



Audit Committee

Tuesday, May 22, 2018 at 12:00 p.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. April 20, 2018 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
 - A. Review of the FY 2017 Audited Financial Statements (Page 6)
 - B. Financial Sustainability Model – Forecast Modeling (Page 161)
 - C. Proposed Public Hearing: State Revolving Fund Project Plan Submittal for the Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project (Page 179)
 - D. Review of the FY 2017 Detroit General retirement System Plan Actuarial Report (Page 184)
 - E. Detroit General Retirement System Plan Reporting Request (Page 232)
 - F. Report: Responses to Questions from Oakland County Drain Commissioner's Office (**pending**)
7. NEW BUSINESS
 - A. FY 2018 Third Quarter Budget Update (**pending**)
 - B. Update: Pre-approved Underwriter Pool Proposal Selection for the 2018 Financing Program (Page 234)
8. REPORTS
 - A. Monthly Revenue & Collections Report for March 2018 (Page 237)
 - B. Master Bond Ordinance Monthly Cash Transfers: Cash Transfers through May 1, 2018 (Page 261)
9. CFO Update (verbal)
 - Procurement Policy Review
 - Vendor Outreach Event
 - Water Infrastructure Finance and Innovation Act (WIFIA) Update
10. LOOK AHEAD
 - Next Audit Committee Meeting – June 15, 2018 at 8 am (Regular Meeting)
11. INFORMATION
12. OTHER MATTERS
13. ADJOURNMENT



Great Lakes Water Authority

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

Meeting Minutes - Draft

Audit Committee

Friday, April 20, 2018

8:00 AM

Water Board Building 5th Floor

1. Call To Order

Chairman Baker called the meeting to order at 8:02 a.m.

2. Quorum Call

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

3. Approval of Agenda

Chairman Baker requested a Motion to approve the Agenda.

Motion By: Robert Daddow

Support By: Gary Brown

Action: Approved

The motion carried by a unanimous vote.

4. Approval of Minutes

[2018-703](#) Approval of Minutes of March 16, 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [March 16 2018 Audit Committee Meeting Minutes](#)

Chairman Baker requested a Motion to approve the March 16, 2018 Audit Committee Meeting Minutes.

Motion By: Gary Brown

Support By: Robert Daddow

Action: Approved

The motion carried by a unanimous vote.

5. Public Comment

There were no Public Comments.

6. Old Business

A. [2018-704](#) Memorandum of Understanding Implementation

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Memorandum of Understanding Implementation](#)
[Member Partners Letter - MOU Term Sheet Approval-Update180406](#)
[Executed MOU Term Sheet](#)

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

B. [2018-705](#) Draft FY 2017 Financial Report Review

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Addendum 2 Audit Committee 4.20.18 issued 4.30.2018](#)

Mark Kettner of Rehmann Robson provided a verbal update regarding the Draft FY 2017 Financial Report Review.

C. Audit Update with External Auditors (Rehmann Robson) (verbal update)

Mark Kettner of Rehmann Robson provided a verbal update regarding the Audit.

D. [2018-706](#) Report: Responses to Questions from Oakland County Drain Commissioner's Office

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Responses to Questions from Oakland County Drain Commissioner's Office](#)

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

Director Daddow made a Motion to Receive and File this item, supported by Director Brown, but noted open issues still remain.

E. [2018-707](#) Water Residential Assistance Program Update and Proposed Program Assistance Allocation Changes

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [WRAP Reallocation](#)

[Supplemental WRAP Update Documents 4.20.18](#)

[WRAP Reallocation Table 2](#)

[WRAP Reallocation Table 3](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Postponed

The motion carried by a unanimous vote.

Director Daddow motioned, supported by Director Brown, to postpone this item to the Board of Directors Workshop Meeting of May 9, 2018.

7. New Business

A. [2018-708](#) Alignment of Revenue Requirement, Budget, Capital, Debt, and Affordability

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Alignment of Revenue Requirement.Capital.Debt.Affordability Alignment](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Received and Filed

The motion carried by a unanimous vote.

B. [2018-709](#) Water Infrastructure Finance and Innovation Act (WIFIA)

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [WIFIA](#)

[GLWA Information Regarding the WIFIA Program](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Received and Filed.

The motion carried by a unanimous vote.

8. Reports

- A. [2018-710](#) Monthly Revenue & Collections Report for March 2018
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Monthly Revenue and Collections Report for March 2018](#)
[AR Aging W_S_IWC_PS_03.31.18](#)
- Motion By: Gary Brown**
Support By: Robert Daddow
Action: Received and Filed
The motion carried by a unanimous vote.
- B. [2018-711](#) Master Bond Ordinance Monthly Cash Transfers: Cash Transfers through April 1, 2018
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Cash Transfers April 2018](#)
[Monthly Transfers to DWSD April 2018](#)
[Monthly Transfers to GLWA April 2018](#)
- Motion By: Gary Brown**
Support By: Robert Daddow
Action: Received and Filed
The motion carried by a unanimous vote.
- C. [2018-712](#) Construction Work-in-Progress Report through December 31, 2017
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [Construction Work-in-Progress 12.31.2017](#)
[Dashboard Construction Work-in-Progress - FY 2018 Q2](#)
[Construction Work-in-Progress FY18](#)
- Motion By: Robert Daddow**
Support By: Gary Brown
Action: Received and Filed
The motion carried by a unanimous vote.
- D. CFO Update (Verbal)

Nicolette Bateson, Chief Financial Officer/Treasurer, provided an update to the Audit Committee on the GLWA Sewer Charge Stability Adjustment Program; Procurement Policy Review; Vendor Outreach Event on May 17, 2018 and the Procurement Group Reorganization.

9. Look Ahead

The Next Audit Committee Meeting is scheduled for Friday, May 18, 2018 at 8:00 a.m.

10. Information

None

11. Other Matters

Director Daddow stated there is a possibility he may not be able to attend the Board of Directors Workshop Meeting on Wednesday, May 9, 2018.

12. Adjournment

Chairman Baker requested a Motion to Adjourn.

Motion By: Gary Brown

Support: Robert Daddow

Action: Approved

The motion carried by a unanimous vote.

There being no further business, the meeting was adjourned at 10:49 a.m.



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Review of the FY 2017 Audited Financial Statements

Background: The FY 2017 audited financial statements were completed on May 11, 2018 after review by the Great Lakes Water Authority (GLWA) Board on May 9, 2018. The auditors for the GLWA will attend the May 22, 2018 Audit Committee meeting for a review of those reports.

Analysis: Attached are the following audit-related reports.

- FY 2017 Comprehensive Annual Financial Report (CAFR)
- FY 2017 Single Audit Compliance Report
- FY 2017 Independent Auditors' Communication with those Charged with Governance

In addition, a memo from Rehmann Robson is attached related to questions from a member of the Audit Committee. Similar to last year, a "Key Takeaways" one-pager is being prepared for distribution to stakeholders (will be presented at the Audit Committee meeting).

The Articles of Incorporation provide for distribution of the Audit Report to the Incorporating Municipalities (see excerpt below). Pending review by the Audit Committee, the final reports will be distributed.

ARTICLE 15 - AUDIT

The Board shall cause an annual audit to be made of its financial statements, including such federal and state audits as may be required relating to grants and awards, by a certified public accountant, and shall furnish at least two copies to each Incorporating Municipality. The books and records of the Authority shall be open for inspection by any Incorporating Municipality at all reasonable times upon reasonable notice.

Proposed Action: Receive and file the final FY 2017 reports: FY 2017 Comprehensive Annual Financial Report, FY 2017 Single Audit Compliance Report, and FY 2017 Independent Auditors' Communication with those Charged with Governance. Further, staff is directed to provide copies to each Incorporating Municipality as outlined in the Articles of Incorporation.



Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2017



We are
One water.

Striving to be the preferred provider of water and wastewater services in southeast Michigan.

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GREAT LAKES WATER AUTHORITY

Table of Contents

	<u>Page</u>
INTRODUCTORY SECTION	
Chief Executive Officer's Transmittal Letter	1
Organizational Line of Reporting Chart	6
Board of Directors, Executive Leadership Team and Mission Statement	7
FINANCIAL SECTION	
Independent Auditors' Report	9
Management's Discussion and Analysis	14
Basic Financial Statements	
Statement of Net Position	28
Statement of Revenues, Expenses and Changes in Net Position	30
Statement of Cash Flows	31
Notes to Financial Statements	36
Required Supplementary Information	
Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System:	
Schedule of Changes in Net Pension Liability and Related Ratios:	
Water Fund	70
Sewer Fund	71
Schedule of Contributions	72
Supplementary Information	
Combining and Individual Fund Schedules:	
Combining Schedule of Net Position - Water Fund	74
Combining Schedule of Revenues, Expenses and Changes in Fund Net Position - Water Fund	76
Combining Schedule of Net Position - Sewage Disposal Fund	78
Combining Schedule of Revenues, Expenses and Changes in Fund Net Position - Sewage Disposal Fund	81
Schedule of Operations and Maintenance Expense for Water Operations	82
Schedule of Operations and Maintenance Expense for Sewer Operations	84
Schedule of Revenue Requirement	86
Schedule of Days Cash - Liquidity	87

GREAT LAKES WATER AUTHORITY

Table of Contents

	<u>Page</u>
STATISTICAL SECTION	
Financial Trends	
Net Position by Component	92
Changes in Net Position	93
Revenue Capacity	
Operating Revenues and Charge Increases	94
Debt Capacity	
Debt by Lien	95
Schedule of Debt Service Requirements	98
Current Debt Ratings	102
Water and Sewer Senior Lien - Debt Ratings History	103
Demographic and Economic Information	
Service Area Demographics	105
Ten Largest Wholesale Water Customers / Total Billed Revenue	106
Ten Largest Wholesale Sewer Customers / Total Billed Revenue	108
Schedule of Wholesale Water Charges	110
Schedule of Wholesale Sewer Monthly Charges	111
Industrial Waste Control Charges & Pollutant Surcharges	112
Operating Information	
Produced and Billed Water Volumes	113
Treated and Billed Wastewater Volumes	114
Pledges of Revenue and Debt Service Coverage	115





CHIEF EXECUTIVE OFFICER'S TRANSMITTAL LETTER

May 10, 2018

Board of Directors
Great Lakes Water Authority

Dear Members of the Board,

I am pleased to present the Comprehensive Annual Financial Report (CAFR) of the Great Lakes Water Authority ("GLWA" or "Authority") for the fiscal year ended June 30, 2017. These financial statements were prepared in accordance with U.S. generally accepted accounting principles (GAAP) and audited by a firm of independent certified public accountants.

Our regional water system is one of the largest in the United States, both in terms of water produced and population served. The system currently serves an area of 1,069 square miles located in eight Southeastern Michigan counties and an estimated population of nearly 3.9 million or approximately 38 percent of Michigan's population.

Our regional wastewater system is also one of the largest in the United States, both in terms of treatment capacity and population served. The wastewater system currently serves an area of 988 square miles located in three Southeastern Michigan counties and an estimated population of nearly 2.9 million or approximately 28 percent of Michigan's population.

GLWA as a Model of Regional Collaboration

GLWA was incorporated by the City of Detroit (the "City") and the counties of Macomb, Oakland and Wayne on November 26, 2014 pursuant to Act 233, Public Acts of Michigan, 1955, as amended. At the time of GLWA's incorporation, the City, through its Detroit Water and Sewerage Department ("DWSD"), was providing water supply services within and outside of the city through a water supply system and drainage and sewage disposal services within and outside of the city through a sewage disposal system.

On June 12, 2015, the City and GLWA executed Regional Water Supply and Sewerage Disposal System Leases (the "Leases"), transferring the regional water and sewer facilities from the City to GLWA for an initial term of 40 years, as well as a Water and Sewer Services Agreement, pursuant to which GLWA provides water and sewer services to the City ("Local System"); the City then supplies these services to Detroit retail customers.

The above agreements required the satisfaction of several conditions before becoming effective. By January 1, 2016 (the "Effective Date"), those conditions were met and GLWA, under the terms of the Leases, became responsible for the assets, all bonded indebtedness as well as other obligations, and operations for the regional water and wastewater systems.

GLWA leases the regional water and sewer facilities from the City for an allocation of \$50 million per year to fund capital improvements for the City's retail system and/or for servicing the debt obligations. GLWA also funds a Water Residential Assistance Program to assist low-income residential households in enrolled member partner communities.

Financial Highlights

GLWA is committed to ensuring the long-term sustainability of the water and sewer systems. Below are three key financial highlights:

1. Strong liquidity with 959 days cash on hand for the water system and 495 days for the sewer system as shown on the Schedule of Days in the Supplementary Information section.
2. Excellent debt service coverage for all bonds at 1.64 times for the water system and 1.51 times for the sewer system as described in the Debt Service Coverage schedule in the Statistical section.
3. Sound operational results with an overall positive budget variance of \$10.1 million, or 9.1%, for the water system and \$24.5 million, or 14.1%, for the sewer system as shown on the Schedule of Operations and Maintenance Expense (Budget to Actual) for each system in the Supplementary Information section. The positive budget variances support subsequent year pay-as-you go capital investment.

Commitment to Excellence

Every month, I highlight the many accomplishments of our valued member partners and talented team working together to benefit the region in the CEO Report. Here are some highlights for FY 2017.¹

July 2016 - Water Operations Receives Water Quality Recognition

GLWA has received the "10-Year Directors Award" from the Partnership for Safe Water, a program developed by the EPA, American Water Works Association (AWWA), and associated partner organizations to guide water systems towards improving water quality by optimizing system operations. GLWA was part of a select group of utilities honored by the Partnership at the annual AWWA conference, the largest and oldest worldwide organization dedicated to safe water.

August 2016 - Security & Integrity Sponsors Regional Emergency Planning

GLWA's Security & Integrity Group hosted a table top exercise utilizing its recently updated emergency response plan. Participants included the City of Detroit, Wayne County, the State of Michigan, the Michigan Department of Environmental Quality and GLWA staff.

September 2016 - Rating Agencies Recognize Steady Progress

GLWA received positive ratings actions from all three ratings agencies - Fitch Ratings, Moody's Investors Service and S&P Global Ratings, and became an "A" rated utility after nine months of operation as an independent regional water and sewer authority.

Fitch Ratings provided a substantial upgrade in ratings for senior and second lien debt, moving GLWA's outstanding bonds up three notches from "BBB" to an "A" rating with a stable outlook for its senior lien, and from "BBB-" to "A-" for its second lien.

¹ Available online at: <http://www.glwater.org/executive-management/ceo-reports/>

Moody's Investors Service upgraded GLWA's credit rating to A3 and its second lien debt to Baa1 (the second upgrade in nine months).

S&P Global Ratings revised the stable outlook to positive for both senior lien and second lien bonds.

October 2016 - Thank You to Our Investors

GLWA's inaugural bond transaction priced which included nearly \$1.1 billion for refunding of outstanding debt and \$251.8 million for new capital projects for the regional and Detroit local water systems. As a result of the favorable interest rates on the bonds, GLWA will realize a net cash flow savings of \$309.1 million over the life of the refinanced bonds.

November 2016 - Systems Planning Presents New Capital Improvement Plan

The Asset Management/Capital Planning team presented a new business case evaluation and criteria to the Board's Capital Improvement Planning Committee. The in-depth capital analysis and business case for each capital project supports improved decision making and financial metrics and is based upon best practices in the water and sewer sectors.

December 2016 - Public Affairs Prepares 2016 "Year in Review"

GLWA Public Affairs Group prepares for the launch of our inaugural "Year in Review" (YIR) for 2016 where we annually highlight the accomplishments achieved during the previous year. The YIR is presented to our team members via Town Hall-style meetings at each GLWA location where I get a chance to thank each team member (across all shifts) for their service and hear firsthand what is on their mind.²

January 2017 - System Analytics Water Audit Consultant Selected

GLWA strives to achieve equity and stability for its customers. For this reason, the System Analytics and Meter Operations Group engaged a consultant to perform a "Water Units of Service for Non-Master Metered Customers and System Water Audit". This project followed the American Water Works Association standard water audit compilation and review process. Results from phase 1 of the study will be used in setting the FY 2019 customer charges.

February 2017 - Information Technology Security Updates

GLWA continues to invest in technology and the security of its systems. The Information Technology Group implemented a Distributed Denial of Services protection for GLWA and for our shared service partner, DWSD. In addition, the Barracuda web filter was upgraded to provide further protections as well as other enhanced security measures.

² Year in Review online at <http://www.glwater.org/wp-content/uploads/2017/03/2016-Year-End-Review.pdf>.

March 2017 - Organizational Development Launches Apprenticeship Program

Seeking innovative ways to approach hard-to-fill jobs, GLWA launches a three-year apprenticeship program to hire and train Electrical Instrument Control Technicians (EICTs) in partnership with Focus: HOPE and Henry Ford College. This program will develop a workforce to fill a GLWA or our customers' skill gap in the employment market. Upon successful completion of the program, individuals will have obtained their EICT-I certification from Henry Ford College, receive a U.S. Department of Labor journeyman card, and full-time employment at a starting wage of \$25 per hour.

April 2017 - Regional Collaboration Expands - City of Flint Selects GLWA Water

An historic collaboration among GLWA, City of Flint, Genesee County Drain Commissioner, Karegnondi Water Authority, and the State of Michigan resulted in the signing of a Statement of Principles for Long Term Water Delivery to the City of Flint. GLWA has become the primary water source for the City of Flint and now also provides backup service for Flint, GLWA and Genesee County customers utilizing the public investments already made by the parties with minimal new investments. This ended a 17-year timeframe in which Flint considered other water supply options. All agreements were finalized in December 2017.

May 2017 - Systems Planning Group Wastewater Master Plan Study Underway

Beginning in April, the Wastewater Master Plan Steering Committee launched monthly meetings with engaged stakeholders. The collaboration opportunities are significant not only for GLWA, but other similar sewage treatment operations in the region as a whole. The master plan is a long-term project which would ultimately develop a roadmap to go from "clean to green" as we are on a trajectory of being a clean system to a Utility of the Future.

June 2017 - GLWA Board Approves Budget and Charges for FY 2018

Due to excellent financial performance as we neared the end of FY 2017, the GLWA Board adopted drinking water charges at 2 percent overall and limited sewer charges to an overall 1.9 percent increase for FY 2018.

These are a few of the examples of how the good work that is done every day at GLWA leads to excellence that supports a financially sustainable system for many generations to come.

Overview of the Financial Report

This report consists of management's representations concerning the finances of GLWA. Consequently, management assumes full responsibility for the completeness and reliability of all the information presented in this report. To provide a reasonable basis for making these representations, GLWA management has established a comprehensive internal control framework that is designed both to protect the entity's assets from loss, theft, or misuse and to compile sufficient reliable information for the preparation of the Authority's financial statements in conformity with GAAP. Because the cost of internal controls should not outweigh their benefits, GLWA's comprehensive framework of internal controls has been designed to provide reasonable rather than absolute assurance that the financial statements will be free from material misstatement. As management, we assert that, to the best of our knowledge and belief, this financial report is complete and reliable in all material respects.

The Authority's financial statements have been audited by Rehmann Robson LLC, a firm of licensed certified public accountants. The goal of the independent audit was to provide reasonable assurance that the financial statements of the Authority for the fiscal year ended June 30, 2017 are free of material misstatement. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; assessing the accounting principles used and significant estimates made by management; and evaluating the overall financial statement presentation. The independent auditor concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that GLWA's financial statements for the fiscal year ended June 30, 2017 are fairly presented in conformity with GAAP. The independent auditor's report is presented as the first component of the financial section of this report.

GAAP requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with the basic financial statements. GLWA's MD&A can be found immediately following the report of the independent auditors.

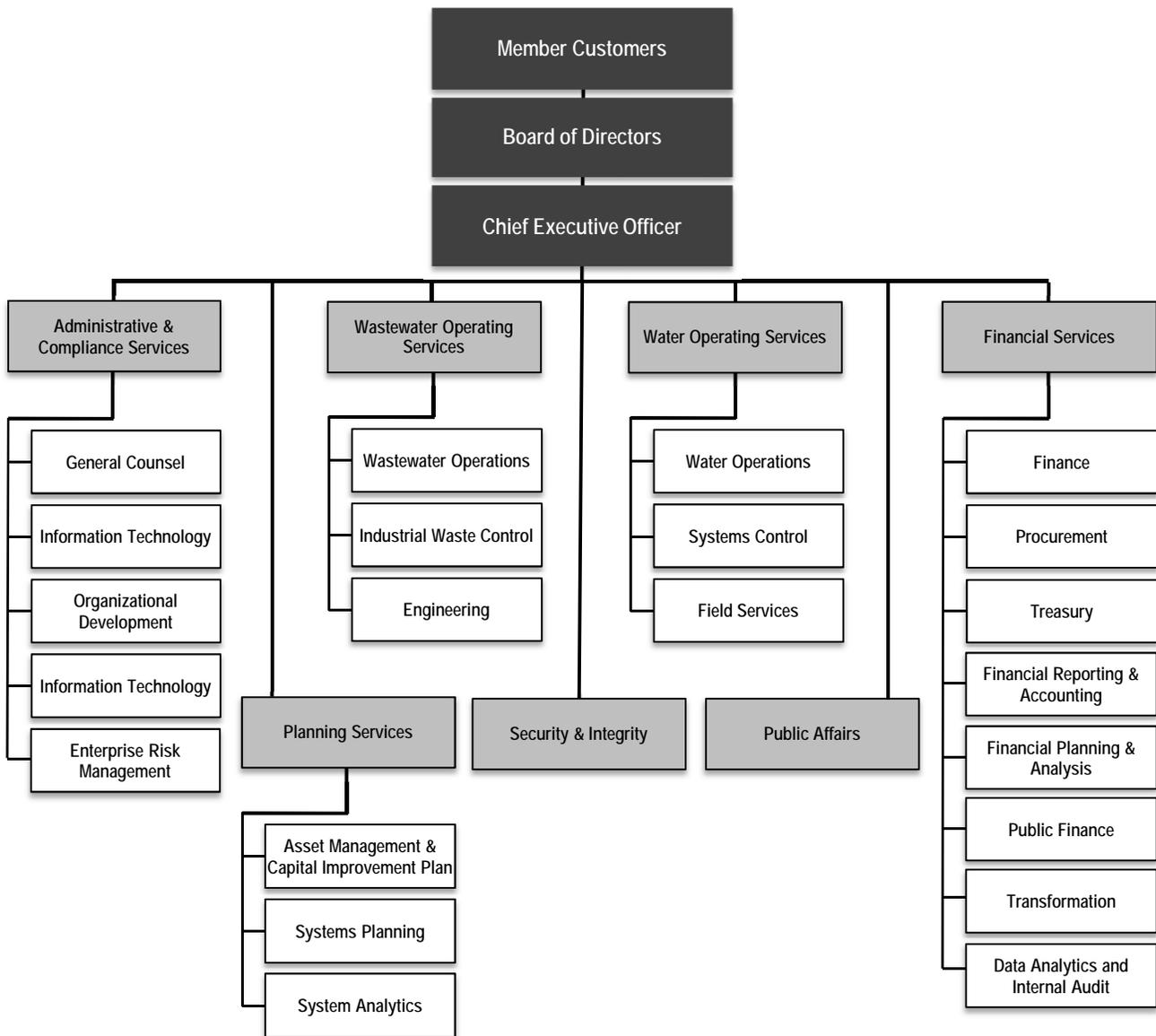
Acknowledgements

When we say "our" system, it is "our" system that we mutually support and foster with our member partners, team members, vendor community, Board of Directors, other stakeholders and the public. Thank you for your continued engaged participation and interest.

Sue McCormick
Chief Executive Officer



Organizational Line of Reporting Chart



Great Lakes Water Authority Board of Directors

Robert J. Daddow GLWA Board Chairman; Representative for Oakland County
Freman Hendrix GLWA Board Vice Chair; Representative for the City of Detroit
Brian Baker..... GLWA Board Secretary; Representative for Macomb County
Gary A. Brown GLWA Board Representative for City of Detroit
Craig Hupy GLWA Board Representative for the State of Michigan
Abe Munfakh, PE GLWA Board Representative for Wayne County

Great Lakes Water Authority Executive Leadership Team

Sue F. McCormick Chief Executive Officer
William M. Wolfson Chief Administrative and Compliance Officer/General Counsel
Nicolette N. Bateson, CPA Chief Financial Officer/Treasurer, Financial Services
Cheryl D. Porter Chief Operating Officer - Water & Field Services
Terri Tabor Conerway Chief Organizational Development Officer
Suzanne R. Coffey, PE... Chief Planning Officer/Interim Chief Operating Officer - Wastewater
Michelle A. Zrodowski..... Chief Public Affairs Officer
Jeffrey E. Small Chief Information Officer
W. Barnett Jones..... Chief Security and Integrity Officer

Mission Statement

To exceed our customers' expectations by utilizing best practices in the treatment and transmission of water and wastewater, while promoting healthy communities and economic growth.

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INDEPENDENT AUDITORS' REPORT

May 10, 2018

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

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority") as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Independent Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on auditor judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and each major fund of the Great Lakes Water Authority as of June 30, 2017, and the respective changes in financial position and cash flows thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis and the schedules for the pension plan, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the required supplementary information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Authority's basic financial statements. The introductory section, combining and individual fund schedules, and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory section, statistical section and the combining and individual fund schedules are the responsibility of management and have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued, under separate cover, our report dated May 10, 2018 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

A handwritten signature in black ink that reads "Rehmann Lobson LLC". The signature is written in a cursive, flowing style.

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MANAGEMENT'S DISCUSSION AND ANALYSIS

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

June 30, 2017

The management of the Great Lakes Water Authority (GLWA or Authority) presents this discussion and analysis of GLWA's financial position and changes in financial position as of and for the fiscal year ended June 30, 2017. The Management's Discussion and Analysis (MD&A) should be read in conjunction with GLWA's basic financial statements and the related notes to the financial statements. Capitalized terms not otherwise defined in the MD&A shall have the meaning given such terms in the transmittal letter from the Chief Executive Officer of GLWA that accompanies the financial statements and the MD&A.

Introduction to the Great Lakes Water Authority

Our regional water system is one of the largest in the United States, both in terms of water produced and population served. The Water System currently serves an area of 1,069 square miles located in eight Michigan counties and an estimated population of nearly 3.9 million or approximately 38% of Michigan's population. Suburban wholesale customers comprise approximately 82% of the population served by the Authority while the retail water customers served by the City of Detroit Water and Sewerage Department (DWSD) comprise the remaining 18%.

Our regional sewer system is one of the largest in the United States, both in terms of treatment capacity and population served. The Sewer System currently serves an area of 988 square miles located in three Michigan counties and an estimated population of nearly 2.9 million or approximately 28% of Michigan's population. Suburban wholesale customers comprise approximately 75% of the population served by the Authority, while retail sewer customers served by the City of Detroit Water and Sewerage Department comprise the remaining 25%.

GLWA began operations on January 1, 2016. This fiscal year ended June 30, 2017 report represents the first twelve-month report for GLWA.

A New Organization with a Long History of Quality Service

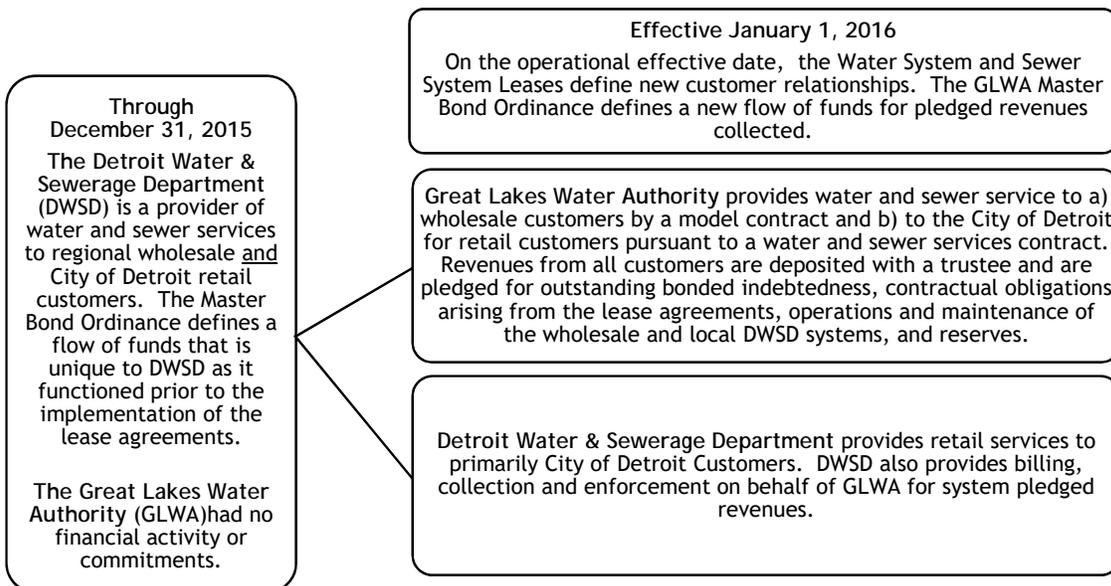
The creation of a regional water authority was an outcome of the City of Detroit's Chapter 9 Bankruptcy. Collaboration among regional stakeholders, supported by mediation proceedings, resulted in a "Memorandum of Understanding Regarding the Formation of the Great Lakes Water Authority" signed on September 9, 2014 by the Mayor of the City of Detroit, the Chief Executives of Wayne, Oakland, and Macomb counties, and the Governor of the State of Michigan. The agreement established a framework for a regional water and sewer authority to be established pursuant to Act 233, Public Acts of Michigan, 1955, as amended. The purpose of GLWA is to operate, control, and improve the regional assets of both the Water System and Sewer System owned by the City and which were operated by DWSD. The purpose of DWSD is to be the service provider for the retail system which is largely the City of Detroit customer base.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

Subsequently, on June 12, 2015, the City of Detroit and GLWA entered into a Regional Water Supply Lease, a Regional Sewage Disposal Lease (collectively the “Leases”) and a Water and Sewer Services Agreement (“WSSA”). Prior to implementation of the Leases, several conditions precedent were necessary to establish the financial and legal parameters before the GLWA could assume control of the Regional Systems. Those conditions precedent included execution of the Leases, WSSA, a Shared Services Agreement, and a Detroit General Retirement pension agreement; adoption of a Master Bond Ordinance (“MBO”) for both the Water System and the Sewer System; confirmation from the Michigan Department of Environmental Quality that all permits were secured for the Leased Facilities; certification from the bond trustee that no less than 51% of bondholders of the outstanding DWSD Water Bonds and DWSD Sewer Bonds, respectively, consented to the adoption by GLWA of the MBO for the Water System and the Sewer System and to the assumption by GLWA of the outstanding DWSD Water Bonds and DWSD Sewer Bonds on the Effective Date; certification from the feasibility consultant that GLWA had the ability to issue at least one dollar of additional indebtedness at each level of lien priority pursuant to the Additional Bonds Test set forth in the Master Bond Ordinance for each system; legal opinions that each Lease is valid, binding, and enforceable and that the rates adopted by DWSD for fiscal year 2016 for the wholesale and City customers were binding and effective; and all necessary consents to the assignment of the wholesale customer contracts. On December 17, 2015, the GLWA Board determined that all conditions precedent were satisfied to commence operations on January 1, 2016.

Activity for the Leases was recorded based upon GASB 69, *Government Combinations and Disposals of Government Operations*. Equally important to the accounting treatment is the requirement of the flow of funds in the related MBO. Since GLWA assumed the outstanding bonded indebtedness, retail customer revenues are pledged for payment of outstanding bonded indebtedness assumed by GLWA. For this reason, pursuant to the terms of the Leases, DWSD is GLWA’s agent for retail billing, collections and enforcement. The chart below depicts the DWSD and GLWA customer relationship and the impact of the MBO flow of funds.



GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

Leases Accounting Treatment

Key Statement of Net Assets implications include the following:

Capital Assets: Capital assets subject to the Leases were recorded at “acquisition value” based upon an inventory valuation performed by a certified appraisal firm as of January 1, 2016. This resulted in an overall increase in capital asset value from the predecessor entity’s historical cost. Accordingly, the depreciable lives were reviewed and, in several cases shortened, which has increased annual depreciation expense.

Bonded Indebtedness: The outstanding bonded indebtedness of the predecessor entity was assumed in its entirety by GLWA. GASB 69 also required debt to be recorded at acquisition value.

Net Pension Liability: The net pension liability represents the Regional Systems’ share of the frozen, defined benefit City of Detroit General Retirement (GRS) pension assigned to DWSD in the City of Detroit’s Chapter 9 Bankruptcy Plan of Adjustment. On January 24, 2017, the parties agreed that 70.3% of the liability was allocable to the GLWA regional operations and 29.7% to DWSD and is the basis of allocation for future pension contributions. That net pension liability is further subdivided between the Water System and the Sewer System for each entity.

Obligation Payable: The obligation payable represents the Regional Systems’ share of the B and C Note Obligations assigned to DWSD in the City of Detroit’s Chapter 9 Bankruptcy Plan of Adjustment. The B and C Note Obligations refers to the debt service on City of Detroit Financial Recovery Bonds dated December 10, 2014. Those bonds were issued to satisfy claims relating to the City’s pension obligation certificates and postemployment healthcare benefits. GLWA’s portion of the liability was estimated at 70.3% of the total liability consistent with the allocation applied to the net pension liability.

Beginning Net Position: The acquisition value of assets acquired exceeded the liabilities assumed by \$736.5 million in total with \$457.9 million attributable to the Water System and \$278.6 million attributable to the Sewer System. In accordance with GASB 69, the opening capital assets were adjusted by an amount to establish a total net position of zero as of January 1, 2016.

Contractual Obligation Receivable: This represents DWSD’s allocable portion of the long-term bonded indebtedness assumed by GLWA on January 1, 2016. This receivable is amortized annually in an agreed upon amount that approximates debt service. If new debt is issued on behalf of DWSD, the receivable is increased.

Lease Payable: The lease payable is the net present value of the lease payment of \$50 million per year for 40 years payable to the DWSD with \$22.5 million paid to the DWSD local water system and \$27.5 million paid to the DWSD local sewer system based on a 4.17% borrowing rate for both systems.

2018 Memorandum of Understanding Term Sheet

In the course of operations, GLWA and DWSD determined that it would be in their mutual interest to clarify certain matters pertaining to the operation of the Leases and WSSA. Discussions began in 2016 regarding creation of a Memorandum of Understanding (“MOU”) to accomplish that goal. This led to the drafting of a Term Sheet, and ultimately an MOU, with the intent to (a) provide clarification of specific sections of the Leases, WSSA and the MBO, (b) make adjustments contemplated by the Leases and the WSSA and (c) address the liquidation of specific liabilities. On April 3, 2018, the Board of Directors for the Great Lakes Water Authority approved the MOU Term Sheet (“Term Sheet”). On April 4, 2018, the Board of Water Commissioners for DWSD approved the same Term Sheet. The final MOU agreement is expected to be completed within the subsequent 90 days.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

The 2018 MOU Term Sheet resulted in a special item of \$94.3 million with \$32.8 million attributable to the water system and \$61.5 million attributable to the sewer system which increased the deficit. Despite the special item, the clarifications provided by the Term Sheet provide other long-term benefits for both parties which largely negate the impact over time.

Financial Highlights

Total business-type current assets of \$834.8 million exceed current liabilities of \$318.1 million by \$516.7 million in total or 2.6 times. For the Water System, current assets of \$426.4 million exceed current liabilities of \$136.4 million by \$290.0 million in total or 3.1 times. For the Sewer System, current assets of \$408.3 million exceed current liabilities of \$181.8 million by \$226.5 million in total or 2.2 times.

The liabilities and deferred inflows of resources of the business-type activities exceeded the assets and deferred outflows of resources as of June 30, 2017 by \$102.8 million (a net deficit). The net deficit for the water fund was \$36.5 million and \$66.3 million for the sewage disposal fund.

The largest category of expense is depreciation at \$329.8 million in total with \$144.2 million for the water fund and \$185.6 million for the sewage disposal fund. The depreciation is based upon the assets that were recorded at acquisition value on January 1, 2016 as previously noted. The second largest category of expense is interest expense at \$291.6 million in total with \$132.4 million for the water fund and \$159.2 million for the sewage disposal fund.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the Authority's basic financial statements. The basic financial statements are comprised of the following:

The *statement of net position* presents information on all of the Authority's assets, deferred outflows of resources, liabilities, and deferred inflows of resources, with the residual reported as net position.

The *statement of revenues, expenses and changes in net position* presents information showing how the Authority's net position changed during the year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, revenues and expenses are reported for some items that will only result in cash flows in future fiscal periods.

The *statement of cash flows* provides information about the Authority's cash receipts, cash payments and net changes in cash and cash equivalents resulting from operating, investing and capital and non-capital financing activities for the fiscal year.

The *notes to the financial statements* provide additional information that is essential to a full understanding of the data provided in the basic financial statements.

This report also contains other supplementary information in addition to the basic financial statements themselves. These schedules provide additional financial, budgetary, statistical, trend, and economic information that may be helpful to the readers of these financial statements.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

The Authority presents a combining statement for each system in the supplementary financial information classified into three categories that align with the Authority's strategic and budgetary focus of managing capital investment for both the Regional Water System and Regional Sewer System: 1) operation and maintenance (low capital investment), 2) improvement and extension (moderate capital investment and financial mechanism to lower the cost of capital over the long term), and 3) construction projects (high capital investment). The water and sewage disposal funds together comprise the activity of these three categories of the Authority in total. The separate water and sewage disposal funds are required by the MBO, a separate credit rating is established for each fund, and the customers and services provided by each system are separate and distinct.

Financial Analysis

Summaries of the basic financial statements and related commentaries are presented below.

Net Position

Net position 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. Deferred inflows and deferred outflows generally relate to financing activity and GLWA's share of the GRS pension obligation. In total, GLWA ended June 30, 2017 with a \$102.8 million net deficit. The net deficit for the water fund was \$36.5 million and \$66.3 million for the sewage disposal fund.

	Net Position		
	Water Fund	Sewage Disposal Fund	Total
Current and other assets	\$ 873,202,483	\$ 683,922,878	\$ 1,557,125,361
Restricted assets	260,680,701	313,142,232	573,822,933
Capital assets	2,039,477,277	2,869,309,560	4,908,786,837
Total assets	<u>3,173,360,461</u>	<u>3,866,374,670</u>	<u>7,039,735,131</u>
Deferred outflows of resources	<u>120,786,005</u>	<u>236,814,914</u>	<u>357,600,919</u>
Current liabilities	136,373,601	181,760,641	318,134,242
Long-term debt	2,606,465,431	3,236,016,730	5,842,482,161
Net pension liability	69,569,044	124,506,503	194,075,547
Other liabilities	448,739,050	566,043,722	1,014,782,772
Total liabilities	<u>3,261,147,126</u>	<u>4,108,327,596</u>	<u>7,369,474,722</u>
Deferred inflows of resources	<u>69,473,490</u>	<u>61,222,831</u>	<u>130,696,321</u>
Net position			
Net investment in capital assets	134,919,107	393,956,399	528,875,506
Restricted for debt service	26,194,280	107,931,677	134,125,957
Restricted for capital acquisition	172,974,994	150,930,508	323,905,502
Restricted for payment assistance program	2,218,373	3,117,744	5,336,117
Unrestricted (deficit)	<u>(372,780,904)</u>	<u>(722,297,171)</u>	<u>(1,095,078,075)</u>
Total net position	<u>\$ (36,474,150)</u>	<u>\$ (66,360,843)</u>	<u>\$ (102,834,993)</u>

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

There are three general components of a net position or deficit: 1) net investment in capital assets (in its simplest form, capital assets acquired less debt incurred to acquire those assets); 2) restricted (such as legally required bond reserves or net proceeds from bonds restricted for capital spending); and 3) unrestricted.

Net investments in capital assets is the largest component of the net position with a total balance of \$528.9 million (\$134.9 million the water fund and \$394.0 for the sewage disposal fund). Increases during the year were attributable to the acquisition of assets and repayment of debt which were both largely offset by depreciation expense.

Net position restricted for debt service represents amounts that are required by the related MBO or other third-party agreements to be used for the repayment of debt. The total amount restricted at year end was \$134.1 million with \$26.2 million in the water fund and \$107.9 million for the sewage disposal fund.

Net position restricted for capital acquisition primarily represents unspent bond proceeds of \$323.9 million in total with \$173.0 million in the water fund and \$150.9 million in the sewage disposal fund.

The remaining unrestricted deficit is significant: a total of \$1.1 billion with \$372.8 million for the water fund and \$722.3 for the sewage disposal fund. Unrestricted net position (deficit) is generally defined as the net result of the other components of net position. This unrestricted deficit is representative of numerous cumulative historical financial activities over many years through the predecessor entity. The largest dollar amounts were driven by swap termination fees paid by debt and capital financed assets that were subsequently written off. Addressing this deficit is a top priority for the GLWA Board and management but recognizes that it will take time. GLWA continues to optimize its operations, focus on financial planning with a biennial budget, annually update the five-year capital and financial plan, and expand its expertise in asset management.

Change in Net Position

Water Fund

As shown in the table below, wholesale water customer charges of \$331.1 million account for 94.1% of Water System revenues from 88 customers. Revenue and charge stability are important goals for GLWA and its member partners. Working within a collaborative process, the water charge structure is based on the following:

1. 40% is based on the average annual sales for each customer from their 36 prior months of usage ending September 30th each year.
2. 60% is based on fixed monthly charges.
3. Fiscal year 2017 revenue billed was 106% of budget meeting the goal of revenue stability.

Local system revenues of \$15.5 million account for 4.4% of the total operating revenue. Pursuant to the terms of the WSSA with DWSD, a \$20.7 million credit is applied against water purchases in the charge methodology. This credit replaces a previous ownership benefit that was in place prior to the Effective Date of the Regional System.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

The remaining 1.5% of revenue is mainly due to the bad debt recovery. Collections on the retail customers prior balances has resulted in a positive adjustment to the allowance for doubtful accounts.

	Amount	Percent of Operating Revenues
Wholesale customer charges	\$ 331,115,131	94.1%
Local system charges	15,490,300	4.4%
Bad debt recovery	5,107,125	1.5%
Other revenues	37,388	0.0%
	<u>351,749,944</u>	
Total operating revenues	<u>\$ 351,749,944</u>	

Operating expenses of \$245.9 million represent 69.9% of total operating revenue. Depreciation is the largest operating expense at \$144.1 million or 58.6% of operating expense. The remaining 41.4% of operating expenses is as follows:

	Amount	Percent of Operating Expenses
Personnel	\$ 38,261,393	15.6%
Contractual services	34,257,419	13.9%
Utilities	28,469,603	11.6%
Chemicals	5,340,753	2.2%
Supplies and other expenses	7,982,562	3.2%
Capital program allocation	(977,762)	-0.4%
Shared services allocation	(11,603,019)	-4.7%
	<u>101,730,949</u>	
Total operating expenses before depreciation	<u>\$ 101,730,949</u>	

The largest category of nonoperating activities is interest expense of \$132.4 million which is net of capitalized interest on construction work in progress. Interest expense before capitalization is largely attributable to debt service (\$119.4 million) with the remainder related to the Water Lease and obligation payable.

Operating income after operating expenses (including depreciation) equals \$105.9 million or 30.1% of operating revenue.

Sewage Disposal Fund

As shown in the table below, wholesale customer charges of \$263.3 million account for 52.1% of Sewer System revenues from 18 customers. Wholesale customer charges are based on a "share" percentage of the annual budget billed one-twelfth each month. The shares are established based upon historical flows and are formally revisited every three years. The result is no revenue shortfall or overestimation.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

Local system revenues of \$187.3 million account for 37.0% of total operating revenues. Pursuant to the terms of the WSSA with DWSD, a \$5.516 million credit is applied against sewer charges in the charge methodology. This credit replaces a previous ownership benefit that was in place prior to the Effective Date of the Regional System.

The remaining 10.9% of revenue is due to other charges such as industrial waste charges, pollutant surcharges which are charged to non-residential users. This also includes a bad debt recovery as collections on the retail customers prior balances has resulted in a positive adjustment to the allowance for doubtful accounts.

