.74	\$11,119.74	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LAKE ORION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LATHRUP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$325.36	\$325.36	\$0.00	\$0.00	\$0.00
LIVONIA	\$40,152.61	\$40,152.61	\$0.00	\$0.00	\$0.00

# GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 12/31/18

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MACOMB TWP	\$206.29	\$206.29	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELVINDALE	\$3,629.99	\$3,629.99	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$567.00	\$567.00	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$4,321.94	\$4,321.94	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$110,557.99	\$9,148.06	\$0.00	\$4,574.03	\$96,835.90
NOVI	\$17,395.28	\$17,395.28	\$0.00	\$0.00	\$0.00
OAK PARK	\$6,807.06	\$6,807.06	\$0.00	\$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)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
OXFORD TOWNSHIP	\$1,015.02	\$1,015.02	\$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	\$3,915.14	\$3,915.14	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$307,737.31	\$25,462.54	\$0.00	\$12,731.27	\$269,543.50
REDFORD TOWNSHIP	\$14,508.43	\$14,508.43	\$0.00	\$0.00	\$0.00
ROCHESTER HILLS	\$18,260.50	\$18,260.50	\$0.00	\$0.00	\$0.00
ROMULUS	\$926.07	\$926.07	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$14,776.82	\$14,776.82	\$0.00	\$0.00	\$0.00
ROYAL OAK	\$13,598.95	\$13,598.95	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$12,178.31	\$12,178.31	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- IWC ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
SOUTHFIELD (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SOUTHFIELD (SEOC)	\$3,800.64	\$3,800.64	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$12,102.46	\$12,102.46	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$31,379.40	\$31,379.40	\$0.00	\$0.00	\$0.00
TROY (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$37,237.46	\$37,237.46	\$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	\$0.00	\$0.00	\$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	\$23,000.17	\$23,000.17	\$0.00	\$0.00	\$0.00
<b>TOTAL IWC ACCOUNTS</b>	<b>\$3,063,757.66</b>	<b>\$613,916.81</b>	<b>\$0.00</b>	<b>\$40,652.55</b>	<b>\$2,409,188.30</b>

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
3M COMPANY	\$4,527.40	\$4,527.40	\$0.00	\$0.00	\$0.00
A & R PACKING CO., LLC	\$4,731.69	\$4,731.69	\$0.00	\$0.00	\$0.00
AACTRON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACADEMY PACKING CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACME RUSTPROOF	\$42.44	\$42.44	\$0.00	\$0.00	\$0.00
ADVANCED RESOURCE RECOVERY	\$1,209.94	\$1,209.94	\$0.00	\$0.00	\$0.00
AEVITAS SPECIALITY SERVICES	\$20,320.71	\$20,320.71	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALGAL SCIENTIFIC CORPORATION	\$16,533.05	\$0.00	\$0.00	\$0.00	\$16,533.05
ALL CHEM CORP, LLC.	\$ (91.23)	\$0.00	\$0.00	\$0.00	\$ (91.23)
ALPHA STAMPING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AMERICAN WASTE TECH INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ATWATER IN THE PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AUTOMOTIVE FINISH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AXLE BREWING COMPANY, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
B. NEKTAR MEADERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BAFFIN BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARON INDUSTRIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARTZ BAKERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BASTONE BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BATCH BREWING COMPANY	\$ (263.56)	\$0.00	\$0.00	\$0.00	\$ (263.56)