	Amount	Percent of Operating Revenues
Wholesale customer charges	\$ 263,311,745	52.1%
Industrial waste charges	14,381,106	2.8%
Pollutant surcharges	5,206,294	1.0%
Local system charges	187,304,100	37.0%
Bad debt recovery	35,065,030	6.9%
Other revenues	<u>538,807</u>	0.1%
Total operating revenues	<u>\$ 505,807,082</u>	

Operating expenses of \$336.9 million represent 66.6% of total operating revenue. Depreciation is the largest operating expense at \$185.6 million or 55.1% of operating expense. The remaining 44.9% of operating expenses is as follows:

	Amount	Percent of Operating Expenses
Personnel	\$ 47,894,911	14.2%
Contractual services	55,878,440	16.5%
Utilities	27,191,866	8.1%
Chemicals	9,424,428	2.8%
Supplies and other expenses	12,180,128	3.6%
Capital program allocation	(1,150,316)	-0.3%
Shared services allocation	<u>(101,191)</u>	0.0%
Total operating expenses before depreciation	<u>\$ 151,318,266</u>	

The largest category of nonoperating activities is interest expense of \$159.2 million which is net of capitalized interest on construction work in progress. Interest expense before capitalization is largely attributable to debt service (\$141.1 million) with the remainder related to the Sewer Lease and obligation payable.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

Operating income after operating expenses (including depreciation) equals \$168.9 million or 33.4% of operating revenue.

	Change in Net Position		
	Water Fund	Sewage Disposal Fund	Total
Operating revenues	\$ 351,749,944	\$ 505,807,082	\$ 857,557,026
Operating expenses	245,868,861	336,946,731	582,815,592
Operating income	105,881,083	168,860,351	274,741,434
Nonoperating expenses	(105,452,057)	(163,470,934)	(268,922,991)
Income before contributions and special item	429,026	5,389,417	5,818,443
Capital contributions	-	320,707	320,707
Special item - MOU with DWSD	(32,811,581)	(61,478,682)	(94,290,263)
Change in net position	(32,382,555)	(55,768,558)	(88,151,113)
Net position, beginning	(4,091,595)	(10,592,285)	(14,683,880)
Net position, end of year	\$ (36,474,150)	\$ (66,360,843)	\$ (102,834,993)

Capital Assets and Debt Administration

GLWA's investment in capital assets as of June 30, 2017 is \$4.9 billion (net of accumulated depreciation) with \$2.0 billion assigned to the Water System and \$2.9 billion assigned to the Sewer System. This investment in capital assets includes land, buildings, plants, transmission lines, vehicles and other equipment. Total net capital assets decreased by \$230.6 million or 4.5% when compared to the prior year. The net decrease is primarily attributable to depreciation in excess of current year additions.

Water Fund

Water System additions were largely due to construction work-in-progress of \$39.7 million.

Approximately one-half of that amount, \$18.9 million, is due to construction related to the following projects:

- Project # 114001: 1958 Filter Rehabilitation at the Springwells Water Treatment Plant (Contracts CS-1425, CS-200, SP-563). Fiscal year 2017 expenditures were \$11.4 million. Life to date costs through June 30, 2017 total \$82.9 million. The project is expected to be completed in fiscal year 2019.
- Project # 122012: 36-Inch Water Main in Telegraph Road (Contract WS-648A). Fiscal year 2017 expenditures were \$7.5 million. Life to date costs through June 30, 2017 total \$8.1 million. Project is expected to be substantially completed in fiscal year 2018.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

- The remaining \$20.7 million is attributable to the 55 projects that are either near closeout in fiscal year 2018 or are design and study contracts related to larger projects.

Sewage Disposal Fund

Sewer System additions were also largely due to construction work-in-progress of \$57.3 million.

Slightly more than one-half of that amount, \$33.1 million, is due to construction related to the following projects:

- Project # 260113: Remediation at the Water Resource Recovery Facility (WRRF)-Complex II. Fiscal year 2017 expenditures and life to date costs through June 30, 2017 total \$17.0 million. Work performed represents capital remediation related to a March 2016 WRRF fire and capital improvements and enhancements prioritized by the event. It is expected to be completed in fiscal year 2018.
- Project # 211001: Rehabilitation of Primary Clarifiers, Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery (Contract PC-757). Fiscal year 2017 expenditures and life to date costs through June 30, 2017 total \$10.2 million. The project is expected to be completed in fiscal year 2020.
- Project # 212006: Rouge River Outfall Project (Contracts PC-797, CS-1781). Fiscal year 2017 expenditures were \$5.9 million. Life to date costs through June 30, 2017 total \$6.8 million. Project is expected to be completed in fiscal year 2019.
- The remaining \$24.2 million is attributable to the 35 projects that are either near closeout in fiscal year 2018 or are design and study contracts related to larger projects.

	GLWA's Capital Assets, Net		
	Water Fund	Sewage Disposal Fund	Total
Land	\$ 34,166,736	\$ 28,733,333	\$ 62,900,069
Easements	258,632,397	96,211,323	354,843,720
Construction in progress	159,386,541	153,341,462	312,728,003
Site improvements	44,469,705	26,085,887	70,555,592
Buildings and structures	502,131,859	997,629,533	1,499,761,392
Infrastructure	529,833,717	576,465,804	1,106,299,521
Machinery and equipment	509,861,713	989,666,708	1,499,528,421
Vehicles	994,609	1,175,510	2,170,119
Total	\$ 2,039,477,277	\$ 2,869,309,560	\$ 4,908,786,837

Additional information on the Authority's capital assets can be found in Note 5.

Long-term Debt. At year-end, the Authority had \$5.5 billion of long-term debt. All the outstanding bonds are revenue bonds, including capital appreciation bonds and state revolving fund loans.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

Water Fund

The total outstanding bonds for the Water System is \$2.4 billion, increasing by \$80.1 million from the prior year.

In October 2016, new revenue and refunding bonds in the amount of \$917,805,000 were issued for GLWA system improvements (\$201,090,000), refunding (\$665,975,000) and pass-thru of DWSD system improvements of (\$50,740,000). Repayment of GLWA bonds issued are funded by charges to all customers. Repayment of the DWSD specific bonds are paid by DWSD from retail customer collections.

Less than 1% of the total indebtedness is issued through the State of Michigan revolving fund loan program for the benefit of the Water System. The Water System received \$2.44 million in new state revolving fund loans and received a \$1.17 million in loan forgiveness. The state revolving fund loan activity for the year was a pass-through to DWSD for system improvements.

Sewage Disposal Fund

The total outstanding bonds for the Sewer System is \$3.1 billion, decreasing by \$125.7 million from the prior year.

In October 2016, new revenue and refunding bonds in the amount of \$421,295,000 were issued. Repayment of GLWA bonds issued are funded by charges to all customers.

Approximately 15.4% of the total indebtedness is issued through the State of Michigan revolving fund loan program for the benefit of the Sewer System. The Sewer System received \$22.2 million in new state revolving fund loans.

	GLWA's Outstanding Debt		
	Water Fund	Sewage Disposal Fund	Total
Revenue bonds	\$ 2,340,885,000	\$ 2,636,510,000	\$ 4,977,395,000
Capital appreciation bonds	-	22,815,000	22,815,000
State revolving loans	17,252,235	485,267,036	502,519,271
Total	\$ 2,358,137,235	\$ 3,144,592,036	\$ 5,502,729,271

Credit Ratings

The ratings for the Water and Sewer Systems are at the same level. GLWA received positive ratings action from all three rating agencies in its first nine months of operations. Presently, Fitch Ratings has rated senior lien debt at A and second lien at A-; Standard & Poor's has rated senior lien debt at A- and second lien at BBB+; and Moody's has rated senior lien debt at A3 and second lien at Baa1.

Additional information on the Authority's long-term debt can be found in Note 6.

Economic Factors Affecting Next Year's Operations and Rates

On June 7, 2017, the GLWA Board adopted the biennial budget for the Authority for fiscal years 2018 and 2019. That two-year financial plan remains true to a foundational commitment to control the budget within a 4% revenue cap.

GREAT LAKES WATER AUTHORITY

Management's Discussion and Analysis

Water Fund

Due to favorable Water System financial performance the budget decreased by one percent for FY 2018. This translated into a system average charge increase of 2% depending on each customer's usage in relation to other customers. An additional consideration was that an agreement was likely for the City of Flint to enter a 30-year model contract in FY 2018 which has a positive revenue impact.

Sewage Disposal Fund

Due to favorable Sewer System financial performance the budget increased by only 0.3 percent for FY 2018. This translated into a system average charge increase of 1.9%. This average increase reflects an amended sewer shares allocation, based on a strength of flow study that will be phased-in over a two-year period (FY 2018 and FY 2019). This outcome, which shifted shares among customers, was the result of a year-long data collection and research study by a technical team comprised of GLWA and its sewer customers.

Requests for Information

This financial report is designed to provide a general overview of GLWA's finances for all those with an interest in the Authority's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to Great Lakes Water Authority, Office of the Chief Financial Officer, 735 Randolph, Detroit, Michigan 48226. This report is also available on the Authority's website at www.glwater.org.

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BASIC FINANCIAL STATEMENTS

GREAT LAKES WATER AUTHORITY

Statement of Net Position

June 30, 2017

	Enterprise Funds		Total Business-type Activities
	Water Fund	Sewage Disposal Fund	
Assets			
Current assets:			
Cash and cash equivalents	\$ 266,483,138	\$ 203,748,704	\$ 470,231,842
Restricted cash and cash equivalents	60,753,268	72,213,813	132,967,081
Restricted cash for the benefit of DWSD	288,378	-	288,378
Investments	852,420	1,430,608	2,283,028
Restricted investments	1,169,187	31,371,834	32,541,021
Receivables:			
Billed	36,459,563	52,234,778	88,694,341
Unbilled	29,539,433	24,279,170	53,818,603
Other	1,300	3,157,050	3,158,350
Allowance for doubtful accounts	(4,941,777)	(30,410,232)	(35,352,009)
Due from other governments	21,327,713	29,461,328	50,789,041
Contractual obligation receivable	12,076,942	11,262,300	23,339,242
Prepaid items and other assets	2,437,047	1,089,521	3,526,568
Inventories	-	8,509,454	8,509,454
Total current assets	426,446,612	408,348,328	834,794,940
Noncurrent assets:			
Restricted cash and cash equivalents	177,939,494	128,378,837	306,318,331
Restricted investments	20,530,374	81,177,748	101,708,122
Contractual obligation receivable	483,604,380	346,828,300	830,432,680
Prepaid lease	11,250,000	13,750,000	25,000,000
Assets not subject to depreciation	452,185,674	278,286,118	730,471,792
Capital assets being depreciated, net	1,587,291,603	2,591,023,442	4,178,315,045
Prepaid insurance on debt	14,112,324	18,581,897	32,694,221
Total noncurrent assets	2,746,913,849	3,458,026,342	6,204,940,191
Total assets	3,173,360,461	3,866,374,670	7,039,735,131
Deferred outflows of resources			
Deferred loss on refunding	99,294,499	198,351,942	297,646,441
Deferred pension amounts	21,491,506	38,462,972	59,954,478
Total deferred outflows of resources	120,786,005	236,814,914	357,600,919

continued...

GREAT LAKES WATER AUTHORITY

Statement of Net Position

June 30, 2017

	Enterprise Funds		Total Business-type Activities
	Water Fund	Sewage Disposal Fund	
Liabilities			
Current liabilities:			
Accounts and contracts payable	\$ 36,751,842	\$ 27,546,558	\$ 64,298,400
Accrued salaries, wages and benefits	3,190,038	-	3,190,038
Other accrued liabilities	1,353,816	898,800	2,252,616
Due to other governments	25,393,813	35,848,573	61,242,386
Interest payable	39,329,322	41,011,198	80,340,520
Current portion of:			
Long-term debt	23,393,905	65,920,307	89,314,212
Leases payable	4,618,174	5,644,435	10,262,609
Obligation payable	159,803	359,448	519,251
Accrued compensated absences	2,157,888	679,260	2,837,148
Accrued workers' compensation	25,000	-	25,000
Claims and judgments	-	3,852,062	3,852,062
Total current liabilities	136,373,601	181,760,641	318,134,242
Noncurrent liabilities:			
Other noncurrent liabilities	2,582,076	5,983,201	8,565,277
Long-term debt	2,606,465,431	3,236,016,730	5,842,482,161
Long-term leases payable	426,303,346	521,037,424	947,340,770
Obligation payable	17,265,503	38,835,597	56,101,100
Accrued compensated absences	2,288,125	-	2,288,125
Accrued workers' compensation	225,000	-	225,000
Claims and judgments	75,000	187,500	262,500
Net pension liability	69,569,044	124,506,503	194,075,547
Total noncurrent liabilities	3,124,773,525	3,926,566,955	7,051,340,480
Total liabilities	3,261,147,126	4,108,327,596	7,369,474,722
Deferred inflows of resources			
Deferred amounts for swap terminations	85,068	214,393	299,461
Deferred gain on refunding	62,822,646	49,257,784	112,080,430
Deferred pension amounts	6,565,776	11,750,654	18,316,430
Total deferred inflows of resources	69,473,490	61,222,831	130,696,321
Net position			
Net investment in capital assets	134,919,107	393,956,399	528,875,506
Restricted for debt service	26,194,280	107,931,677	134,125,957
Restricted for capital acquisition	172,974,994	150,930,508	323,905,502
Restricted for payment assistance program	2,218,373	3,117,744	5,336,117
Unrestricted (deficit)	(372,780,904)	(722,297,171)	(1,095,078,075)
Total net position	\$ (36,474,150)	\$ (66,360,843)	\$ (102,834,993)

concluded.

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Statement of Revenues, Expenses and Changes in Net Position

For the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities
	Water Fund	Sewage Disposal Fund	
Operating revenues			
Wholesale customer charges	\$ 331,115,131	\$ 263,311,745	\$ 594,426,876
Industrial waste charges	-	14,381,106	14,381,106
Pollutant surcharges	-	5,206,294	5,206,294
Local system charges	15,490,300	187,304,100	202,794,400
Bad debt recovery	5,107,125	35,065,030	40,172,155
Other revenues	37,388	538,807	576,195
Total operating revenues	351,749,944	505,807,082	857,557,026
Operating expenses			
Operating before depreciation:			
Personnel	38,261,393	47,894,911	86,156,304
Contractual services	34,257,419	55,878,440	90,135,859
Utilities	28,469,603	27,191,866	55,661,469
Chemicals	5,340,753	9,424,428	14,765,181
Supplies and other expenses	7,982,562	12,180,128	20,162,690
Capital program allocation	(977,762)	(1,150,316)	(2,128,078)
Shared services allocation	(11,603,019)	(101,191)	(11,704,210)
Total operating before depreciation	101,730,949	151,318,266	253,049,215
Depreciation	144,137,912	185,628,465	329,766,377
Total operating expenses	245,868,861	336,946,731	582,815,592
Operating income	105,881,083	168,860,351	274,741,434
Nonoperating revenues (expenses)			
Earnings on investments	1,832,918	2,209,872	4,042,790
Interest on obligations receivable	25,269,750	17,062,678	42,332,428
Interest expense, net of capitalized interest	(132,434,945)	(159,157,152)	(291,592,097)
Amortization of debt related items and costs of issuance	2,403,018	(17,340,200)	(14,937,182)
Other	(2,283,399)	(6,203,206)	(8,486,605)
Loss on disposal of capital assets	(207,900)	(42,926)	(250,826)
Loss on impairment of capital assets	(31,499)	-	(31,499)
Total nonoperating expenses	(105,452,057)	(163,470,934)	(268,922,991)
Income before contributions and special item	429,026	5,389,417	5,818,443
Capital contributions	-	320,707	320,707
Special item - memorandum of understanding with DWSD	(32,811,581)	(61,478,682)	(94,290,263)
Change in net position	(32,382,555)	(55,768,558)	(88,151,113)
Net position (deficit), beginning of year	(4,091,595)	(10,592,285)	(14,683,880)
Net position (deficit), end of year	\$ (36,474,150)	\$ (66,360,843)	\$ (102,834,993)

The accompanying notes are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY

Statement of Cash Flows

For the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities
	Water Fund	Sewage Disposal Fund	
Cash flows from operating activities			
Cash received from customers	\$ 371,376,130	\$ 469,715,953	\$ 841,092,083
Cash payments to suppliers for goods and services	(58,059,394)	(88,808,269)	(146,867,663)
Cash payments for employee services	(65,550,769)	(85,935,607)	(151,486,376)
Cash received (paid) from interfund services provided	(65,971)	65,971	-
Cash received for DWSD budget stabilization	369,109	2,680,092	3,049,201
Cash received (net) for DWSD nonoperating pension	622,642	522,683	1,145,325
Cash payments (net) from miscellaneous nonoperating income (expense)	(2,283,399)	(6,203,206)	(8,486,605)
Other receipts	477,474	-	477,474
Principal payments received on obligation receivable	9,139,470	4,288,922	13,428,392
Interest received on obligation receivable	25,355,136	17,062,678	42,417,814
Payment of long-term debt proceeds to DWSD	(56,995,800)	-	(56,995,800)
Payments for bond issuance costs on DWSD debt	(222,234)	-	(222,234)
Proceeds to DWSD from issuance of state revolving fund loans	(2,032,280)	-	(2,032,280)
Transfer affordability bank account to DWSD	(977,278)	-	(977,278)
Net cash provided by operating activities	221,152,836	313,389,217	534,542,053
Cash flows from noncapital financing activities			
Proceeds from issuance of long-term debt for DWSD	57,218,034	-	57,218,034
Proceeds from state revolving fund loans for DWSD	2,436,781	-	2,436,781
Interest payments	(451,022)	-	(451,022)
Net cash provided by noncapital financing activities	59,203,793	-	59,203,793
Cash flows from capital and related financing activities			
Proceeds from fire remediation	-	5,000,000	5,000,000
Proceeds from issuance of long-term refunding debt	999,700,247	482,467,729	1,482,167,976
Proceeds from state revolving fund loans	-	22,216,294	22,216,294
Payment to bond refunding escrow agent	(797,926,349)	(505,629,823)	(1,303,556,172)
Payments for bond issuance costs	(4,167,889)	(2,520,484)	(6,688,373)
Principal payments on bonds	(65,195,000)	(89,045,000)	(154,240,000)
Principal payments on lease	(4,429,876)	(5,414,293)	(9,844,169)
Interest payments	(134,868,353)	(164,865,242)	(299,733,595)
Purchase of capital assets	(43,750,490)	(55,206,526)	(98,957,016)
Net cash used in capital and related financing activities	(50,637,710)	(312,997,345)	(363,635,055)

continued...

GREAT LAKES WATER AUTHORITY

Statement of Cash Flows

For the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities
	Water Fund	Sewage Disposal Fund	
Cash flows from investing activities			
Investment purchases	\$ (210,263,613)	\$ (290,767,815)	\$ (501,031,428)
Investment maturities	270,263,564	300,005,179	570,268,743
Interest received	1,532,301	1,967,971	3,500,272
Net cash provided by investing activities	<u>61,532,252</u>	<u>11,205,335</u>	<u>72,737,587</u>
Net change in cash and cash equivalents	291,251,171	11,597,207	302,848,378
Cash and cash equivalents, beginning of year	<u>214,213,107</u>	<u>392,744,147</u>	<u>606,957,254</u>
Cash and cash equivalents, end of year	<u>\$ 505,464,278</u>	<u>\$ 404,341,354</u>	<u>\$ 909,805,632</u>
Statement of net position classification of cash			
Cash and cash equivalents	\$ 266,483,138	\$ 203,748,704	\$ 470,231,842
Restricted cash and cash equivalents	61,041,646	72,213,813	133,255,459
Noncurrent restricted cash and cash equivalents	<u>177,939,494</u>	<u>128,378,837</u>	<u>306,318,331</u>
	<u>\$ 505,464,278</u>	<u>\$ 404,341,354</u>	<u>\$ 909,805,632</u>

continued...

GREAT LAKES WATER AUTHORITY

Statement of Cash Flows

For the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities
	Water Fund	Sewage Disposal Fund	
Reconciliation of operating income to net cash provided by operating activities:			
Operating income	\$ 105,881,083	\$ 168,860,351	\$ 274,741,434
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation	144,137,912	185,628,465	329,766,377
Miscellaneous nonoperating income (expense)	(2,283,399)	(6,203,206)	(8,486,605)
Loan forgiveness pass through to DWSD	(1,168,307)	-	(1,168,307)
Interest income on contractual obligation receivable	25,269,750	17,062,678	42,332,428
Interest expense on obligation payable	(717,819)	(1,614,602)	(2,332,421)
Adjustment of special item	(32,811,581)	(61,478,682)	(94,290,263)
Changes in:			
Receivables:			
Billed	1,169,607	(4,187,844)	(3,018,237)
Unbilled	2,768,512	(1,241,779)	1,526,733
Other (excludes capital item)	21,897,746	84,591,939	106,489,685
Allowance for doubtful accounts	(20,098,835)	(68,558,398)	(88,657,233)
Due from other governments	20,158,444	36,740,815	56,899,259
Contractual obligation receivable	(22,512,072)	13,241,150	(9,270,922)
Due from other funds	-	65,971	65,971
Prepaid lease	(11,250,000)	(13,750,000)	(25,000,000)
Other assets (excludes investing item)	(265,646)	(587,000)	(852,646)
Inventories	-	1,474,609	1,474,609
Accounts payable (excludes capital items)	(3,641,398)	(6,781,318)	(10,422,716)
Accrued salaries, wages and benefits	302,758	-	302,758
Other accrued liabilities (excludes capital items)	210,047	318,512	528,559
Due to other governments (excludes non-capital financing)	11,724,923	11,623,560	23,348,483
Due to other funds	(65,971)	-	(65,971)
Other noncurrent liabilities	(128,016)	70,508	(57,508)
Obligation payable	(152,193)	(342,331)	(494,524)
Accrued compensated absences	(850,667)	224,630	(626,037)
Accrued workers' compensation	(3,708,324)	(4,781,103)	(8,489,427)
Claims and judgments	(4,419,694)	(22,144,038)	(26,563,732)
Net pension liability and deferred items	(8,294,024)	(14,843,670)	(23,137,694)
Net cash provided by operating activities	<u>\$ 221,152,836</u>	<u>\$ 313,389,217</u>	<u>\$ 534,542,053</u>

concluded.

The accompanying notes are an integral part of these financial statements.

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NOTES TO FINANCIAL STATEMENTS

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Great Lakes Water Authority ("GLWA" or the "Authority") is the regional wholesale provider of water and sewer services in southeast Michigan. The Authority was incorporated by the counties of Macomb, Oakland, Wayne and the City of Detroit (the "City") on November 26, 2014 pursuant to Act 233, Public Acts of Michigan, 1955, as amended ("Act 233"). Pursuant to Leases that became effective on January 1, 2016, the Authority assumed possession and control of the regional assets of both the water supply and sewage disposal systems owned by the City, which were previously operated by the Detroit Water and Sewerage Department ("DWSD" or the "Department"). The City, acting through DWSD, will continue to manage and operate its own local retail water and sewer system infrastructure. The leases assigned all revenues of both systems to the Authority for an initial term of 40 years and substituted GLWA for the City as the obligor on all outstanding debt obligations of the City related to the systems.

The Authority's water system is one of the largest in the United States, both in terms of water produced and population served. The water system currently serves an area of 1,069 square miles located in eight Michigan counties and an estimated population of nearly 3.9 million or approximately 38% of Michigan's population. Suburban wholesale customers comprise approximately 82% of the population served by the Authority, and the retail water customers comprise the remainder served by the Authority.

The Authority's sewer system is one of the largest in the United States, both in terms of treatment capacity and population served. The sewer system currently serves an area of 988 square miles located in three Michigan counties and an estimated population of nearly 2.9 million or approximately 28% of Michigan's population. Suburban customers comprise approximately 75% of the population served by the Authority, and the retail sewer customers comprise the remainder served by the Authority.

The Authority is authorized to establish rates, fees and charges for its water supply and sewage disposal services. Under the Water and Sewer Services Agreement, the City is appointed as agent of the Authority for setting retail rates and for billing, collecting and enforcing the collection of charges from retail water and sewer customers. As an agent of the Authority, the City, through the Board of Water Commissioners and without further approval by the City Council, is required to set retail rates to meet the revenue requirements for the City retail portion of the water and sewer systems. Under certain conditions, the Authority may terminate the City's appointment.

The financial statements of the Authority have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the Authority's accounting policies are described below.

Reporting Entity

The GLWA Board is composed of six voting members. Two members are residents of the City of Detroit and are appointed by the Mayor of the City of Detroit. The counties of Macomb, Oakland and Wayne each appoint one member who is a resident of the county from which appointed and the Governor of the State of Michigan appoints one member who is a resident of an area served by the Authority outside of the counties. All members of the GLWA Board must have at least seven years of experience in a regulated industry, such as a utility, engineering, finance, accounting or law firm. After the initial term specified in its Articles of Incorporation, each GLWA Board member is appointed for a four-year term and serves at the pleasure of the appointing government.

The GLWA Board has adopted a committee structure. Four committees have been established: Audit, Capital Improvement Planning, Operations and Resources, and Legal.

The Authority has a water enterprise fund and a sewage disposal enterprise fund, both of which are presented as major funds.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Basis of Accounting

The accounting policies of the Authority conform to GAAP as applicable to governmental entities. The accounts of the Authority are used to account for its activities, which are financed and operated in a manner similar to a private business enterprise. Accordingly, the Authority maintains its records on the accrual basis of accounting. Revenues from operations, investments and other sources are recorded when earned. Expenses (including depreciation) of providing services to the public are accrued when incurred.

Nonexchange transactions, in which the Authority receives value without directly giving equal value in return, include contributions and grants. On an accrual basis, revenue from contributions and grants is recognized in the fiscal year in which all eligibility requirements have been satisfied, including timing and expense requirements. Timing requirements specify the year when the resources are required to be used or the fiscal year when use is first permitted. Expense requirements specify the year in which the resources are provided to the Authority on a reimbursement basis.

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Equity

Cash Deposits and Investments

The Authority's cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with original maturities of three months or less from the date of acquisition.

Investments are stated at fair value. Short-term investments are reported at cost, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Mortgages are valued on the basis of future principal and interest payments, and are discounted at prevailing interest rates for similar instruments. Investments that do not have established market values are reported at estimated fair value. Cash deposits are reported at carrying amounts, which reasonably approximates fair value.

State statutes authorize the Authority to deposit in the accounts of federally insured banks, credit unions and savings and loan associations and to invest in obligations of the U.S. Treasury, certain commercial paper, repurchase agreements, bankers' acceptances and mutual funds composed of otherwise legal investments. The Authority also maintains and adheres to a formal investment policy in accordance with Michigan Public Act 20 of 1943 *Investment Surplus Funds of Political Subdivisions*.

Restricted Cash and Cash Equivalents

Restricted assets are those assets set aside as required by the Authority's Master Bond Ordinance ("MBO"). See Note 4 for further details.

Unbilled Revenue

The Authority records unbilled revenues for services provided prior to year-end by accruing actual revenues billed in the subsequent month.

Contractual Obligation Receivable

Pursuant to the Water and Sewer Services Agreement between the City and Authority, the City is responsible for paying the portion of debt service on the bonds assumed by the Authority that were issued to finance the cost of improvements to the Detroit local facilities. Hence, the "receivable" recorded by the Authority on the "contractual obligation" of the City to the Authority. Any new debt issued on behalf of DWSD is also included in the contractual obligation receivable.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Prepaid Items and Other Assets

Inventories consist of operating, maintenance and repair parts for sewage assets and are valued at the lower of cost or market, with cost being determined on an average cost method. Inventory is recorded as expense when consumed rather than when purchased. The water fund does not report inventory because the amounts are insignificant and for efficiency are recorded in the sewage disposal fund. Any inventory usage by the water fund is charged through an interfund payable to the sewage disposal fund.

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in the financial statements.

Prepaid Lease

As described in Note 7, the Authority has recorded a prepaid lease for cash paid to DWSD on the date GLWA began operations equivalent to six months of lease payments. As described in Note 12, based on a Memorandum of Understanding (MOU) Term Sheet with DWSD, dated April 2018, this will be applied at the end of the 40 year term and, hence it is classified as noncurrent.

Capital Assets

Capital assets are recorded at historical cost, together with interest capitalized during construction. All acquisitions of land and land improvements are capitalized regardless of cost.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets of business-type activities is included as part of the capitalized value of the assets constructed.

Capital assets acquired after January 1, 2016 are depreciated on the straight line basis over the useful life of the assets as follows:

	Useful Lives (in years)
Site improvements	15
Buildings and structures	20-50
Infrastructure	80
Machinery and equipment	3-20
Vehicles	5-7

Capital assets acquired from the bifurcation at January 1, 2016 are depreciated over their estimated remaining useful lives at that time as determined by a third-party valuation. These remaining lives differ from the years cited above for newly acquired capital assets and, in most instances, are significantly shorter.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Deferred Outflows of Resources

In addition to assets, the statement of net position reports a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net position that applies to future periods and so will not be recognized as an outflow of resources (or expense) until then. The Authority reports deferred outflows of resources for two items: deferred charges on refunding and pension amounts. Deferred charges on refunding results from the difference in the carrying value of refunded debt and its reacquisition price; these amounts are deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred outflows of resources from pension amounts relate to the net pension liability. A portion of these costs represent contributions to the plan subsequent to the plan measurement date. More detailed information on pension amounts can be found in Note 10.

Long-term Obligations

In the financial statements, long-term debt and other long-term obligations are reported as liabilities in the statement of net position. Bond premiums and discounts are deferred and amortized over the life of the bonds using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount.

Obligation Payable

Under the terms of the lease agreements with the City, the Authority is required to pay a portion of the City's B and C notes allocated to the regional water and sewer systems. See "Obligation Payable-City of Detroit 2014 Financial Recovery Bonds" in Note 6.

Leases Payable

The effective date of the leases by the City to the Authority for the leased water and sewer facilities was January 1, 2016. See Note 8 for the detail of the leases.

Compensated Absences

The Authority has a paid time off (PTO) policy which has an annual accrual period ending September 30 each year. Employees are allowed to carry over a maximum bank of 80 hours to the next accrual period. Balances greater than 80 hours up to a maximum of 160 hours shall be converted to the retiree health saving program at 50% of the value of the PTO time. Hours in excess of 160 hours are forfeited if unused by September 30 of each accrual period. The accrued compensated absences for PTO accrual are approximately \$1,456,000 for the water fund and \$679,000 for the sewage disposal fund on June 30, 2017.

The Authority also has an accrued compensated absence liability assumed on January 1, 2016 relating to the accumulated unpaid vacation and sick leave balances for those employees who retired from the City or resigned from the City and accepted employment with the Authority on January 1, 2016. The June 30, 2017 balance of the accrued compensated absences for the liability assumed on January 1, 2016 is approximately \$2,990,000. This liability is recorded in the water fund as the disbursements for payment will be processed from the water fund with reimbursement from the sewer fund. The accrued compensated absences includes the employers' share of Social Security and Medicare taxes.

Bond Premiums, Discounts, and Deferred Amounts on Refunding

Bond premiums, discounts, and gains or losses on refunding are deferred and amortized over the life of the bonds. Bond premiums and discounts are amortized using the effective interest method, and deferred amounts on refunding are amortized using the straight-line method. Bonds payable are reported net of the applicable bond premium and discounts. Deferred amounts on refunding are reported as deferred outflows and deferred inflows of resources.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Deferred Inflows of Resources

In addition to liabilities, the statement of net position includes a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net position that applies to future periods and so will not be recognized as an inflow of resources (or revenues) until that time. The Authority has included the deferred amounts on swap terminations, deferred gain on refunding and pension inflows in this reporting category. The deferred amounts on swap terminations were assumed as part of the lease agreements with the City. The amounts will be fully amortized for both funds by fiscal 2036. Deferred gain on refunding results from the difference in the carrying value of refunded debt and its reacquisition price; these amounts are deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred pension inflows result when there is a change in total pension liability due to benefit changes, differences between expected and actual experience, changes in actuarial assumptions, or differences between expected and actual investment returns. The amount for the changes in actuarial assumptions is deferred and amortized over the estimated remaining service life. The amount for the difference between actual and projected assumptions in investment earnings is deferred and amortized over five years.

Net Position

Net position, which represents the difference between assets, deferred outflows of resources, liabilities and deferred inflows of resources, is reported in three components as follows:

Net Investment in Capital Assets - consists of capital assets, net of accumulated depreciation, and related debt.

Restricted - consists of amounts that are legally restricted by outside parties or by law through constitutional provisions or enabling legislation.

Unrestricted - is the residual balance of net position after *net investment in capital assets* and *restricted*.

When both restricted and unrestricted resources are available for use, generally it is the Authority's policy to use restricted resources first and then unrestricted resources when they are needed.

Classification of Revenues and Expenses

The Authority classifies its revenues and expenses as either operating or nonoperating.

Operating revenues are those revenues generated from providing services in connection with the Authority's principal ongoing operations. The principal operating revenues of the Authority are wholesale charges for providing water and wastewater treatment. The local system charges are the wholesale charges to the City of Detroit under the Water and Sewer Services Agreement. Wholesale customer charges are shown net of bad debt expense of \$1,252,465 for the water fund and \$3,165,055 for the sewage disposal fund.

Operating expenses include the costs of operating the water and sewer utilities, administrative expenses and depreciation on capital assets. Costs related to shared facilities and personnel are allocated to the water and sewer funds on a basis that relates costs incurred to the system benefited. By agreement, the Authority provides shared services to DWSD; accordingly, operating expenses for personnel and contractual services have been reported net of the charges for shared services to DWSD.

All revenue and expenses not meeting these definitions are reported as nonoperating revenues and expenses.

Taxes

The Authority pays no direct federal, state or local taxes, except local taxes on excess property and federal Social Security taxes.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Interest Income

Interest income is the interest earned on the contractual obligation receivable.

Interest Expense

Interest expense in the statement of revenues, expenses and changes in fund net position includes amounts related to the accretion of capital appreciation bonds. Interest expense is reported net of capitalized interest.

Capital Contributions

Contributed capital represents the acquisition value of sewer lines received from a wholesale customer.

Central Services and Administrative Services

Various common costs incurred by the Authority are allocated proratably between the water and sewer funds. The allocations are based on management's best estimate and may change from year to year depending on the activities incurred by each fund and the information available. The following table shows the allocation of these common costs for the year ended June 30, 2017:

Common Costs	Water % Allocation	Water Allocation	Sewer % Allocation	Sewer Allocation	Total Common Costs
Centralized services	52.4%	\$ 35,379,657	47.6%	\$ 32,171,959	\$ 67,551,616
Administrative services	30.3%	7,241,024	69.7%	16,656,631	23,897,655

Centralized services include security, systems operations control, field engineering and service operations, information technology, planning, energy management, and system analytics service costs.

Administrative services includes executive, public affairs, general counsel, organizational development, risk management, finance, procurement, and other service costs.

Use of Estimates

The preparation of basic financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the basic financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

2. BUDGETARY INFORMATION

The financial activity of the Authority is presented in two enterprise funds, which are not required under State statutes to adopt appropriated budgets. Budget to actual schedules for revenues and expenses is presented in the other information section of this report. This schedule is not required by GAAP or subject to audit procedures. It is presented strictly for informational purposes.

Budget Process

GLWA is required to adopt a two-year budget for the regional water and sewer systems. The budgeted expenses shall equal the sum of the revenue requirement, including the following for both the regional water and sewer systems: a) operation and maintenance expenses; b) amounts necessary to pay the principal of and interest on all bonds and to restore any reserves therefor established in the Master Bond Ordinance; c) the lease payment, which shall be a common-to-all charge; d) GLWA portions of the net pension liability and the B&C obligation payable; e) the amount necessary to be deposited to the Water Residential Assistance Program (WRAP) Fund, which shall be a common-to-all charge equal to 0.5% of the base budgeted operating revenues for the regional water and sewer systems for each fiscal year; f) the amounts needed to make the required deposits to the regional Extraordinary Repair and Replacement Reserve Fund and the regional Improvement and Extension Fund as defined in the Master Bond Ordinance; and g) the amount necessary to satisfy the coverage ratios required by the rate covenant in the Master Bond Ordinance.

As provided in the leases, through the fiscal year ending June 30, 2025, the water and sewer systems are assumed to experience annual increases in the regional revenue requirement of not more than 4%. This limitation shall not be applicable, however, if the regional revenue requirement must increase beyond the 4% assumption in order to satisfy the rate covenant or to pay the cost of improvements to the leased water and/or sewer facilities that are required to be made by applicable laws.

In the leases, the City acknowledges that all local water and sewer system revenues received from customers in the City are the property of the GLWA and will be deposited as received in the Receiving Fund as defined in the Master Bond Ordinance and applied as provided in the Bond Ordinance. As a result, the City agrees to provide the Authority with a budget for the local water and sewer system as provided in the Water and Sewer Services Agreement.

Schedule of Charges Process

The GLWA Wholesale Customer Model Water Contract requires that the GLWA provide wholesale customers with written notice of a proposed charge, meet to review the proposed charges, and the underlying data used to calculate the charge not less than 30 calendar days prior to a public hearing. Further, the contract requires that a public hearing be held no less than 120 days prior to the date that a proposed charge increase is to take effect.

The Water and Sewer Services agreement between GLWA and DWSD requires that GLWA provides the City with written notice of the proposed charges and the underlying data used to calculate the charge not less than 120 calendar days prior to the effective date of any new charges.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

3. CASH DEPOSITS AND INVESTMENTS

The deposits and investments of the Authority at June 30, 2017 are reported in the basic financial statements as follows:

	Water Fund	Sewage Disposal Fund	Total
Statement of Net Position			
Cash and cash equivalents	\$ 266,483,138	\$ 203,748,704	\$ 470,231,842
Restricted cash and cash equivalents	60,753,268	72,213,813	132,967,081
Restricted cash for the benefit of DWSD	288,378	-	288,378
Investments	852,420	1,430,608	2,283,028
Restricted investments	1,169,187	31,371,834	32,541,021
Noncurrent restricted cash and cash equivalents	177,939,494	128,378,837	306,318,331
Noncurrent restricted investments	20,530,374	81,177,748	101,708,122
Total	\$ 528,016,259	\$ 518,321,544	\$ 1,046,337,803
Cash deposits and investments			
Bank deposits -			
Checking/savings accounts	\$ 27,089,413	\$ 8,078,374	\$ 35,167,787
Investments in securities	22,551,981	113,980,189	136,532,170
Money market accounts	478,374,865	396,262,981	874,637,846
Total	\$ 528,016,259	\$ 518,321,544	\$ 1,046,337,803

Restricted cash of the Authority primarily consists of amounts held in reserve for construction retainage and for future debt service payments.

Custodial Credit Risk - Deposits and Money Market Accounts. Deposits and money market accounts are exposed to custodial credit risk if they are not covered by depository insurance. At year-end, the carrying amount of the Authority's deposits and money market accounts was \$505,464,278 for the water fund and \$404,341,355 for the sewage disposal fund. The bank balance of the water fund deposits and money markets was \$535,773,864 of which \$518,863,338 was uninsured and uncollateralized. The bank balance of the sewage disposal fund deposits and money markets was \$379,931,554 of which \$379,593,521 was uninsured and uncollateralized.

In accordance with the Authority's investment policy and State law, all deposits are uncollateralized, held in the Authority's name, and evidenced by a safekeeping receipt. Also, due to the dollar amounts of cash deposits and the limits of FDIC insurance, the Authority believes it is impractical to insure all bank deposits. As a result, the Authority evaluates each financial institution and assesses the level of risk of each institution; only those institutions with an acceptable estimated risk level are used as depositories.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Custodial Credit Risk - Investments. Following is a summary of the Authority's investments as of June 30, 2017:

	Water Fund	Sewage Disposal Fund	Total
U.S. treasury notes	\$ 11,415,294	\$ 65,805,779	\$ 77,221,073
U.S. government agencies	11,136,687	48,174,410	59,311,097
Total	\$ 22,551,981	\$ 113,980,189	\$ 136,532,170

Investments are exposed to custodial credit risk if the securities are uninsured, unregistered or held by a counterparty or its agent but not in the government's name. In accordance with the Authority's investment policy, all investments are held in the name of the Authority and are evidenced by a safekeeping receipt confirmation, and thus not exposed to custodial credit risk.

Credit Risk. Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Authority's investment policy and State law require that commercial paper be rated in the top two ratings by at least two nationally recognized statistical rating organizations.

As of June 30, 2017, all of the Authority's investments in securities of U.S. agencies were rated AA+ by Standard & Poor's and Aaa by Moody's. U.S treasury securities are explicitly guaranteed by the U.S. government and not considered to have credit risk. The Authority's money market accounts were not rated.

Concentration of Credit Risk. Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. The Authority's investment policy requires diversification by security type and institution, but does not place a fixed percentage limit for any one issuer.

At June 30, 2017, the Authority had greater than 5% of its total investment portfolio concentrated as follows:

Investment Type	Issuer	% of Portfolio
Water fund		
U.S. government agencies	Federal Home Loan Bank	10.5%
U.S. government agencies	Federal National Mortgage Association	89.5%
Sewage disposal fund		
U.S. government agencies	Federal Home Loan Bank	64.75%
U.S. government agencies	Federal National Mortgage Association	10.36%
U.S. government agencies	Federal Farm Credit Banks	24.89%

Interest Rate Risk. Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of investments. The Authority's investment policy does not limit investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

As of June 30, 2017, the Authority's fixed income investments had the following maturities:

	< 1 year	1 - 5 years	6 - 10 years	Total
Water fund				
U.S. treasury notes	\$ 9,783,063	\$ 1,632,231	\$ -	\$ 11,415,294
U.S. government agencies	1,169,187	9,967,500	-	11,136,687
	<u>10,952,250</u>	<u>11,599,731</u>	<u>-</u>	<u>22,551,981</u>
Sewage disposal fund				
U.S. treasury notes	36,244,899	29,560,880	-	65,805,779
U.S. government agencies	48,174,410	-	-	48,174,410
	<u>84,419,309</u>	<u>29,560,880</u>	<u>-</u>	<u>113,980,189</u>
Total	<u>\$ 95,371,559</u>	<u>\$ 41,160,611</u>	<u>\$ -</u>	<u>\$ 136,532,170</u>

Fair Value Measurements - The Authority categorizes investments measured at fair value within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the assets. Level 1 inputs are quoted at prices in active markets for identical assets; Level 2 inputs are observable for the asset or liability, such as interest rates and yield curves observable at commonly quoted intervals; and Level 3 inputs are unobservable in the market and are the least reliable. The Authority had the following fair value measurements as of June 30, 2017:

	Level 1	Level 2	Level 3	Total
Water fund				
Investments by fair value level:				
U.S. treasury notes	\$ 11,415,294	\$ -	\$ -	\$ 11,415,294
U.S. government agencies	-	11,136,687	-	11,136,687
	<u>11,415,294</u>	<u>11,136,687</u>	<u>-</u>	<u>22,551,981</u>
Sewage disposal fund				
Investments by fair value level:				
U.S. treasury notes	65,805,779	-	-	65,805,779
U.S. government agencies	-	48,174,410	-	48,174,410
	<u>65,805,779</u>	<u>48,174,410</u>	<u>-</u>	<u>113,980,189</u>
Total	<u>\$ 77,221,073</u>	<u>\$ 59,311,097</u>	<u>\$ -</u>	<u>\$ 136,532,170</u>

4. RESTRICTED ASSETS

Restricted assets, comprised of cash and investments, are available for debt service on revenue bonds and to provide funds for improvements, enlargements, extensions and construction. In accordance with the provisions of the Master Bond Ordinance and Board guidance, the Authority follows a detailed and sequential flow of funds concept and set of procedures that establishes various physically segregated accounts through which monies flow and are maintained at certain levels in satisfaction of all borrowing and other legal requirements.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

The following schedules provide, in the order of the flow of funds per the Master Bond Ordinance, the distribution of water and sewage disposal fund cash and investments between restricted and unrestricted assets based on the source of the monies as of June 30, 2017:

	Funded from Revenue		Funded from	Total
	Unrestricted	Restricted	Debt Issuance	
Water fund				
Operations and maintenance	\$ 62,578,684	\$ 989,627	\$ -	\$ 63,568,311
Senior lien debt service	-	29,065,663	-	29,065,663
Senior lien bond reserve	-	-	122,034,996	122,034,996
Second & Junior lien debt service	-	15,763,514	-	15,763,514
Second & Junior lien debt reserve	-	-	52,267,696	52,267,696
Pension Obligation	-	2,371,431	-	2,371,431
Water Residential Assistance Program (WRAP)	-	2,800,449	-	2,800,449
Budget Stabilization	-	2,000,000	-	2,000,000
Extraordinary Repair and Replacement	27,500,000	-	-	27,500,000
Improvement and Extension-Regional	177,256,874	-	-	177,256,874
Subtotal - reserves defined by ordinance	267,335,558	52,990,684	174,302,692	494,628,934
Less: funded by surety (non-cash)	-	-	(153,608,267)	(153,608,267)
Total - reserves defined by ordinance (net of surety coverage)	267,335,558	52,990,684	20,694,425	341,020,667
Cash held for the benefit of DWSD	-	288,378	-	288,378
Unspent construction bond proceeds	-	-	186,707,214	186,707,214
Total cash, cash equivalents and investments	267,335,558	53,279,062	207,401,639	528,016,259
Sewage disposal fund				
Operations and Maintenance	99,335,780	-	-	99,335,780
Senior Lien Debt Service	-	46,822,343	-	46,822,343
Senior Lien Bond Reserve	-	-	142,860,146	142,860,146
Second & Junior lien debt service	-	37,576,233	-	37,576,233
Second & Junior lien debt reserve	-	-	70,106,077	70,106,077
Pension Obligation	-	4,167,903	-	4,167,903
Water Residential Assistance Program (WRAP)	-	3,600,945	-	3,600,945
Budget Stabilization	-	5,500,000	-	5,500,000
Extraordinary Repair and Replacement	44,000,000	-	-	44,000,000
Improvement and Extension-Regional	61,843,532	-	-	61,843,532
Subtotal - reserves defined by ordinance	205,179,312	97,667,424	212,966,223	515,812,959
Less: funded by surety (non-cash)	-	-	(148,421,923)	(148,421,923)
Total - reserves defined by ordinance (net of surety coverage)	205,179,312	97,667,424	64,544,300	367,391,036
Unspent construction bond proceeds	-	-	150,930,508	150,930,508
Total cash, cash equivalents and investments	205,179,312	97,667,424	215,474,808	518,321,544
Total cash, cash equivalents and investments - business-type activities	\$ 472,514,870	\$ 150,946,486	\$ 422,876,447	\$ 1,046,337,803

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

The following summary reconciles the above cash and investment balances with the balances per the Statement of Net Position. The allocation of restricted balances to current and noncurrent categories is not intended to directly align with the funding source allocation included in the schedule.