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
BAYS MICHIGAN CORPORATION	\$337.03	\$337.03	\$0.00	\$0.00	\$0.00
BEIRUT BAKERY, INC.	\$64.34	\$64.34	\$0.00	\$0.00	\$0.00
BETTER MADE SNACK FOOD	\$19,237.22	\$19,237.22	\$0.00	\$0.00	\$0.00
BLACK LOTUS BREWING CO.	\$174.45	\$0.00	\$72.32	\$0.00	\$102.13
BOZEK'S MARKET	\$61.54	\$61.54	\$0.00	\$0.00	\$0.00
BREW DETROIT	\$3,835.12	\$3,835.12	\$0.00	\$0.00	\$0.00
BROADWAY MKT CORNED BEEF	\$ (39.92)	\$0.00	\$0.00	\$0.00	\$ (39.92)
BROOKS BREWING, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BROWN IRON BREWHOUSE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CANTON BREW WORKS	\$142.63	\$0.00	\$72.32	\$0.00	\$70.31
CAPITAL REPRODUCTIONS	\$1.62	\$1.62	\$0.00	\$0.00	\$0.00
CF BURGER CREAMERY	\$18,270.00	\$18,270.00	\$0.00	\$0.00	\$0.00
CHILANGO'S BAKERY	\$2,213.08	\$134.49	\$31.65	\$23.73	\$2,023.21
CINTAS CORP. - MACOMB TWP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$29,883.41	\$29,883.41	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$13,931.61	\$13,931.61	\$0.00	\$0.00	\$0.00
CITY LAUNDRY, INC.	\$15.95	\$15.95	\$0.00	\$0.00	\$0.00
CLASSIC CONTAINER CORP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COCA-COLA REFRESHMENTS USA,	\$6,172.09	\$3,661.22	\$1,891.45	\$619.42	\$0.00
COSTCO WHOLESALE STORE	\$2,404.63	\$2,404.63	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$775.84	\$775.84	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$3,222.21	\$3,222.21	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COUNTRY FRESH DAIRY CO.	\$2,216.17	\$2,216.17	\$0.00	\$0.00	\$0.00
CROSS CHEMICAL COMPANY, INC.	\$2,057.90	\$1,029.10	\$0.00	\$0.00	\$1,028.80
DARLING INGREDIENTS, INC.	\$6,551.31	\$6,551.31	\$0.00	\$0.00	\$0.00
DAVE'S SAUSAGE FACTORY 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN BREWING	\$37.91	\$0.00	\$37.91	\$0.00	\$0.00
DEARBORN SAUSAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE CO., INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT BEER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT LINEN SERVICE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT RIVERTOWN BREWERY CC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT SAUSAGES CO INC	\$47.55	\$30.77	\$16.78	\$0.00	\$0.00
DETRONIC INDUSTRIES, INC.	\$144.01	\$144.01	\$0.00	\$0.00	\$0.00
DIFCO LABORATORIES, INC.	\$23,397.86	\$23,397.86	\$0.00	\$0.00	\$0.00
DIVERSIFIED CHEM TECH. INC.	\$183.97	\$183.97	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,037.60	\$1,037.60	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$2,987.03	\$2,874.72	\$112.31	\$0.00	\$0.00
E.W. GROBBEL'S SONS, INC.	\$4,070.43	\$4,070.43	\$0.00	\$0.00	\$0.00
EASTERN MARKET BREWING COMP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ENVIROSOLIDS, L.L.C.	\$120,524.02	\$0.00	\$0.00	\$16,440.32	\$104,083.70
EQ DETROIT, INC.	\$944.28	\$944.28	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$2,461.80	\$2,461.80	\$0.00	\$0.00	\$0.00