	Unrestricted	Restricted Current	Restricted Noncurrent	Total
Water				
Cash and cash equivalents	\$ 266,483,138	\$ 60,753,268	\$ 177,939,494	\$ 505,175,900
Cash held for the benefit of DWSD	-	288,378	-	288,378
Investments	852,420	1,169,187	20,530,374	22,551,981
	<u>267,335,558</u>	<u>62,210,833</u>	<u>198,469,868</u>	<u>528,016,259</u>
Sewage disposal				
Cash and cash equivalents	203,748,704	72,213,813	128,378,837	404,341,354
Investments	1,430,608	31,371,834	81,177,748	113,980,190
	<u>205,179,312</u>	<u>103,585,647</u>	<u>209,556,585</u>	<u>518,321,544</u>
Total	<u>\$ 472,514,870</u>	<u>\$ 165,796,480</u>	<u>\$ 408,026,453</u>	<u>\$ 1,046,337,803</u>

Surety coverage includes series specific policies; therefore, this represents the lesser of the maximum amount of the policy or amount of reserve requirement allocated to the specific series covered by such policy.

5. CAPITAL ASSETS

Capital assets activity for the year ended June 30, 2017 was as follows:

	Beginning Balance	Additions	Disposals	Transfers	Ending Balance
Water fund					
Nondepreciable capital assets:					
Land	\$ 34,244,101	\$ -	\$ (77,365)	\$ -	\$ 34,166,736
Easements	258,632,397	-	-	-	258,632,397
Construction in progress	122,681,592	39,662,580	-	(2,957,631)	159,386,541
Total nondepreciable assets	<u>415,558,090</u>	<u>39,662,580</u>	<u>(77,365)</u>	<u>(2,957,631)</u>	<u>452,185,674</u>
Depreciated capital assets:					
Site improvements	57,687,528	-	-	494,399	58,181,927
Buildings and structures	555,265,762	-	-	-	555,265,762
Infrastructure	586,102,646	-	-	330,348	586,432,994
Machinery and equipment	598,755,988	475,561	(350,877)	2,132,884	601,013,556
Vehicles	1,538,031	203,948	-	-	1,741,979
Total depreciable assets	<u>1,799,349,955</u>	<u>679,509</u>	<u>(350,877)</u>	<u>2,957,631</u>	<u>1,802,636,218</u>
Less accumulated depreciation:					
Site improvements	(4,570,741)	(9,141,481)	-	-	(13,712,222)
Buildings and structures	(17,711,187)	(35,422,716)	-	-	(53,133,903)
Infrastructure	(18,866,429)	(37,732,848)	-	-	(56,599,277)
Machinery and equipment	(29,898,877)	(61,341,808)	88,842	-	(91,151,843)
Vehicles	(248,311)	(499,059)	-	-	(747,370)
Total accumulated depreciation	<u>(71,295,545)</u>	<u>(144,137,912)</u>	<u>88,842</u>	<u>-</u>	<u>(215,344,615)</u>
Total capital assets being depreciated, net	<u>1,728,054,410</u>	<u>(143,458,403)</u>	<u>(262,035)</u>	<u>2,957,631</u>	<u>1,587,291,603</u>
Water fund net capital assets	<u>2,143,612,500</u>	<u>(103,795,823)</u>	<u>(339,400)</u>	<u>-</u>	<u>2,039,477,277</u>

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

	Beginning Balance	Additions	Disposals	Transfers	Ending Balance
Sewage disposal fund					
Nondepreciable capital assets:					
Land	\$ 28,733,333	\$ -	\$ -	\$ -	\$ 28,733,333
Easements	96,211,323	-	-	-	96,211,323
Construction in progress	170,931,602	57,328,097	-	(74,918,237)	153,341,462
Total nondepreciable assets	<u>295,876,258</u>	<u>57,328,097</u>	<u>-</u>	<u>(74,918,237)</u>	<u>278,286,118</u>
Depreciated capital assets:					
Site improvements	36,280,397	12,981	(14,467)	-	36,278,911
Buildings and structures	1,059,318,822	19,050	-	18,135,132	1,077,473,004
Infrastructure	596,856,313	320,707	-	-	597,177,020
Machinery and equipment	1,091,711,217	920,875	(26,105)	56,783,105	1,149,389,092
Vehicles	1,426,261	611,843	(12,140)	-	2,025,964
Total depreciable assets	<u>2,785,593,010</u>	<u>1,885,456</u>	<u>(52,712)</u>	<u>74,918,237</u>	<u>2,862,343,991</u>
Less accumulated depreciation:					
Site improvements	(3,398,076)	(6,796,224)	1,276	-	(10,193,024)
Buildings and structures	(26,554,348)	(53,289,123)	-	-	(79,843,471)
Infrastructure	(6,903,182)	(13,808,034)	-	-	(20,711,216)
Machinery and equipment	(48,575,116)	(111,151,221)	3,953	-	(159,722,384)
Vehicles	(271,143)	(583,863)	4,552	-	(850,454)
Total accumulated depreciation	<u>(85,701,865)</u>	<u>(185,628,465)</u>	<u>9,781</u>	<u>-</u>	<u>(271,320,549)</u>
Total capital assets being depreciated, net	<u>2,699,891,145</u>	<u>(183,743,009)</u>	<u>(42,931)</u>	<u>74,918,237</u>	<u>2,591,023,442</u>
Sewage disposal fund net capital assets	<u>2,995,767,403</u>	<u>(126,414,912)</u>	<u>(42,931)</u>	<u>-</u>	<u>2,869,309,560</u>
Business-type activities capital assets, net	<u>\$ 5,139,379,903</u>	<u>\$ (230,210,735)</u>	<u>\$ (382,331)</u>	<u>\$ -</u>	<u>\$ 4,908,786,837</u>

Capital assets were evaluated during the year to determine if any asset impairments exist, defined as a significant, unexpected decline in the service utility of a capital asset. The Authority did not have any significant impairments for the year.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

6. LONG-TERM DEBT

Changes in long-term debt and accrued compensated absences for the year ended June 30, 2017 were as follows:

	Beginning Balance	Increase	Decrease	Refunding	Ending Balance	Amount due within one
Water fund						
Revenue bonds	\$2,260,675,000	\$ 917,805,000	\$ (63,795,000)	\$ (773,800,000)	\$2,340,885,000	\$ 6,075,000
State revolving loans	17,383,761	1,268,474	(1,400,000)	-	17,252,235	1,435,000
Deferred amounts for:						
Unamortized premiums	264,672,431	-	(116,095,392)	139,113,281	287,690,320	19,119,372
Unamortized discounts	(18,256,393)	-	2,288,174	-	(15,968,219)	(3,235,467)
Total debt, net	2,524,474,799	919,073,474	(179,002,218)	(634,686,719)	2,629,859,336	23,393,905
Compensated absences	5,296,680	1,668,823	(2,519,490)	-	4,446,013	2,157,888
Total water fund	2,529,771,479	920,742,297	(181,521,708)	(634,686,719)	2,634,305,349	25,551,793
Sewage disposal fund						
Revenue bonds	2,739,665,000	421,295,000	(44,310,000)	(480,140,000)	2,636,510,000	11,430,000
Capital appreciation bonds	24,165,000	-	(1,350,000)	-	22,815,000	5,565,000
Discount on capital appreciation bonds	(4,496,962)	-	1,183,699	-	(3,313,263)	(1,047,305)
State revolving loans	506,435,742	22,216,294	(43,385,000)	-	485,267,036	44,340,000
Deferred amounts for:						
Unamortized premiums	308,918,380	-	(97,287,469)	61,172,729	272,803,640	17,944,003
Unamortized discounts	(126,493,781)	-	14,348,405	-	(112,145,376)	(12,311,391)
Total debt, net	3,448,193,379	443,511,294	(170,800,365)	(418,967,271)	3,301,937,037	65,920,307
Compensated absences	454,630	1,325,402	(1,100,772)	-	679,260	679,260
Total sewage disposal fund	3,448,648,009	444,836,696	(171,901,137)	(418,967,271)	3,302,616,297	66,599,567
Total business-type activities	\$5,978,419,488	\$1,365,578,993	\$ (353,422,845)	\$ (1,053,653,990)	\$5,936,921,646	\$ 92,151,360

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

As of June 30, 2017, aggregate debt service requirements of the Authority's debt (fixed and variable-rate) instruments were as follows. These amounts assume that current interest rates on variable-rate bonds will remain the same for their respective terms. As these rates vary, interest payments on variable-rate bonds will vary.

	Year Ended June 30,	Principal	Interest	Total
Water fund				
	2018	\$ 7,510,000	\$ 96,828,481	\$ 104,338,481
	2019	54,325,000	116,777,608	171,102,608
	2020	54,710,000	114,146,149	168,856,149
	2021	63,620,000	111,236,502	174,856,502
	2022	70,985,000	107,815,846	178,800,846
	2023-2027	409,967,820	480,324,881	890,292,701
	2028-2032	520,334,415	362,731,733	883,066,148
	2033-2037	615,160,000	220,803,756	835,963,756
	2038-2042	309,905,000	105,305,700	415,210,700
	2043-2047	251,620,000	32,679,000	284,299,000
		<u>\$2,358,137,235</u>	<u>\$1,748,649,656</u>	<u>\$ 4,106,786,891</u>
Sewage disposal fund				
	2018	\$ 61,335,000	\$ 110,240,488	\$ 171,575,488
	2019	97,210,000	133,554,997	230,764,997
	2020	107,670,000	129,866,991	237,536,991
	2021	112,280,000	125,861,663	238,141,663
	2022	110,582,370	121,782,125	232,364,495
	2023-2027	603,930,293	535,302,905	1,139,233,198
	2028-2032	739,471,085	396,865,059	1,136,336,144
	2033-2037	823,313,288	231,254,093	1,054,567,381
	2038-2042	394,230,000	61,911,756	456,141,756
	2043-2045	94,570,000	7,236,250	101,806,250
		<u>\$3,144,592,036</u>	<u>\$1,853,876,326</u>	<u>\$ 4,998,468,362</u>

For bonds issued through the Michigan Finance Authority (MFA) in 2014 and 2015, the Authority is required to make payment on these obligations to the MFA depository account five business days prior to the actual due date of the bond principal and interest payments. Therefore, the payments for principal and interest due on July 1, 2017 are not included in the debt service requirements amounts above as they were paid on June 26, 2017.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Revenue Bonds Payable

Net revenues of the Authority are pledged to repayment of bonds. The following is a schedule of the revenue bonds payable at June 30, 2017:

Issue	Bond Date	Original Issue Amount	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance	Callable
Water fund						
Series 2001-C	5/14/08	\$ 4,055,000	4.25%	7/01/17-18	\$ 705,000	
Series 2001-C	5/14/08	186,350,000	4.50-5.75%	7/01/19-29	178,735,000	c
Series 2003-A	1/30/03	234,805,000	5.00%	7/01/34	100,000	c
Series 2003-B	1/30/03	172,945,000	5.00%	7/01/34	100,000	c
Series 2005-B	5/14/08	19,070,000	4.00-5.50%	7/01/17-18	3,185,000	
Series 2005-B	5/14/08	175,830,000	4.75-5.25%	7/01/35	100,000	c
Series 2006-A	8/16/06	237,205,000	5.00%	7/01/34	100,000	c
Series 2006-B	4/01/09	900,000	4.60-5.00%	7/01/17-19	250,000	
Series 2006-B	4/01/09	119,100,000	6.25%	7/01/36	100,000	c
Series 2011-A	12/22/11	37,880,000	5.00%	7/01/17-20	8,210,000	
Series 2011-A	12/22/11	341,710,000	5.00-5.75%	7/01/27-41	289,605,000	c
Series 2011-B	12/22/11	7,455,000	5.00%	7/01/17-21	2,630,000	
Series 2011-B	12/22/11	9,740,000	6.00%	7/01/23-33	2,295,000	c
Series 2011-C	12/22/11	3,925,000	5.00%	7/01/21	1,020,000	
Series 2011-C	12/22/11	99,965,000	4.50-5.25%	7/01/23-41	74,125,000	c
Series 2014-A (D-1)	9/04/14	162,350,000	5.00%	7/01/17-23	147,960,000	
Series 2014-A (D-1)	9/04/14	44,190,000	5.00%	7/01/35-37	44,190,000	c
Series 2014-B (D-2)	9/04/14	51,530,000	5.00%	7/01/23-24	51,530,000	
Series 2014-B (D-2)	9/04/14	136,925,000	5.00%	7/01/25-28	136,925,000	c
Series 2014-C (D-3)	9/04/14	62,700,000	5.00%	7/01/18-20	62,700,000	
Series 2014-D (D-4)	9/04/14	209,360,000	5.00%	7/01/29-34	209,360,000	c
Series 2014-E (D-5)	9/04/14	9,270,000	2.85%	7/01/19	9,270,000	
Series 2014-F (D-6)	9/04/14	21,735,000	5.00%	7/01/19-24	21,735,000	
Series 2014-F (D-6)	9/04/14	43,690,000	5.00%	7/01/25-36	43,690,000	c
Series 2014-G (D-7)	9/04/14	14,815,000	5.00%	7/01/17-18	8,300,000	
Series 2015-A (D-1)	12/15/15	20,155,000	3.00-5.00%	7/01/17-22	19,650,000	
Series 2015-A (D-1)	12/15/15	69,275,000	5.00%	7/01/27-35	69,275,000	c
Series 2015 (D-2)	12/15/15	37,235,000	5.00%	7/01/34	37,235,000	c
Series 2016-A	10/27/16	30,000	5.00%	7/01/21-26	30,000	
Series 2016-A	10/27/16	87,970,000	5.00%	7/01/27-46	87,970,000	c
Series 2016-B	10/27/16	30,000	5.00%	7/01/21-26	30,000	
Series 2016-B	10/27/16	163,800,000	5.00%	7/01/27-46	163,800,000	c
Series 2016-C	10/27/16	76,245,000	5.00%	7/01/22-26	76,245,000	
Series 2016-C	10/27/16	367,685,000	5.00-5.25%	7/01/27-35	367,685,000	c
Series 2016-D	10/27/16	4,665,000	5.00%	7/01/24-26	4,665,000	
Series 2016-D	10/27/16	217,380,000	4.00-5.00%	7/01/27-36	217,380,000	c
Total water fund revenue bonds payable					<u>2,340,885,000</u>	

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Issue	Bond Date	Original Issue Amount	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance	Callable
Sewage disposal fund						
Series 1998-A	12/14/06	\$ 18,540,000	5.50%	7/1/17	\$ 2,265,000	
Series 1998-A	12/14/06	49,075,000	5.25%	7/01/18-23	18,485,000	c
Series 1998-B	12/14/06	18,750,000	5.50%	7/1/17	3,390,000	
Series 1998-B	12/14/06	48,770,000	5.25%	7/01/18-23	18,260,000	c
Series 1999-A **	12/01/99	33,510,118	—	7/01/17-21	19,501,737	
Series 2001-B	9/15/01	110,550,000	5.50%	7/01/23-29	78,895,000	
Series 2001-C-1	6/17/09	6,360,000	5.25%	7/01/17-19	1,095,000	
Series 2001-C-1	6/17/09	148,510,000	6.50-7.00%	7/01/20-27	40,705,000	c
Series 2001-C-2	5/08/08	3,275,000	4.00%	7/01/17-18	705,000	
Series 2001-C-2	5/08/08	119,630,000	4.00-5.25%	7/01/19-29	107,045,000	c
Series 2003-A	5/15/03	213,395,000	5.50%	7/01/17-18	3,150,000	
Series 2003-B	6/17/09	150,000,000	7.50%	7/1/33	100,000	c
Series 2004-A	2/12/04	101,435,000	5.25%	7/01/19-24	35,010,000	
Series 2005-A	3/17/05	237,805,000	4.50%	7/1/35	100,000	c
Series 2005-A	3/17/05	31,785,000	5.00%	7/01/34-35	31,785,000	c
Series 2005-B	3/17/05	40,215,000	5.50%	7/01/21-22	17,115,000	
Series 2005-C	4/05/05	41,095,000	5.00%	7/1/25	100,000	c
Series 2006-B	8/10/06	183,150,000	5.00%	7/1/36	100,000	c
Series 2006-B	8/10/06	55,000,000	5.00%	7/01/34-36	55,000,000	c
Series 2006-D	12/14/06	370,000,000	Variable (*)	7/01/26-32	239,475,000	c
Series 2012-A	6/26/12	95,445,000	5.00%	7/01/17-22	64,545,000	
Series 2012-A	6/26/12	564,335,000	5.00 - 5.50	7/01/23-39	462,810,000	c
Series 2014-A (C-1)	9/04/14	20,000	5.00%	7/01/19-22	20,000	
Series 2014-A (C-1)	9/04/14	123,200,000	5.00%	7/01/23-44	123,200,000	c
Series 2014-B (C-2)	9/04/14	20,000	5.00%	7/01/19-22	20,000	
Series 2014-B (C-2)	9/04/14	27,450,000	5.00%	7/01/23-44	27,450,000	c
Series 2014-C (C-3)	9/04/14	142,600,000	5.00%	7/01/21-24	142,600,000	
Series 2014-C (C-3)	9/04/14	303,570,000	5.00%	7/01/25-33	303,570,000	c
Series 2014-D (C-5)	9/04/14	95,165,000	5.00%	7/01/18-20	69,595,000	
Series 2014-E (C-6)	9/04/14	88,900,000	5.00%	7/01/32-33	88,900,000	c
Series 2014-F (C-7)	9/04/14	32,650,000	5.00%	7/01/19-24	32,650,000	
Series 2014-F (C-7)	9/04/14	44,065,000	5.00%	7/01/25-36	44,065,000	c
Series 2014-G (C-8)	9/04/14	23,240,000	5.00%	7/01/17-18	5,850,000	
Series 2015 (C-1)	12/15/15	197,160,000	5.00%	7/01/26-35	197,160,000	c
Series 2016-B	10/27/16	14,445,000	5.00%	7/01/24-26	14,445,000	
Series 2016-B	10/27/16	111,660,000	5.00%	7/01/27-34	111,660,000	c
Series 2016-C	10/27/16	295,190,000	4.00-5.00%	7/01/27-36	295,190,000	c
Total sewage disposal fund revenue and capital appreciation bonds payable					<u>2,656,011,737</u>	
Total business-type activities					<u>\$4,996,896,737</u>	

Maturity dates reflect the final pricing of each series of bonds. Multiple maturity date ranges for a series of bonds differentiate between those bonds which are callable prior to maturity and those which are not callable prior to maturity.

* Interest rates are reset periodically at the stated current market interest rate.

** Bonds are capital appreciation bonds. The outstanding balance represents the discounted present value.

c Indicates bonds are callable under terms specified in the indenture; all other bonds are noncallable.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Revenue Bonds - Pledges of Future Revenue

The Authority has pledged assets to secure the repayment of the revenue bonds and State of Michigan revolving fund loans. The Water System bonds and loans are paid solely from the net revenues of the Water System and the Sewer System bonds and loans are paid solely from the net revenues of the Sewer System. Net revenues are defined in the Great Lakes Water Authority Water and Sewer Master Bond Ordinances as all revenues except those transferred to the Operation and Maintenance funds. These revenues are further defined to include the revenues from the Retail Customers who are serviced under the Water and Sewer Services Agreement with the City of Detroit which are reported in the financial statements of the City of Detroit Water and Sewerage Department. The pledged revenues calculation for the fiscal year ending June 30, 2017 includes revenues reported by the Great Lakes Water Authority and the City of Detroit Water and Sewerage Department as this revenue is pledged for payment of the bonds and loans of the Great Lakes Water Authority.

The general purpose of the Water System bonds is to provide funding for various water treatment and transmission capital improvements, refund certain water revenue bonds, pay termination amounts for interest rate swap agreements and fund reserve requirements. The general purpose of the Sewer System bonds is to provide funding for various wastewater treatment and collection activities, capital improvements, refund certain sewage disposal revenue bonds, pay termination amounts for interest rate swap agreements and fund reserve requirements. The term of pledge commitment for the Water Fund is through 2047 and through 2045 for the Sewage Disposal Fund.

See table below for pledged revenue requirements as of June 30, 2017:

	Water Fund	Sewage Disposal Fund
Remaining principal and interest requirement	\$ 4,106,786,891	\$4,998,468,362
Principal and interest funding requirement for the year ending June 30, 2017 (Computed consistent with rate Covenant basis for rate determination purposes. Not applicable for purposes of additional bond test.)	\$ 175,010,012	\$ 234,554,814
Pledged revenue for the year ending June 30, 2017	\$ 286,317,089	\$ 354,290,815
Pledged revenue collected as a percentage of funding requirement	163.6%	151.0%
Approximate amount in restricted cash investments related to various bond indentures at June 30, 2017	\$ 186,700,000	\$ 150,900,000

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

State Revolving Loans Payable

Net revenues of the Authority are pledged to repayment of bonds. The following is a schedule of the state revolving loans payable at June 30, 2017:

Issue	Bond Date	Amount Issued	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance
Water fund					
Series 2005 SRF-1	9/22/05	\$ 13,805,164	2.125%	10/01/17-26	\$ 7,385,164
Series 2005 SRF-2	9/22/05	8,891,730	2.125%	10/01/17-26	4,641,730
Series 2006 SRF-1	9/21/06	5,180,926	2.125%	10/01/17-26	2,750,926
Series 2008 SRF-1	9/29/08	2,590,941	2.50%	10/01/17-28	1,205,941
Series 2016B SRF	9/16/16	4,180,000	2.50%	4/1/19-28	1,268,474
Total water fund state revolving loans payable					<u>17,252,235</u>
Sewage disposal fund					
Series 1997-B-SRF	9/30/97	5,430,174	2.25%	10/01/17-18	650,000
Series 1999-SRF-1	6/24/99	21,475,000	2.50%	4/01/18-20	3,930,000
Series 1999-SRF-2	9/30/99	46,000,000	2.50%	10/01/17-22	16,280,000
Series 1999-SRF-3	9/30/99	31,030,000	2.50%	10/01/17-20	7,505,000
Series 1999-SRF-4	9/30/99	40,655,000	2.50%	10/01/17-20	9,830,000
Series 2000-SRF-1	3/30/00	44,197,995	2.50%	10/01/17-22	13,947,995
Series 2000-SRF-2	9/28/00	64,401,066	2.50%	10/01/17-22	22,691,066
Series 2001-SRF-1	6/28/01	82,200,000	2.50%	10/01/17-24	37,865,000
Series 2001-SRF-2	12/20/01	59,850,000	2.50%	10/01/17-24	27,575,000
Series 2002 SRF-1	6/27/02	18,985,000	2.50%	4/01/18-23	6,710,000
Series 2002-SRF-2	6/27/02	1,545,369	2.50%	4/01/18-23	545,369
Series 2002-SRF-3	12/19/02	31,549,466	2.50%	10/01/17-24	13,399,466
Series 2003-SRF-1	6/26/03	48,520,000	2.50%	10/01/17-25	24,845,000
Series 2003-SRF-2	9/25/03	25,055,370	2.50%	4/01/18-25	11,460,370
Series 2004 SRF-1	6/24/04	2,910,000	2.125%	10/01/17-24	1,310,000
Series 2004 SRF-2	6/24/04	18,353,459	2.125%	4/01/18-25	8,258,459
Series 2004 SRF-3	6/24/04	12,722,575	2.125%	4/01/18-25	5,707,575
Series 2007 SRF-1	9/20/07	167,540,598	1.625%	10/01/17-29	114,950,598
Series 2009 SRF-1	4/17/09	13,970,062	2.50%	4/01/18-30	9,545,062
Series 2010 SRF-1	1/22/10	4,214,763	2.50%	4/01/18-31	3,115,763
Series 2012 SRF-1	8/30/12	14,950,000	2.50%	10/01/17-34	13,765,000
Series 2015 SRF-1	3/20/15	79,500,000	2.50%	4/01/18-36	76,390,000
Series 2015 SRF-2	3/20/15	33,030,000	2.50%	10/01/17-35	24,814,000
Series 2015 SRF-3	12/11/15	19,485,000	2.50%	10/01/17-35	14,399,288
Series 2016 SRF-1	9/16/16	19,305,000	2.50%	4/01/19-38	2,602,370
Series 2016 SRF-2	9/16/16	51,310,000	2.50%	4/01/20-39	8,384,993
Series 2016 SAW	5/25/16	10,000,000	2.50%	10/01/19-38	4,789,662
Total sewage disposal fund state revolving loans payable					<u>485,267,036</u>
Total business-type activities					<u>\$ 502,519,271</u>

The state revolving loans are issued as part of the State of Michigan's Revolving Fund Loan Program. As GLWA draws additional amounts from time to time hereafter, the outstanding principal amounts of such bonds will correspondingly increase. All loans are callable under terms specified in the loan agreements.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Refunded Debt - Water Fund

In October 2016 the Authority issued \$88,000,000 in Series 2016A senior lien revenue bonds, \$163,830,000 in Series 2016B second lien revenue bonds, \$443,930,000 in Series 2016C senior lien revenue refunding bonds and \$224,045,000 in Series 2016D second lien revenue refunding bonds. The net proceeds of the Series 2016A and Series 2016B will be used to pay certain costs of improvements, enlargements and extensions and repairs to the Regional Water System and Local Water System. The net proceeds of the Series 2016C and Series 2016D were used to purchase securities that were placed in an irrevocable trust with an escrow agent to refund \$116,645,000 of Series 2003D revenue bonds, \$30,335,000 of Series 2004A revenue bonds, \$15,725,000 of Series 2004B revenue bonds, \$147,985,000 of Series 2005B revenue bonds, \$119,345,000 of Series 2006A revenue bonds, \$85,250,000 of Series 2006B revenue bonds, \$198,700,000 of Series 2006C revenue bonds and \$59,815,000 of Series 2006D revenue bonds. As a result, the bonds are considered to be defeased and the liability for these bonds has been removed from the financial statements. The refunding bonds resulted in a savings of \$185,424,383 over the next 20 years and an economic gain of \$120,780,483.

Refunded Debt - Sewage Disposal Fund

In October 2016, the Authority issued \$126,105,000 in Series 2016B senior lien revenue refunding bonds and \$295,190,000 in Series 2016C second lien revenue refunding bonds. The net proceeds were used to purchase securities that were placed in an irrevocable trust with an escrow agent to refund \$134,745,000 of Series 2001E revenue bonds, \$25,550,000 of Series 2003B revenue bonds, \$123,185,000 of Series 2006A revenue bonds, \$174,565,000 of Series 2006B revenue bonds, \$9,740,000 of Series 2006C revenue bonds and \$12,355,000 of Series 2012A revenue bonds. As a result, the bonds are considered to be defeased and the liability for these bonds has been removed from the financial statements. The refunding bonds resulted in a savings of \$123,710,549 over the next 20 years and an economic gain of \$71,155,202.

Issuance of State Revolving Loans

The Authority's water fund received loans from the State of Michigan Revolving Loan Fund totaling \$2,436,781, of which \$1,168,307 has been forgiven, and the sewage disposal fund received \$22,216,294 during the year ended June 30, 2017. The proceeds of the sewage disposal fund loans were used to pay costs of acquiring, constructing extensions, and making certain repairs and improvements to the Systems. The water fund loans were for DWSD, the subrecipient of the loans. At June 30, 2017, \$19,191,526 for the water fund and \$114,539,687 for the sewage disposal fund was authorized and unissued.

Debt Ratings

As of September 30, 2016, Standard & Poor's Ratings Services ratings on the senior and second lien debt was A-/BBB+; Moody's rating was A3/Baa1 and Fitch's rating was A/A-.

Contractual Obligation Receivable - Debt Allocation for DWSD Retail Operations

As part of the lease transaction in which GLWA leased the regional water and sewer system from the City of Detroit, all DWSD revenue bonds outstanding as of December 31, 2015, including those purchased by the Michigan Finance Authority under its state revolving loan program, were assumed by GLWA with the consent of bondholders. Total bonds assumed by GLWA totaled \$2,313,683,761 for the water fund and \$3,291,282,050 for the sewage disposal fund.

Per the Water and Sewer Services Agreement between the DWSD and GLWA dated June 12, 2015 and the Master Bond Ordinance dated October 7, 2015, as amended, the Detroit retail class continues to pay its common-to-all share of debt service revenue requirements and its allocated share of debt service revenue requirements associated with improvements to the local water and sewer systems. Payments on the debt service incurred by GLWA on the outstanding revenue bonds assumed as of December 31, 2015 are to be allocated using an agreed-upon percentage of total debt service associated with bond-financed local improvements over the life of such bonds, though the bonds themselves continue to be secured by the net revenue of GLWA, and the revenues of the Detroit retail class. A Memorandum of Understanding (MOU) Term Sheet was entered into with DWSD dated April 2018 with an agreed upon allocation and amortization schedule. The June 30, 2017 balance has been adjusted to the revised allocation. The total obligation receivable at June 30, 2017, including the additional water fund debt issued during the year, is \$495,681,322 for the water fund and \$358,090,600 for the sewage disposal fund.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Obligation Payable - City of Detroit 2014 Financial Recovery Bonds

The Financial Recovery Bonds, Series 2014-B are federally taxable. The Series 2014-B bonds have two components B(1) which has a 4.0 percent per annum interest rate and B(2) which has a variable interest rate until the maturity date of April 1, 2044. The bonds were delivered to classes of creditors in satisfaction of: (1) Class 12 OPEB claims the bonds were distributed to the new Voluntary Employee Beneficiary Associations (VEBA) for the general retirees and police and fire retirees; (2) Class 9 Pension Obligation Certificate (POC) claims; and (3) other unsecured bankruptcy claims. GLWA has a contractual obligation to pay a portion of the bonds based on an agreed-upon allocation percentage.

The Financial Recovery Bonds, Series 2014-C bear interest at 5.0 percent per annum. The bonds mature on December 10, 2026. The 2014-C bonds were issued as part of the Syncora Settlement and FGIC/POC Settlement in the bankruptcy plan. GLWA has a contractual obligation to pay a portion of the bonds based on an agreed upon allocation percentage.

The following is a schedule of the obligation payable for the Financial Recovery Bonds at June 30, 2017:

	Bond Issue	Original Issue Amount	Range of Interest Rates	Maturity Date	Outstanding Ending Balance
Water fund					
	Series 2014-B	\$ 26,540,080	4.00% and variable	4/1/2044	\$ 15,556,025
	Series 2014-C	3,829,794	5.00%	12/10/2026	<u>1,869,281</u>
	Total water fund				<u>17,425,306</u>
Sewage disposal fund					
	Series 2014-B	44,233,463	4.00% and variable	4/1/2044	34,990,438
	Series 2014-C	6,382,990	5.00%	12/10/2026	<u>4,204,607</u>
	Total sewage disposal fund				<u>39,195,045</u>
	Total business-type activities				<u>\$ 56,620,351</u>

As of June 30, 2017, debt service requirements of the Financial Recovery Bonds were as follows:

	Year Ended June 30,	Principal	Interest	Total
Water fund				
	2018	\$ 159,803	\$ 715,705	\$ 875,508
	2019	167,793	707,715	875,508
	2020	176,183	699,326	875,509
	2021	184,992	690,516	875,508
	2022	194,242	681,266	875,508
	2023-2027	3,319,672	3,154,254	6,473,926
	2028-2032	3,889,006	2,333,403	6,222,409
	2033-2037	3,889,006	1,975,615	5,864,621
	2038-2042	3,889,006	1,166,702	5,055,708
	2043-2044	1,555,603	140,004	1,695,607
		<u>17,425,306</u>	<u>12,264,506</u>	<u>29,689,812</u>

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

	Year Ended June 30,	Principal	Interest	Total
Sewage disposal fund				
2018	\$	359,448	\$ 1,609,848	\$ 1,969,296
2019		377,420	1,591,876	1,969,296
2020		396,291	1,573,005	1,969,296
2021		416,106	1,553,190	1,969,296
2022		436,911	1,532,384	1,969,295
2023-2027		7,466,997	7,094,919	14,561,916
2028-2032		8,747,610	5,248,565	13,996,175
2033-2037		8,747,610	4,443,786	13,191,396
2038-2042		8,747,609	2,624,283	11,371,892
2043-2044		3,499,043	314,914	3,813,957
		<u>39,195,045</u>	<u>27,586,770</u>	<u>66,781,815</u>
Total business-type activities	\$	<u>56,620,351</u>	<u>\$ 39,851,276</u>	<u>\$ 96,471,627</u>

Interest expense

The following represents the amounts recorded as interest expense for the year ended June 30, 2017:

	Water Fund	Sewage Disposal Fund	Total
Bonded debt	\$ 119,367,849	\$ 141,080,363	\$ 260,448,212
Obligation payable	717,819	1,614,602	2,332,421
Lease payable	18,054,730	22,066,892	40,121,622
Less: amounts capitalized	<u>(5,705,453)</u>	<u>(5,604,705)</u>	<u>(11,310,158)</u>
	<u>\$ 132,434,945</u>	<u>\$ 159,157,152</u>	<u>\$ 291,592,097</u>

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

7. LONG-TERM LEASES PAYABLE AND RELATED PREPAID

On January 1, 2016, the Great Lakes Water Authority effectuated lease agreements with the City of Detroit, Michigan for the regional water system and regional sewer system for a term of 40 years, to be extended automatically to coincide with the final maturity of any bonds issued to finance improvements to the regional or local sewer systems. The agreements collectively provide for an annual lease payment of \$50 million. Currently, \$22,500,000 is allocated to the water fund and \$27,500,000 is allocated to the sewage disposal fund. The lease for the water system provides service to the wholesale customers and the retail water customers of the City up to the point of connection to the local water system facilities of the City. The lease for the sewer system provides service to the wholesale customers and the retail sewer customers of the City up to the point of connection to the local sewer system facilities of the City. In addition, both leases provide that certain other assets including cash and investments held by DWSD as of December 31, 2015 are transferred to GLWA, all revenues of the regional and local water and sewer systems are assigned to GLWA, and that GLWA assumes all DWSD bonded debt and certain other liabilities. The long-term leases are recorded as the present value of all future debt payments.

Amounts reported as a liability at year-end represent the net present value of all future lease payments. Changes in long-term leases payable for the year ended June 30, 2017 were as follows:

	Beginning Balance	Increase	Decrease	Ending Balance	Amount Due Within One Year *
Water fund	\$ 435,351,396	\$ -	\$ (4,429,876)	\$ 430,921,520	\$ 4,618,174
Sewage disposal fund	532,096,152	-	(5,414,293)	526,681,859	5,644,435
Total business-type activities	\$ 967,447,548	\$ -	\$ (9,844,169)	\$ 957,603,379	\$ 10,262,609

* The current portion of the long-term leases payable represents the 12 monthly payments required from July 1, 2017 through June 30, 2018. Future revenues are intended to cover these payments.

Principal and interest portions of the lease payable for the year ended June 30, 2017 were as follows:

	Water	Sewage Disposal	Total
Gross future payments	\$ 866,250,000	\$ 1,058,750,000	\$1,925,000,000
Less: interest	(435,328,480)	(532,068,141)	(967,396,621)
Total principal remaining	\$ 430,921,520	\$ 526,681,859	\$ 957,603,379

As part of the Memorandum of Understanding (MOU) Term Sheet with DWSD dated April 2018, the MBO requirement for six months of lease payments made to DWSD on January 1, 2016 will be treated as prepaid lease payments. The initial term of the leases began on the effective date and ends on December 31, 2055. GLWA's last monthly payment shall be June 1, 2055 and GLWA's \$25 million lease pre-payment on January 1, 2016 shall be applied to the period of July 1, 2055 through December 31, 2055. Of the \$25 million recorded as a prepaid on the statement of net position, \$11,250,000 is recorded in the water fund and \$13,750,000 in the sewage disposal fund.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

8. RISK MANAGEMENT / SELF-INSURANCE PROGRAMS

The Authority is exposed to various types of risk of loss including torts; theft of, damage to, or destruction of assets; errors or omissions; job related illnesses or injuries to employees; natural disasters; and environmental occurrences. Also included are risk of loss associated with providing medical benefits to employees.

The Authority purchases a variety of insurance policies including: public official's and employment practices liability insurance, property insurance, pollution legal liability insurance and casualty insurance for workers' compensation, general liability, and automobile liability. The Authority purchases excess liability insurance for its casualty program which provides per occurrence and aggregate protection for up to \$8 million. The Authority's retention is \$1,250,000 for workers' compensation and \$250,000 for general liability and automobile. The Authority also has coverage under a pollution legal liability policy with limits of \$50 million, a property insurance policy with limits of \$750 million and a public officials policy with limits of \$25 million.

Settled claims relating to commercial insurance have not exceeded the amount of insurance coverage in any of the past two fiscal years.

A liability for claims is reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. Liabilities include an amount for claims that have been incurred but not reported. Claim liabilities are calculated considering the effects of recent claim settlement trends including frequency and amount of payouts and other economic and social factors. The claim liabilities also include estimated costs for claim administration fees and outside legal and medical assistance costs. The liabilities for workers' compensation current year claims is based on estimates and payments are based on actuals.

Under most circumstances, the Authority's maximum loss retention per occurrence was as follows:

Type of Risk	Maximum Retention Per Occurrence
Workers' compensation	\$1,250,000 per occurrence
General and automobile liability	\$250,000 per occurrence
Motor vehicle physical damage	Authority assumes all risk
Property damage	\$1,000,000 per occurrence
Public officials	\$250,000 per occurrence
Pollution legal liability	\$500,000 per occurrence

The Authority estimates the liability for medical and worker's compensation claims that have been incurred through the end of the fiscal year, including claims that have been reported as well as those that have not yet been reported, which includes estimates of both future payments of losses and related claim adjustments expense. The liability is based on individual claims and management's evaluation of experience with respect to the probable number and nature of claims. Any adjustments resulting from settlement of losses will be reflected in earnings at the time the adjustments are determined.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Medical insurance. The Authority provides medical benefits to a significant number of employees through a self-insured health plan that is administered by third party administrators. The Authority purchased stop loss insurance for its self-insured health plan with terms of \$300,000 per contract to reduce risk exposure for the group. The self-insured program is administered by a third-party administrator who provides claims review and processing services as well as illustrated premium rates, which are anticipated, over time, to approximate the actual cost of benefits.

	2017	2016
Unpaid claims, beginning of year	\$ 933,567	\$ -
Incurred claims (including change in IBNR provisions)	8,986,780	4,565,983
Claims payments	<u>(8,894,169)</u>	<u>(3,632,416)</u>
Unpaid claims, end of year	<u>\$ 1,026,178</u>	<u>\$ 933,567</u>

Workers' compensation. The Authority maintains a self insurance program for workers' compensation coverage up to the amount of its retention. The program is administered by a third-party who provides claim review and medical bill review services.

Changes in the balances of claims liabilities during the past two years are as follows:

	2017	2016
Unpaid claims, beginning of year	\$ 351,231	\$ -
Incurred claims	238,483	533,897
Claims payments	<u>(339,714)</u>	<u>(182,666)</u>
Unpaid claims, end of year	<u>\$ 250,000</u>	<u>\$ 351,231</u>

9. DEFINED CONTRIBUTION PENSION PLAN

Defined Contribution Plans

The Great Lakes Water Authority Defined Contribution Retirement Plan is a 401(a) governmental money purchase plan administered by ICMA Retirement Corporation (the "Administrator") to provide benefits at retirement to all full-time employees of the Authority. The Authority contributes 6.0% of earnings to the plan. The Authority will make an additional contribution to the 401(a) plan to match employee pre-tax contributions under the Great Lakes Water Authority 457 Plan up to 3% of compensation. Employees are 100% vested after three years of service (cliff vesting). Employees who transferred to the Authority on or around January 1, 2016 from DWSD retain their years of service for vesting purposes. Employer contributions totaled \$3,986,841 million for the year ended June 30, 2017. At June 30, 2017, there were 893 plan members.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

The Great Lakes Water Authority Defined Contribution Plan Make-Up Benefit Plan is a 401(a) governmental money purchase plan administered by ICMA Retirement Corporation (the “Administrator”) to provide benefits at retirement to all employees who terminated employment with DWSD on or around January 1, 2016 and were not vested in the City of Detroit General Retirement System (GRS). Eligible employees are required to roll over to the Authority’s Section 457 Deferred Compensation Plan their refunded employee mandatory contribution from GRS. The amount of the make-up benefit will be determined by an actuary based on the present value of the lost GRS benefit. Employees are 100% vested after one year of service.

The Authority has also adopted a Section 457 Deferred Compensation Plan which employees can make pre-tax contributions which are immediately 100% vested. At June 30, 2017, there were 729 plan members.

Retirement Health Savings Plan

The Authority also provides a Retirement Health Savings Program for full-time employees. Employees are required to contribute \$10 per pay period and the Authority contributes \$80 per pay period. Employees are 100% vested after three years of service (cliff vesting). Employees who transferred to the Authority on or around January 1, 2016 from DWSD retain their years of service for vesting purposes. Employer contributions were \$1,661,440 and employee contributions were \$207,670 for the year ended June 30, 2017. At June 30, 2017, there were 975 plan members.

10. NET PENSION LIABILITY (SPECIAL FUNDING SITUATION)

As part of the City of Detroit bankruptcy plan of adjustment (POA) and the Leases (Section 4.3), the City, the City of Detroit General Employees’ Retirement system (GRS or the “System”) and the Authority entered into an agreement on December 1, 2015 that set forth the terms for contributions and reporting of the DWSD share of the GRS pension pool. GRS provides the information necessary for the Authority and DWSD to report the proportionate share separately in their respective statements. On January 24, 2017, DWSD and the Authority provided a supplement to the agreement whereby GRS is directed to allocate investments and pension liabilities of the DWSD division on the basis of 70.3% to the Authority and 29.7% to DWSD effective January 1, 2016. This information is available in a separate audit report for the “Legacy Pension Plan (Component II) of the General Retirement System of the City of Detroit Statement of Changes in Fiduciary Net Position by Division with Supplemental Information as of June 30, 2017” and is available by contacting the Authority’s management. This agreement constitutes a special funding situation pursuant to the provisions of GASB 68, *Accounting and Financial Reporting for Pensions*. As such, while no Authority employees earn service credit in the legacy or hybrid plans, GLWA is legally responsible for making substantial contributions to a legacy pension plan of another entity and, accordingly, must record a net pension liability for its proportion and make the following disclosures regarding the plan as required by the standard.

Plan Administration. The Authority contributes to (and DWSD participates in) the System. The System is a single employer plan composed of a defined benefit plan component and a defined contribution annuity plan component. The plan provides retirement, disability, and survivor benefits to plan members and beneficiaries. The plan is administered by its own board of trustees. Plan members include active employees, retirees and beneficiaries from various departments within the City. Benefit terms have been established by contractual agreements between the City and the employees’ collective bargaining units; amendments are subject to the same process.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

The System issues publicly available financial reports that include financial statements and the required supplementary information. The reports can be obtained from City of Detroit Retirement Systems, One Detroit Center, 500 Woodward Avenue, Suite 3000, Detroit, MI 48226 or obtained from the Systems' website (www.rscd.org). Detailed information about the pension plan's fiduciary net position is available in the separately issued financial reports.

Benefits Provided. Plan members may retire at age 55 or 60 with 5, 8, 10 or 25 years of credited service depending on which group the employee is in. Members are vested after completing 5, 8 or 10 years of credited service. Retirement options that provide for survivor benefits are available to members. The Plan also provides death and disability benefits. If a member leaves employment or dies before vesting, accumulated member contributions plus interest are refunded to the member or designated beneficiary.

Component II - Component II is the legacy plan, the original defined benefit plan, which includes a defined benefit component and a defined contribution component. Component II generally applies to benefits accrued by members prior to July 1, 2014. The plan provides retirement, disability, and survivor benefits to plan members and beneficiaries. Except as specifically provided in the combined plan, benefits provided under Component II are frozen effective June 30, 2014. Component II also includes the income stabilization fund. The fund, a part of Component II and established as a provision of the POA, was established for the sole purpose of paying the income stabilization benefits to eligible pensioners. Complete details regarding the Component II benefits and changes in those benefits by virtue of the POA are presented in the System financial statements.

Employer Contributions. Employer contributions, including the Authority's nonemployer contribution, for the respective components are as follows:

Component II - Employer contributions to the GRS were determined by the provisions of the POA. Included within contributions in Component II are amounts sourced from the one-time sale of City-owned artwork with proceeds from the Foundation for Detroit's Future in the amount of \$32,886,827 along with \$4,005,830 from unlimited tax general obligation bonds and \$67,900,000 of contributions from the City and related entities, of which \$45,400,000 of contributions were from GLWA and DWSD. Employer contributions were also made into the income stabilization fund in the amount of \$1,689,857 from the bond proceeds.

The POA obligates DWSD to pay \$2,500,000 per year towards administrative costs and annual plan contributions of \$42,900,000 per year in total for both water and sewer employees, until 2023. Pursuant to the leases, the Authority is obligated to pay its allocable share of such liability. The portion allocated to the Authority is \$31,916,200 for fiscal year 2017. Subsequent to 2023, DWSD and the Authority will be responsible for paying their allocable share of any additional amounts that are actuarially determined to be payable.

The information below represents the Authority's share of pension liability activity. DWSD separately reports its prorata share of activity in its separate financial statements.

DWSD Employee Contributions. Contribution requirements of plan members are established and may be amended by the board of trustees in accordance with the City Charter, union contracts, and plan provisions. For the year ended June 30, 2017, there were minimal employee contributions into Component II, only related to military service credit, as the plan was frozen as of June 30, 2014; contributions into Component I began thereafter.

Net Pension Liability. The net pension liability was measured as of June 30, 2016, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Actuarial Assumptions. The total pension liability in the June 30, 2016 actuarial valuation was determined using the following actuarial assumptions.

Inflation	NA
Salary increases	NA
Investment rate of return	7.23%, net of investment expense and including inflation

The actuarial assumptions were based on an experience study from 2008-2013 issued in February 2015; the mortality table assumption was based on RP-2014 Blue Collar Annuitant Table for males and females. The tables are projected to be fully generational, based on two-dimensional sex distinct mortality scale MP-2014.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each asset class. These real ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each asset class that is included in the pension plan's target asset allocation as of June 30, 2016, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return	Expected Money-Weighted Rate of Return
Global equity	43.0%	6.22%	2.67%
Fixed income	12.0%	2.95%	0.35%
Private equity	8.0%	7.35%	0.59%
Cash	1.0%	0.98%	0.01%
Real estate	10.0%	3.92%	0.39%
Global asset allocation/risk parity/real assets	21.0%	5.02%	1.05%
Hedge funds	5.0%	4.41%	0.22%
	<u>100.0%</u>		<u>5.28%</u>
Inflation			<u>1.95%</u>
Investment rate of return			<u>7.23%</u>

Discount Rate. The discount rate used to measure the total pension liability was 7.23%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that Authority contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Changes in the Net Pension Liability. The components of the change in the Authority's share of the net pension liability are summarized as follows:

	Water	Sewage Disposal	Total
Total pension liability	\$ 196,712,089	\$ 352,052,192	\$ 548,764,281
Plan fiduciary net position	(127,143,045)	(227,545,689)	(354,688,734)
Authority's net pension liability	<u>\$ 69,569,044</u>	<u>\$ 124,506,503</u>	<u>\$ 194,075,547</u>
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Water			
Balances at June 30, 2016	<u>\$ 202,696,454</u>	<u>\$ 141,675,375</u>	<u>\$ 61,021,079</u>
Changes for the year:			
Interest	14,475,348	-	14,475,348
Differences between expected and actual experience	(1,815,233)	-	(1,815,233)
Changes in assumptions	6,318,782	-	6,318,782
Employer contributions	-	10,810,800	(10,810,800)
Net investment loss	-	(470,295)	470,295
Benefit payments, including refunds of employee contributions	(24,963,262)	(24,963,262)	-
Other changes	-	90,427	(90,427)
Net changes	<u>(5,984,365)</u>	<u>(14,532,330)</u>	<u>8,547,965</u>
Balances at June 30, 2017	<u>\$ 196,712,089</u>	<u>\$ 127,143,045</u>	<u>\$ 69,569,044</u>

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Sewer			
Balances at June 30, 2016	\$ 362,762,305	\$ 253,553,946	\$ 109,208,359
Changes for the year:			
Interest	25,906,278	-	25,906,278
Differences between expected and actual experience	(3,248,690)	-	(3,248,690)
Changes in assumptions	11,308,613	-	11,308,613
Employer contributions	-	19,347,900	(19,347,900)
Net investment loss	-	(841,679)	841,679
Benefit payments, including refunds of employee contributions	(44,676,314)	(44,676,314)	-
Other changes	-	161,836	(161,836)
Net changes	<u>(10,710,113)</u>	<u>(26,008,257)</u>	<u>15,298,144</u>
Balances at June 30, 2017	<u>\$ 352,052,192</u>	<u>\$ 227,545,689</u>	<u>\$ 124,506,503</u>

Sensitivity of the Net Pension Liability to Changes in the Discount Rate. The following presents the net pension liability of the Authority, calculated using the discount rate of 7.23%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is 1% lower (6.23%) or 1% higher (8.23%) than the current rate:

	1% Decrease (6.23%)	Current Discount Rate (7.23%)	1% Increase (8.23%)
Water	\$ 88,176,626	\$ 69,569,044	\$ 53,745,695
Sewage disposal	<u>157,808,168</u>	<u>124,506,503</u>	<u>96,187,732</u>
Authority's net pension liability	<u>\$ 245,984,794</u>	<u>\$ 194,075,547</u>	<u>\$ 149,933,427</u>

Pension Plan Fiduciary Net Position. Detailed information about the pension plan's fiduciary net position is available in the separately issued plan financial statements.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions. For the year ended June 30, 2017, the Authority recognized pension expense of \$2,516,776 and \$4,504,230 for the water and sewage disposal funds, respectively. At June 30, 2017, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
<i>Water</i>			
Net difference between projected and actual earnings on pension plan investments	\$ 10,680,706	\$ 6,565,776	\$ 4,114,930
Employer contributions to the plan subsequent to the measurement date	10,810,800	-	10,810,800
	<u>21,491,506</u>	<u>6,565,776</u>	<u>14,925,730</u>
<i>Sewage disposal</i>			
Net difference between projected and actual earnings on pension plan investments	19,115,072	11,750,654	7,364,418
Employer contributions to the plan subsequent to the measurement date	19,347,900	-	19,347,900
	<u>38,462,972</u>	<u>11,750,654</u>	<u>26,712,318</u>
Total business-type activities	<u>\$ 59,954,478</u>	<u>\$ 18,316,430</u>	<u>\$ 41,638,048</u>

The amount reported as deferred outflows of resources resulting from contributions subsequent to the measurement date will be recognized as a reduction in the net pension liability for the year ending June 30, 2018. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pension will be recognized in pension expense as follows:

Year Ended June 30,	Water	Sewage Disposal	Total
2018	\$ (437,101)	\$ (782,272)	\$ (1,219,373)
2019	(437,101)	(782,272)	(1,219,373)
2020	2,845,786	5,093,054	7,938,840
2021	2,143,346	3,835,908	5,979,254
Total	<u>\$ 4,114,930</u>	<u>\$ 7,364,418</u>	<u>\$ 11,479,348</u>

Payable to the Pension Plan. At June 30, 2017, the Authority did not have any outstanding contributions payable to the pension plan for the year then ended.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

11. COMMITMENTS AND CONTINGENCIES

Capital Improvement Program

The Authority is engaged in a variety of projects that are part of its five-year capital improvement program (the "Program"). The total cost of this Program is anticipated to be approximately \$800.6 million for the water fund and \$752.7 million for the sewage disposal fund through fiscal year 2022. The Program is being financed primarily from revenue bond proceeds in addition to customer charges revenue. The latter is accounted for in the Improvement & Extension Fund as defined in the MBO. As of June 30, 2017, the water fund has unspent bond proceeds of \$173.0 million in addition to the Improvement & Extension funds of \$177.3 million available for use in funding these commitments. Similarly, the sewage disposal fund has unspent bond proceeds of \$150.9 million in addition to Improvement & Extension funds of \$61.8 million available for use in funding these commitments.

The total amount of construction contract commitments outstanding at June 30, 2017 was approximately \$34.5 million for the water fund and \$139.0 million for the sewage disposal fund.

Contingencies

The Authority is subject to various government environmental laws and regulations. GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, established accounting and financial reporting standards for pollution (including contamination) remediation obligations, which are obligations to address the current or potential detrimental effects of existing pollution by participating in pollution remedial activities such as site assessments and cleanups. The standard excludes pollution prevention or control obligations with respect to current operations, and future pollution remediation activities that are required upon retirement of an asset, such as landfill closure and post-closure care. The Authority determined that there were no estimated pollution remediation obligations to be recorded at June 30, 2017.

The sewage disposal fund's operations are subject to regulation pursuant to the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (collectively, the Clean Water Act). Included in the regulatory framework established by the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) permit program, which requires operation of wastewater system facilities according to discharge limitations and other requirements as set forth in permits issued to each facility. The Environmental Protection Agency (EPA) has authorized the Michigan Department of Environmental Quality (MDEQ) to implement and enforce the federal NPDES permit program. The sewage disposal fund operates pursuant to an NPDES permit that is in effect through October 1, 2017.

The Authority is a defendant in numerous alleged claims, lawsuits, billing disputes, and other stated and pending demands. The Authority's Legal Department has estimated a reserve of \$75,000 for the water fund and \$4,039,562 for the sewage disposal fund, which are included in the accompanying financial statements, for the potential outcome of such claims or the amount of potential damages in the event of an unfavorable outcome for each of the above contingencies. The Authority's management believes that any differences in reserved amounts and final settlement, after consideration of claims covered by insurance, resulting from such litigation will not materially impact the Authority's financial position or results of operations.

The Authority holds various commercial insurance policies to cover other potential loss exposures.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

12. SPECIAL ITEM

On April 3, 2018, the Board of Directors for the Great Lakes Water Authority approved a Memorandum of Understanding (MOU) Term Sheet. On April 4, 2018, the Board of Water Commissioners for the DWSD approved the same Term Sheet. The Term Sheet was not intended to impose any legal obligation on the parties. A final MOU that will make the provisions of the Term Sheet binding on GLWA and DWSD is expected to be completed and approved by both Boards by July 1, 2018. The Leases and the Water and Sewer Services Agreement (“WSSA”) between the City and GLWA and the MBO, govern the relationship between DWSD and GLWA, which began on January 1, 2016 (the “Effective Date”). The intent of the MOU is to (a) provide clarification of specific sections of the Leases, WSSA and MBO; (b) make adjustments contemplated by the Leases and the WSSA; and (c) address the liquidation of specific liabilities. The transactions associated with this MOU Term Sheet resulted in a special item on the statement of activities for the year ended June 30, 2017, comprised of the following:

	Water	Sewage Disposal
Consideration for assumption of pre-bifurcation liabilities	\$ (17,759,200)	\$ (51,675,100)
Reduction of claims and judgements for pre-bifurcation retail cases	294,199	11,417,600
Sewer lookback adjustment	-	(1,333,900)
Recognize prepayment on leases	11,250,000	13,750,000
Change in obligation receivable for DWSD share of debt	(26,749,580)	(8,952,228)
Transfer of retail receivables and related amounts	153,000	(9,510,854)
Allocation of sewage disposal fund capital funds to DWSD	-	(15,174,200)
	<u> </u>	<u> </u>
Total special item	<u>\$ (32,811,581)</u>	<u>\$ (61,478,682)</u>

13. SUBSEQUENT EVENTS

Partnership between the Great Lakes Water Authority, City of Flint, Karegnondi Water Authority, Genesee County Drain Commission and State of Michigan

Effective December 1, 2017, the Authority, the City of Flint (the City), Karegnondi Water Authority (KWA), Genesee County Drain Commission (GCDC) and State of Michigan entered into a long-term partnership agreement to satisfy a number of critical water service needs across the region. Key provisions of a master agreement comprised of seven separate exhibits includes: 1) a 30-year water service contract with the City that establishes GLWA as the long-term water source for the City and credits the City of its debt service payment obligations on existing KWA bonds for the building of its water plant; 2) a long-term lease to GLWA of the 72-inch line serving the City; and 3) a 30-year contract for reciprocal, emergency water services between GLWA and GCDC.



REQUIRED SUPPLEMENTARY INFORMATION

GREAT LAKES WATER AUTHORITY

Required Supplementary Information

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System - Component II Schedule of Changes in Net Pension Liability and Related Ratios - Water Fund

	Fiscal Year Based on Measurement Date	
	2016*	2015**
Share of total pension liability		
Interest	\$ 14,475,348	\$ 18,422,673
Differences between expected and actual experience	(1,815,233)	(153,112)
Changes in assumptions	6,318,782	(7,093,982)
Benefit changes	-	(54,618,440)
Benefit payments, including refunds of employee contributions	(24,963,262)	(19,462,302)
Net change	(5,984,365)	(62,905,163)
Share of total pension liability, beginning of year	202,696,454	265,601,617
Share of total pension liability, end of year	196,712,089	202,696,454
Share of plan fiduciary net position		
Employer contributions	10,810,800	10,808,000
Employee contributions	-	46,941
Net investment income (loss)	(470,295)	6,194,355
Benefit payments, including refunds of employee contributions	(24,963,262)	(19,462,302)
Administrative expense	-	(7,633)
Other changes	90,427	9,950,436
Net change	(14,532,330)	7,529,797
Share of plan fiduciary net position, beginning of year	141,675,375	134,145,578
Share of plan fiduciary net position, end of year	127,143,045	141,675,375
Share of net pension liability	\$ 69,569,044	\$ 61,021,079
Nonemployer contributing entity share of collective net pension liability - Water Fund	7.0%	7.4%
Plan fiduciary net position as a percentage of total pension liability	64.6%	69.9%

*As described in Notes 1 and 10 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. 2016 reflects only the portion allocated to GLWA.

**The 2015 information is presented based on City of Detroit Water and Sewerage Department (DWSD) prior to the establishment of GLWA. The amounts shown represent GLWA's allocation, fiduciary net position and net pension liability. The actual employer contributions made by DWSD were \$18,440,222.

Note: This schedule is being built prospectively; ultimately, 10 years of data will be presented.

GREAT LAKES WATER AUTHORITY

Required Supplementary Information

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System - Component II
Schedule of Changes in Net Pension Liability and Related Ratios - Sewage Disposal Fund

	Fiscal Year Based on Measurement Date	
	2016*	2015**
Share of total pension liability		
Interest	\$ 25,906,278	\$ 32,970,738
Differences between expected and actual experience	(3,248,690)	(274,022)
Changes in assumptions	11,308,613	(12,695,976)
Benefit changes	-	(97,749,668)
Benefit payments, including refunds of employee contributions	(44,676,314)	(34,831,342)
Net change	(10,710,113)	(112,580,270)
Share of total pension liability, beginning of year	362,762,305	475,342,575
Share of total pension liability, end of year	352,052,192	362,762,305
Share of plan fiduciary net position		
Employer contributions	19,347,900	19,342,889
Employee contributions	-	84,010
Net investment income (loss)	(841,679)	11,085,930
Benefit payments, including refunds of employee contributions	(44,676,314)	(34,831,342)
Administrative expense	-	(13,661)
Other changes	161,836	17,808,122
Net change	(26,008,257)	13,475,948
Share of plan fiduciary net position, beginning of year	253,553,946	240,077,998
Share of plan fiduciary net position, end of year	227,545,689	253,553,946
Share of net pension liability	\$ 124,506,503	\$ 109,208,359
Nonemployer contributing entity share of collective net pension liability - Sewage Disposal Fund	12.5%	13.2%
Plan fiduciary net position as a percentage of total pension liability	64.6%	69.9%

*As described in Notes 1 and 10 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. 2016 reflects only the portion allocated to GLWA.

**The 2015 information is presented based on City of Detroit Water and Sewerage Department (DWSD) prior to the establishment of GLWA. The amounts shown represent GLWA's allocation, fiduciary net position and net pension liability. The actual employer contributions made by DWSD were \$24,448,667.

Note: This schedule is being built prospectively; ultimately, 10 years of data will be presented.

GREAT LAKES WATER AUTHORITY

Required Supplementary Information

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System - Component II
Schedule of Contributions

	Fiscal Year Based on Measurement Date
	2016*
Water Fund	
Contractually required contribution**	\$ 10,810,800
Actual contribution	10,810,800
Contribution deficiency (excess)	<u>\$ -</u>
Sewage disposal fund	
Contractually required contribution**	\$ 19,347,900
Actual contribution	19,347,900
Contribution deficiency (excess)	<u>\$ -</u>

*As described in Notes 1 and 10 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. 2016 reflects only the portion allocated to GLWA.

**Contributions are determined by the provisions of the Plan of Adjustment and are not actuarially determined.

Note: This schedule is being built prospectively; ultimately, 10 years of data will be presented.

**COMBINING AND INDIVIDUAL FUND
SCHEDULES**

Combining Schedule of Net Position

 Water Fund
 June 30, 2017

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Assets				
Current assets:				
Cash and cash equivalents	\$ 90,581,675	\$ 175,901,463	\$ -	\$ 266,483,138
Restricted cash and cash equivalents	47,021,048	-	13,732,220	60,753,268
Restricted cash for the benefit of DWSD	288,378	-	-	288,378
Investments	852,420	-	-	852,420
Restricted investments	1,169,187	-	-	1,169,187
Receivables:				
Billed	36,459,563	-	-	36,459,563
Unbilled	29,539,433	-	-	29,539,433
Other	1,300	-	-	1,300
Allowance for doubtful accounts	(4,941,777)	-	-	(4,941,777)
Due from other governments	21,327,713	-	-	21,327,713
Contractual obligation receivable	12,076,942	-	-	12,076,942
Due from other funds	-	-	-	-
Prepaid items and other assets	2,437,047	-	-	2,437,047
Total current assets	236,812,929	175,901,463	13,732,220	426,446,612
Noncurrent assets:				
Restricted cash and cash equivalents	4,964,501	-	172,974,993	177,939,494
Restricted investments	20,530,374	-	-	20,530,374
Contractual obligation receivable	483,604,380	-	-	483,604,380
Prepaid lease	11,250,000	-	-	11,250,000
Assets not subject to depreciation	452,185,674	-	-	452,185,674
Capital assets being depreciated, net	1,587,291,603	-	-	1,587,291,603
Prepaid insurance on debt	14,112,324	-	-	14,112,324
Total noncurrent assets	2,573,938,856	-	172,974,993	2,746,913,849
Total assets	2,810,751,785	175,901,463	186,707,213	3,173,360,461
Deferred outflows of resources				
Deferred loss on refunding	99,294,499	-	-	99,294,499
Deferred pension amounts	21,491,506	-	-	21,491,506
Total deferred outflows of resources	120,786,005	-	-	120,786,005

continued...

Combining Schedule of Net Position

Water Fund
June 30, 2017

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Liabilities				
Current liabilities:				
Accounts and contracts payable	\$ 22,838,286	\$ 181,337	\$ 13,732,219	\$ 36,751,842
Accrued salaries, wages and benefits	3,190,038	-	-	3,190,038
Other accrued liabilities	1,353,816	-	-	1,353,816
Due to other governments	25,393,813	-	-	25,393,813
Interest payable	39,329,322	-	-	39,329,322
Current portion of:				
Long-term debt	23,393,905	-	-	23,393,905
Lease payable	4,618,174	-	-	4,618,174
Obligation payable	159,803	-	-	159,803
Accrued compensated absences	2,157,888	-	-	2,157,888
Accrued workers' compensation	25,000	-	-	25,000
Total current liabilities	<u>122,460,045</u>	<u>181,337</u>	<u>13,732,219</u>	<u>136,373,601</u>
Noncurrent liabilities:				
Other noncurrent liabilities	2,582,076	-	-	2,582,076
Long-term debt	2,606,465,431	-	-	2,606,465,431
Long-term lease payable	426,303,346	-	-	426,303,346
Obligation payable	17,265,503	-	-	17,265,503
Accrued compensated absences	2,288,125	-	-	2,288,125
Accrued workers' compensation	225,000	-	-	225,000
Claims and judgments	75,000	-	-	75,000
Net pension liability	69,569,044	-	-	69,569,044
Total noncurrent liabilities	<u>3,124,773,525</u>	<u>-</u>	<u>-</u>	<u>3,124,773,525</u>
Total liabilities	<u>3,247,233,570</u>	<u>181,337</u>	<u>13,732,219</u>	<u>3,261,147,126</u>
Deferred inflows of resources				
Deferred amounts for swap terminations	85,068	-	-	85,068
Deferred gain on refunding	62,822,646	-	-	62,822,646
Deferred pension amounts	6,565,776	-	-	6,565,776
Total deferred inflows of resources	<u>69,473,490</u>	<u>-</u>	<u>-</u>	<u>69,473,490</u>
Net position				
Net investment in capital assets	134,919,107	-	-	134,919,107
Restricted for debt service	26,194,280	-	-	26,194,280
Restricted for capital acquisition	-	-	172,974,994	172,974,994
Restricted for payment assistance program	2,218,373	-	-	2,218,373
Unrestricted (deficit)	(548,501,030)	175,720,126	-	(372,780,904)
Total net position	<u>\$ (385,169,270)</u>	<u>\$ 175,720,126</u>	<u>\$ 172,974,994</u>	<u>\$ (36,474,150)</u>

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Combining Schedule of Revenues, Expenses and Changes in Fund Net Position

Water Fund

For the Year Ended June 30, 2017

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Operating revenues				
Wholesale customer charges	\$ 331,115,131	\$ -	\$ -	\$ 331,115,131
Local system charges	15,490,300	-	-	15,490,300
Bad debt recovery	5,107,125	-	-	5,107,125
Other revenues	37,388	-	-	37,388
Total operating revenues	351,749,944	-	-	351,749,944
Operating expenses				
Operating before depreciation:				
Personnel	38,261,393	-	-	38,261,393
Contractual services	34,257,419	-	-	34,257,419
Utilities - Gas	952,285	-	-	952,285
Utilities - Electric	26,942,016	-	-	26,942,016
Utilities - Sewage	574,267	-	-	574,267
Utilities - Water	1,035	-	-	1,035
Chemicals	5,340,753	-	-	5,340,753
Supplies and other expenses	7,834,678	147,884	-	7,982,562
Capital program allocation	(977,762)	-	-	(977,762)
Shared services allocation	(11,603,019)	-	-	(11,603,019)
Total operating before depreciation	101,583,065	147,884	-	101,730,949
Depreciation	144,137,912	-	-	144,137,912
Total operating expenses	245,720,977	147,884	-	245,868,861
Operating income (loss)	106,028,967	(147,884)	-	105,881,083
Nonoperating revenues (expenses)				
Earnings on investments	1,342,272	6,626	484,020	1,832,918
Interest on obligations receivable	25,269,750	-	-	25,269,750
Interest expense, net of capitalized interest	(132,434,945)	-	-	(132,434,945)
Amortization of debt related items and costs of issuance	2,733,535	-	(330,517)	2,403,018
Other	(2,283,399)	-	-	(2,283,399)
Capital outlay	40,342,148	(858,305)	(39,483,843)	-
Loss on disposal of capital assets	(207,900)	-	-	(207,900)
Loss on impairment of capital assets	(31,499)	-	-	(31,499)
Total nonoperating revenues (expenses)	(65,270,038)	(851,679)	(39,330,340)	(105,452,057)
Income (loss) before special item and transfers	40,758,929	(999,563)	(39,330,340)	429,026
Special item - memorandum of understanding with DWSD	(32,811,581)	-	-	(32,811,581)
Transfer in	-	110,100,000	234,786,360	344,886,360
Transfer out	(344,671,815)	(214,545)	-	(344,886,360)
Change in net position	(336,724,467)	108,885,892	195,456,020	(32,382,555)
Net position (deficit), beginning of year	(48,444,803)	66,834,234	(22,481,026)	(4,091,595)
Net position (deficit), end of year	\$ (385,169,270)	\$ 175,720,126	\$ 172,974,994	\$ (36,474,150)

Note: Transfers in (out) are used for recording financial activity related to bond proceeds and MBO requirements.

Combining Schedule of Net Position

Sewage Disposal Fund
June 30, 2017

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Assets				
Current assets:				
Cash and cash equivalents	\$ 160,397,101	\$ 43,351,603	\$ -	\$ 203,748,704
Restricted cash and cash equivalents	57,194,643	-	15,019,170	72,213,813
Investments	1,430,608	-	-	1,430,608
Restricted investments	31,371,834	-	-	31,371,834
Receivables:				
Billed	52,234,778	-	-	52,234,778
Unbilled	24,279,170	-	-	24,279,170
Other	3,157,050	-	-	3,157,050
Allowance for doubtful accounts	(30,410,232)	-	-	(30,410,232)
Due from other governments	29,461,328	-	-	29,461,328
Contractual obligation receivable	11,262,300	-	-	11,262,300
Prepaid items and other assets	1,063,284	-	26,237	1,089,521
Inventories	8,509,454	-	-	8,509,454
Total current assets	349,951,318	43,351,603	15,045,407	408,348,328
Noncurrent assets:				
Restricted cash and cash equivalents	9,449,348	-	118,929,489	128,378,837
Restricted investments	64,195,898	-	16,981,850	81,177,748
Contractual obligation receivable	346,828,300	-	-	346,828,300
Prepaid lease	13,750,000	-	-	13,750,000
Assets not subject to depreciation	278,286,118	-	-	278,286,118
Capital assets being depreciated, net	2,591,023,442	-	-	2,591,023,442
Prepaid insurance on debt	18,581,897	-	-	18,581,897
Total noncurrent assets	3,322,115,003	-	135,911,339	3,458,026,342
Total assets	3,672,066,321	43,351,603	150,956,746	3,866,374,670
Deferred outflows of resources				
Deferred loss on refunding	198,351,942	-	-	198,351,942
Deferred pension amounts	38,462,972	-	-	38,462,972
Total deferred outflows of resources	236,814,914	-	-	236,814,914

continued...

Combining Schedule of Net Position

 Sewage Disposal Fund
 June 30, 2017

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Liabilities				
Current liabilities:				
Accounts and contracts payable	\$ 12,013,399	\$ 513,989	\$ 15,019,170	\$ 27,546,558
Other accrued liabilities	898,800	-	-	898,800
Due to other governments	35,801,034	-	47,539	35,848,573
Interest payable	41,011,198	-	-	41,011,198
Current portion of:				
Long-term debt	65,920,307	-	-	65,920,307
Lease payable	5,644,435	-	-	5,644,435
Obligation payable	359,448	-	-	359,448
Accrued compensated absences	679,260	-	-	679,260
Claims and judgments	3,852,062	-	-	3,852,062
Total current liabilities	<u>166,179,943</u>	<u>513,989</u>	<u>15,066,709</u>	<u>181,760,641</u>
Noncurrent liabilities:				
Other noncurrent liabilities	5,983,201	-	-	5,983,201
Long-term debt	3,236,016,730	-	-	3,236,016,730
Long-term lease payable	521,037,424	-	-	521,037,424
Obligation payable	38,835,597	-	-	38,835,597
Claims and judgments	187,500	-	-	187,500
Net pension liability	124,506,503	-	-	124,506,503
Total noncurrent liabilities	<u>3,926,566,955</u>	<u>-</u>	<u>-</u>	<u>3,926,566,955</u>
Total liabilities	<u>4,092,746,898</u>	<u>513,989</u>	<u>15,066,709</u>	<u>4,108,327,596</u>
Deferred inflows of resources				
Deferred amounts for swap terminations	214,393	-	-	214,393
Deferred gain on refunding	49,257,784	-	-	49,257,784
Deferred pension amounts	11,750,654	-	-	11,750,654
Total deferred inflows of resources	<u>61,222,831</u>	<u>-</u>	<u>-</u>	<u>61,222,831</u>
Net position				
Net investment in capital assets	393,956,399	-	-	393,956,399
Restricted for debt service	107,931,677	-	-	107,931,677
Restricted for capital acquisition	15,040,471	-	135,890,037	150,930,508
Restricted for payment assistance program	3,117,744	-	-	3,117,744
Unrestricted (deficit)	(765,134,785)	42,837,614	-	(722,297,171)
Total net position	<u>\$ (245,088,494)</u>	<u>\$ 42,837,614</u>	<u>\$ 135,890,037</u>	<u>\$ (66,360,843)</u>

concluded.

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Combining Schedule of Revenues, Expenses and Changes in Fund Net Position
 Sewage Disposal Fund
 For the Year Ended June 30, 2017

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Operating revenues				
Wholesale customer charges	\$ 263,311,745	\$ -	\$ -	\$ 263,311,745
Industrial waste charges	14,381,106	-	-	14,381,106
Pollutant surcharges	5,206,294	-	-	5,206,294
Local system charges	187,304,100	-	-	187,304,100
Bad debt recovery	35,065,030	-	-	35,065,030
Other revenues	538,807	-	-	538,807
Total operating revenues	505,807,082	-	-	505,807,082
Operating expenses				
Operating before depreciation:				
Personnel	47,894,911	-	-	47,894,911
Contractual services	55,878,440	-	-	55,878,440
Utilities - Gas	5,497,215	-	-	5,497,215
Utilities - Electric	14,570,263	-	-	14,570,263
Utilities - Sewage	1,656,052	-	-	1,656,052
Utilities - Water	5,468,336	-	-	5,468,336
Chemicals	9,424,428	-	-	9,424,428
Supplies and other expenses	12,180,128	-	-	12,180,128
Capital program allocation	(1,150,316)	-	-	(1,150,316)
Shared services allocation	(101,191)	-	-	(101,191)
Total operating before depreciation	151,318,266	-	-	151,318,266
Depreciation	185,628,465	-	-	185,628,465
Total operating expenses	336,946,731	-	-	336,946,731
Operating income	168,860,351	-	-	168,860,351
Nonoperating revenues (expenses)				
Earnings on investments	1,356,821	27,404	825,647	2,209,872
Interest on obligations receivable	17,062,678	-	-	17,062,678
Interest expense, net of capitalized interest	(159,157,152)	-	-	(159,157,152)
Amortization of debt related items	(17,340,200)	-	-	(17,340,200)
Other	(6,203,206)	-	-	(6,203,206)
Capital outlay	58,892,845	(19,110,580)	(39,782,265)	-
Loss on disposal of capital assets	(42,926)	-	-	(42,926)
Total nonoperating revenues (expenses)	(105,431,140)	(19,083,176)	(38,956,618)	(163,470,934)
Income (loss) before contributions, special item and transfers	63,429,211	(19,083,176)	(38,956,618)	5,389,417
Capital contributions	320,707	-	-	320,707
Special item - memorandum of understanding with DWSD	(61,478,682)	-	-	(61,478,682)
Transfer in	-	(49,600,000)	27,820,997	(21,779,003)
Transfer out	21,997,506	(218,503)	-	21,779,003
Change in net position	24,268,742	(68,901,679)	(11,135,621)	(55,768,558)
Net position (deficit), beginning of year	(269,357,236)	111,739,293	147,025,658	(10,592,285)
Net position (deficit), end of year	\$ (245,088,494)	\$ 42,837,614	\$ 135,890,037	\$ (66,360,843)

Note: Transfers in (out) are used for recording financial activity related to MBO requirements.

GREAT LAKES WATER AUTHORITY

Schedule of Operations and Maintenance Expense for Water Operations

Cost Type Category - Budget and Actual

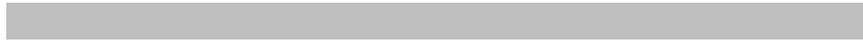
For the Year Ended June 30, 2017

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification
Operating expenses			
Personnel	\$ 58,395,600	\$ 58,395,600	\$ (17,975,100)
Contractual services	79,616,800	104,148,500	(35,828,400)
Utilities	34,903,600	34,903,600	(143,300)
Chemicals	6,192,400	6,192,400	-
Supplies and other expenses	16,490,700	16,490,700	-
Shared services reimbursement	(10,306,900)	(10,306,900)	-
Capital program allocation	(23,315,600)	(23,315,600)	-
Unallocated reserve	3,849,400	(20,682,300)	-
Centralized services allocation	(34,980,600)	(34,980,600)	34,980,600
Administrative services allocation	(18,966,200)	(18,966,200)	18,966,200
Total operating expenses	<u>\$ 111,879,200</u>	<u>\$ 111,879,200</u>	<u>\$ -</u>

continued...

Note: Centralized and administrative services allocations have been applied to the expense categories above for presentation of the amended budget and actual amounts.

UNAUDITED



Final Amended Budget	Actual	Amount Over (Under) Budget	Percent Over (Under) Budget
\$ 40,420,500	\$ 38,261,393	\$ (2,159,107)	-5.3%
68,320,100	34,257,419	(34,062,681)	-49.9%
34,760,300	28,469,603	(6,290,697)	-18.1%
6,192,400	5,340,753	(851,647)	-13.8%
16,490,700	7,982,562	(8,508,138)	-51.6%
(10,306,900)	(11,603,019)	(1,296,119)	12.6%
(23,315,600)	(977,762)	22,337,838	-95.8%
(20,682,300)	-	20,682,300	-100.0%
-	-	-	0.0%
-	-	-	0.0%
<u>\$ 111,879,200</u>	<u>\$ 101,730,949</u>	<u>\$ (10,148,251)</u>	-9.1%

concluded.

GREAT LAKES WATER AUTHORITY

Schedule of Operations and Maintenance Expense for Sewer Operations

Cost Type Category - Budget and Actual

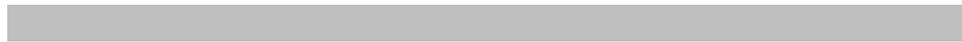
For the Year Ended June 30, 2017

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification
Operating expenses			
Personnel	\$ 33,777,300	\$ 33,777,300	\$ 17,975,100
Contractual services	28,778,700	28,778,700	35,828,400
Utilities	31,660,100	31,660,100	143,300
Chemicals	14,345,700	14,345,700	-
Supplies and other expenses	9,694,800	9,694,800	-
Shared services reimbursement	-	-	-
Capital program allocation	(3,061,400)	(3,061,400)	-
Unallocated reserve	6,716,900	6,716,900	-
Centralized services allocation	34,980,600	34,980,600	(34,980,600)
Administrative services allocation	18,966,200	18,966,200	(18,966,200)
Total operating expenses	\$ 175,858,900	\$ 175,858,900	\$ -

continued...

Note: Centralized and administrative services allocations have been applied to the expense categories above for presentation of the amended budget and actual amounts.

UNAUDITED



Final Amended Budget	Actual	Amount Over (Under) Budget	Percent Over (Under) Budget
\$ 51,752,400	\$ 47,894,911	\$ (3,857,489)	-7.5%
64,607,100	55,878,440	(8,728,660)	-13.5%
31,803,400	27,191,866	(4,611,534)	-14.5%
14,345,700	9,424,428	(4,921,272)	-34.3%
9,694,800	12,180,128	2,485,328	25.6%
-	(101,191)	(101,191)	0.0%
(3,061,400)	(1,150,316)	1,911,084	-62.4%
6,716,900	-	(6,716,900)	-100.0%
-	-	-	0.0%
-	-	-	0.0%
<u>\$ 175,858,900</u>	<u>\$ 151,318,266</u>	<u>\$ (24,540,634)</u>	-14.0%

concluded.

Schedule of Revenue Requirement

Budget to Actual

For the Year Ended June 30, 2017

	Original Budget	Amended Budget	Actual	Over (Under) Budget
Water fund				
Revenue:				
Revenue Requirement from Charges	\$ 329,135,600	\$ 329,135,600	\$ 346,605,431	\$ 17,469,831
Bad Debt Expense Recovery	-	-	5,107,125	5,107,125
Other Revenue	2,077,600	2,077,600	37,388	(2,040,212)
	<u>\$ 331,213,200</u>	<u>\$ 331,213,200</u>	<u>\$ 351,749,944</u>	<u>\$ 20,536,744</u>
Revenue requirements*				
Operations & maintenance expense	\$ 111,879,200	\$ 111,879,200	\$ 111,879,600	\$ 400
Operations & maintenance				
legacy pension allocation	6,037,100	6,037,100	6,048,100	11,000
Debt service allocation	159,277,500	159,277,500	141,481,548	(17,795,952)
Accelerated legacy pension allocation	6,035,200	6,035,200	6,260,724	225,524
Water residential assistance program	1,645,700	1,645,700	1,646,100	400
Lease payment to local system				
improvement & extension fund	22,500,000	22,500,000	22,500,000	-
Regional system improvement & extension fund**	23,838,500	23,838,500	23,838,500	-
Total revenue requirements	<u>\$ 331,213,200</u>	<u>\$ 331,213,200</u>	<u>\$ 313,654,572</u>	<u>\$ (17,558,628)</u>
Sewage disposal fund				
Revenue:				
Revenue Requirement from Charges	\$ 467,594,400	\$ 467,594,400	\$ 470,203,245	\$ 2,608,845
Bad Debt Expense Recovery	-	-	35,065,030	35,065,030
Other Revenue	4,115,800	4,115,800	538,807	(3,576,993)
	<u>\$ 471,710,200</u>	<u>\$ 471,710,200</u>	<u>\$ 505,807,082</u>	<u>\$ 34,096,882</u>
Revenue requirements*				
Operations & maintenance expense	\$ 175,858,900	\$ 175,858,900	\$ 175,858,800	\$ (100)
Operations & maintenance				
legacy pension allocation	10,838,400	10,838,400	10,824,000	(14,400)
Debt service allocation	222,418,500	222,418,500	211,556,875	(10,861,625)
Accelerated legacy pension allocation	11,096,500	11,096,500	11,604,538	508,038
Water residential assistance program	2,299,800	2,299,800	2,299,600	(200)
Lease payment to local system				
improvement & extension fund	27,500,000	27,500,000	27,500,000	-
Regional system improvement & extension fund**	21,698,100	21,698,100	21,698,100	-
Total revenue requirements	<u>\$ 471,710,200</u>	<u>\$ 471,710,200</u>	<u>\$ 461,341,913</u>	<u>\$ (10,368,287)</u>

*Item is not considered an expense for accounting purposes but is for revenue requirement basis in establishing customer charges. Actual amounts are based on cash transfers made to the MBO defined bank accounts that must be funded by revenue.

**Amount determined to be available after all of MBO requirements are met.

Schedule of Days Cash - Liquidity
June 30, 2017

	2017	2016*
Water fund		
Cash and investments - Unrestricted	\$ 267,335,558	\$ 167,292,572
<i>Operating expense</i>		
Operating expense	\$ 245,868,861	\$ 120,841,204
Less: depreciation	(144,137,912)	(71,295,545)
<i>Net operating expense</i>	\$ 101,730,949	\$ 49,545,659
<i>Operating expense per day (365 days)</i>	\$ 278,715	\$ 273,733
<i>Days cash</i>		
Number of days cash	959	611
Sewage disposal fund		
Cash and investments - Unrestricted	\$ 205,179,312	\$ 188,063,375
<i>Operating expense</i>		
Operating expense	\$ 336,946,731	\$ 170,401,050
Less: depreciation	(185,628,465)	(86,021,029)
<i>Net operating expense</i>	\$ 151,318,266	\$ 84,380,021
<i>Operating expense per day (365 days)</i>	\$ 414,571	\$ 466,188
<i>Days cash</i>		
Number of days cash	495	403
Combined		
Cash and investments - Unrestricted	\$ 472,514,870	\$ 355,355,947
<i>Operating expense</i>		
Operating expense	\$ 582,815,592	\$ 291,242,254
Less: depreciation	(329,766,377)	(157,316,574)
<i>Net operating expense</i>	\$ 253,049,215	\$ 133,925,680
<i>Operating expense per day (365 days)</i>	\$ 693,286	\$ 739,921
<i>Days cash</i>		
Number of days cash	682	480

*GLWA assumed operations on January 1, 2016. Data for 2016 includes six months of operation under GLWA. Operating expense per day is based on a half year (that is, 181 days).

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STATISTICAL SECTION

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GREAT LAKES WATER AUTHORITY

Statistical Section Table of Contents

The objective of the statistical section is to provide financial statement users with additional historical perspective, context and detail to assist in using the information in the financial statements, notes to financial statements and required supplementary information to understand and assess the Authority's economic condition.

The statistical section information is presented in the following categories:

		<u>Page</u>
Financial Trends Schedules 1 and 2	Financial trends information is intended to show how the Authority's financial position has changed over time.	92
Revenue Capacity Schedule 3	Revenue capacity information is intended to show the factors affecting the Authority's ability to generate its own-source revenue.	94
Debt Capacity Information Schedules 4 through 7	Debt capacity information is intended to show the Authority's debt burden and its ability to issue additional debt.	95
Demographic and Economic Schedules 8 through 12	Demographic and economic information is intended to show the socioeconomic environment within which the Authority operates.	105
Operating Information Schedule 13 through 15	Operating information is intended to show contextual information about operations and resources to provide understanding and assessing the Authority's economic condition.	113

Net Position by Component
(accrual basis of accounting)

	2017	2016*
Business-type activities		
Net investment in capital assets	\$ 528,875,506	\$ 851,734,519
Restricted for debt service	134,125,957	178,540,029
Restricted for capital acquisition	323,905,502	164,326,618
Restricted for payment assistance program	5,336,117	977,278
Unrestricted (deficit)	<u>(1,095,078,075)</u>	<u>(1,210,262,324)</u>
Total business-type activities net position	<u><u>\$ (102,834,993)</u></u>	<u><u>\$ (14,683,880)</u></u>

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

Changes in Net Position

(accrual basis of accounting)

	2017	2016*
Operating revenues		
Wholesale customer charges	\$ 594,426,876	\$ 281,883,522
Industrial waste charges	14,381,106	6,910,192
Pollutant surcharges	5,206,294	2,423,910
Local system charges	202,794,400	102,660,400
Bad debt recovery	40,172,155	-
Other revenues	576,195	4,252,477
Total operating revenues	857,557,026	398,130,501
Operating expenses		
Personnel	86,156,304	21,590,763
Contractual services	90,135,859	17,179,869
Utilities	55,661,469	25,037,499
Chemicals	14,765,181	6,451,484
Supplies and other expenses	20,162,690	17,903,355
Capital program allocation	(2,128,078)	-
Shared services allocation	(11,704,210)	-
Centralized services	-	35,228,282
Administrative services	-	10,534,428
Depreciation	329,766,377	157,316,574
Total operating expenses	582,815,592	291,242,254
Operating income	274,741,434	106,888,247
Nonoperating revenues (expenses)		
Earnings on investments	4,042,790	1,481,398
Interest on obligations receivable	42,332,428	21,062,500
Interest expense, net of capitalized interest	(291,592,097)	(148,447,442)
Amortization of debt related items and costs of issuance	(14,937,182)	2,055,724
Other	(8,486,605)	-
Gain (loss) on disposal of capital assets	(250,826)	275,693
Loss on impairment of capital assets	(31,499)	-
Total nonoperating expenses	(268,922,991)	(123,572,127)
Income (loss) before contributions and special item	5,818,443	(16,683,880)
Capital contributions	320,707	2,000,000
Special item - memorandum of understanding with DWSD	(94,290,263)	-
Change in net position	(88,151,113)	(14,683,880)
Net position (deficit), beginning of year	(14,683,880)	-
Net position (deficit), end of year	<u>\$ (102,834,993)</u>	<u>\$ (14,683,880)</u>

*GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

Source: Great Lakes Water Authority Financial Services Area

Operating Revenues and Charge Increases
Last Two Years*

	2017	2016
Water fund		
Operating revenues:		
Wholesale customer charges	\$ 331,115,131	\$ 160,777,169
Local system charges	15,490,300	6,833,500
Bad debt recovery	5,107,125	-
Other revenues	37,388	54,863
	<hr/>	<hr/>
Total operating revenues	<u>\$ 351,749,944</u>	<u>\$ 167,665,532</u>
System charge increase	4.0%	4.0%
Number of wholesale customers [1]	88	85
Sewage disposal fund		
Operating Revenues:		
Wholesale customer charges	\$ 263,311,745	\$ 121,106,353
Local system charges	187,304,100	95,826,900
Industrial waste and surcharges	19,587,400	9,334,102
Bad debt recovery	35,065,030	-
Other revenues	538,807	4,197,614
	<hr/>	<hr/>
Total operating revenues	<u>\$ 505,807,082</u>	<u>\$ 230,464,969</u>
System charge increase	4.0%	4.0%
Number of wholesale customers [1]	18	21

* GLWA began operations on January 1, 2016. The data for FY 2016 relates to six months of activity through June 30, 2016. This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

[1] Does not include the City of Detroit.