**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
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)
ETON ST BREWERY- GRIFFIN CLA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EXTRUDE HONE CORPORATION	\$117.45	\$117.45	\$0.00	\$0.00	\$0.00
EXTRUDEHODE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FARMINGTON BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FAYGO BEVERAGES, INC.	\$480,938.99	\$81,043.80	\$51,276.74	\$53,249.28	\$295,369.17
FORD NEW MODEL PROGRAM	\$583.27	\$583.27	\$0.00	\$0.00	\$0.00
FOUNDERS BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$865.98	\$865.98	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$7,461.41	\$7,461.41	\$0.00	\$0.00	\$0.00
G2O ENERGY, LLC	\$2,230.04	\$2,230.04	\$0.00	\$0.00	\$0.00
GENERAL LINEN SUPPLY CO.	\$69,493.69	\$12,420.21	\$6,181.90	\$6,040.92	\$44,850.66
GLOBAL TITANIUM, INC.	\$5,518.90	\$5,518.90	\$0.00	\$0.00	\$0.00
GLOBAL TITANIUM, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$245.32	\$0.00	\$115.99	\$0.00	\$129.33
GREAT BARABOO BREWING CO.	\$ (2,187.50)	\$0.00	\$0.00	\$0.00	\$ (2,187.50)
HACIENDA MEXICAN FOODS	\$5,122.75	\$2,487.62	\$0.00	\$0.00	\$2,635.13
HENKEL CORPORATION	\$473.94	\$473.94	\$0.00	\$0.00	\$0.00
HOME STYLE FOOD INC.	\$4,150.23	\$4,150.23	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
HOOD CLEANERS	\$210.36	\$0.00	\$0.00	\$0.00	\$210.36
HOUGHTON INTERNATIONAL INC.	\$388.12	\$388.12	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$224.70	\$224.70	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$7,549.92	\$7,549.92	\$0.00	\$0.00	\$0.00
HUNTINGTON CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INDUSTRIAL METAL COATING	\$326.18	\$326.18	\$0.00	\$0.00	\$0.00
ISLAMIC SLAUGHTER HOUSE	\$644.39	\$644.39	\$0.00	\$0.00	\$0.00
ITALIAN BUTTER BREAD STICKS	\$7.91	\$7.91	\$0.00	\$0.00	\$0.00
J & G FOOD PRODUCTS, INC.	\$69.94	\$69.94	\$0.00	\$0.00	\$0.00
JAMEX BREWING CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KAR NUT PRODUCTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KOWALSKI SAUSAGES, CO.	\$541.15	\$541.15	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$591.23	\$591.23	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$50.20	\$50.20	\$0.00	\$0.00	\$0.00
LEAR CORPORATION DBA EAGLE C	\$5,652.06	\$5,652.06	\$0.00	\$0.00	\$0.00
LIBERTY STREET PROD. BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LILY'S SEAFOOD GRILL & BREWE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MACDERMID, INC.	\$5,018.68	\$4,916.73	\$101.95	\$0.00	\$0.00
MCNICHOLS POLISHING & ANODIZ	\$50.29	\$35.00	\$0.00	\$15.29	\$0.00
MELLO MEATS INC, - KUBISCH S	\$111.90	\$111.90	\$0.00	\$0.00	\$0.00
METROPOLITAN BAKERY	\$474.69	\$474.69	\$0.00	\$0.00	\$0.00
MIBA HYDRAMECHANICA CORP.	\$91.81	\$91.81	\$0.00	\$0.00	\$0.00
MICHIGAN DAIRY	\$84,739.34	\$84,739.34	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
MICHIGAN PROD. MACHINING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MICHIGAN SOY PRODUCTS CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MIDWEST WIRE PRODUCTS, INC.	\$ (2.94)	\$0.00	\$0.00	\$0.00	\$ (2.94)
MILANO BAKERY	\$1,418.44	\$1,418.44	\$0.00	\$0.00	\$0.00
MILTON CHILI CO.	\$39.04	\$39.04	\$0.00	\$0.00	\$0.00
MINNIE MARIE BAKERS, INC	\$4,415.34	\$4,415.34	\$0.00	\$0.00	\$0.00
MISTER UNIFORM & MAT RENTALS	\$103.77	\$23.63	\$27.74	\$52.40	\$0.00
MOTOR CITY BREWING WORKS	\$ (23.25)	\$0.00	\$0.00	\$0.00	\$ (23.25)
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
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTH CENTER BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHERN LAKES SEAFOOD & MEAT	\$52.64	\$52.64	\$0.00	\$0.00	\$0.00
OAKWOOD BAKERY	\$160.58	\$160.58	\$0.00	\$0.00	\$0.00
PARKER'S HILLTOP BREWER & S	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PELLERITO FOODS INC.	\$2,027.75	\$2,027.75	\$0.00	\$0.00	\$0.00
PEPSI COLA, INC.	\$42,565.06	\$42,565.06	\$0.00	\$0.00	\$0.00
PERSONAL UNIFORM SERVICE, IN	\$34.67	\$34.67	\$0.00	\$0.00	\$0.00
PETRO ENVIRON TECH, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PINE TREE ACRES, INC.	\$41,692.25	\$41,692.25	\$0.00	\$0.00	\$0.00
PLATING SPEC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
POWER VAC OF MICHIGAN, INC.	\$78.97	\$78.97	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
PREMIER PLATING, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PRODUCTION SPRING, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
QUALA SERVICES, LLC	\$822.63	\$822.63	\$0.00	\$0.00	\$0.00
RAY'S ICE CREAM CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RED SPOT PAINT #409139	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RIVER ROUGE BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROAK BREWING CO. LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS BEER COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS PROD BREWERY	\$2,005.73	\$0.00	\$2,005.73	\$0.00	\$0.00
RTT	\$23,842.21	\$0.00	\$0.00	\$123.61	\$23,718.60
SEAFARE FOODS, INC.	\$150.58	\$150.58	\$0.00	\$0.00	\$0.00
SHERWOOD BREWING COMPANY	\$819.08	\$0.00	\$707.30	\$111.78	\$0.00
SMITH-WATKINS, LLC	\$ (1,775.84)	\$0.00	\$ (1,775.84)	\$0.00	\$0.00
SPRAYTEK, INC.	\$46.16	\$34.28	\$11.88	\$0.00	\$0.00
SWEETHEART BAKERY, INC.	\$940.37	\$152.86	\$75.72	\$72.86	\$638.93
THE CROWN GROUP-LIVONIA PLAN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
THE ROYAL OAK BREWERY	\$ (1,531.50)	\$0.00	\$0.00	\$0.00	\$ (1,531.50)
TOM LAUNDRY CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TRAFFIC JAM & SNUG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
U-METCO, INC.	\$1,124.47	\$1,124.47	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$38,242.49	\$38,242.49	\$0.00	\$0.00	\$0.00

**GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS**

**Balances as of 12/31/18**

<b>Customer Name</b>	<b>Total Due</b>	<b>Current</b>	<b>46 - 74 Days</b>	<b>75 - 104 Days</b>	<b>&gt;105 Days</b>
UNCLE RAYS SNACKS, LLC	\$180.04	\$180.04	\$0.00	\$0.00	\$0.00
UNIQUE LINEN SERVICES, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNITED FISH DISTRIBUTORS	\$7.98	\$7.98	\$0.00	\$0.00	\$0.00
UNITED LINEN SERVICE, LLC.	\$287.30	\$287.30	\$0.00	\$0.00	\$0.00
UNITED MEAT & DELI	\$464.39	\$464.39	\$0.00	\$0.00	\$0.00
US ECOLOGY MICHIGAN	\$ (1,101.62)	\$0.00	\$0.00	\$0.00	\$ (1,101.62)
US ECOLOGY ROMULUS, INC.	\$4,258.55	\$4,258.55	\$0.00	\$0.00	\$0.00
USHER OIL SERVICES	\$4,591.80	\$4,591.80	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS	\$9,979.10	\$9,979.10	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS, INC.	\$3,875.88	\$3,875.88	\$0.00	\$0.00	\$0.00
VERNOR FOOD PRODUCTS	\$100.41	\$64.15	\$27.89	\$8.37	\$0.00
WIGLEY'S MEAT PROCESS	\$344.09	\$344.09	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$1,829.60	\$1,829.60	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$72.07	\$72.07	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO	\$6,527.06	\$6,527.06	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO.	\$2,761.18	\$2,761.18	\$0.00	\$0.00	\$0.00
WOODWARD AVENUE BREWERS	\$219.55	\$0.00	\$219.55	\$0.00	\$0.00
<b>TOTAL POLLUTANT SURCHARGE ACCOUNTS</b>	<b>\$1,181,951.19</b>	<b>\$563,657.42</b>	<b>\$61,211.29</b>	<b>\$76,757.98</b>	<b>\$480,324.50</b>

## City of Highland Park Billings and Collections

	<u>Water</u>	<u>Sewer</u>	<u>IWC</u>	<u>Cumulative Total</u>
June 30, 2012 Balance	\$ -	\$ 10,207,956	\$ 852,987	\$ 11,060,943
FY 2013 Billings	485,887	4,987,635	154,444	5,627,966
FY 2013 Payments	<u>(65,652)</u>	<u>(2,206,211)</u>	<u>-</u>	<u>(2,271,863)</u>
				-
June 30, 2013 Balance	\$ 420,235	\$ 12,989,380	\$ 1,007,431	\$ 14,417,046
FY 2014 Billings	1,004,357	6,980,442	161,951	8,146,750
FY 2014 Payments	<u>-</u>	<u>(1,612,633)</u>	<u>-</u>	<u>(1,612,633)</u>
				-
June 30, 2014 Balance	\$ 1,424,592	\$ 18,357,189	\$ 1,169,382	\$ 20,951,163
FY 2015 Billings	1,008,032	5,553,123	165,739	6,726,894
FY 2015 Payments	<u>-</u>	<u>(1,444,623)</u>	<u>-</u>	<u>(1,444,623)</u>
				-
June 30, 2015 Balance	\$ 2,432,625	\$ 22,465,689	\$ 1,335,121	\$ 26,233,435
FY 2016 Billings	1,157,178	5,612,167	106,431	6,875,776
FY 2016 Payments	<u>-</u>	<u>(2,022,335)</u>	<u>-</u>	<u>(2,022,335)</u>
				-
June 30, 2016 Balance	\$ 3,589,803	\$ 26,055,521	\$ 1,441,551	\$ 31,086,875
FY 2017 Billings	1,245,267	5,802,000	101,999	7,149,265
FY 2017 Payments	<u>-</u>	<u>(2,309,186)</u>	<u>-</u>	<u>(2,309,186)</u>
				-
June 30, 2017 Balance	\$ 4,835,070	\$ 29,548,335	\$ 1,543,550	\$ 35,926,954
FY 2018 Billings	1,277,179	5,657,101	80,472	7,014,752
FY 2018 Payments	<u>-</u>	<u>(4,108,108)</u>	<u>-</u>	<u>(4,108,108)</u>
				-
June 30, 2018 Balance	\$ 6,112,248	\$ 31,097,327	\$ 1,624,022	\$ 38,833,597
FY 2019 Billings (6 Months)	643,248	2,809,701	27,452	3,480,401
FY 2019 Payments (6 Months)	<u>-</u>	<u>(629,017)</u>	<u>-</u>	<u>(629,017)</u>
				-
<b>Balance as of December 31, 2018</b>	<b><u>\$ 6,755,496</u></b>	<b><u>\$ 33,278,011</u></b>	<b><u>\$ 1,651,474</u></b>	<b><u>\$ 41,684,982</u></b>