Source: Charge Increases Water Official Statement Series 2016 and Sewer Official Statement 2016 Series

Source: Great Lakes Water Authority Financial Services Area

Debt by Lien

as of June 30, 2017

	Original Principal Amount [1]	Outstanding as of June 30, 2017	Total Future Debt [2]
Water Supply System Revenue Bonds			
Senior Lien Bonds			
Water Supply System Revenue Senior Lien Bonds, Series 2003A	\$ 234,805,000	\$ 100,000	\$ 100,000
Water Supply System Revenue Senior Lien Bonds, Series 2005B	194,900,000	3,285,000	3,285,000
Water Supply System Revenue Senior Lien Bonds, Series 2006A	280,000,000	100,000	100,000
Water Supply System Revenue Senior Lien Bonds, Series 2011A	379,590,000	297,815,000	297,815,000
Water Supply System Revenue Senior Lien Bonds, Series 2011B	17,195,000	4,925,000	4,925,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2011C	103,890,000	75,145,000	75,145,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014A	206,540,000	192,150,000	192,150,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014B	188,455,000	188,455,000	188,455,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014C	62,700,000	62,700,000	62,700,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D	307,645,000	209,360,000	209,360,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014E	9,270,000	9,270,000	9,270,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2015A	89,430,000	88,925,000	88,925,000
Water Supply System Revenue Senior Lien Bonds, Series 2016A	88,000,000	88,000,000	88,000,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2016C	443,930,000	443,930,000	443,930,000
	<u>2,606,350,000</u>	<u>1,664,160,000</u>	<u>1,664,160,000</u>
Second Lien Bonds			
Water Supply System Revenue Refunding Second Lien Bonds, Series 2001C	190,405,000	179,440,000	179,440,000
Water Supply System Revenue Second Lien Bonds, Series 2003B	172,945,000	100,000	100,000
Water Supply System Revenue Second Lien Bonds, Series 2006B	120,000,000	350,000	350,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2014F	65,425,000	65,425,000	65,425,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2014G	14,815,000	8,300,000	8,300,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2015B	37,235,000	37,235,000	37,235,000
Water Supply System Revenue Second Lien Bonds, Series 2016B	163,830,000	163,830,000	163,830,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2016D	222,045,000	222,045,000	222,045,000
	<u>986,700,000</u>	<u>676,725,000</u>	<u>676,725,000</u>
SRF Junior Lien Bonds			
Water Supply System Revenue Bonds, Series 2005-SRF-1	13,805,164	7,385,164	7,385,164
Water Supply System Revenue Bonds, Series 2005-SRF-2	8,891,730	4,641,730	4,641,730
Water Supply System Revenue Bonds, Series 2006-SRF	5,180,926	2,750,926	2,750,926
Water Supply System Revenue Bonds, Series 2008-SRF	2,590,941	1,205,941	1,205,941
Water Supply System Revenue Bonds, Series 2016A-SRF	9,605,000	-	9,605,000
Water Supply System Revenue Bonds, Series 2016B-SRF	4,180,000	1,268,474	4,180,000
Water Supply System Revenue Bonds, Series 2017-SRF	6,675,000	-	6,675,000
	<u>50,928,761</u>	<u>17,252,235</u>	<u>36,443,761</u>
Total water supply system revenue bonds	<u>\$ 3,643,978,761</u>	<u>\$ 2,358,137,235</u>	<u>\$ 2,377,328,761</u>

continued...

Debt by Lien

as of June 30, 2017

	Original Principal Amount [1]	Outstanding as of June 30, 2017	Total Future Debt [2]
Sewage Disposal System Revenue Bonds			
Senior Lien Bonds (revenue and SRF)			
Sewage Disposal System Revenue Bonds (Senior), Series 1997-B-SRF	\$ 5,430,174	\$ 650,000	\$ 650,000
Sewage Disposal System Revenue Refunding Bonds, Series 1998A	67,615,000	20,750,000	20,750,000
Sewage Disposal System Revenue Refunding Bonds, Series 1998B	67,520,000	21,650,000	21,650,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF1	21,475,000	3,930,000	3,930,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF2	46,000,000	16,280,000	16,280,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF3	31,030,000	7,505,000	7,505,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF4	40,655,000	9,830,000	9,830,000
Sewage Disposal System Revenue Bonds, Series 1999A	33,510,118	22,815,000	22,815,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C1	154,870,000	41,800,000	41,800,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C2	122,905,000	107,750,000	107,750,000
Sewage Disposal System Senior Lien Revenue & Revenue Refunding Bonds, Series 2003A	599,380,000	3,150,000	3,150,000
Sewage Disposal System Senior Lien Revenue Bonds, Series 2003B	150,000,000	100,000	100,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2004A	101,435,000	35,010,000	35,010,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2006D	370,000,000	239,475,000	239,475,000
Sewage Disposal System Revenue & Revenue Refunding Senior Lien Bonds, Series 2012A	659,780,000	527,355,000	527,355,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014A	123,220,000	123,220,000	123,220,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014B	27,470,000	27,470,000	27,470,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C	446,170,000	446,170,000	446,170,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014D	95,165,000	69,595,000	69,595,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014E	143,880,000	88,900,000	88,900,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2016B	126,105,000	126,105,000	126,105,000
	<u>3,433,615,292</u>	<u>1,939,510,000</u>	<u>1,939,510,000</u>
Second Lien Bonds			
Sewage Disposal System Second Lien Revenue Bonds, Series 2001B	110,550,000	78,895,000	78,895,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2005A	273,355,000	31,885,000	31,885,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005B	40,215,000	17,115,000	17,115,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005C	63,160,000	100,000	100,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2006B	250,000,000	55,100,000	55,100,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2014F	76,715,000	76,715,000	76,715,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2014G	23,240,000	5,850,000	5,850,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2015C	197,660,000	197,160,000	197,160,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2016C	295,190,000	295,190,000	295,190,000
	<u>1,330,085,000</u>	<u>758,010,000</u>	<u>758,010,000</u>

continued...

Debt by Lien

as of June 30, 2017

	Original Principal Amount [1]	Outstanding as of June 30, 2017	Total Future Debt [2]
Sewage Disposal System Revenue Bonds (concluded)			
Junior Lien Bonds (SRF)			
Sewage Disposal System Revenue Bonds, Series 2000-SRF1	\$ 44,197,995	\$ 13,947,995	\$ 13,947,995
Sewage Disposal System Revenue Bonds, Series 2000-SRF2	64,401,066	22,691,066	22,691,066
Sewage Disposal System Revenue Bonds, Series 2001-SRF1	82,200,000	37,865,000	37,865,000
Sewage Disposal System Revenue Bonds, Series 2001-SRF2	59,850,000	27,575,000	27,575,000
Sewage Disposal System Revenue Bonds, Series 2002-SRF1	18,985,000	6,710,000	6,710,000
Sewage Disposal System Revenue Bonds, Series 2002-SRF3	1,545,369	545,369	545,369
Sewage Disposal System Revenue Bonds, Series 2002-SRF2	31,549,466	13,399,466	13,399,466
Sewage Disposal System Revenue Bonds, Series 2003-SRF1	48,520,000	24,845,000	24,845,000
Sewage Disposal System Revenue Bonds, Series 2003-SRF2	25,055,370	11,460,370	11,460,370
Sewage Disposal System Revenue Bonds, Series 2004-SRF1	2,910,000	1,310,000	1,310,000
Sewage Disposal System Revenue Bonds, Series 2004-SRF2	18,353,459	8,258,459	8,258,459
Sewage Disposal System Revenue Bonds, Series 2004-SRF3	12,722,575	5,707,575	5,707,575
Sewage Disposal System Revenue Bonds, Series 2007-SRF1	167,540,598	114,950,598	114,950,598
Sewage Disposal System Revenue Bonds, Series 2009-SRF1	13,970,062	9,545,062	9,545,062
Sewage Disposal System Revenue Bonds, Series 2010-SRF1	4,214,763	3,115,763	3,115,763
Sewage Disposal System Revenue Bonds, Series 2012-SRF1	14,950,000	13,765,000	13,765,000
Sewage Disposal System Revenue Bonds, Series 2015A-SRF	79,500,000	76,390,000	76,390,000
Sewage Disposal System Revenue Bonds, Series 2015B-SRF	33,030,000	24,814,000	31,740,000
Sewage Disposal System Revenue Bonds, Series 2015D-SRF	19,485,000	14,399,288	18,725,000
Sewage Disposal System Revenue Bonds, Series 2016-SAW	10,000,000	2,602,370	10,000,000
Sewage Disposal System Revenue Bonds, Series 2016-SRF1	19,305,000	8,384,993	19,305,000
Sewage Disposal System Revenue Bonds, Series 2016-SRF2	51,310,000	4,789,662	51,310,000
Sewage Disposal System Revenue Bonds, Series 2017-SRF1	38,450,000	-	38,450,000
	<u>862,045,723</u>	<u>447,072,036</u>	<u>561,611,723</u>
Total sewage disposal system revenue bonds	<u>\$ 5,625,746,015</u>	<u>\$ 3,144,592,036</u>	<u>\$ 3,259,131,723</u>

concluded.

[1] Reflects original amount issued by predecessor entity, DWSD, for bonds issued prior to January 1, 2016.

[2] Includes the full purchase contract amounts not drawn by June 30, 2017 from state revolving funds. Final amounts will be determined after project close-out.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Schedule of Debt Service Requirements as of June 30, 2017

Fiscal Year Ending [1]	Senior Lien Bonds (in \$1,000s)			Second Lien Bonds (in \$1,000s)		
	Principal	Interest	Total Debt Service	Principal	Interest	Total Debt Service
Water fund						
2018 [2]	\$ 5,735	\$ 65,197	\$ 70,932	\$ 340	\$ 31,271	\$ 31,611
2019	43,955	82,629	126,584	8,815	33,819	42,634
2020	37,705	80,683	118,388	15,420	33,168	48,588
2021	44,070	78,738	122,808	17,925	32,238	50,163
2022	48,980	76,412	125,392	20,345	31,179	51,524
2023	52,225	73,881	126,106	16,875	30,141	47,016
2024	58,610	71,105	129,715	18,185	29,154	47,339
2025	61,550	68,084	129,634	19,275	28,105	47,380
2026	64,650	64,902	129,552	20,350	26,995	47,345
2027	67,915	61,574	129,489	21,490	25,822	47,312
2028	71,310	58,092	129,402	22,700	24,583	47,283
2029	74,870	54,436	129,306	23,970	23,363	47,333
2030	78,625	50,597	129,222	25,135	22,193	47,328
2031	82,550	46,566	129,116	26,310	20,949	47,259
2032	86,690	42,333	129,023	27,625	19,601	47,226
2033	91,015	37,888	128,903	29,005	18,328	47,333
2034	84,900	33,443	118,343	40,840	16,926	57,766
2035	93,165	28,923	122,088	38,555	15,143	53,698
2036	104,610	23,918	128,528	1,210	14,149	15,359
2037	13,255	20,932	34,187	118,605	11,153	129,758
2038	52,690	19,206	71,896	5	8,187	8,192
2039	59,775	16,251	76,026	5	8,187	8,192
2040	62,895	13,052	75,947	5	8,187	8,192
2041	66,180	9,685	75,865	5	8,187	8,192
2042	68,340	6,177	74,517	5	8,186	8,191
2043	15,905	3,997	19,902	29,630	7,446	37,076
2044	16,705	3,182	19,887	31,110	5,927	37,037
2045	17,535	2,326	19,861	32,670	4,333	37,003
2046	18,415	1,427	19,842	34,300	2,658	36,958
2047	19,335	483	19,818	36,015	900	36,915
2048	-	-	-	-	-	-
2049	-	-	-	-	-	-
Total	\$ 1,664,160	\$ 1,196,119	\$ 2,860,279	\$ 676,725	\$ 550,478	\$ 1,227,203

Junior Lien Bonds (in \$1,000s)			Total (in \$1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2017	Additional Future Junior Lien Debt Service on Undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
\$ 1,435	\$ 360	\$ 1,795	\$ 104,338	\$ 442	\$ 104,780
1,555	329	1,884	171,102	700	171,802
1,585	295	1,880	168,856	847	169,703
1,625	261	1,886	174,857	848	175,705
1,660	225	1,885	178,801	848	179,649
1,700	189	1,889	175,011	848	175,859
1,735	151	1,886	178,940	848	179,788
1,770	113	1,883	178,897	848	179,745
1,805	75	1,880	178,777	847	179,624
1,833	35	1,868	178,669	846	179,515
235	12	247	176,932	850	177,782
236	6	242	176,881	848	177,729
78	2	80	176,630	893	177,523
-	-	-	176,375	978	177,353
-	-	-	176,249	973	177,222
-	-	-	176,236	977	177,213
-	-	-	176,109	975	177,084
-	-	-	175,786	974	176,760
-	-	-	143,887	976	144,863
-	-	-	163,945	974	164,919
-	-	-	80,088	971	81,059
-	-	-	84,218	977	85,195
-	-	-	84,139	978	85,117
-	-	-	84,057	973	85,030
-	-	-	82,708	974	83,682
-	-	-	56,978	973	57,951
-	-	-	56,924	972	57,896
-	-	-	56,864	976	57,840
-	-	-	56,800	973	57,773
-	-	-	56,733	971	57,704
-	-	-	-	978	978
-	-	-	-	319	319
<u>\$ 17,252</u>	<u>\$ 2,053</u>	<u>\$ 19,305</u>	<u>\$ 4,106,787</u>	<u>\$ 28,375</u>	<u>\$ 4,135,162</u>

GREAT LAKES WATER AUTHORITY

Schedule of Debt Service Requirements as of June 30, 2017

Fiscal Year Ending [1]	Senior Lien Bonds (in \$1,000s)			Second Lien Bonds (in \$1,000s)		
	Principal	Interest	Total Debt Service	Principal	Interest	Total Debt Service
Sewage disposal fund						
2018 [2]	\$ 25,310	\$ 69,294	\$ 94,604	\$ -	\$ 31,147	\$ 31,147
2019	53,715	86,593	140,308	5,850	37,994	43,844
2020	60,620	84,079	144,699	6,075	37,696	43,771
2021	61,935	81,388	143,323	8,335	37,335	45,670
2022	50,395	78,962	129,357	17,515	36,663	54,178
2023	65,440	76,255	141,695	11,905	35,885	47,790
2024	74,955	72,734	147,689	3,215	35,485	38,700
2025	75,790	68,842	144,632	16,035	34,971	51,006
2026	74,635	64,877	139,512	16,995	34,087	51,082
2027	92,895	60,979	153,874	21,040	33,075	54,115
2028	97,065	57,126	154,191	25,795	31,840	57,635
2029	100,895	53,033	153,928	26,640	30,462	57,102
2030	105,475	48,725	154,200	19,860	29,230	49,090
2031	109,890	44,721	154,611	32,550	27,883	60,433
2032	113,795	40,922	154,717	34,175	26,215	60,390
2033	117,875	36,327	154,202	21,910	24,813	46,723
2034	123,245	30,594	153,839	25,915	23,641	49,556
2035	43,920	26,411	70,331	118,345	20,155	138,500
2036	1,450	25,274	26,724	168,680	13,076	181,756
2037	1,410	25,198	26,608	177,175	4,429	181,604
2038	107,095	22,370	129,465	-	-	-
2039	112,675	16,641	129,316	-	-	-
2040	118,550	10,614	129,164	-	-	-
2041	27,275	6,842	34,117	-	-	-
2042	28,635	5,445	34,080	-	-	-
2043	30,065	3,977	34,042	-	-	-
2044	31,570	2,436	34,006	-	-	-
2045	32,935	823	33,758	-	-	-
Total	\$ 1,939,510	\$ 1,201,482	\$ 3,140,992	\$ 758,010	\$ 586,082	\$ 1,344,092

[1] Reflects fiscal period in which actual payments are due.

[2] For bonds issued through the Michigan Finance Authority (MFA) in 2014 and 2015, the Authority is required to make payment on these obligations to the MFA depository accounts five business days prior to the due date of the bond principal and interest payments. Therefore, the payments for the principal and interest due on July 1, 2017, are not included in the debt service requirement amounts above as they were paid June 26, 2017.

Source: Great Lakes Water Authority Financial Services Area

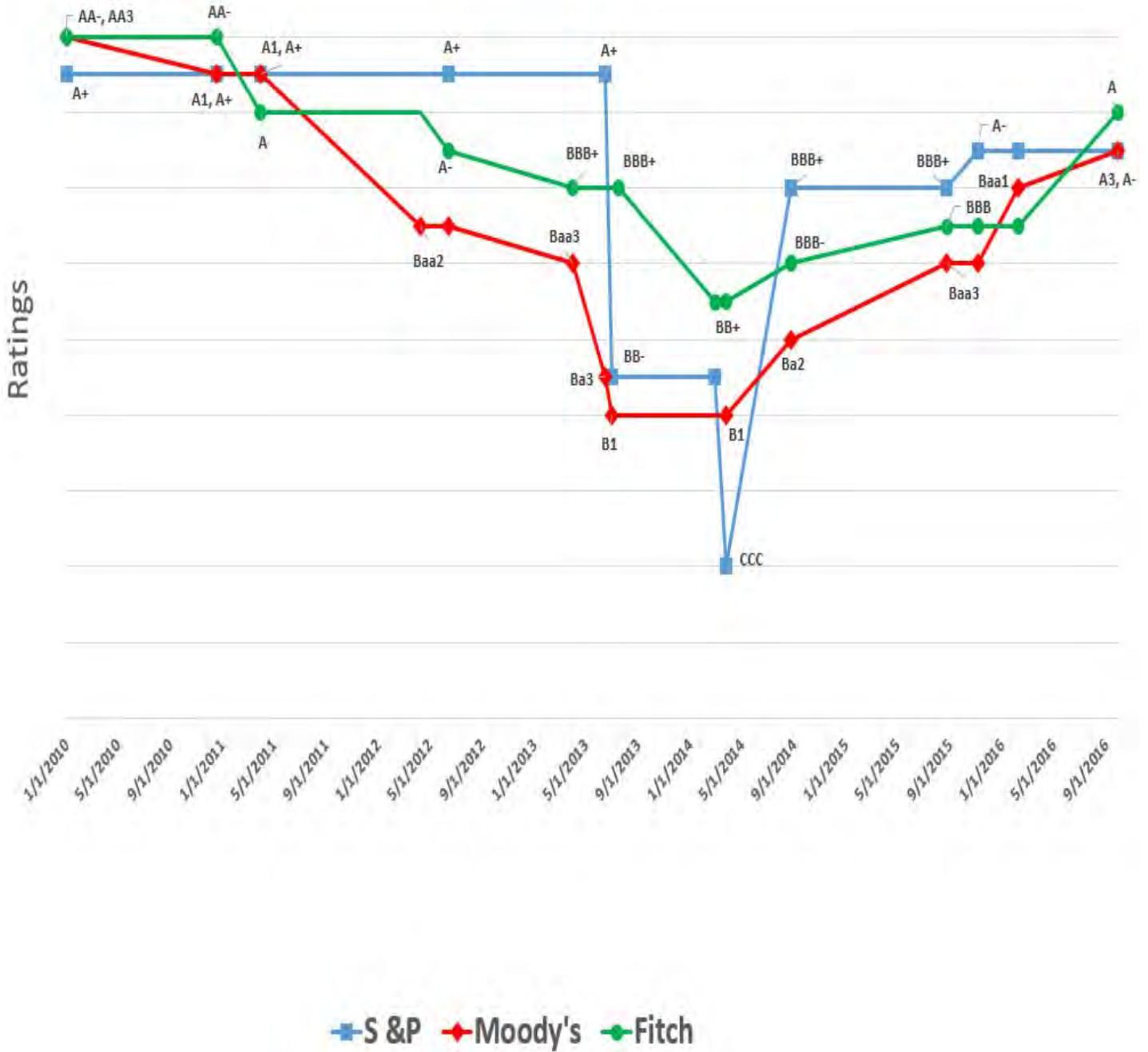
Junior Lien Bonds (in \$1,000s)			Total (in \$1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2017	Additional Future Junior Lien Debt Service on Undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
\$ 36,025	\$ 9,800	\$ 45,825	\$ 171,576	\$ 2,644	\$ 174,220
37,645	8,968	46,613	230,765	2,863	233,628
40,975	8,092	49,067	237,537	3,604	241,141
42,010	7,138	49,148	238,141	4,395	242,536
42,672	6,157	48,829	232,364	4,933	237,297
43,335	5,165	48,500	237,985	5,216	243,201
34,005	4,242	38,247	224,636	7,389	232,025
34,731	3,470	38,201	233,839	7,430	241,269
20,815	2,820	23,635	214,229	7,437	221,666
18,140	2,415	20,555	228,544	7,437	235,981
18,495	2,041	20,536	232,362	7,433	239,795
18,880	1,658	20,538	231,568	7,431	238,999
19,175	1,307	20,482	223,772	7,481	231,253
8,421	957	9,378	224,422	7,938	232,360
8,360	746	9,106	224,213	7,933	232,146
6,968	555	7,523	208,448	9,525	217,973
5,650	399	6,049	209,444	11,001	220,445
5,795	258	6,053	214,884	10,999	225,883
4,975	124	5,099	213,579	10,996	224,575
-	-	-	208,212	7,654	215,866
-	-	-	129,465	7,659	137,124
-	-	-	129,316	6,419	135,735
-	-	-	129,164	-	129,164
-	-	-	34,117	-	34,117
-	-	-	34,080	-	34,080
-	-	-	34,042	-	34,042
-	-	-	34,006	-	34,006
-	-	-	33,758	-	33,758
<u>\$ 447,072</u>	<u>\$ 66,312</u>	<u>\$ 513,384</u>	<u>\$ 4,998,468</u>	<u>\$ 155,817</u>	<u>\$ 5,154,285</u>

Current Debt Ratings
as of June 30, 2017

Debt Type	Rating Agency		
	Standard & Poor's	Moody's	Fitch
Water supply system revenue			
Senior lien	A-	A3	A
Second lien	BBB+	Baa1	A-
Junior lien	N/A	N/A	N/A
Sewage disposal system revenue			
Senior lien	A-	A3	A
Second lien	BBB+	Baa1	A-
Junior lien	N/A	N/A	N/A

Source: Great Lakes Water Authority Financial Services Area

Water and Sewer Senior Lien - Debt Ratings History
2010 to Present [1]



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Service Area Demographics
Last Ten Years

Year	Total Population (1)	Unemployment (2)	Per Capita Income (3)	Total Debt Service (5)	Debt Per Capita	Debt Service as a Percentage of Income
Water fund						
2017	3,800,000	4.4%	\$ 49,612 (4)	\$ 175,010,012	\$ 46.06	0.09%
2016 *	3,800,000	5.4%	48,467 (4)	171,138,525	45.04	0.09%
2015 *	3,800,000	5.9%	46,894	178,923,900	47.09	0.10%
2014 *	3,800,000	8.1%	44,718	182,464,900	48.02	0.11%
2013 *	3,800,000	9.7%	42,555	172,458,800	45.38	0.11%
2012 *	3,800,000	10.1%	42,168	153,524,200	40.40	0.10%
2011 *	3,800,000	11.4%	40,607	164,435,900	43.27	0.11%
2010 *	3,800,000	13.9%	37,837	157,590,500	41.47	0.11%
2009 *	3,976,100	15.1%	36,874	156,775,100	39.43	0.11%
2008 *	3,976,100	8.2%	38,998	135,156,500	33.99	0.09%
Sewage disposal fund						
2017	2,800,000	4.4%	\$ 49,612 (4)	\$ 234,554,814	\$ 83.77	0.17%
2016 *	2,800,000	5.4%	48,467 (4)	228,570,571	81.63	0.17%
2015 *	2,807,000	5.9%	46,894	232,612,800	82.87	0.18%
2014 *	2,807,000	8.1%	44,718	229,611,100	81.80	0.18%
2013 *	2,807,000	9.7%	42,555	225,222,900	80.24	0.19%
2012 *	2,807,000	10.1%	42,168	203,092,300	72.35	0.17%
2011 *	2,807,000	11.4%	40,607	209,063,900	74.48	0.18%
2010 *	2,807,000	13.9%	37,837	200,985,100	71.60	0.19%
2009 *	2,998,200	15.1%	36,874	195,544,837	65.22	0.18%
2008 *	2,998,200	8.2%	38,998	175,248,600	58.45	0.15%

- (1) Source: Estimated based on data from Southeast Michigan Council of Governments (SEMCOG).
- (2) Source: Bureau of Labor Statistics Detroit-Warren-Dearborn MSA Annual Average (For 2017 the September rate was used). The Detroit-Warren-Dearborn Metropolitan Statistical Area (MSA) is comprised of six counties: Wayne, Oakland, Macomb, Livingston, Lapeer and St. Clair. This represents the majority of the service area customers.
- (3) Source: FRED Economic Data, St. Louis Fed
- (4) Source: Michigan State University Center for Economic Analysis
- (5) Debt service is based on set aside debt service requirements for the fiscal year which includes the subsequent year 1st debt payment.

*GLWA assumed operations on January 1, 2016. The information in this table from 2008-2015 is based on operations under DWSD. Data for 2016 includes six months of operation under DWSD and six months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area

GREAT LAKES WATER AUTHORITY

Ten Largest Wholesale Water Customers / Total Billed Revenue Last Ten Years

	2008 *	2009 *	2010 *	2011 *
Operating revenues				
Flint [1]	\$ 16,297,870	\$ -	\$ 17,421,663	\$ 17,103,752
Genesee County Drain Commission [1]	-	17,421,571	-	-
Southeast Oakland County Water Authority	10,165,018	9,285,621	9,285,621	10,293,814
Troy	8,606,895	7,445,795	7,550,028	7,295,491
Sterling Heights	9,424,067	8,578,659	8,696,601	8,113,053
Farmington Hills	7,611,586	7,547,579	7,547,585	7,775,635
Warren	7,775,671	-	-	7,532,208
Livonia	7,530,863	7,033,848	7,033,853	7,804,684
Shelby Township	7,537,378	7,403,055	7,403,056	8,175,322
Novi	-	6,913,500	6,782,362	7,063,698
Macomb Township	-	-	-	-
Rochester Hills	8,823,580	8,644,531	8,553,457	9,047,860
North Oakland County Water Authority	-	-	-	-
West Bloomfield Township	-	-	-	-
Canton Township	7,803,359	6,876,444	7,142,729	-
Total	\$ 91,576,287	\$ 87,150,603	\$ 87,416,955	\$ 90,205,517
Operating revenues - DWSD	\$ 292,983,220	\$ 274,095,463	\$ 285,470,426	\$ 316,002,201
Operating revenues - GLWA	-	-	-	-
Total operating revenues	\$ 292,983,220	\$ 274,095,463	\$ 285,470,426	\$ 316,002,201
% of total operating revenues	31.26%	31.80%	30.62%	28.55%

[1] Flint contract terminated April 2013, but service provided through April 2014 and re-established in November 2015 on a temporary basis until a long-term contract took effect on December 1, 2017. Non-contract service has been provided to Genesee County Drain Commission (GCDC) from May 2014 through mid-December 2017. GCDC changed service providers in December 2017 and has contracted with GLWA for as needed emergency water service.

*GLWA assumed operations on January 1, 2016. The information in this table from 2008-2015 is based on operations under DWSD. Data for 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area

	2012 *	2013 *	2014 *	2015 *	2016 *	2017
\$	20,919,987	\$ 23,308,800	\$ 23,871,366	\$ 15,804,309	\$ -	\$ 13,256,330
	-	-	-	-	17,231,935	18,493,530
	12,111,306	19,541,038	19,467,746	19,779,978	22,846,983	22,434,129
	-	9,311,146	9,715,613	9,761,438	12,365,922	13,939,815
	9,882,899	12,089,582	12,015,093	12,650,819	14,678,915	15,480,008
	8,503,722	10,575,173	9,769,372	9,797,153	-	-
	9,121,108	9,945,794	9,060,112	9,297,285	-	-
	8,806,767	10,338,724	9,728,576	10,325,750	12,809,124	13,483,657
	9,966,936	10,824,461	10,770,614	11,035,002	12,689,582	13,462,808
	8,340,815	-	-	-	11,869,865	-
	-	-	-	-	10,103,536	10,945,117
	10,324,388	9,529,341	9,600,373	9,432,554	-	-
	-	-	-	-	22,585,698	22,913,261
	7,973,620	9,655,154	-	-	-	-
	-	-	9,400,322	9,692,530	12,319,875	13,872,584
<u>\$</u>	<u>105,951,548</u>	<u>\$ 125,119,213</u>	<u>\$ 123,399,187</u>	<u>\$ 117,576,818</u>	<u>\$ 149,501,435</u>	<u>\$ 158,281,239</u>
\$	336,129,945	\$ 355,527,761	\$ 349,369,362	\$ 364,278,054	\$ 167,665,532	\$ -
	-	-	-	-	217,759,272	351,749,944
<u>\$</u>	<u>336,129,945</u>	<u>\$ 355,527,761</u>	<u>\$ 349,369,362</u>	<u>\$ 364,278,054</u>	<u>\$ 385,424,804</u>	<u>\$ 351,749,944</u>
	31.52%	35.19%	35.32%	32.28%	38.79%	45.00%

GREAT LAKES WATER AUTHORITY

Ten Largest Wholesale Sewer Customers / Total Billed Revenue Last Ten Years

	2008 *	2009 *	2010 *	2011 *
Operating revenues				
Oakland Macomb Interceptor Drainage District	\$ 52,832,546	\$ 57,753,543	\$ 52,780,322	\$ 51,216,403
Wayne County - Rouge Valley	35,784,848	40,843,614	35,175,971	41,807,733
Oakland County-George W Kuhn Drainage District	29,822,251	33,965,834	27,820,025	35,810,320
Evergreen Farmington	24,404,725	26,875,478	22,080,501	24,951,389
NE Wayne County	14,838,182	18,023,991	14,760,986	19,146,923
Dearborn	12,853,361	13,572,269	12,752,026	14,441,467
Highland Park	4,363,745	4,438,562	3,965,206	4,490,709
Hamtramck	2,428,484	2,689,250	4,386,331	3,249,930
Grosse Pointe Farms	1,715,608	1,370,953	1,605,103	1,857,469
Grosse Pointe Park	1,198,731	1,206,275	976,896	1,151,516
Total	\$ 180,242,481	\$ 200,739,770	\$ 176,303,366	\$ 198,123,859
Operating revenues - DWSD	\$ 346,908,831	\$ 390,126,398	\$ 365,537,390	\$ 410,719,075
Operating revenues - GLWA	-	-	-	-
Total operating revenues	\$ 346,908,831	\$ 390,126,398	\$ 365,537,390	\$ 410,719,075
% of total operating revenues	51.96%	51.46%	48.23%	48.24%

*GLWA assumed operations on January 1, 2016. The information in this table from 2008-2015 is based on operations under DWSD. Data for 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area/The Foster Group

2012 *	2013 *	2014 *	2015 *	2016 *	2017
\$ 59,379,605	\$ 62,302,424	\$ 71,972,397	\$ 74,853,600	\$ 69,206,904	\$ 69,627,600
47,309,391	44,972,847	51,181,360	50,930,400	51,784,039	55,486,800
39,620,971	38,148,325	41,658,188	42,046,800	42,804,155	45,682,800
28,097,941	27,556,982	29,198,838	29,686,800	30,177,613	32,179,200
20,532,777	19,293,968	20,406,419	22,585,200	22,993,819	24,120,000
15,884,591	15,292,901	16,406,661	18,190,800	18,368,762	19,603,200
4,840,249	5,007,724	6,887,428	5,569,200	5,616,167	5,818,800
3,437,744	3,586,927	3,941,094	4,054,800	3,936,205	4,086,000
1,922,441	2,462,068	2,502,113	2,449,200	2,486,773	2,667,600
1,413,363	1,273,953	1,244,951	1,465,200	1,492,206	1,626,000
<u>\$ 222,439,074</u>	<u>\$ 219,898,118</u>	<u>\$ 245,399,451</u>	<u>\$ 251,832,000</u>	<u>\$ 248,866,643</u>	<u>\$ 260,898,000</u>
\$ 437,654,891	\$ 440,863,260	\$ 475,770,844	\$ 505,671,614	\$ 282,415,566	\$ -
-	-	-	-	230,464,969	505,807,802
<u>\$ 437,654,891</u>	<u>\$ 440,863,260</u>	<u>\$ 475,770,844</u>	<u>\$ 505,671,614</u>	<u>\$ 512,880,535</u>	<u>\$ 505,807,802</u>
<u>50.83%</u>	<u>49.88%</u>	<u>51.58%</u>	<u>49.80%</u>	<u>48.52%</u>	<u>51.58%</u>

FY 2016-17 Wholesale Water Schedule of Charges*
 and Total Revenue Requirement for the Detroit Retail Class

Community Name	Fixed Monthly \$/mo	Commodity \$/Mcf	Community Name	Fixed Monthly \$/mo	Commodity \$/Mcf
Allen Park	\$ 113,700	\$ 6.59	Madison Heights	\$ 99,700	\$ 5.39
Almont, Village of	10,700	9.51	Mayfield Township	1,400	23.86
Ash Township	36,400	7.28	Melvindale	32,700	5.57
Belleville	15,300	8.19	New Haven, Village of	17,100	9.79
Berlin Township	35,300	9.74	North Oakland County Water Authority	1,137,400	9.78
Brownstown Township	165,800	9.75	Northville, City	36,400	9.11
Bruce Township	2,400	19.40	Northville Township	321,900	20.12
Canton Township	638,600	15.77	Novi	426,900	12.98
Centerline	23,300	5.49	Oak Park	64,400	5.00
Chesterfield Township	186,000	9.18	Oakland County Drain Commission	3,200	2.84
Clinton Township	377,500	7.59	Plymouth City	50,100	9.54
Commerce Township	245,600	21.13	Plymouth Township	205,200	9.95
Dearborn	463,100	5.90	Redford Township	166,500	7.70
Dearborn Heights	186,400	6.84	River Rouge	34,400	4.75
East Pointe	79,400	5.43	Riverview	44,800	7.79
Ecorse	70,300	3.60	Rockwood	14,700	10.66
Farmington City	47,500	8.09	Romeo	12,800	17.05
Farmington Hills	430,900	9.50	Romulus	179,600	7.33
Ferndale	47,000	5.70	Roseville	130,500	5.02
Flat Rock	58,100	7.50	Royal Oak Township	11,200	7.47
Flint	662,100	8.93	Shelby Township	667,900	13.49
Fraser	63,600	7.83	Southeastern Oakland County Water Authority	1,099,900	6.84
Garden City	81,200	7.06	South Rockwood	5,000	8.08
Genesee County Drain Commission	964,800	12.71	Southgate	105,900	6.83
Gibraltar	22,900	10.79	St. Clair County-Burtchville Township	14,600	12.98
Grosse Ile	62,600	11.64	St. Clair County-Greenwood	19,000	15.17
Grosse Pointe Park	69,300	9.09	St. Clair Shores	150,400	5.45
Grosse Pointe Shores	30,100	12.68	Sterling Heights	774,900	10.05
Grosse Pointe Woods	69,600	7.42	Sumpter Township	31,800	8.49
Hamtramck	34,300	4.49	Sylvan Lake	11,700	13.37
Harper Woods	42,400	5.84	Taylor	235,800	6.60
Harrison Township	68,800	5.92	Trenton	103,800	9.12
Hazel Park	34,600	5.13	Troy	653,000	12.01
Highland Park	62,600	4.56	Utica	28,900	10.05
Huron Township	68,800	9.18	Van Buren Township	140,900	8.54
Imlay City	56,800	11.22	Walled Lake	45,200	11.66
Imlay Township	134	10.84	Warren	490,200	5.42
Inkster	89,800	6.90	Washington Township	150,800	18.28
Keego Harbor	15,300	11.13	Wayne	132,500	10.70
Lapeer	69,700	9.36	West Bloomfield Township	487,000	15.16
Lenox Township	14,800	6.23	Westland	295,300	7.45
Lincoln Park	108,400	5.94	Wixom	115,900	14.48
Livonia	663,700	10.88	Woodhaven	100,100	12.52
Macomb Township	516,000	13.90	Ypsilanti Community Utilities Authority	524,500	8.56

Total Revenue Requirement for the Detroit Retail Class \$15,490,300 - Effective July 1, 2016

*Wholesale charges went into effect July 1, 2016

Source: Great Lakes Water Authority Financial Services Area/The Foster Group

Schedule of Wholesale Sewer Monthly Charges* and Total Revenue Requirement for the Detroit Retail Class

	Total
Oakland Macomb Interceptor District (OMID)	\$ 5,802,300
Rouge Valley	4,623,900
Oakland County - George W. Kuhn (GWK)	3,806,900
Evergreen Farmington	2,681,600
Northeast Wayne County	2,010,000
Dearborn	1,633,600
Grosse Pointe Farms	222,300
Grosse Pointe Park	135,500
Melvindale	115,100
Farmington	92,500
Center Line	77,200
Allen Park	56,000
Highland Park	484,900
Hamtramck	340,500
Grosse Pointe	78,500
Harper Woods	20,000
Redford Township	21,700
Wayne County #3	3,900

Total Revenue Requirement for the Detroit Retail Class \$187,304,100 - Effective July 1, 2016

*Wholesale charges went into effect July 1, 2016

Source: Great Lakes Water Authority Financial Services Area

Industrial Waste Control Charges & Pollutant Surcharges
Effective July 1, 2016

	Charge \$/Month
Industrial waste control charges	
Meter size - inches:	
5/8	\$ 5.65
3/4	8.48
1	14.13
1 1/2	31.08
2	45.20
3	81.93
4	113.00
6	169.50
8	282.50
10	395.50
12	452.00
14	565.00
16	678.00
18	791.00
20	904.00
24	1,017.00
30	1,130.00
36	1,243.00
48	1,356.00

	Charge Per Pound
Pollutant surcharges	
Biochemical Oxygen Demand (BOD) for concentrations > 275 mg/l	\$ 0.491
Total Suspended Solids (TSS) for concentrations > 350 mg/l	\$ 0.498
Phosphorus (P) for concentrations > 12 mg/l	\$ 7.346
Fats, Oil and Grease (FOG) for concentrations > 100 mg/l	\$ 0.473
Septage Disposal Fee \$ per 500 gallons of disposal	\$ 47.00

Source: Great Lakes Water Authority Financial Services Area

Produced and Billed Water Volumes
Last Ten Years

Fiscal Year	Estimated Total Water Produced (Mcf) [1]	Reported Water Sales			Estimated Non-Revenue Water (Mcf)	Estimated Non-Revenue % of Production [3]
		Wholesale Customer Billed (Mcf)	Local System Billed (Mcf)	Total Water Billed (Mcf) [2]		
2008 *	29,360,700	18,405,500	4,145,500	22,551,000	6,809,700	23.2%
2009 *	27,180,700	16,682,100	4,138,100	20,820,200	6,360,500	23.4%
2010 *	25,142,700	15,676,300	3,924,000	19,600,300	5,542,400	22.0%
2011 *	26,513,000	16,094,700	4,176,600	20,271,300	6,241,700	23.5%
2012 *	27,219,500	16,280,300	3,903,100	20,183,400	7,036,100	25.8%
2013 *	26,832,800	15,687,900	3,660,300	19,348,200	7,484,600	27.9%
2014 *	26,088,800	14,778,500	3,410,600	18,189,100	7,899,700	30.3%
2015 *	23,238,000	13,547,000	3,173,700	16,720,700	6,517,300	28.0%
2016 *	23,580,700	14,730,400	3,086,400	17,816,800	5,763,900	24.4%
2017	23,915,600	14,824,000	2,912,030	17,736,030	6,179,570	25.8%

[1] Represents, in part, estimated volumes based on pump curves and engineering analysis. GLWA engineering studies in 2017 concluded that total water production values for calendar year 2016 were over-reported by 5.8%.

[2] Represents metered wholesale amounts for all customers other than Detroit, Dearborn, and Highland Park. Water sales to those customers reflect, in part, estimated retail water sales during this period. GLWA is modifying this approach, which will result in larger reported water sales figures in future years.

[3] As noted in [1] and [2], these values are likely overestimated. GLWA expects recently modified flow measuring methods to result in lower values in future years.

*GLWA assumed operations on January 1, 2016. The information in this table from 2008-2015 is based on operations under DWSD. Data from 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

Source: Great Lakes Water Authority Financial Services Area

Treated and Billed Wastewater Volumes
Last Ten Years

Fiscal Year	Total	Customer Wastewater Volume (mg)		
	Wastewater Treated (mg)	Wholesale Customers [1]	Local System [2]	Total
2008 *	244,200	114,200	27,800	142,000
2009 *	260,800	123,200	29,600	152,800
2010 *	221,400	100,600	27,100	127,700
2011 *	253,500	112,700	28,000	140,700
2012 *	255,500	112,600	24,900	137,500
2013 *	220,600	99,400	23,100	122,500
2014 *	233,200	107,200	22,100	129,300
2015 *	222,700	103,700	20,100	123,800
2016 *	209,200	96,800	20,600	117,400
2017	254,400	105,500	19,200	124,700

*GLWA assumed operations on January 1, 2016. The information in this table from 2008-2015 is based on operations under DWSD. Data from 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

[1] Primarily metered wastewater volumes, but also includes water sales volumes for some customers whose wastewater is not metered. For 2015 through 2017 a fixed charge billing methodology was implemented. Volumes reflect measured and monitored wastewater flow.

[2] Reported water sales to retail customers

Source: Great Lakes Water Authority Financial Services Area and DWSD

Pledges of Revenue and Debt Service Coverage
as of June 30, 2017

The Authority has pledged specific revenue streams to secure the repayment of the revenue bonds and State of Michigan revolving fund loans. The bonds and loans are paid solely from the net revenues of the Water System and Sewer System including the Retail Revenues from the Retail Customers who are serviced under the Water and Sewer Services Agreement with the City of Detroit. The pledged revenues for the fiscal year ending June 30, 2017 were reported by two entities due to the lease agreement between the City of Detroit and Great Lakes Water Authority which became effective on January 1, 2016. The pledge revenue definition in the Great Lakes Water Authority Master Bond Ordinance includes the retail revenues of the City of Detroit Water and Sewerage Department as this revenue is pledged for payment of the bonded debt owed by Great Lakes Water Authority. A summary of the pledged revenue and the applicable debt as of June 30, 2017 is as follows:

	Water Fund	Sewage Disposal Fund
Term of pledged commitment	Thru 2047	Thru 2045
Calculation of Pledged Revenue as defined in Master Bond Ordinance		
GLWA revenue pledged-excludes local charges [1]		
Wholesale customer charges	\$ 331,115,131	\$ 263,311,745
Industrial waste charges	-	14,381,106
IWC charges to retail included in DWSD pledged revenue calculation below	-	(2,846,569)
Pollutant surcharges	-	5,206,294
Bad debt recovery	5,107,125	35,065,030
Other revenues	37,388	538,807
Earnings on investments net of construction fund investment earnings	1,348,898	1,384,225
less cash transfers to GLWA Operations and Maintenance Fund	<u>(117,916,800)</u>	<u>(186,697,200)</u>
GLWA net revenue for pledged revenue calculation	<u>219,691,742</u>	<u>130,343,438</u>
DWSD revenue pledged		
Customer charges	93,480,965	263,213,728
Penalties and fees	5,265,229	4,617,148
Miscellaneous	5,737,953	514,101
less cash transfers to DWSD Operations and Maintenance Fund	<u>(37,858,800)</u>	<u>(44,397,600)</u>
DWSD net revenue for pledged revenue calculation	<u>66,625,347</u>	<u>223,947,377</u>
Pledged revenue for the year ending June 30, 2017	<u>\$ 286,317,089</u>	<u>\$ 354,290,815</u>
Principal and interest funding requirement for the year ending June 30, 2017 [2]:		
Senior and second lien bonds		
Senior lien bonds	\$ 134,234,660	\$ 140,854,010
Second lien bonds	<u>38,990,023</u>	<u>47,918,639</u>
Total senior and second lien bonds	173,224,683	188,772,649
Junior lien bonds	<u>1,785,328</u>	<u>45,782,165</u>
Total all bonds	<u>\$ 175,010,011</u>	<u>\$ 234,554,814</u>
Rate covenant debt service coverage [2]		
Senior lien bonds	2.13	2.52
Senior and second lien bonds	1.65	1.88
All bonds, including SRF junior lien	1.64	1.51
Approximate amount in restricted cash and investments related to various bond indentures at June 30, 2017	\$ 186,700,000	\$ 150,900,000

[1] Local charges are excluded from the GLWA revenue calculation as they would duplicated the revenues reported in the DWSD revenue calculation.

[2] Computed consistent with rate Covenant basis for rate determination purposes. Not applicable for purposes of additional bond test calculations.

Source: Great Lakes Water Authority Financial Services Area

Pledges of Revenue and Debt Service Coverage
 as of June 30, 2017

	2017	2016 [1]
Water fund		
Pledged revenue	<u>\$ 286,317,089</u>	<u>\$ 270,117,396</u>
Principal and interest funding requirement for the year ending June 30, 2017 [2]:		
Senior and second lien bonds		
Senior lien bonds	\$ 134,234,660	\$ 128,177,999
Second lien bonds	<u>38,990,023</u>	<u>41,178,843</u>
Total senior and second lien bonds	<u>173,224,683</u>	<u>169,356,842</u>
Junior lien bonds	1,785,328	1,781,683
Total all bonds	<u>\$ 175,010,011</u>	<u>\$ 171,138,525</u>
Rate covenant debt service coverage [2]		
Senior lien bonds	2.13	2.11
Senior and second lien bonds	1.65	1.59
All bonds, including SRF junior lien	1.64	1.58
Sewage disposal fund		
Pledged revenue	<u>\$ 354,290,815</u>	<u>\$ 326,048,837</u>
Principal and interest funding requirement for the year ending June 30, 2017 [2]:		
Senior and second lien bonds		
Senior lien bonds	\$ 140,854,010	\$ 140,191,016
Second lien bonds	<u>47,918,639</u>	<u>48,944,924</u>
Total senior and second lien bonds	<u>188,772,649</u>	<u>189,135,940</u>
Junior lien bonds	45,782,165	39,434,631
Total all bonds	<u>\$ 234,554,814</u>	<u>\$ 228,570,571</u>
Rate covenant debt service coverage [2]		
Senior lien bonds	2.52	2.33
Senior and second lien bonds	1.88	1.72
All bonds, including SRF junior lien	1.51	1.43

[1] GLWA started operations on January 1, 2016. Includes 6 months under operations of DWSD and 6 months under the operations of GLWA under the Master Bond Ordinances in effect during the respective time periods.

[2] Computed consistent with rate Covenant basis for rate determination purposes. Not applicable for purposes of additional bond test.

Source: Great Lakes Water Authority Financial Services Area



GLWA

Great Lakes Water Authority

Financial Services

735 Randolph, Suite 1608

Detroit, Michigan 48226

Great Lakes Water Authority

Year Ended
June 30, 2017

Single Audit Act
Compliance

GREAT LAKES WATER AUTHORITY

Table of Contents

	<u>Page</u>
Independent Auditors' Report on the Schedule of Expenditures of Federal Awards Required by the Uniform Guidance	1
Schedule of Expenditures of Federal Awards	2
Notes to Schedule of Expenditures of Federal Awards	3
Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	4
Independent Auditors' Report on Compliance for the Major Federal Program and on Internal Control over Compliance Required by the Uniform Guidance	6
Schedule of Findings and Questioned Costs	8
Summary Schedule of Prior Audit Findings	11



INDEPENDENT AUDITORS' REPORT ON THE SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
REQUIRED BY THE UNIFORM GUIDANCE

May 10, 2018

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

We have audited the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority") as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements. We issued our report thereon dated May 10, 2018, which contained unmodified opinions on those financial statements. Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the basic financial statements. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards is fairly stated in all material respects, in relation to the basic financial statements as a whole.



GREAT LAKES WATER AUTHORITY

Schedule of Expenditures of Federal Awards For the Year Ended June 30, 2017

Federal Agency / Cluster / Program Title	CFDA Number	Pass-through / Grantor Number	Total Subawards	Federal Expenditures
U.S. Environmental Protection Agency				
Passed-through the Michigan Department of Environmental Quality:				
Capitalization Grants for Clean Water State Revolving Funds Cluster:				
State Revolving Funds	66.458	5486-01	\$ -	\$ 85,292
State Revolving Funds	66.458	5619-02	-	340,757
State Revolving Funds	66.458	5619-03	-	137,272
State Revolving Funds	66.458	5636-01	-	606,994
			-	1,170,315
Capitalization Grants for Drinking Water State Revolving Funds Cluster -				
State Revolving Funds	66.468	7413-01	1,575,627	1,575,627
Total Expenditures of Federal Awards			\$ 1,575,627	\$ 2,745,942

See notes to schedule of expenditures of federal awards.

GREAT LAKES WATER AUTHORITY

Notes to Schedule of Expenditures of Federal Awards

1. BASIS OF PRESENTATION

The accompanying schedule of expenditures of federal awards (the "Schedule") includes the federal grant activity of the Great Lakes Water Authority (the "Authority") under programs of the federal government for the year ended June 30, 2017. The information in this schedule is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Because the Schedule presents only a selected portion of the operations of the Authority, it is not intended to and does not present the financial position, changes in net position or cash flows of the Authority.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Expenditures reported on the Schedule are reported on the modified cash basis of accounting, which is described as follows:

- *Basis of accounting.* In general, expenditures are reported in the Schedule when the Authority remits payment to a vendor or contractor, rather than when an expense is incurred by the Authority in accordance with Generally Accepted Accounting Principles (GAAP). Additionally, any amounts paid to subrecipients are included when paid or transferred instead of when incurred. The Authority reports its expenditures using this method based on guidance it received from the Michigan Department of Environmental Quality (MDEQ), which serves as the pass-through entity for all of the Authority's federally funded loan programs.
- *Pre-award costs.* In addition to the above, the MDEQ may approve reimbursement of costs related to projects undertaken (and paid to vendors) in prior periods. In those cases, as the payments were not previously reported as federal expenditures, they are reported on the Schedule in the period reimbursement is approved by the MDEQ which is normally with the initial project cash draw.

The above referenced expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule, if any, represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years. Pass-through entity identifying numbers are presented where available.

For purposes of charging indirect costs to federal awards, the Authority has elected not to use the 10 percent de minimis cost rate as permitted by §200.414 of the Uniform Guidance.



INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING
AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS
PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

May 10, 2018

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

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority"), as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated May 10, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and, therefore, material weaknesses or significant deficiencies may exist that have not been identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. We did identify a certain deficiency in internal control over financial reporting, described in the accompanying schedule of findings and questioned costs as item 2017-001, that we consider to be a significant deficiency.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Great Lakes Water Authority's Response to Finding

The Authority's response to the finding identified in our audit is described in the accompanying schedule of findings and questioned costs. The Authority's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "Lehmann Johnson LLC". The signature is written in a cursive, flowing style.

**INDEPENDENT AUDITORS' REPORT ON COMPLIANCE FOR THE MAJOR FEDERAL PROGRAM
AND ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM GUIDANCE**

May 10, 2018

To the Board of Directors of the
Great Lakes Water Authority
Detroit, Michigan**Report on Compliance for the Major Federal Program**

We have audited the compliance of the *Great Lakes Water Authority* (the "Authority") with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on the Authority's major federal program for the year ended June 30, 2017. The Authority's major federal program is identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal program.

Independent Auditors' Responsibility

Our responsibility is to express an opinion on compliance for the Authority's major federal program based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the major federal program. However, our audit does not provide a legal determination of the Authority's compliance.

Opinion on the Major Federal Program

In our opinion, the Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended June 30, 2017.

Report on Internal Control Over Compliance

Management of the Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Authority's internal control over compliance with the types of requirements that could have a direct and material effect on the major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Purpose of this Report

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

A handwritten signature in black ink that reads "Rehmann Johnson LLC". The signature is written in a cursive, flowing style.

GREAT LAKES WATER AUTHORITY

Schedule of Findings and Questioned Costs For the Year Ended June 30, 2017

SECTION I - SUMMARY OF AUDITORS' RESULTS

Financial Statements

Type of report the auditor issued on whether the financial statements audited were prepared in accordance with GAAP:

Unmodified

Internal control over financial reporting:

Material weakness(es) identified? yes X no

Significant deficiency(ies) identified? X yes none reported

Noncompliance material to financial statements noted? yes X no

Federal Awards

Internal control over major programs:

Material weakness(es) identified? yes X no

Significant deficiency(ies) identified? yes X none reported

Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)? yes X no

Identification of major programs and type of auditors' report issued on compliance for each major program:

<u>CFDA Number</u>	<u>Name of Federal Program or Cluster</u>	<u>Type of Report</u>
66.468	Capitalization Grants for Drinking Water State Revolving Fund Cluster	Unmodified

Dollar threshold used to distinguish between Type A and Type B programs: \$ 750,000

Auditee qualified as low-risk auditee? yes X no

GREAT LAKES WATER AUTHORITY

Schedule of Findings and Questioned Costs

For the Year Ended June 30, 2017

SECTION II - FINANCIAL STATEMENT FINDINGS

2017-001 - Timely Year-end Closing and Completion (repeat comment)

Finding Type. Significant Deficiency in Internal Control over Financial Reporting.

Criteria. The timely preparation and issuance of financial statements in accordance with generally accepted accounting principles requires a coordinated effort between management and the external auditors, and places the burden on management to properly prepare for the audit, including timely closing of the accounting records, preparation of workpapers to support the significant account balances and obtaining the necessary documents needed by the auditors to perform their work.

Condition. While there has been improvement from the initial audit in 2016, several areas were not ready to be audited when fieldwork began. Fieldwork started in mid-October 2017, and at that time, bank reconciliations were still being completed and adjustments were being posted to the general ledger. Additionally, capital assets and a reasonably adjusted trial balance was not provided until early January 2018.

Cause. The complex nature of the bifurcation of the balance sheet and separation from the City of Detroit in the prior year caused delays when preparing for this year's audit due to the short timeframe between audits.

Effect. As a result of this condition, the Authority was exposed to the risk that misstatements (whether caused by error or fraud) could exist and not be detected and corrected by not reconciling in a timely manner.

Recommendation. We recommend that going forward, the Authority develop a plan and strictly adhere to agreed-upon timelines to ensure timely completion of the audit and issuance of the CAFR.

View of Responsible Officials. We have reviewed the findings and concur with the recommendations. This timing was unique to the standup of GLWA for FY 2016 due to the delay in the financial close of the initial year, implementation of new or previously non-existing systems, and recruitment of staff vacancies due to the bifurcation.

GREAT LAKES WATER AUTHORITY

Schedule of Findings and Questioned Costs For the Year Ended June 30, 2017

SECTION III - FEDERAL AWARDS FINDINGS AND QUESTIONED COSTS

None reported.

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GREAT LAKES WATER AUTHORITY

Summary Schedule of Prior Audit Findings

For the Year Ended June 30, 2017

2016-001 - Timely Year-end Closing

Due to the complex nature of the bifurcation of the balance sheet, and separation from the City of Detroit, there were delays in completion of the bank reconciliations and adjusting various accounts to the final balances. Fieldwork started in April 2017, and at that time, bank reconciliations were still being completed and adjustments were being posted to the general ledger. Additionally, a reasonably adjusted trial balance was not provided until June 2017.

This finding was not adequately resolved. See finding 2017-001 in the current year Schedule of Findings and Questioned Costs.

2016-002 - Segregation of Duties

The Authority had two individuals who were able to set up vendors, enter an invoice for payment and approve the invoice for payment.

This finding was adequately resolved.



INDEPENDENT AUDITORS' COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE

May 10, 2018

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

We have audited the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority") as of and for the year ended June 30, 2017, and have issued our report thereon dated May 10, 2018. Professional standards require that we advise you of the following matters relating to our audit.

Our Responsibility in Relation to the Financial Statement Audit

As communicated in our engagement letter dated August 17, 2017, our responsibility, as described by professional standards, is to form and express opinions about whether the financial statements that have been prepared by management with your oversight are fairly presented, in all material respects, in conformity with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of your respective responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of the Authority solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

We have provided our findings regarding internal control over financial reporting and compliance noted during our audit in a separate letter to you dated May 10, 2018. In addition, we noted certain other matters which are included in Attachment A to this letter.

Planned Scope and Timing of the Audit

We performed the audit according to the planned scope and timing previously communicated to you in our engagement letter and in our meeting about planning matters on October 16, 2017.

Compliance with All Ethics Requirements Regarding Independence

The engagement team, others in our firm, as appropriate, and our firm has complied with all relevant ethical requirements regarding independence.

Qualitative Aspects of the Authority's Significant Accounting Practices

Significant Accounting Policies

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the Authority is included in Note 1 to the financial statements.

There have been no initial selections of accounting policies and no changes in significant accounting policies or their application during the year.

No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Significant Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

The most sensitive accounting estimates affecting the financial statements were:

- Management's estimate of the useful lives of depreciable capital assets is based on the length of time it is believed that those assets will provide some economic benefit in the future.
- Acquisition value of the assets and liabilities acquired by lease agreement from the City of Detroit at the inception of the Authority's fiscal operations, which has a lasting impact.
- Allocation of the debt service responsibilities between the Authority and the City of Detroit.
- Shared services between the Authority and the City of Detroit are not yet finalized and amounts recorded are subject to negotiation.
- Management's estimate of the accrued compensated absences is based on current hourly rates and policies regarding payment of sick and vacation banks.
- Management's estimate of the allowance for uncollectible receivable balances is based on past experience and future expectation for collection of various account balances.
- Management's estimate of the insurance claims incurred but not reported is based on information provided by the entity's third party administrators and subsequent claims activity.

We evaluated the key factors and assumptions used to develop these estimates and determined that they are reasonable in relation to the basic financial statements taken as a whole and in relation to the applicable opinion units. In addition, the financial statements include a net pension liability and other pension-related amounts, which are dependent on estimates made by the City of Detroit General Employees' Retirement System. These estimates are based on historical trends and industry standards, but are not within the control of management.

Financial Statement Disclosures

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the financial statements relate to the acquisition value of assets acquired and liabilities assumed when the Authority was created. Independent experts provided estimates regarding the acquisition value of capital assets, useful lives of those assets and the related debt. See Note 8 for discussion of the lease from the City of Detroit that is the basis for the acquisition transaction; see Note 12 for special item regarding the memorandum of understanding with DWSD.

Significant Difficulties Encountered During the Audit

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

Uncorrected and Corrected Misstatements

For purposes of this communication, professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole and each applicable opinion unit. In addition, professional standards require us to communicate to you all material, corrected misstatements that were brought to the attention of management as a result of our audit procedures. None of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to the financial statements taken as a whole.

The schedule of adjustments passed is included with management's written representations in Attachment C to this letter, and summarizes uncorrected financial statement misstatements whose effects in the current and prior periods, as determined by management, are immaterial, both individually and in the aggregate, to the financial statements taken as a whole and each applicable opinion unit.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the Authority's financial statements or the auditors' report. No such disagreements arose during the course of the audit.

Representations Requested from Management

We have requested certain written representations from management, which are included in Attachment C to this letter.

Management's Consultations with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

Other Significant Matters, Findings, or Issues

In the normal course of our professional association with the Authority, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, operating and regulatory conditions affecting the entity, and operational plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as the Authority's auditors.

Other Information in Documents Containing Audited Financial Statements

Our responsibility for the supplementary information accompanying the financial statements, as described by professional standards, is to evaluate the presentation of the supplementary information in relation to the financial statements as a whole and to report on whether the supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole. We made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Upcoming Changes in Accounting Standards

Generally accepted accounting principles (GAAP) are continually changing in order to promote the usability and enhance the applicability of information included in external financial reporting. While it would not be practical to include an in-depth discussion of every upcoming change in professional standards, Attachment B to this letter contains a brief overview of recent pronouncements of the Governmental Accounting Standards Board (GASB) and their related effective dates. Management is responsible for reviewing these standards, determining their applicability, and implementing them in future accounting periods.

This information is intended solely for the use of the governing body and management of the *Great Lakes Water Authority* and is not intended to be and should not be used by anyone other than these specified parties.

Very truly yours,

A handwritten signature in cursive script that reads "Lehmann Johnson LLC".

GREAT LAKES WATER AUTHORITY

Attachment A - Comments and Recommendations

For the June 30, 2017 Audit

During our audit, we became aware of certain other matters that are opportunities for strengthening internal control and/or improving operating efficiency. This memorandum summarizes our comments and recommendations regarding those matters. Our consideration of the Authority's internal control over financial reporting is described in our report, dated May 10, 2018, issued in accordance with *Government Auditing Standards*. This memorandum does not affect that report or our report dated May 10, 2018, on the financial statements of the Great Lakes Water Authority.

Information Technology (IT) Matters

Processes and policies related to information technology were reviewed, and through related procedures, instances were identified that represent opportunities for management to improve upon the Authority's internal control structure. We noted that prior year comments from the SAS 114 communication dated July 31, 2017 were not addressed. We recommend the Authority consider these comments and make any necessary changes based on that consideration. The following issues from the prior year were not addressed:

- ◆ *Back-up Processes Review* - Back-ups to the Storage Area Network (SAN) are currently retained on-site. We recommend utilization of an off-site storage solution for backups to ensure quick recovery of critical data.
- ◆ *Vendor Risk Assessment and Oversight* - The risk assessment process and monitoring of vendor performance is not formalized. Management should ensure that all vendor relationships are formally reviewed on a periodic basis depending on the risk they pose to the Authority. Management should ensure that a risk assessment is performed on all IT vendors that identifies and ranks the vendors based on overall risk as it relates to critical need to operations and access to internal information.
- ◆ *Procedures over Network Access Rights* - The Authority performs quarterly reviews for privileged access, but does not perform a periodic review of all system users. Such a review should confirm whether the rights to all user accounts are still appropriate, given shifting responsibilities.
- ◆ *Password Policies* - The Authority has software level password controls in place to secure BS&A, Domain, WAM, and Ceridian applications/systems; however, the password settings for each system vary and do not align with recommended best practice settings. We recommend that management implement best practice password settings to each system's capability including:
 - Minimum Length: 8 characters
 - Maximum Age: 45-90 days
 - Password History: 12-24 previous passwords
 - Complexity: Required special character or upper/lowercase
 - Invalid Lockout: 3 invalid attempts

GREAT LAKES WATER AUTHORITY

Attachment A - Comments and Recommendations

For the June 30, 2017 Audit

Salary Documentation

We noted one instance in which an employee's salary documentation was not available and another in which the pay rate did not agree to the approved pay rate in the employee's personnel records. Pay rates should be properly documented.

Interim Financial Reporting

Due to a variety of reasons, including start-up complexities following bifurcation, software issues and personnel challenges, Authority management has been unable to provide its board with timely and accurate interim financial information. As such information is integral to timely and meaningful decision making, management needs to implement measures to fulfill this obligation.

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GREAT LAKES WATER AUTHORITY

Attachment B - Upcoming Changes in Accounting Standards / Regulations

For the June 30, 2017 Audit

The following pronouncements of the Governmental Accounting Standards Board (GASB) have been released recently and may be applicable to the Authority in the near future. We encourage management to review the following information and determine which standard(s) may be applicable to the Authority. For the complete text of these and other GASB standards, visit www.gasb.org and click on the “Standards & Guidance” tab. If you have questions regarding the applicability, timing, or implementation approach for any of these standards, please contact your audit team.

GASB 75 ■ Postemployment Benefits Other than Pensions

Effective 06/15/2018 (your FY 2018)

This standard builds on the requirements of GASB 74 by requiring employers that provide other postemployment benefits (OPEB) to recognize a net OPEB liability on their statements of net position. It mirrors the new accounting and financial reporting requirements of GASB 68 for pension benefits. We do not expect this standard to have any significant effect on the Authority.

GASB 81 ■ Irrevocable Split-Interest Agreements

Effective 12/15/2017 (your FY 2018)

This standard addresses the accounting for split-interest agreements for which the government serves as the intermediary and/or the beneficiary. It requires governments to record assets, liabilities, and deferred inflows of resources at the inception of the agreement when serving as intermediary, or when the government controls the present service capacity of a beneficial interest. We do not expect this standard to have any significant effect on the Authority.

GASB 83 ■ Certain Asset Retirement Obligations

Effective 06/15/2019 (your FY 2019)

This standard addresses accounting and financial reporting for certain asset retirement obligations--legally enforceable liabilities associated with the retirement of a tangible capital asset. We do not expect this standard to have any significant effect on the Authority.

GASB 84 ■ Fiduciary Activities

Effective 12/15/2019 (your FY 2020)

This standard establishes new criteria for determining how to report fiduciary activities in governmental financial statements. The focus is on whether the government is controlling the assets, and who the beneficiaries are. Under this revised standard, certain activities previously reported in agency funds may be reclassified in future periods. Due to the number of specific factors to consider, we will continue to assess the degree to which this standard may impact the Authority.

GREAT LAKES WATER AUTHORITY

Attachment B - Upcoming Changes in Accounting Standards / Regulations

For the June 30, 2017 Audit

GASB 85 ■ Omnibus 2017

Effective 06/15/2018 (your FY 2018)

This standard includes a variety of small technical revisions to previously issued GASB statements. We do not expect this standard to have any significant effect on the Authority.

GASB 86 ■ Certain Debt Extinguishment Issues

Effective 06/15/2018 (your FY 2018)

This standard provides guidance for reporting the in-substance defeasance of outstanding debt obligations using existing resources. Qualifying transactions will remove both the assets placed into trust and the related debt obligation from the government's statement of net position. We do not expect this standard to have any significant effect on the Authority.

GASB 87 ■ Leases

Effective 12/15/2020 (your FY 2021)

This standard establishes a single model for reporting all leases (including those previously classified as operating and capital). Lessees will now report offsetting intangible lease assets and lease liabilities equal to the present value of future lease payments. Lessors will report offsetting lease receivables and deferred inflows of resources.

GASB 88 ■ Certain Disclosures Related to Debt

Effective 06/15/2019 (your FY 2019)

This standard provides guidance on note disclosures related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. We do not expect this standard to have any significant effect on the Authority.

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GREAT LAKES WATER AUTHORITY

Attachment C - Management Representations

For the June 30, 2017 Audit

The following pages contain the written representations that we requested from management.



May 10, 2018

Rehmann Robson
675 Robinson Road
Jackson, MI 49203

This representation letter is provided in connection with your audit of the financial statements of the business-type activities and each major fund of the *Great Lakes Water Authority* (the "Authority"), as of and for the year ended June 30, 2017, and the related notes to the financial statements, for the purpose of expressing opinions on whether the basic financial statements present fairly, in all material respects, the financial position, results of operations, and cash flows of the Authority in conformity with accounting principles generally accepted for governments in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement.

We confirm that, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves as of May 10, 2018:

Financial Statements

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated August 17, 2017, for the preparation and fair presentation of the financial statements of the various opinion units referred to above in accordance with U.S. GAAP. We have reviewed, approved, and taken responsibility for the financial statements and related notes.
2. We have reviewed and approved the various adjusting journal entries that were proposed by you for recording in our books and records and reflected in the financial statements.
3. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.
4. We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.
5. Significant assumptions used by us in making accounting estimates, including those measured at fair value, are reasonable.
6. Related party relationships and transactions have been appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP. For the purposes of this letter, related parties mean members of the governing body; board members; administrative officials; immediate families of administrative officials, board members, and members of the governing body; and any companies affiliated with or owned by such individuals.
7. All events subsequent to the date of the financial statements and for which U.S. GAAP requires adjustment or disclosure have been adjusted or disclosed.
8. The effects of uncorrected misstatements summarized in the attached schedule and aggregated by you during the current engagement are immaterial, both individually and in the aggregate, to the applicable opinion units and to the financial statements as a whole.

9. The effects of all known actual or possible litigation and claims have been accounted for and disclosed in accordance with U.S. GAAP.
10. With regard to items reported at fair value:
 - a. The underlying assumptions are reasonable and they appropriately reflect management's intent and ability to carry out its stated courses of action.
 - b. The measurement methods and related assumptions used in determining fair value are appropriate in the circumstances and have been consistently applied.
 - c. The disclosures related to fair values are complete, adequate, and in conformity with U.S. GAAP.
 - d. There are no subsequent events that require adjustments to the fair value measurements and disclosures included in the financial statements.
11. All component units, as well as joint ventures with an equity interest, are included and other joint ventures and related organizations are properly disclosed.
12. All funds and activities are properly classified.
13. All funds that meet the quantitative criteria in GASB Statement No. 34, *Basic Financial Statements— and Management's Discussion and Analysis—for State and Local Governments*, and GASB Statement No. 37, *Basic Financial Statements— and Management's Discussion and Analysis—for State and Local Governments: Omnibus*, for presentation as major are identified and presented as such and all other funds that are presented as major are considered important to financial statement users.
14. All components of net position and fund balance classifications have been properly reported.
15. All revenues within the statement of activities have been properly classified as program revenues, general revenues, contributions to term or permanent endowments, or contributions to permanent fund principal.
16. All expenses have been properly classified in or allocated to functions and programs in the statement of activities, and allocations, if any, have been made on a reasonable basis.
17. All interfund and intra-entity transactions and balances have been properly classified and reported.
18. Special items and extraordinary items have been properly classified and reported.
19. Deposit and investment risks have been properly and fully disclosed.
20. Capital assets, including infrastructure assets, are properly capitalized, reported, and if applicable, depreciated.
21. We have reviewed capital assets and certain identifiable intangibles to be held and used for impairment whenever events or changes in circumstances have indicated that the carrying amount of the assets might not be recoverable and have appropriately recorded the adjustment.
22. We are responsible for the fair presentation of the Authority's net pension liability based upon calculations by the City of Detroit General Employees' Retirement System ("GRS") and related amounts. We appropriately allocated the net pension liability based on the assumptions in the lease agreements, pension agreement and the allocation letter signed by the GLWA Chief Executive Officer and the Detroit Water & Sewerage Department ("DWSD") Director on January 24, 2017. We have properly disclosed our special funding situation under GASB 68, *Accounting and Financial Reporting for Pension Plans*. We have reviewed the information provided by GRS for inclusion in the Authority's financial statements.

Information Provided

23. We have provided you with:
 - a. Access to all information, of which we are aware that is relevant to the preparation and fair presentation of the financial statements of the various opinion units referred to above, such as records, documentation, meeting minutes, and other matters;
 - b. Additional information that you have requested from us for the purpose of the audit; and
 - c. Unrestricted access to persons within the entity from whom you determined it necessary to obtain audit evidence.

24. All transactions have been recorded in the accounting records and are reflected in the financial statements.
25. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.
26. We have no knowledge of any fraud or suspected fraud that affects the entity and involves:
 - a. Management;
 - b. Employees who have significant roles in internal control; or
 - c. Others where the fraud could have a material effect on the financial statements.
27. We have no knowledge of any allegations of fraud, or suspected fraud, affecting the entity's financial statements communicated by employees, former employees, vendors, regulators, or others.
28. We have disclosed to you all known actual or possible litigation and claims whose effects should be considered when preparing the financial.
29. We have disclosed to you the identity of the entity's related parties and all the related party relationships and transactions of which we are aware.
30. There have been no communications from regulatory agencies concerning noncompliance with or deficiencies in accounting, internal control, or financial reporting practices.
31. The government has no plans or intentions that may materially affect the carrying value or classification of assets and liabilities.
32. We have disclosed to you all guarantees, whether written or oral, under which the government is contingently liable.
33. We have identified and disclosed to you the laws, regulations, and provisions of contracts and grant agreements that could have a direct and material effect on financial statement amounts, including legal and contractual provisions for reporting specific activities in separate funds.
34. There are no:
 - d. Violations or possible violations of laws or regulations, or provisions of contracts or grant agreements whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency, including applicable budget laws and regulations.
 - e. Unasserted claims or assessments that our lawyer has advised are probable of assertion and must be disclosed in accordance with GASB-62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*.
 - f. Other liabilities or gain or loss contingencies that are required to be accrued or disclosed by GASB-62.
35. The government has satisfactory title to all owned assets, and there are no liens or encumbrances on such assets nor has any asset or future revenue been pledged as collateral, except as disclosed to you.
36. We have complied with all aspects of grant agreements and other contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
37. We have disclosed to you all significant estimates and material concentrations known to management that are required to be disclosed in accordance with GASB-62. Significant estimates are estimates at the balance sheet date that could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets or geographic areas for which events could occur that would significantly disrupt normal finances within the next year.

Supplementary Information in Relation to the Financial Statements as a Whole

38. With respect to the supplementary information accompanying the financial statements:
 - a. We acknowledge our responsibility for the presentation of the supplementary information in accordance with accounting principles generally accepted in the United States of America.
 - b. We believe the supplementary information, including its form and content, is fairly presented in accordance with accounting principles generally accepted in the United States of America.

- c. The methods of measurement or presentation have not changed from those used in the prior period.
- d. We believe the significant assumptions or interpretations underlying the measurement or presentation of the supplementary information, and the basis for our assumptions and interpretations, are reasonable and appropriate in the circumstances.

Required Supplementary Information

39. With respect to the required supplementary information accompanying the financial statements:
- a. We acknowledge our responsibility for the presentation of the required supplementary information in accordance with accounting principles generally accepted in the United States of America.
 - b. We believe the required supplementary information, including its form and content, is measured and fairly presented in accordance with accounting principles generally accepted in the United States of America.
 - c. The methods of measurement or presentation have not changed from those used in the prior period.
 - d. We believe the significant assumptions or interpretations underlying the measurement or presentation of the required supplementary information, and the basis for our assumptions and interpretations, are reasonable and appropriate in the circumstances.

Uniform Guidance (2 CFR 200)

40. With respect to federal awards, we represent the following to you:
- a. We are responsible for understanding and complying with and have complied with the requirements of the Uniform Guidance.
 - b. We are responsible for the preparation and presentation of the schedule of expenditures of federal awards in accordance with the Uniform Guidance.
 - c. We believe the schedule of expenditures of federal awards, including its form and content, is fairly presented in accordance with the Uniform Guidance.
 - d. The methods of measurement or presentation have not changed from those used in the prior period.
 - e. We believe the significant assumptions or interpretations underlying the measurement or presentation of the schedule of expenditures of federal awards, and the basis for our assumptions and interpretations, are reasonable and appropriate in the circumstances.
 - f. We are responsible for including the auditor's report on the schedule of expenditures of federal awards in any document that contains the schedule and that indicates that the auditor has reported on such information.
 - g. When the schedule of expenditures of federal awards is not presented with the audited financial statements, management will make the audited financial statements readily available to the intended users of the schedule of expenditures of federal awards no later than the date of issuance by the entity of the schedule of expenditures of federal awards and the auditor's report thereon.
 - h. We have, in accordance with the Uniform Guidance, identified in the schedule of expenditures of federal awards, expenditures made during the audit period for all awards provided by federal agencies in the form of grants, federal cost-reimbursement contracts, loans, loan guarantees, property (including donated surplus property), cooperative agreements, interest subsidies, direct appropriations, and other assistance.
 - i. We are responsible for complying with the requirements of laws, regulations, and the provisions of contracts and grant agreements related to each of our federal programs and have identified

and disclosed to you the requirements of laws, regulations, and the provisions of contracts and grant agreements that are considered to have a direct and material effect on each major federal program; and we have complied, in all material respects, with these requirements.

- j. We have provided to you our interpretations of any compliance requirements that have varying interpretations.
- k. We are responsible for establishing and maintaining effective internal control over compliance requirements applicable to federal programs that provide reasonable assurance that we are managing our federal awards in compliance with laws, regulations, and the provisions of contracts and grant agreements that could have a material effect on our federal programs. Also, no changes have been made in the internal control system to the date of this letter that might significantly affect internal control, including any corrective action taken with regard to significant deficiencies, including material weaknesses, reported in the schedule of findings and questioned costs.
- l. We have made available to you all contracts and grant agreements (including amendments, if any) and any other correspondence with federal agencies or pass-through entities relating to federal programs.
- m. We have received no requests from a federal agency to audit one or more specific programs as a major program.
- n. We have identified and disclosed to you all amounts questioned and any known noncompliance with the requirements of federal awards, including the results of other audits or program reviews. We also know of no instances of noncompliance occurring subsequent to the end of the period audited.
- o. We have charged costs to federal awards in accordance with applicable cost principles, including amounts claimed or used for matching determined in accordance with relevant guidelines in the Uniform Guidance.
- p. We have made available to you all documentation related to the compliance requirements, including information related to federal program financial reports and claims for advances and reimbursements.
- q. Federal program financial reports and claims for advances and reimbursements are supported by the books and records from which the basic financial statements have been prepared (and are prepared on a basis consistent with the schedule of expenditures of federal awards).
- r. The copies of federal program financial reports provided to you are true copies of the reports submitted, or electronically transmitted, to the respective federal agency or pass-through entity, as applicable.
- s. We have monitored subrecipients to determine if they have expended pass-through assistance in accordance with applicable laws and regulations and have met the requirements of the Uniform Guidance.
- t. We have issued management decisions timely after the receipt of subrecipients' auditor reports that identified noncompliance with laws, regulations, or the provisions of contracts or grant agreements, and have ensured that the subrecipients have taken the appropriate and timely corrective action on findings.
- u. We have considered the results of subrecipients' audits and have made any necessary adjustments to our own books and records.
- v. We are responsible for and have accurately prepared the summary schedule of prior audit findings to include all findings required to be included by the Uniform Guidance, and we have provided you with all information on the status of the follow-up on prior audit findings by federal awarding agencies and pass-through entities, including all management decisions.
- w. We have disclosed to you the findings received and related corrective actions taken for previous audits, attestation engagements, and internal or external monitoring that directly relate to the objectives of the compliance audit, including findings received and corrective actions taken from the end of the period covered by the compliance audit to the date of the auditor's report.

- x. We are responsible for and have accurately completed the appropriate sections of the Data Collection Form as required by the Uniform Guidance, and we are responsible for preparing and implementing a correction action plan for each audit finding.
- y. We have disclosed all contracts or other agreements with service organizations and disclosed to you all communications from these service organizations relating to noncompliance at the organizations.
- z. We have reviewed, approved, and taken responsibility for the financial statements and related notes.
- aa. We have disclosed to you the nature of any subsequent events that provide additional evidence with respect to conditions that existed at the end of the reporting period that affect noncompliance during the reporting period.



Sue F. McCormick, Chief Executive Officer



Nicolette N. Bateson, CPA, Chief Financial Officer/ Treasurer

GREAT LAKES WATER AUTHORITY

Schedule of Adjustments Passed (SOAP)

For the June 30, 2017 Audit

In accordance with generally accepted auditing standards, we have prepared the following schedule of proposed audit adjustments, which we believe are immaterial both individually and in the aggregate. We are providing this schedule to both management and those charged with governance to receive their assurance that they agree that the amounts listed below are not material to the financial statements, either individually or in the aggregate, and do not need to be recorded.

	Effect of Passed Adjustment - Over(Under)Statement				
	Assets	Liabilities	Net Position	Revenues	Expenses
Water fund					
Understated accounts receivable	\$ (2,402,455)	\$ (2,402,455)	\$ -	\$ -	\$ -
Overstated health care claims liability	-	597,922	-	-	597,922
Prior year overstated capital assets	907,545	-	907,545	-	-
Prior year understated legal reserve	-	-	130,650	-	130,650
Prior year overstated health care claims liability	-	-	(500,000)	-	(500,000)
Prior year overstated long-term debt premium	-	-	(1,000,000)	-	(1,000,000)
Total water fund	(1,494,910)	(1,804,533)	(461,805)	-	(771,428)
Sewage disposal fund					
Prior year understated long-term debt premium	-	-	1,060,538	-	1,060,538
Business-type activities					
Cumulative effect of items noted above	<u>\$ (1,494,910)</u>	<u>\$ (1,804,533)</u>	<u>\$ 598,733</u>	<u>\$ -</u>	<u>\$ 289,110</u>
Misstatement as a percentage of total expenses - business-type activities	-0.2%	-0.2%	0.1%	0.0%	0.0%

*GLWA was formed as an acquisition under GASB 69, and as a result any amount of the assets acquired that exceeded the liabilities assumed was recorded as a reduction to capital assets. This amount is shown as a misstatement of assets to reflect the passed overstatement or understatement of capital assets.

Nicolette Bateson

From: Mark Kettner <Mark.Kettner@rehmann.com>
Sent: Wednesday, May 9, 2018 8:47 AM
To: Nicolette Bateson
Subject: Responses to Director Daddow questions/comments

First, let me apologize for being physically unable to attend your Board meeting to address the matters below, in person. As I mentioned to Nicolette on the phone yesterday, I had that “murphy’s law” feeling when I registered for the GFOA Conference in St. Louis back in January that the GLWA report issuance will probably come to a head while I’m away, and sure enough it did. Chalk up another instance for the “law of attraction.”

See my responses to the questions/issues posed by Director Daddow below.

Director Daddow: In addition, the following are comments on the auditor’s letter that will be discussed at the table.

Director Daddow: Auditor’s SAS 114 letter: Fourth paragraph, page 1 – giving rise to the auditor’s responsibility to cite ‘significant matters related to the audit’ involving ‘responsibilities in overseeing the financial reporting process.’ I find this assertion interesting in light of the failure to provide any discussion of the Michigan Warehouse and United House of Prayer matters. I am going to be asking Kettner several questions on this matter involving his scope of work and how it was expanded and why there is no mention of this matter in the SAS 114 report.

The first sentence states – “We are also responsible for communicating significant matters related to the audit that are, in our opinion professional judgment, relevant to your responsibilities in overseeing the financial reporting process.”

Response: After concerns relative to the Michigan Warehouse and similar legal matters was communicated by Director Daddow several months ago, we considered expanding the scope of our work through additional/expanded inquiries with Authority management (including legal staff) and DWSD legal staff. That work was suspended when the MOU negotiations commenced and then ceased when the Terms Sheet was made available (and the respective governing bodies accepted those Terms) as it seemed that this matter was resolved. Now, we could still write a finding if the Board and/or management felt strongly about it, which would cite the need for management to inform the Board of all such matters, but we believe there was a compelling argument regarding this lack of communication (given the very unique situation that the chief executive of the party to a potential legal action sits on the Authority Board and would therefore potentially receive confidential information regarding legal strategy that could be unfavorable to the Authority).

We are satisfied from our audit procedures, both this year and last, that the accruals for these items were appropriate given the understanding and interpretation of the Lease(s) at that time and there was no indication that material information was being withheld from us to suggest that additional accruals may be warranted. When this matter was removed because of the MOU (both the specific accruals and the any future such cases/claims), it was removed from our consideration.

We certainly encourage full and complete communication between management and the Board, and the Board has the responsibility to determine when items should be limited for legal reasons. Our understanding was that a policy related to this was considered (but not adopted) by the Board and this certainly played into our conclusion as to whether this matter merited separate communication.

Director Daddow: Page 2 third paragraph – ‘significant unusual transactions’ – none of the MOU items were considered to be significant or unusual?

Response: As this item is to inform you, the Board, about significant unusual transactions, we felt there was no need to mention the MOU Term Sheet since you were already aware of it and, in fact, had taken specific action on it. In other words, we were not compelled to tell you what you already know. Other users of the financial statements are informed of the MOU items through the financial statement note disclosures on the Special Item.

Director Daddow: Shared services – is Rehmann satisfied that the accruals – both to and from DWSD-R – are properly recorded even as certain services remain open going back into the six months ended June 30, 2016?

Response: We have performed audit procedures, both this year and last, on the shared services and are satisfied that the amounts recorded are adequately supported. We are aware of the potential for further negotiations that may affect these accruals, but such amounts are not reasonably determinable, would most likely be “gain” items to the Authority rather than “loss” items, and there is not compelling evidence to indicate that a net loss (if and when further negotiations actually occur) that the amount would be material to the Authority’s financial statements. For these reasons, we were not compelled to require note disclosure in the financial statements or an emphasis of a matter paragraph in our report. If the Authority would like to add a note regarding this, we would not disagree with it.

Director Daddow: Page 3 – uncorrected / corrected misstatements – while not directly on point and more of an estimate than a misstatement, here might be a decent area where the \$10.9 million in receivables previously identified and in the MOU should be considered. What was recorded as a receivable from DWSD-R on this matter as a starting point in the resolution of this issue? And, what actions to secure engineering services have transpired given that there is a finite time frame identified in the MOU approved a few weeks ago.

Response: This question relates to Item # 14 from the MOU Term Sheet. It is our understanding from the GLWA management that the “MOU Term Sheet” is now being finalized as an “MOU”. The timeline for resolution of that matter is outlined in the MOU Term Sheet (excerpt below) and is based upon execution of the MOU. Given the nature of the additional engineering review, analysis, and collaboration among the parties to resolve, the management team has been conservatively not recorded a receivable as the outcome is dependent on resolution on future actions

14. Water and Sewer Charges to GLWA: GLWA desires a meeting to begin the discussion on the clarification of water supply and sewage disposal services provided by DWSD to the Regional System within thirty (30) days after the execution of the MOU. If this issue is not resolved within ninety (90) days after the meeting, the matter will be brought to the Reconciliation Committee for resolution.

Director Daddow: Page 3 – representations requested from management. Cited as being attached; it wasn’t.

Response: We had previously provided a draft of the management representation letter in a Word file. That letter is now included in the latest draft of the SAS 114 report package.

Director Daddow: Page A1 – should the findings identified in the Information Technology bullet be restated given that no actions have been taken to rectify them from the prior SAS 114 letter. It is hard to understand the issues in reading this document if one does not have access to the prior SAS 114 letter.

Response: Good catch (as are all the other items here); we will modify this finding to put the level of detail from last year into this year’s finding.

Director Daddow: Single Audit Act letter – A little surprised at the single issue of the timely year end closing with no reference to interim financial information needed by the Board to perform their functions (see paragraph 4 of the SAS 114 letter). Not quite sure how the lack of timely, accurate and relevant financial information not submitted to the board cannot be considered a ‘significant matter’ involving ‘the financial reporting process.

Response: It should be noted that we have observed publicly available financial information on a regular basis via the Audit Committee binders in lieu of interim financial statements. We will be adding a finding to the management letter (on page A1 as referenced in the prior bullet point). The finding in the single audit report is compliance-oriented and therefore shown there. The text of that finding is shown below:

Interim Financial Reporting

Due to a variety of reasons, including start-up complexities following bifurcation, software issues and personnel challenges, Authority management has been unable to provide its board with timely and accurate interim financial information. As such information is integral to timely and meaningful decision making, management needs to implement measures to fulfill this obligation.

We look forward to presentation of the final reports at the next Audit Committee meeting.

Mark Kettner, CPA, CGFM

Principal

 **Rehmann**

Rehmann Robson

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Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Financial Sustainability Model – Forecast Modeling

Background: Last month, initial discussion began at the Audit Committee related to long-term financial planning and parameters to establish a Financial Sustainability model that encompasses the following.

1. **Risk Management:** Ensuring that there is sufficient liquidity to seek opportunities as well as address unforeseen and/or uncontrollable events.
2. **Affordability:** Appropriate level of fixed long-term commitments, controlled variable annual costs, and balancing the two to achieve intergenerational equity.
3. **Stability:** Anticipating annual budget variances and ensuring that charges are stable and predictable (i.e. prevents “rate shock”).

Analysis: Translating these objectives into measurable planning parameters is based on the next step which is modeling various scenarios (referred to as the Revenue Requirement Policy matrix in last month’s material and attached). The Foster Group has developed a long-term forecasting model that can be used to test the proposed policy matrix under various scenarios. Accordingly, see the attached memo and side-by-side forecasting scenarios. Mr. Foster will be in attendance at the Audit Committee to demonstrate the impact of a varying assumptions as well as discuss additional policy considerations.

Proposed Action: Receive and file report.

Proposed GLWA Revenue Requirement Policy Matrix

		Category	Near-term Planning Parameters (Current Five-Year Plan)	Long-term Planning Parameters (FY 2024+)
		Revenue Requirement		O&M
	Debt Service and Debt Service Coverage Target		Debt Service no more than ___% of total revenue requirement Senior Lien: 2.00x Second Lien: 1.40x SRF Junior Lien and Pension Junior Lien: 1.0x All-in: 1.30x	Debt Service no more than ___% of total revenue requirement Senior Lien: 2.0x Second Lien: 1.75x SRF Junior Lien and Pension Junior Lien: 1.60x All-in: 1.60x Debt per Capita at a Moderate Level
Debt Service Coverage	MBO Commitments		MBO items are fixed amounts/formulas	MBO commitments decrease (i.e. GRS pension)
	I&E Contribution		Minimum I&E at ___% of rolling five-year capital program	Minimum I&E at ___% of rolling five-year capital program
	Total		No more than prior year plus 4% per through FY 2025 ¹	No more than prior year plus 4% per policy

¹ Note: This limitation shall not be applicable if the revenue requirement must increase beyond the 4% assumption to satisfy the rate covenant or to pay the cost of improvements that are required to be made by applicable laws.

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MEMORANDUM

GLWA Financial Forecast Model

May 17, 2018

To: Nicolette Bateson

From: Bart Foster

At your request, we have prepared modeling analyses to support evaluation of potential GLWA financial policies. Our analyses calculate forecasted financial metrics that align with those used by investment community analysts when evaluating the credit worthiness of utility enterprises, including the GLWA Water and Sewer Systems. This material is intended to establish financial benchmarks against which to measure future financial performance of the Systems.

The accompanying exhibits provide summary information regarding our preliminary analyses to establish long-term financial forecast results. We have established a “forecast period” that extends through FY 2030. This longer term period facilitates complete review of potential impacts of policy decisions on financial metrics. However, we note that forecasting beyond five years requires development of assumptions that do not represent currently published plans, particularly with respect to capital improvement program (“CIP”) needs, as the current published CIPs only extend five years.

For purposes of our analyses, we have estimated annual CIP financing requirements beyond FY 2023 at levels indicated by averages of the current five-year plans. This assumption is just one of a myriad that impact the forecast presented herein, all of which could have material impacts on the results if they were modified. We have identified what we consider to be “key assumptions” that define the general scenarios introduced in this presentation.

The intent of this document is not to advocate for any specific policy, nor any specific combination of assumptions, but rather to provide perspective for policy discussions amongst stakeholders. Towards that goal, we are presenting two scenarios in this document for purposes of illustration.

- Scenario 1 reflects the “baseline” financial plan submitted as part of the FY 2019 budget request, which included annual BUDGET increases of a 2% for FY 2019 and 4% thereafter. We have assumed annual increases in the operating expense budget of 2% for this scenario.

- Scenario 2 assumes no BUDGET increase for FY 2019 and 3% thereafter. Scenario 2 assumes lower annual increases annual increases (1%) in the operating expense budget.

All other assumptions are identical for the two scenarios being introduced in this document. As noted above, this topic lends itself to most effective communication through a verbal presentation, and we are prepared to provide such presentation at the GLWA Audit Committee meeting on May 22. Herewith a brief introduction to the various exhibits.

The exhibits for each Scenario contain a key assumption page, and 5 pages of individual forecast results, arranged to illustrate categories of metrics. There are separate metric exhibits for the Water System and the Sewer System.

As noted in the introduction, we have attempted to incorporate specific financial metrics used by ratings agency analysts (and others) often compute independently to compare GLWA with peer utilities. The unique nature of the GLWA / DWSD relationship requires analysts to modify their traditional calculation approaches in order to accurately interpret GLWA audited financial statements, and to accurately reflect GLWA metrics when comparing with peer utilities. The necessary adjustments are a topic that the GLWA finance team has preliminary communicated with rating agency analysts, and will continue to do so as review continues. Where appropriate, we briefly introduced such modifications in this document.

- **Introductory Page:** Identifies key assumptions and outlines basis for capital financing strategies. Of particular note:
 - *Perhaps the key assumption is the forecasted change in overall BUDGET for the Regional System(s), as noted in the Scenario introduction above.*
 - *We have assumed an ongoing annual pension reimbursement requirement of \$9 million (combined for the Regional and Local Systems) starting in FY 2023. The current annual requirement is \$45 million.*
 - *We have reflected potential minimum balances for the I&E and Construction Funds. These assumptions are intended to support policy discussions, and illustrate:*
 - *The capital financing strategies that are noted on the assumption page.*
 - *Note that a key assumption in this forecast is that DWSD has indicated a short term policy approach of financing all “post bifurcation” debt service via use of the annual Lease Payment, and therefore reducing revenues available to the consolidated Water and Sewer Systems by a like amount. Each of the scenarios presented in this document assume that such an approach remains intact for the duration of the forecast period.*

- **Page 1: Capital Financing Forecast Summary:** Illustrates comparative forecasted funding sources for the Regional System CIP. The overall financial strategy envisions less reliance on debt financing, with more of the CIP being financed with revenue generated funds.
 - *The chart on the top of the page compares annual forecasted funding sources for the CIP.*
 - *The chart on the bottom of the page indicates a “rolling 5-year forecast” of the portion of the CIP that is financed via debt, and compares it with the Fitch “AA Median” metric.*

- **Page 2: Forecasted Annual Revenue Requirement Summary:** Illustrates the forecasted elements of the annual Regional System revenue requirement. The overall financial strategy envisions lessening the portion of the annual revenue dollar that is dedicated to debt service, and increasing the portion that is available to transfer to the I&E Fund(s) to cash finance the CIP.
 - *The chart on the top of the page shows the change in annual BUDGET. The black line reflects the total annual BUDGET increase, and the bars reflect the components. The reduction in the Master Bond Ordinance requirements in FY 2024 reflects the assumed reduction in legacy pension obligation requirements. All else being equal, the impact of this change would allow for a larger deposit to the I&E Fund, as illustrated in the chart(s).*
 - *The chart on the bottom of the page indicates the relative forecasted share each element comprises of the overall annual BUDGET.*

- **Page 3: Forecasted Debt Service Coverage:** Illustrates calculations of this metric, which is seen as perhaps the most critical indicator of financial performance by the investment community. The overall financial strategy envisions increasing debt service coverage ratios.
 - *The chart on the top of the page reflects calculated “rate covenant” debt service coverage ratios by the various liens of debt.*
 - Senior Lien (rate covenant minimum is 1.20);
 - 2nd Lien (rate covenant minimum is 1.10);
 - SRF Junior Lien (rate covenant minimum is 1.00). The SRF Junior Lien debt service coverage is often referred to as the “all in” or “total” coverage ratio.
 - *The top chart also reflects calculated “income statement proxy” coverage ratios – a metric that ratings agency analysts (and others) often compute independently. The only difference between this metric and the “all in”*

coverage is that it **generally** does not include investment income as revenue, whereas the rate covenant allows inclusion of investment income. However:

- The initially calculated “income statement proxy” coverage (solid green line) is misleading due to the unique nature of the GLWA / DWSD relationship, and requires an adjustment. This is because the GLWA financial statement of “Revenues, Expenses, and Changes in Net Position” (from which net revenues available to pay debt service are derived by analysts) only includes the net revenues from the regional system, while reported annual debt service payments include both the Regional System and Local System portions.
 - Our “Adjusted Income Statement Proxy” coverage ratios (dotted green line) reflect our suggested modification to accurately reflect true GLWA “all in” debt service coverage.
 - The black line reflects the target metric for AA rated utilities based on an interpretation of Fitch and Moody’s guidance. This metric is intended to apply to the “all in” coverage ratios (equivalent to the SRF Jr. Lien).
 - The chart on the bottom of the page illustrates the elements that provide the “coverage” over and above debt service. In essence, these are annual revenue requirements that are subordinate to operating expense and debt service in the Master Bond Ordinance Flow of Funds. The bars in the chart indicate the amount
 - The Regional System components are illustrated in green and represent the “coverage” that each element comprises of the forecasted Regional System debt service share.
 - The Local System components are illustrated in red and represent the “coverage” that each element comprises of the forecasted Local System debt service share.
 - The assumed DWSD policy approach of utilizing a portion of the annual Lease Payment for debt service essentially produces “negative” contributions to Local System (and overall consolidated) debt service coverage.
 - The black line illustrates total “all in” coverage providers for the consolidated system, and aligns with the ratios in the top table. This metric represents a weighted average of Regional and Local elements.
- **Page 4: Additional Forecasted Rating Agency Metrics:** Illustrates calculations of other comparative metrics. The overall financial strategy envisions meeting or exceeding peer performance metrics to improve credit ratings.
 - The first chart illustrates forecasted “Operating Margin.” Operating Margin is defined as operating revenues minus operating expenses (**including**

- depreciation expense). The metric in the chart represents Operating Margin divided by operating revenues.*
- *The second chart illustrates forecasted “Free Cash as a % of Depreciation”. This metric deducts annual debt service from Operating Margin, adds in annual depreciation expense, and then divides the result by annual depreciation expense.*
 - This metric requires an adjustment to accurately reflect GLWA financial results. We have computed the “adjusted” metric by only reflecting the debt service allocable to the Regional System in the calculation.
 - *The final chart illustrates forecasted “Debt to Operating Revenues”. This metric represents total long term debt divided by operating revenues.*
 - This metric requires an adjustment to accurately reflect GLWA financial results. We have computed the “adjusted” metric by only reflecting the long term debt allocable to the Regional System in the calculation.
- **Page 5: Forecasted Balance Sheet Metrics:** Illustrates depictions of key relative GLWA assets and liabilities since inception, and forecasted.
 - *The chart on the top of the page presents the Net Position, and the cash and investment balances in the “revenue generated” funds established by the Master Bond Ordinance. (excludes Construction Fund and annual forecasted funding sources for the CIP.*
 - *The chart on the bottom of the page compares the GLWA net capital assets (including the amounts owed by DWSD for Local System assets) and long term debt. The ratio of the two metrics is reflected by the dotted line. The overall financial strategy envisions reducing this metric to less than 100%, so that the balance sheet depiction of net capital assets exceeds related debt.*
 - *We note that the asset valuation that established the GLWA “starting net position” with respect to capital assets, and established ongoing depreciation schedules, has a significant impact on short term depictions of these metrics. The depreciation schedules are undergoing diligent review, and assumptions of projected future depreciation expense may change in subsequent forecasts.*

We trust that this information provides an effective introduction to this topic, and we look forward to presenting it to stakeholders in more detail.

GLWA Financial Forecast Model

Objectives:

- Provide forecasted financial results to assist evaluation of GLWA financial policies
- Calculate forecasted metrics that align with investment community analyses
- Establish financial benchmarks against which to measure future performance

These exhibits are intended to serve as an executive summary of forecasted financial results. While key assumptions are identified, the forecasted results are subject to significant additional assumptions that are documented in other detailed exhibits.

Scenario: **1**
 Header 1: Scenario 1
 Header 2: Baseline FY 2019 Budget Forecast
 Initial Forecast Year: **2018**

Key Scenario Assumptions:

	2018	2019	2020	2021	2022	2023	2024	2025 - 2030
Planning Level BUDGET Increase - Regional		2.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
O&M Inflation - Regional System			2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Total Legacy Pension Obligation after 2023							9,000,000	9,000,000
Minimum I&E Balance - <i>Regional</i>			90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000
Min Const Fund Balance - <i>Regional</i>	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
Minimum I&E Balance - <i>Local</i>	<i>Equal to annual Lease Payment transferred to I&E (net of amount applied to debt service)</i>							
Min Const Fund Balance - <i>Local</i>	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000

Regional System Capital Financing Strategy:

1. Fund all capital outlay and short-lived major CIP from I&E
2. Fund long-lived major CIP from I&E at amounts targeted to result in minimum policy "carryover" balances
3. Fund remaining long lived major CIP from issuance of revenue bonds (and SRF loans)
4. Forecast annual debt issuances in amounts necessary to fund (3) and result in minimum policy "carryover" balances

Local System Capital Financing Strategy:

1. Establish required funding level @ 80% of average 5-year CIP requirements
 2. Fund long lived major CIP from I&E at amounts targeted to result in minimum policy "carryover" balances
 3. Fund remaining long lived major CIP from issuance of revenue bonds (and SRF loans)
 4. Forecast annual debt issuances in amounts necessary to fund (3) and result in minimum policy "carryover" balances
 5. Utilize Lease Payment to finance all "post-bifurcation" debt service, so long as annual amounts direct to not exceed ___ of the annual Lease Payment
- | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>Maximum Lease Pmt to Debt Service:</i> | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
|---|--------|--------|--------|--------|--------|--------|--------|--------|

GLWA Financial Forecast Model

Objectives:

- Provide forecasted financial results to assist evaluation of GLWA financial policies
- Calculate forecasted metrics that align with investment community analyses
- Establish financial benchmarks against which to measure future performance

These exhibits are intended to serve as an executive summary of forecasted financial results. While key assumptions are identified, the forecasted results are subject to significant additional assumptions that are documented in other detailed exhibits.

Scenario: **2**
 Header 1: Scenario 2
 Header 2: No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
 Initial Forecast Year: **2018**

Key Scenario Assumptions:

	2018	2019	2020	2021	2022	2023	2024	2025 - 2030
Planning Level BUDGET Increase - Regional		0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
O&M Inflation - Regional System			1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Total Legacy Pension Obligation after 2023							9,000,000	9,000,000
Minimum I&E Balance - <i>Regional</i>			90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000
Min Const Fund Balance - <i>Regional</i>	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000
Minimum I&E Balance - <i>Local</i>	<i>Equal to annual Lease Payment transferred to I&E (net of amount applied to debt service)</i>							
Min Const Fund Balance - <i>Local</i>	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000

Regional System Capital Financing Strategy:

1. Fund all capital outlay and short-lived major CIP from I&E
2. Fund long-lived major CIP from I&E at amounts targeted to result in minimum policy "carryover" balances
3. Fund remaining long lived major CIP from issuance of revenue bonds (and SRF loans)
4. Forecast annual debt issuances in amounts necessary to fund (3) and result in minimum policy "carryover" balances

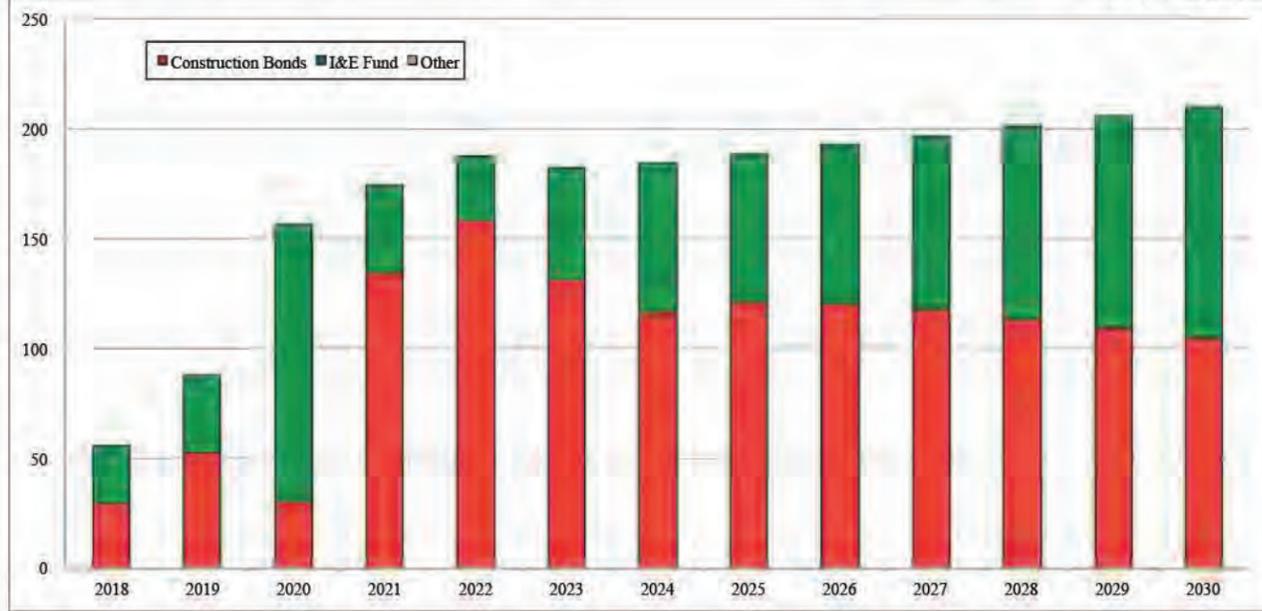
Local System Capital Financing Strategy:

1. Establish required funding level @ 80% of average 5-year CIP requirements
 2. Fund long lived major CIP from I&E at amounts targeted to result in minimum policy "carryover" balances
 3. Fund remaining long lived major CIP from issuance of revenue bonds (and SRF loans)
 4. Forecast annual debt issuances in amounts necessary to fund (3) and result in minimum policy "carryover" balances
 5. Utilize Lease Payment to finance all "post-bifurcation" debt service, so long as annual amounts direct to not exceed ___ of the annual Lease Payment
- | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>Maximum Lease Pmt to Debt Service:</i> | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
|---|--------|--------|--------|--------|--------|--------|--------|--------|

SCENARIO 1

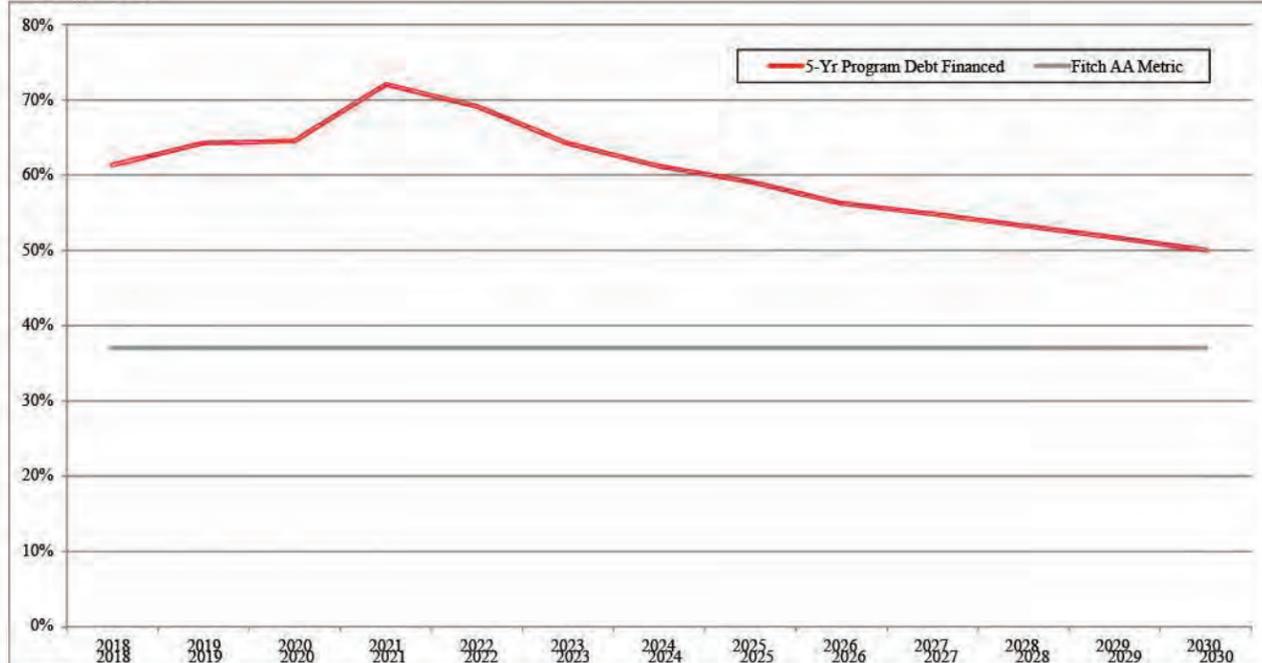
Financial Forecast Summary - Water Supply System Capital Financing (\$ millions)
Financing Sources

Scenario 1 - Baseline FY 2019 Budget Forecast
WATER Page 1 of 5



CIP Financing Requirements	56	88	156	174	188	183	185	189	193	197	201	206	210
Financing Sources	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Construction Bonds	30	53	31	134	158	131	117	121	120	118	114	110	105
I&E Fund	26	35	125	40	30	52	68	68	73	79	88	96	105
Other	0	0	0	0	0	0	0	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

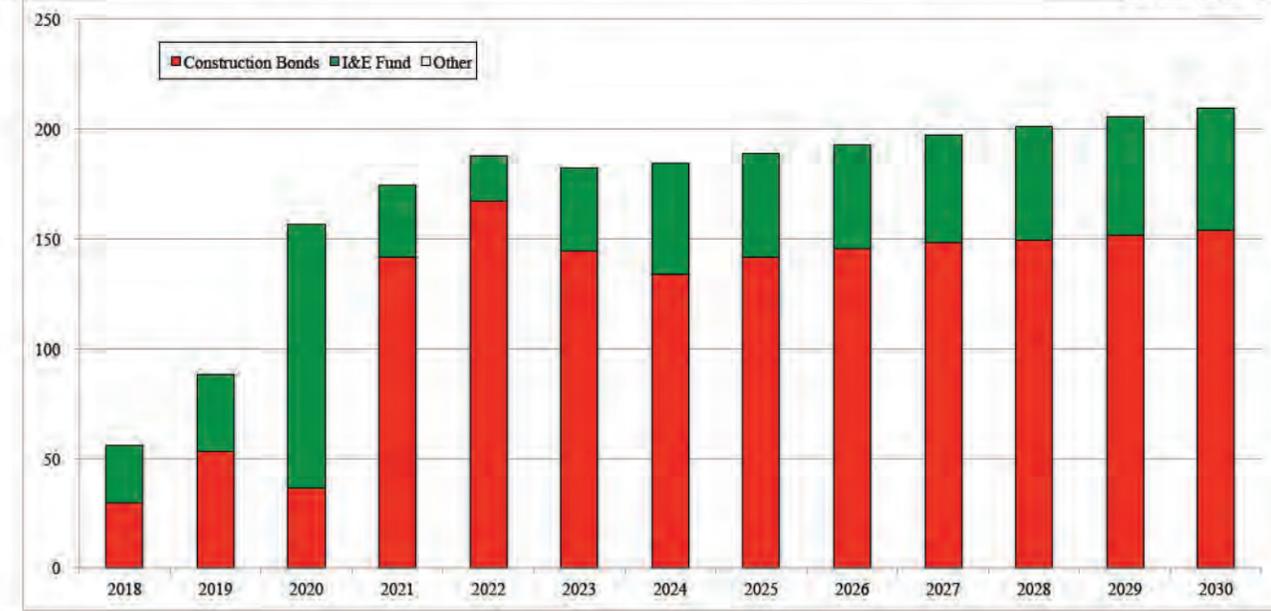


5-Yr Program Debt Financed	61%	64%	65%	72%	69%	64%	61%	59%	56%	55%	53%	52%	50%
Fitch AA Metric	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%

SCENARIO 2

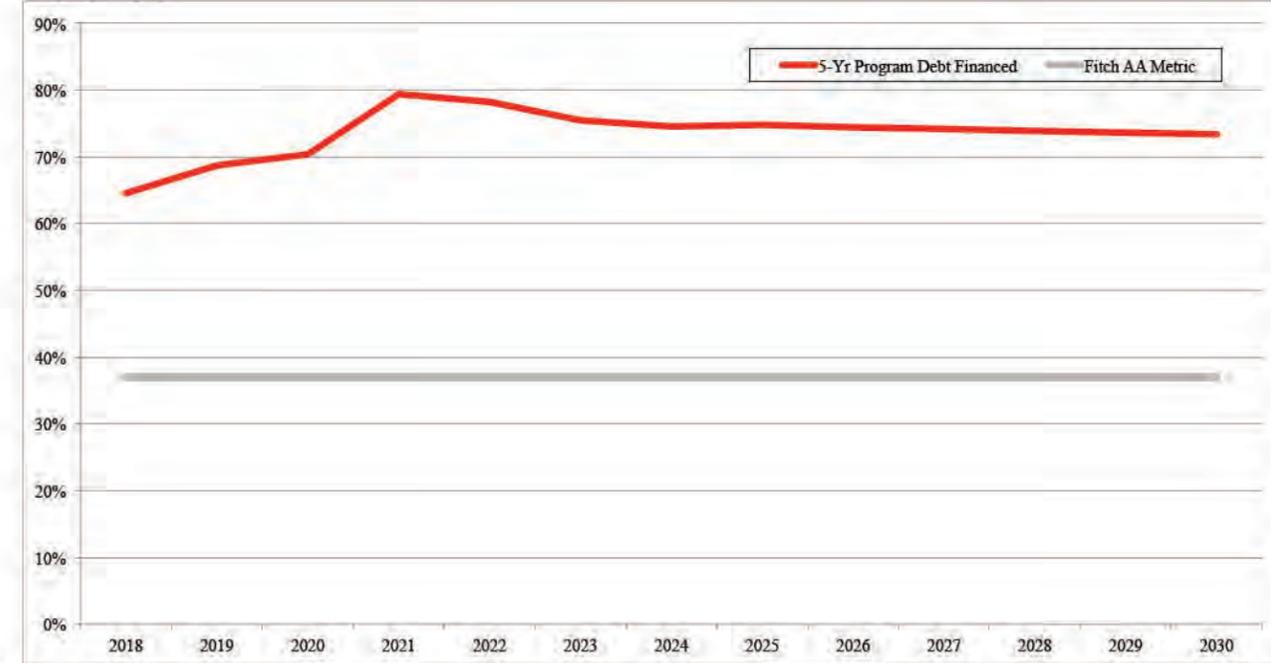
Financial Forecast Summary - Water Supply System Capital Financing (\$ millions)
Financing Sources

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
WATER Page 1 of 5



CIP Financing Requirements	56	88	156	174	188	183	185	189	193	197	201	206	210
Financing Sources	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Construction Bonds	30	53	36	142	167	144	134	142	145	148	150	152	154
I&E Fund	26	35	120	33	21	38	51	47	47	49	52	54	56
Other	0	0	0	0	0	0	0	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

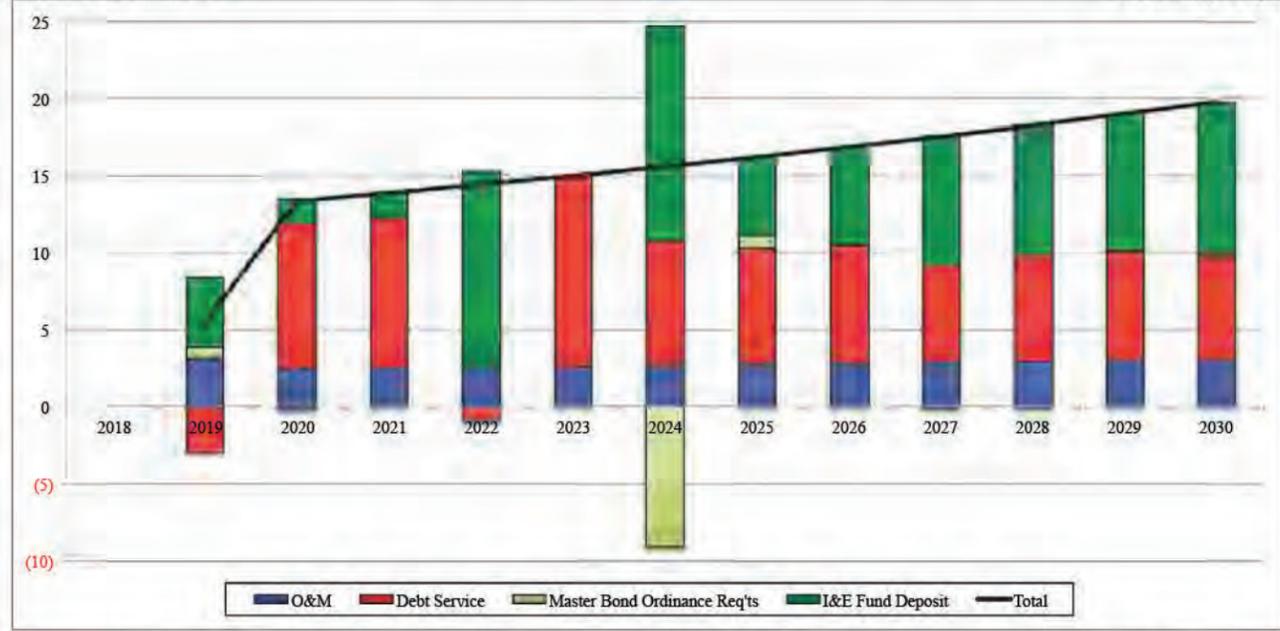


5-Yr Program Debt Financed	65%	69%	70%	79%	78%	75%	75%	75%	74%	74%	74%	74%	73%
Fitch AA Metric	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%

SCENARIO 1

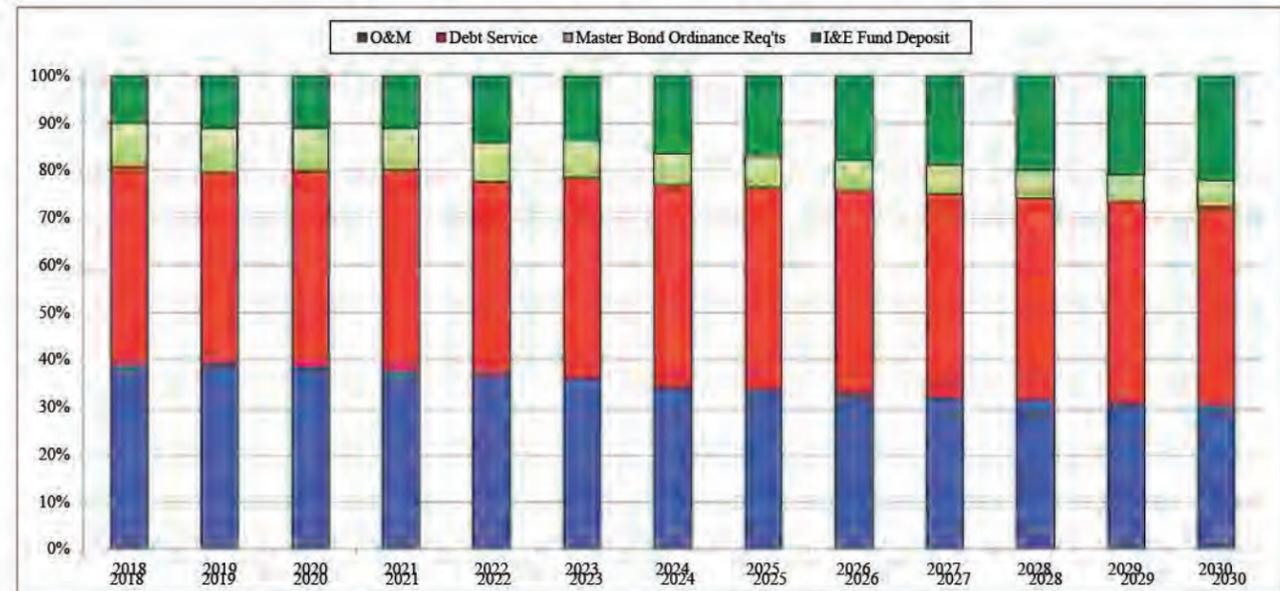
Financial Forecast Summary - Water Supply System Revenue Requirements
Change in Relative BUDGET - \$ millions

Scenario 1 - Baseline FY 2019 Budget Forecast
WATER Page 2 of 5



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M		3.2	2.5	2.5	2.6	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.0
Debt Service		(3.0)	9.4	9.7	(0.9)	12.3	8.1	7.5	7.7	6.3	7.0	7.0	6.8
Master Bond Ordinance Req'ts		0.7	(0.2)	0.1	0.1	0.1	(9.1)	0.9	0.1	(0.1)	(0.0)	0.1	0.1
I&E Fund Deposit		4.5	1.6	1.6	12.7	0.0	13.9	5.1	6.3	8.4	8.4	8.9	9.8
Total		5.4	13.3	13.9	14.4	15.0	15.6	16.2	16.9	17.6	18.3	19.0	19.7

Relative BUDGET

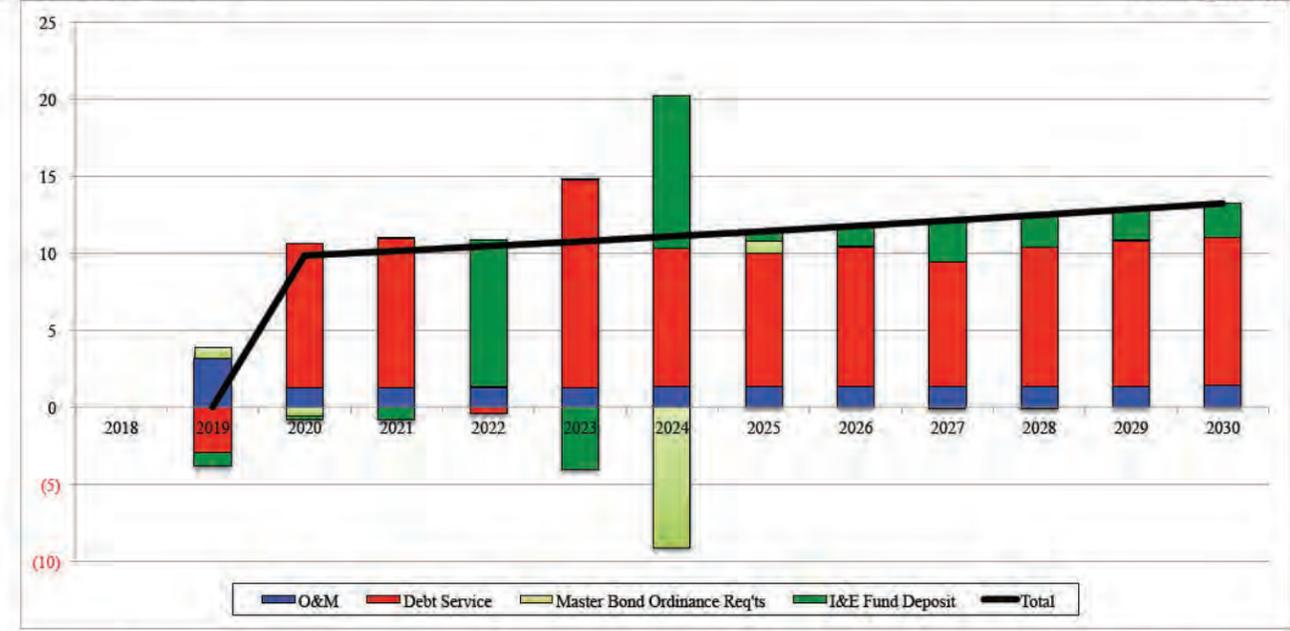


	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M	39%	39%	38%	38%	37%	36%	34%	34%	33%	32%	32%	31%	30%
Debt Service	42%	40%	41%	42%	41%	42%	43%	43%	43%	43%	42%	42%	42%
Master Bond Ordinance Req'l	9%	9%	9%	9%	8%	8%	7%	7%	6%	6%	6%	6%	6%
I&E Fund Deposit	10%	11%	11%	11%	14%	14%	16%	17%	18%	19%	20%	21%	22%

SCENARIO 2

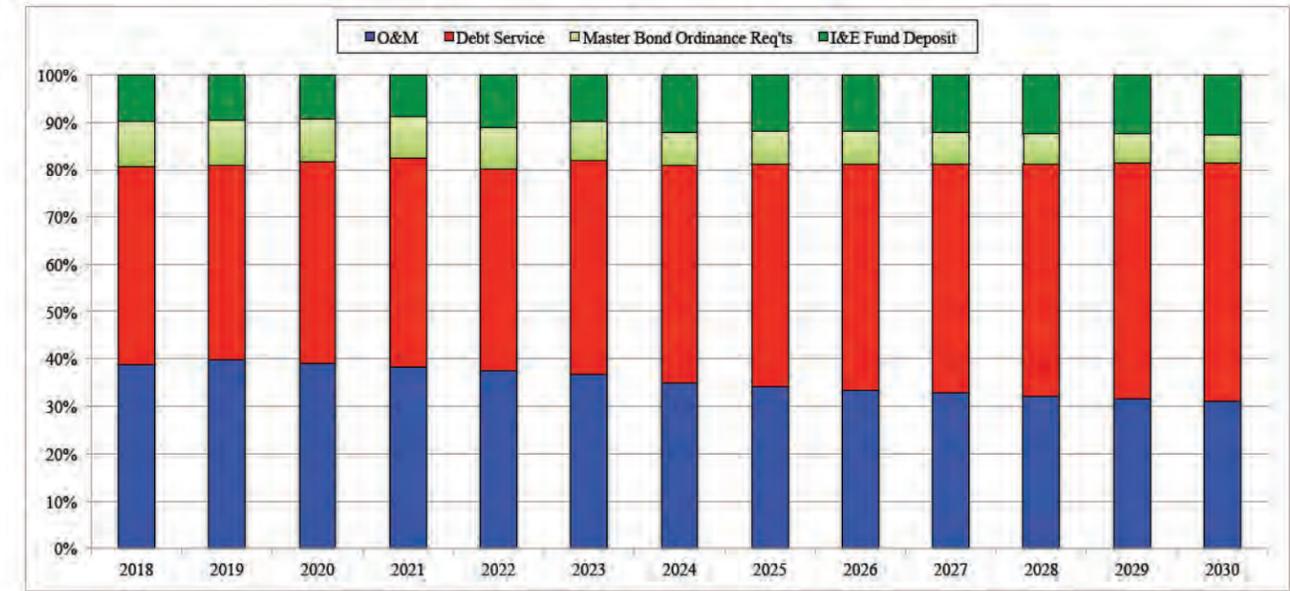
Financial Forecast Summary - Water Supply System Revenue Requirements
Change in Relative BUDGET - \$ millions

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
WATER Page 2 of 5



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M		3.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4
Debt Service		(3.0)	9.4	9.7	(0.4)	13.5	9.0	8.6	9.1	8.0	9.0	9.5	9.6
Master Bond Ordinance Req'ts		0.7	(0.6)	0.1	0.1	0.1	(9.1)	0.8	0.0	(0.1)	(0.1)	0.0	0.0
I&E Fund Deposit		(0.9)	(0.2)	(0.9)	9.5	(4.0)	9.9	0.6	1.3	2.8	2.2	2.0	2.2
Total		0.0	9.8	10.1	10.4	10.8	11.1	11.4	11.8	12.1	12.5	12.8	13.2

Relative BUDGET



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M	39%	40%	39%	38%	38%	37%	35%	34%	33%	33%	32%	32%	31%
Debt Service	42%	41%	42%	44%	43%	45%	46%	47%	48%	48%	49%	50%	50%
Master Bond Ordinance Req'l	9%	10%	9%	9%	9%	8%	7%	7%	7%	7%	6%	6%	6%
I&E Fund Deposit	10%	10%	9%	9%	11%	10%	12%	12%	12%	12%	12%	12%	13%

SCENARIO 1

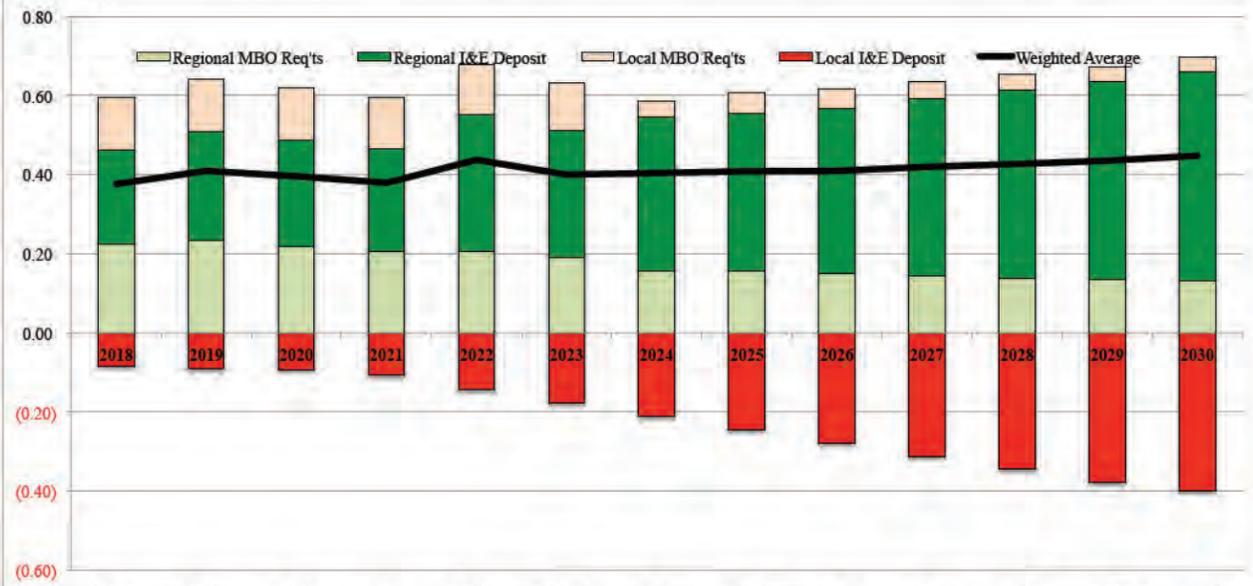
Financial Forecast Summary - Water Supply System
Debt Service Coverage

Scenario 1 - Baseline FY 2019 Budget Forecast
WATER Page 3 of 5



Sr. Lien Rate Covenant	1.86	2.02	1.98	1.94	1.95	1.86	1.84	1.82	1.80	1.78	1.77	1.77	1.77
2nd. Lien Rate Covenant	1.40	1.43	1.42	1.40	1.46	1.42	1.42	1.43	1.43	1.43	1.43	1.44	1.45
SRF Jr. Lien Rate Covenant	1.38	1.41	1.40	1.38	1.44	1.40	1.40	1.41	1.41	1.42	1.43	1.44	1.45
Income Statement Proxy	1.18	1.20	1.20	1.20	1.25	1.23	1.23	1.24	1.25	1.26	1.28	1.29	1.31
Adj Income Statement Proxy	1.38	1.41	1.40	1.38	1.44	1.40	1.40	1.41	1.41	1.42	1.43	1.44	1.45
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

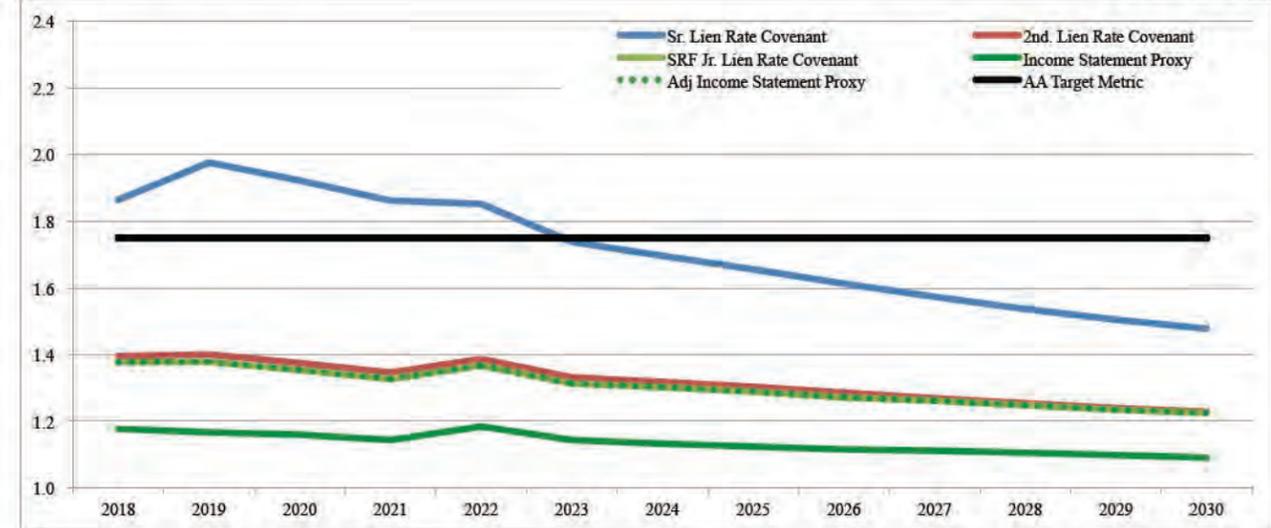


Regional MBO Req'ts	0.22	0.23	0.22	0.20	0.21	0.19	0.16	0.16	0.15	0.15	0.14	0.14	0.13
Regional I&E Deposit	0.24	0.28	0.27	0.26	0.35	0.32	0.39	0.40	0.42	0.45	0.47	0.50	0.53
Local MBO Req'ts	0.13	0.13	0.13	0.13	0.12	0.12	0.04	0.05	0.05	0.04	0.04	0.04	0.04
Local I&E Deposit	(0.08)	(0.09)	(0.09)	(0.11)	(0.14)	(0.18)	(0.21)	(0.24)	(0.28)	(0.31)	(0.34)	(0.38)	(0.40)
Weighted Average	0.38	0.41	0.40	0.38	0.44	0.40	0.40	0.41	0.41	0.42	0.43	0.44	0.45
Regional Total	0.46	0.51	0.49	0.47	0.55	0.51	0.55	0.56	0.57	0.59	0.61	0.64	0.66
Local Total	0.05	0.04	0.04	0.02	(0.02)	(0.06)	(0.17)	(0.19)	(0.23)	(0.27)	(0.30)	(0.34)	(0.36)
Weighted Average	0.38	0.41	0.40	0.38	0.44	0.40	0.40	0.41	0.41	0.42	0.43	0.44	0.45

SCENARIO 2

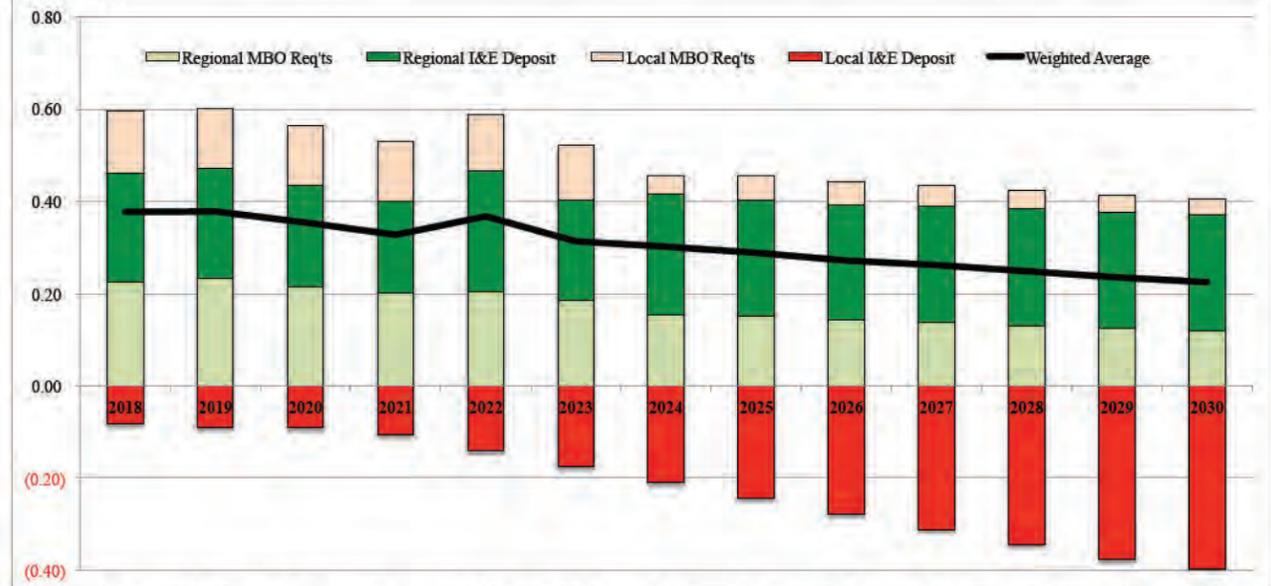
Financial Forecast Summary - Water Supply System
Debt Service Coverage

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
WATER Page 3 of 5



Sr. Lien Rate Covenant	1.86	1.98	1.92	1.86	1.85	1.74	1.70	1.66	1.61	1.57	1.54	1.50	1.48
2nd. Lien Rate Covenant	1.40	1.40	1.37	1.35	1.39	1.33	1.32	1.30	1.29	1.27	1.25	1.24	1.23
SRF Jr. Lien Rate Covenant	1.38	1.38	1.35	1.33	1.37	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.22
Income Statement Proxy	1.18	1.17	1.16	1.14	1.18	1.14	1.13	1.12	1.11	1.11	1.11	1.10	1.09
Adj Income Statement Proxy	1.38	1.38	1.35	1.33	1.37	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.22
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

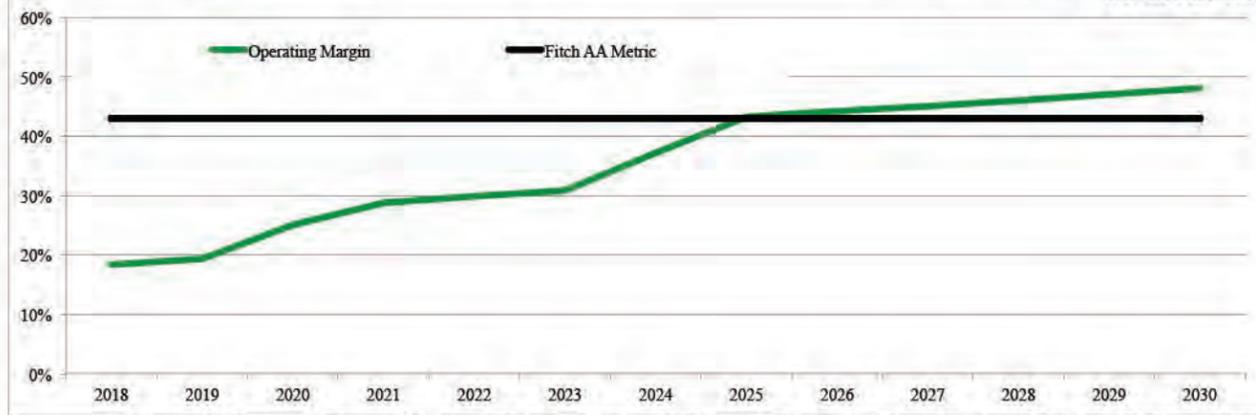


Regional MBO Req'ts	0.22	0.23	0.21	0.20	0.20	0.19	0.15	0.15	0.14	0.14	0.13	0.13	0.12
Regional I&E Deposit	0.24	0.24	0.22	0.20	0.26	0.22	0.26	0.25	0.25	0.25	0.25	0.25	0.25
Local MBO Req'ts	0.13	0.13	0.13	0.13	0.12	0.12	0.04	0.05	0.05	0.04	0.04	0.04	0.04
Local I&E Deposit	(0.08)	(0.09)	(0.09)	(0.11)	(0.14)	(0.18)	(0.21)	(0.24)	(0.28)	(0.31)	(0.34)	(0.38)	(0.40)
Weighted Average	0.38	0.38	0.35	0.33	0.37	0.31	0.30	0.29	0.27	0.26	0.25	0.24	0.22
Regional Total	0.46	0.47	0.43	0.40	0.47	0.40	0.42	0.40	0.39	0.39	0.38	0.38	0.37
Local Total	0.05	0.04	0.04	0.02	(0.02)	(0.06)	(0.17)	(0.19)	(0.23)	(0.27)	(0.30)	(0.34)	(0.36)
Weighted Average	0.38	0.38	0.35	0.33	0.37	0.31	0.30	0.29	0.27	0.26	0.25	0.24	0.22

SCENARIO 1

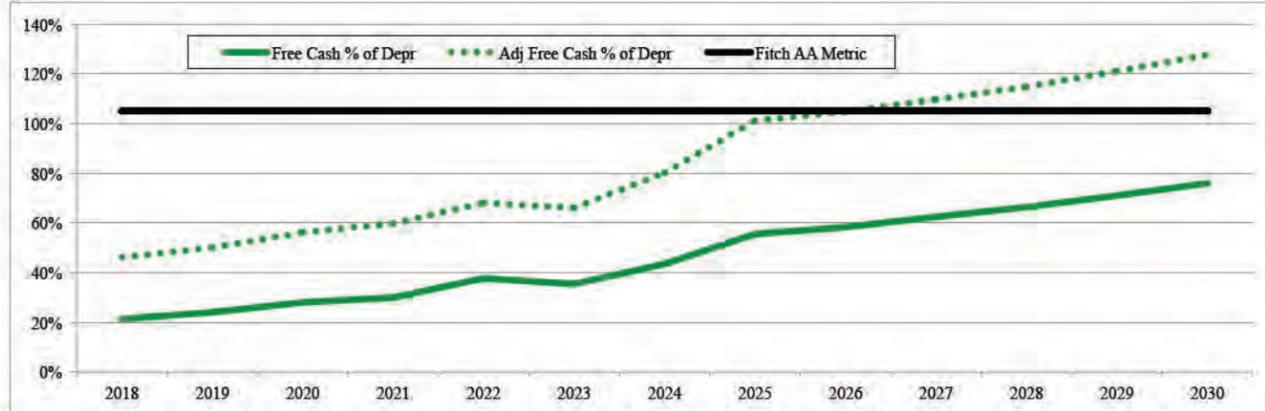
Financial Forecast Summary - Water Supply System
Operating Margin

Scenario 1 - Baseline FY 2019 Budget Forecast
WATER Page 4 of 5



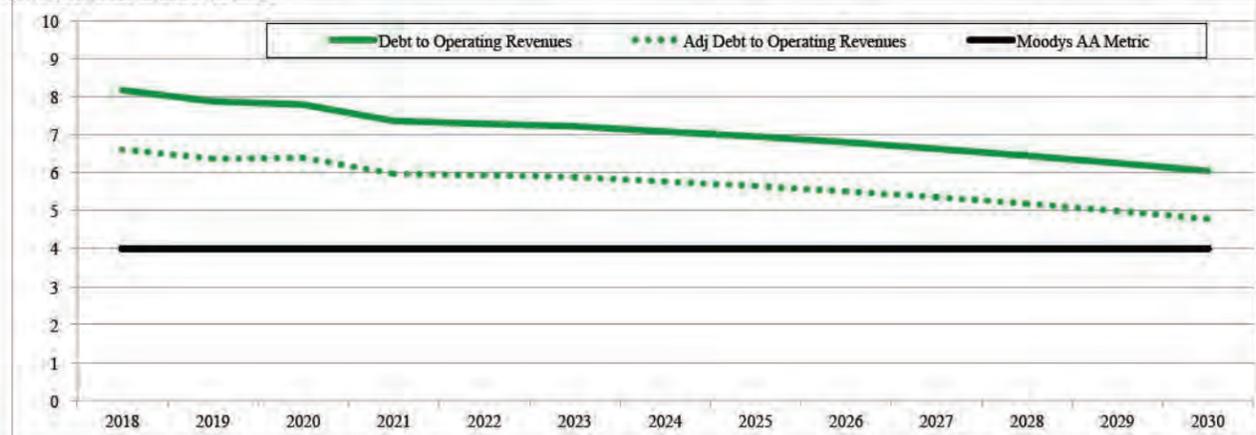
Operating Margin	18%	19%	25%	29%	30%	31%	37%	43%	44%	45%	46%	47%	48%
Fitch AA Metric	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%

Free Cash % of Depr



Free Cash % of Depr	21%	24%	28%	30%	38%	35%	43%	56%	58%	63%	66%	71%	76%
Adj Free Cash % of Depr	46%	50%	56%	60%	68%	66%	80%	101%	105%	110%	115%	121%	128%
Fitch AA Metric	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%

Debt to Operating Revenues (lower metric is positive)

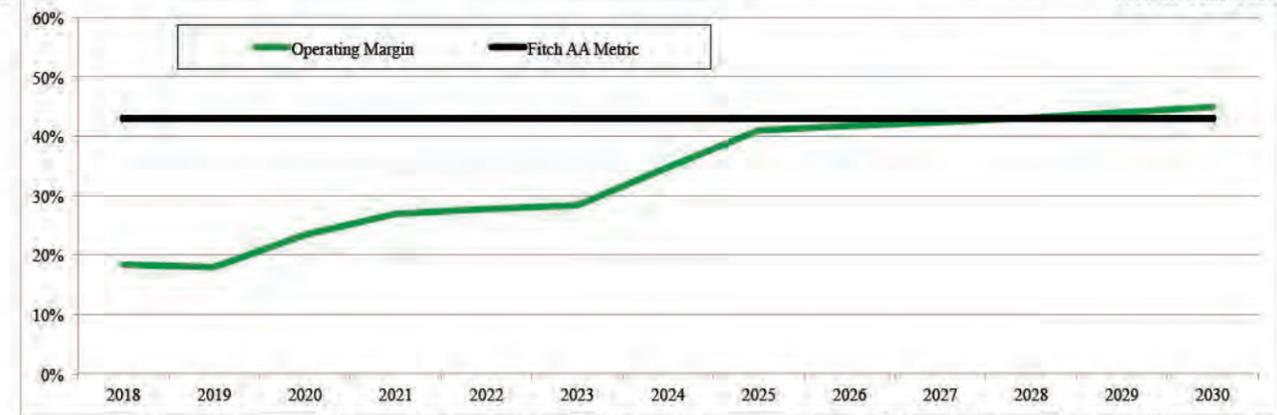


Debt to Operating Revenues	8.2	7.9	7.8	7.4	7.3	7.2	7.1	7.0	6.8	6.6	6.5	6.3	6.0
Adj Debt to Operating Reven	6.6	6.4	6.4	6.0	5.9	5.9	5.8	5.7	5.5	5.4	5.2	5.0	4.8
Moody's AA Metric	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

SCENARIO 2

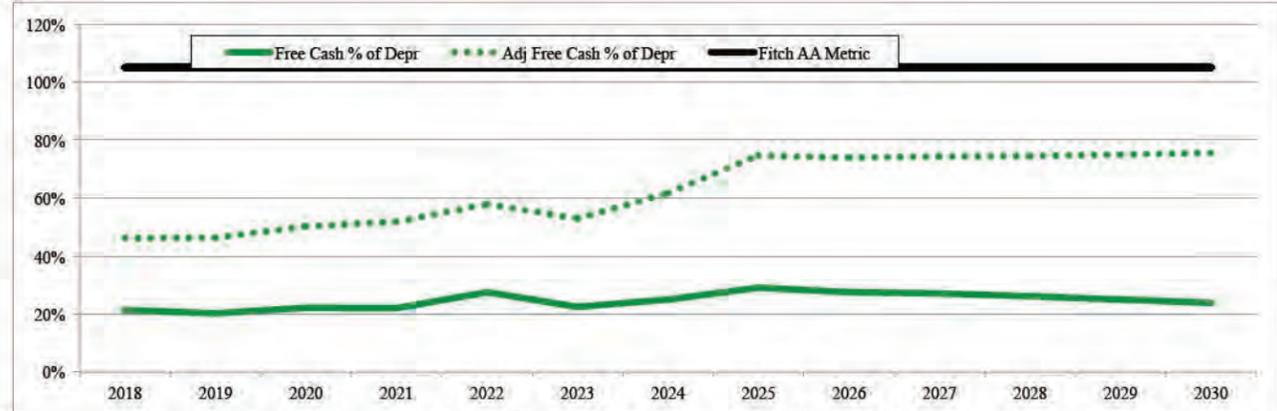
Financial Forecast Summary - Water Supply System
Operating Margin

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
WATER Page 4 of 5



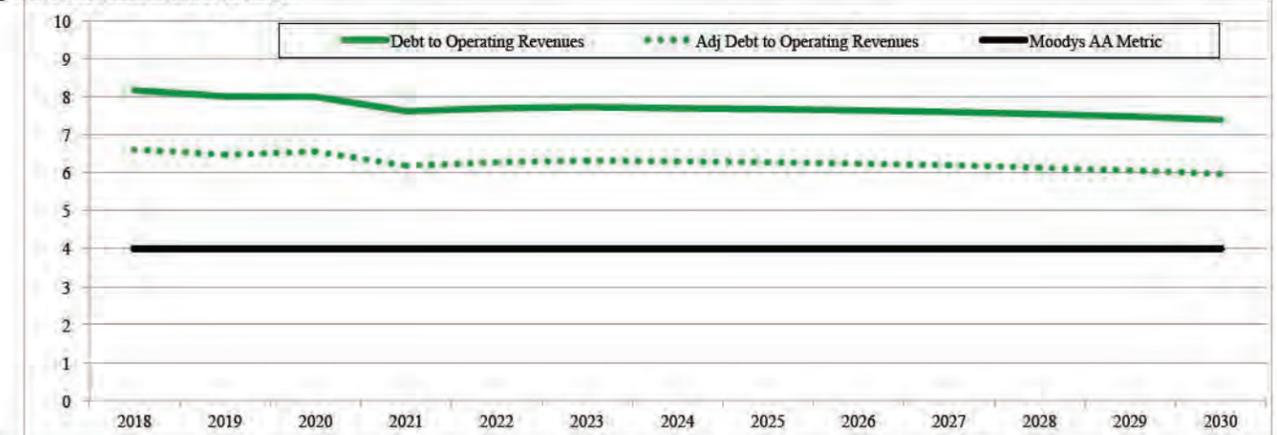
Operating Margin	18%	18%	23%	27%	28%	28%	35%	41%	42%	42%	43%	44%	45%
Fitch AA Metric	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%

Free Cash % of Depr



Free Cash % of Depr	21%	20%	22%	22%	28%	22%	25%	29%	28%	27%	26%	25%	24%
Adj Free Cash % of Depr	46%	46%	50%	52%	58%	53%	62%	75%	74%	74%	75%	75%	76%
Fitch AA Metric	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%

Debt to Operating Revenues (lower metric is positive)

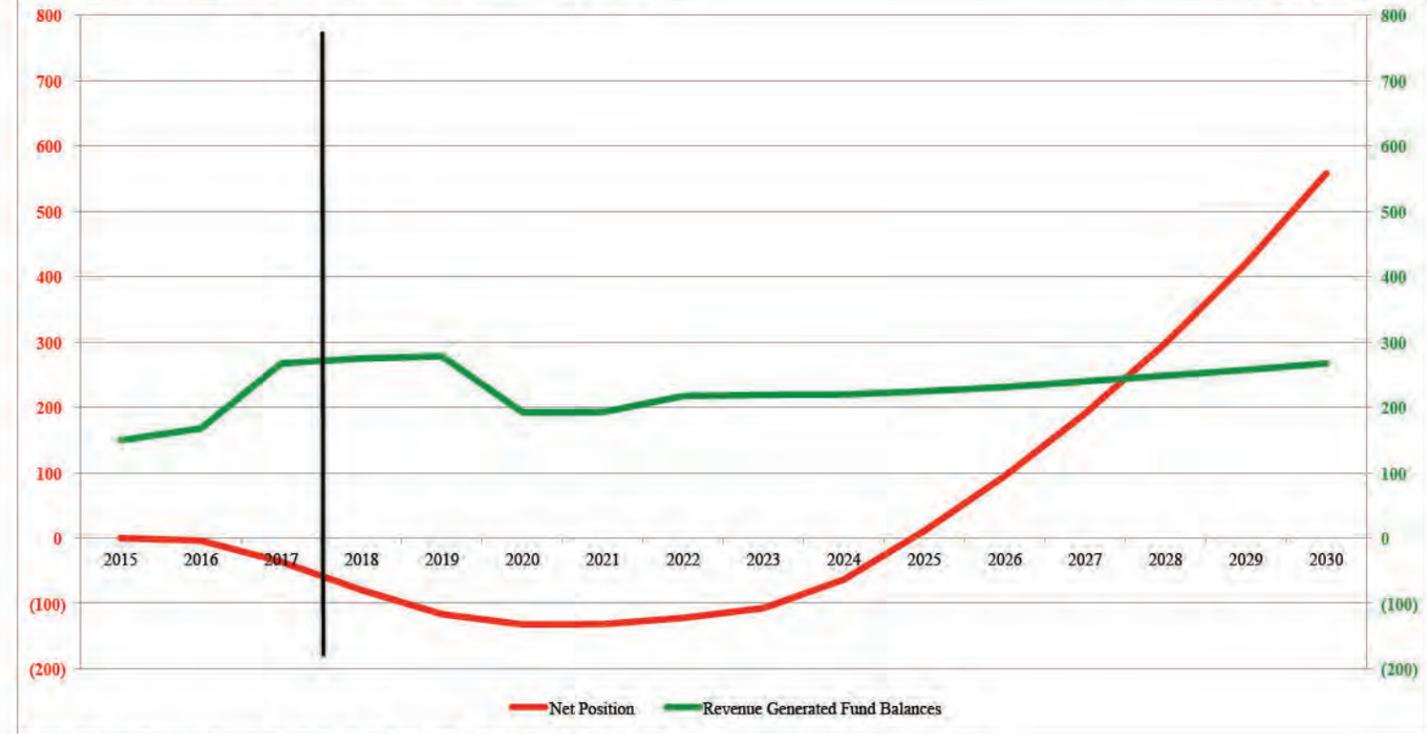


Debt to Operating Revenues	8.2	8.0	8.0	7.6	7.7	7.7	7.7	7.7	7.6	7.6	7.5	7.5	7.4
Adj Debt to Operating Reven	6.6	6.5	6.6	6.2	6.3	6.3	6.3	6.3	6.2	6.2	6.1	6.1	6.0
Moody's AA Metric	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

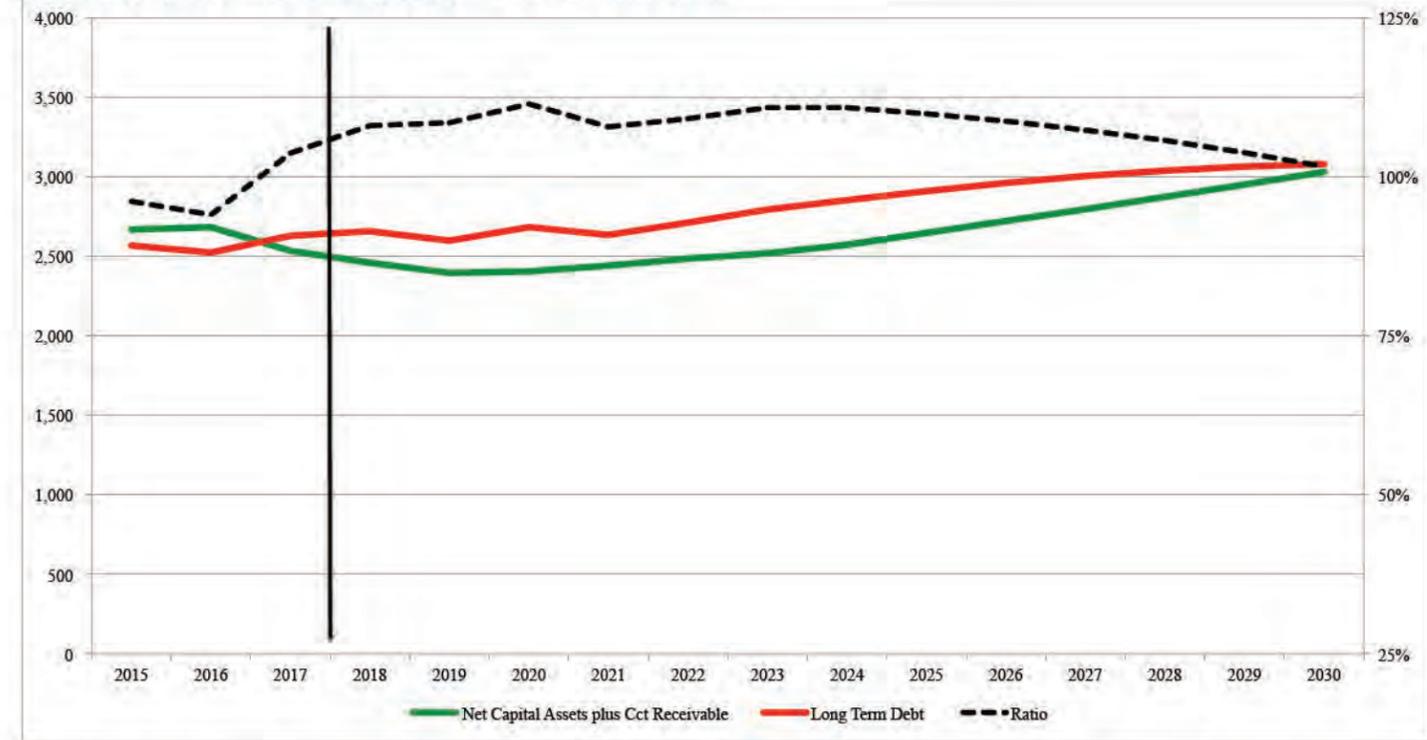
SCENARIO 1

Financial Forecast Summary - Water Supply System
 Projected Net Position and Unrestricted MBO Fund Balances (\$ millions)

Scenario 1 - Baseline FY 2019 Budget Forecast
 WATER Page 5 of 5



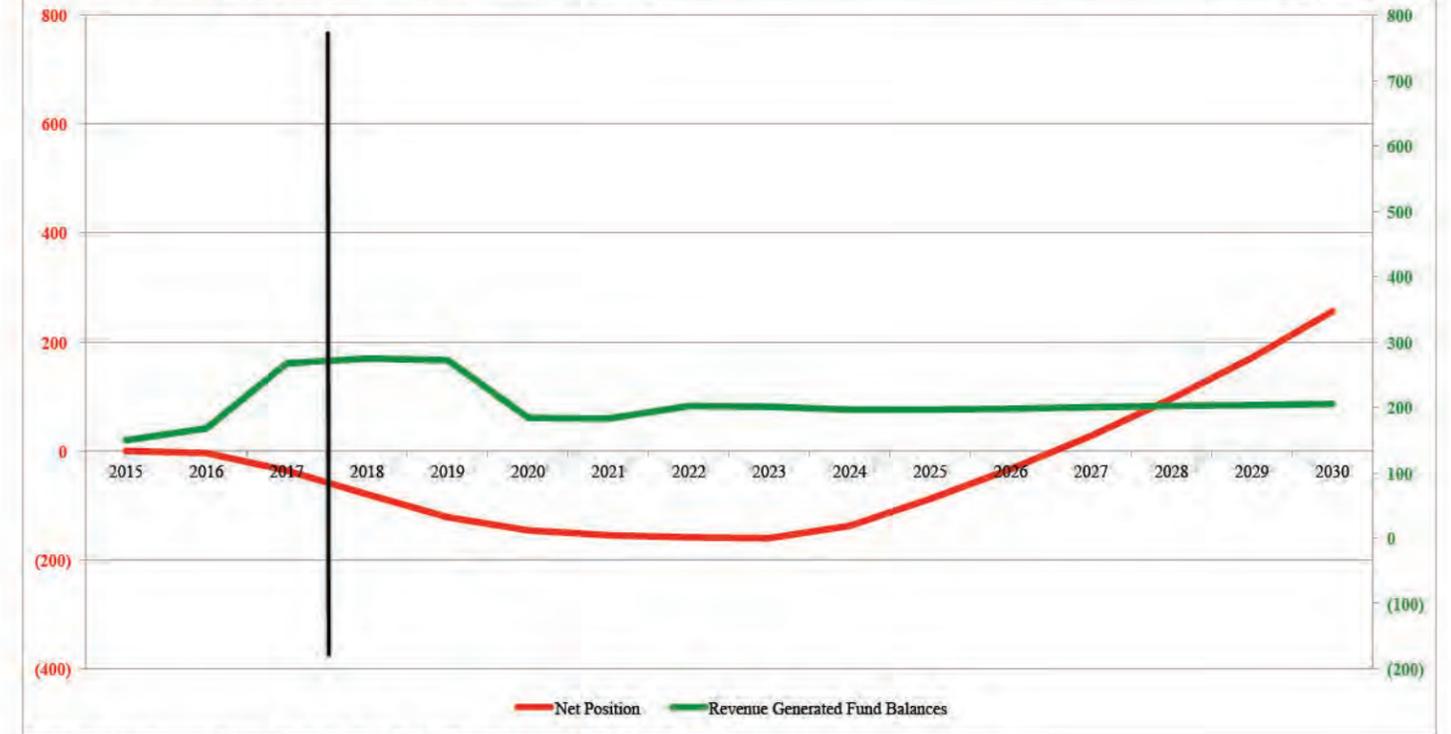
Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



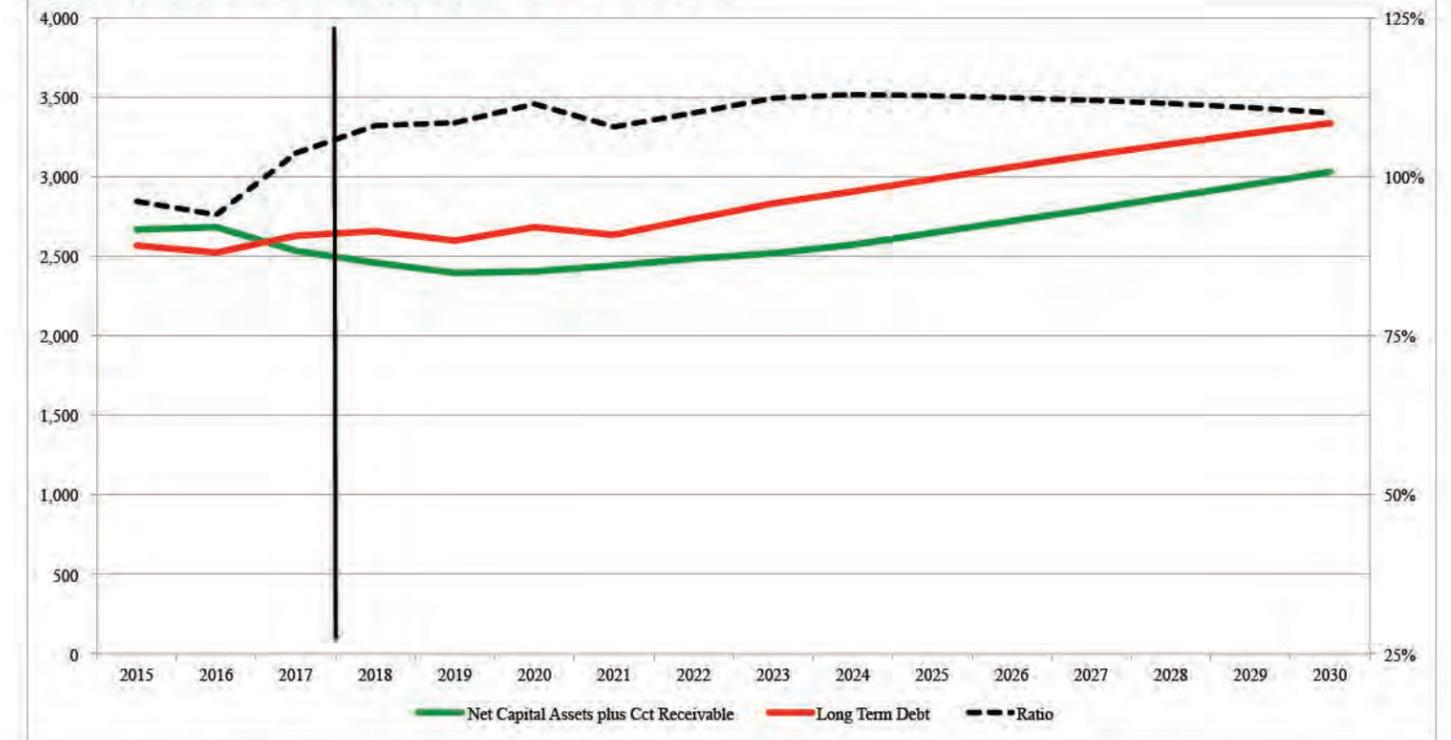
SCENARIO 2

Financial Forecast Summary - Water Supply System
 Projected Net Position and Unrestricted MBO Fund Balances (\$ millions)

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
 WATER Page 5 of 5



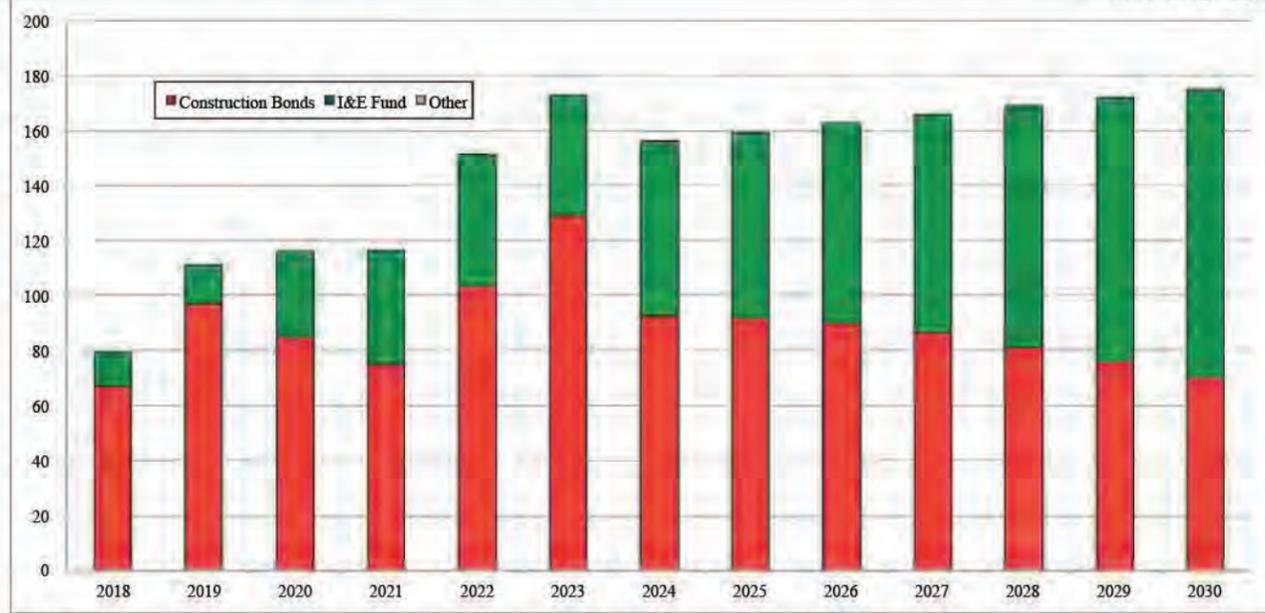
Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



SCENARIO 1

Financial Forecast Summary - Sewage Disposal System Capital Financing (\$ millions)
Financing Sources

Scenario 1 - Baseline FY 2019 Budget Forecast
SEWER Page 1 of 5



CIP Financing Requirements	79	111	116	116	151	173	156	160	163	166	169	172	175
Financing Sources	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Construction Bonds	67	97	85	75	103	129	93	92	90	87	82	76	70
I&E Fund	12	14	31	41	48	44	64	67	73	79	87	96	105
Other	0	0	0	0	0	0	0	0	0	0	0	0	0

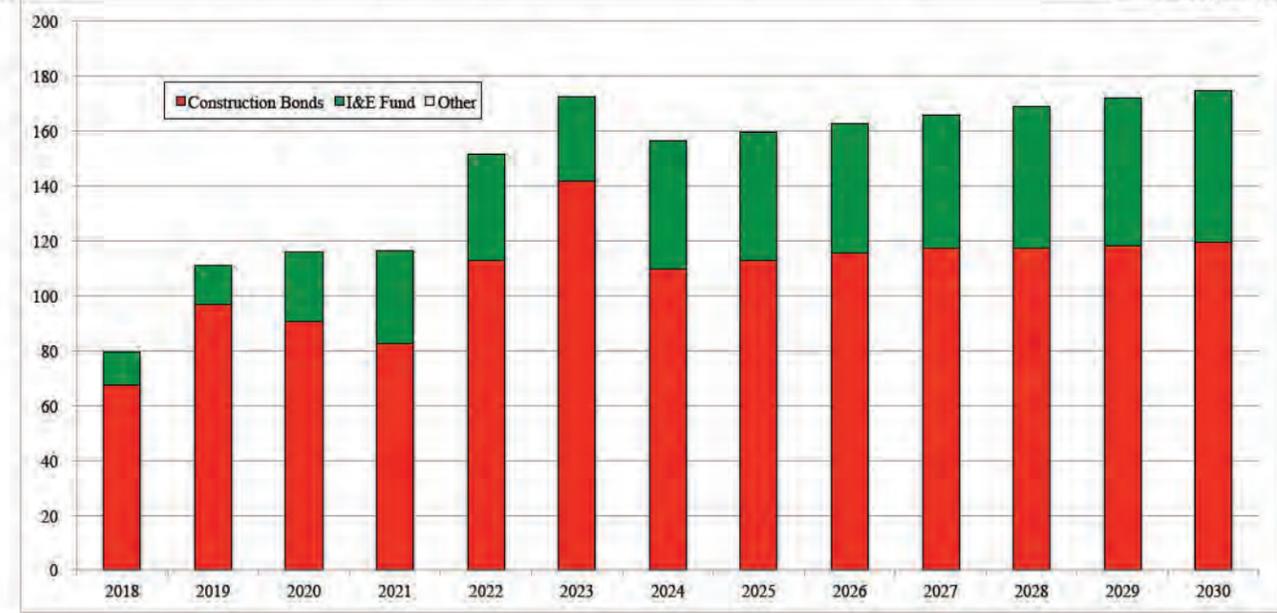
Relative Debt Financing (5-year projection)



5-Yr Program Debt Financed	75%	73%	68%	65%	63%	60%	55%	52%	48%	46%	44%	42%	40%
Fitch AA Metric	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%

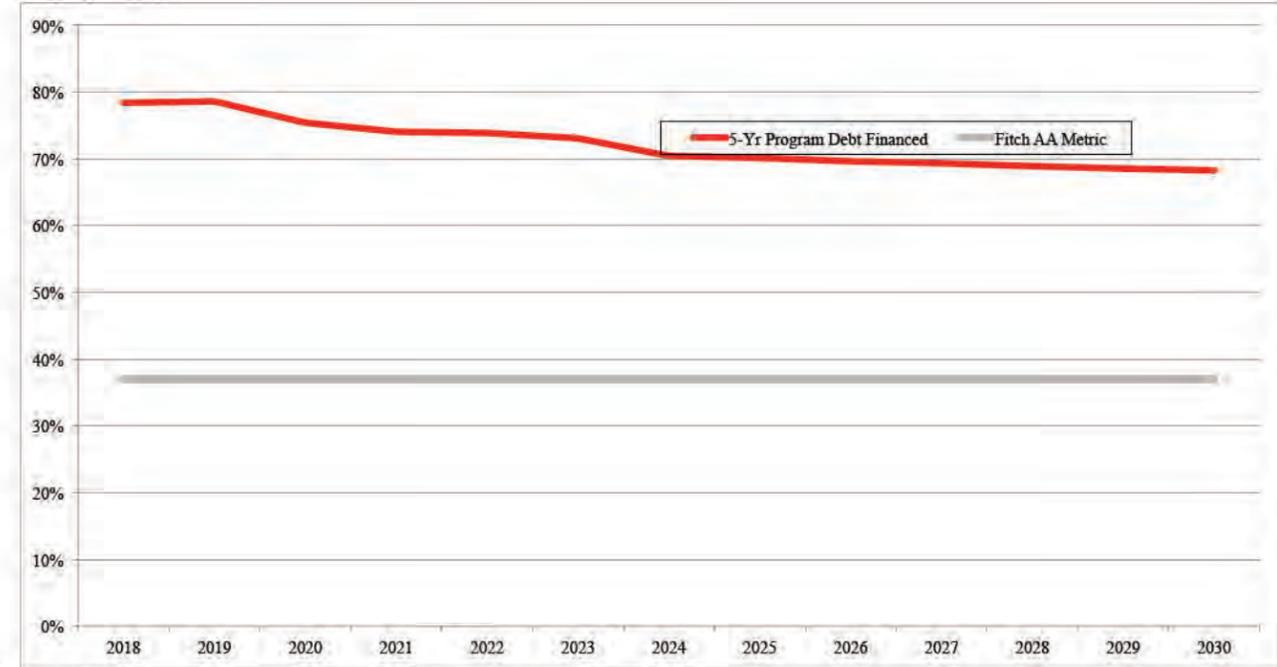
SCENARIO 2

Financial Forecast Summary - Sewage Disposal System Capital Financing (\$ millions)
Financing Sources Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
SEWER Page 1 of 5



CIP Financing Requirements	79	111	116	116	151	173	156	160	163	166	169	172	175
Financing Sources	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Construction Bonds	67	97	90	83	113	142	110	113	115	117	117	118	119
I&E Fund	12	14	25	34	38	31	47	47	47	49	51	54	56
Other	0	0	0	0	0	0	0	0	0	0	0	0	0

Relative Debt Financing (5-year projection)

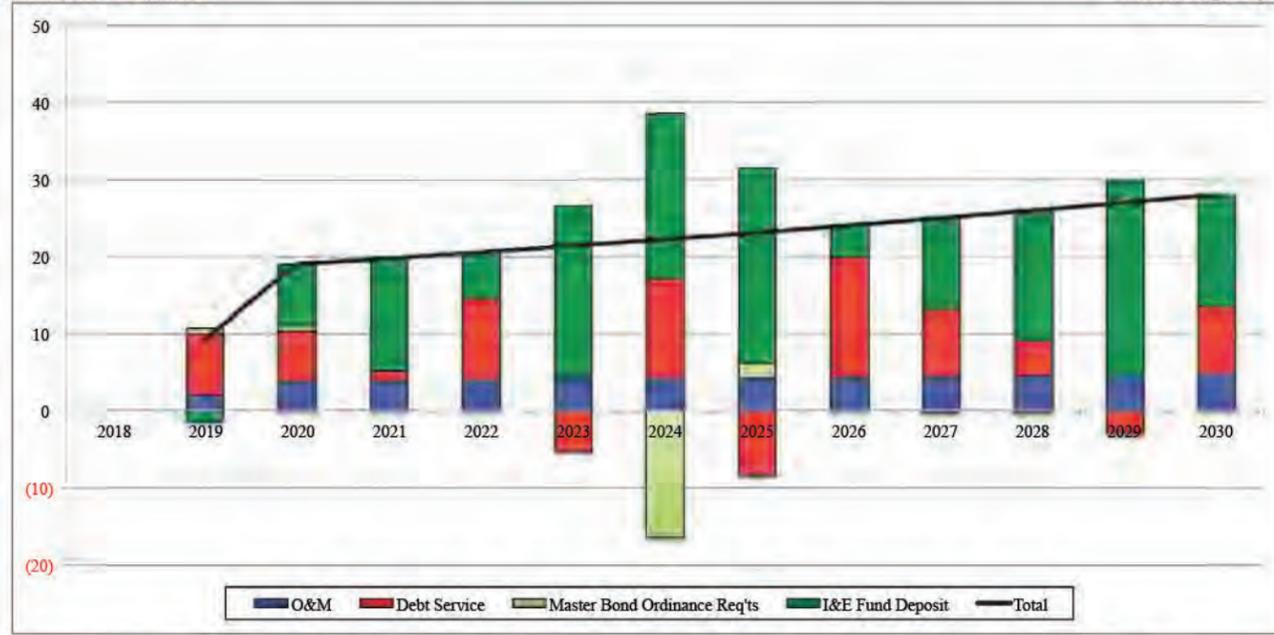


5-Yr Program Debt Financed	78%	79%	75%	74%	74%	73%	70%	70%	70%	69%	69%	69%	68%
Fitch AA Metric	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%

SCENARIO 1

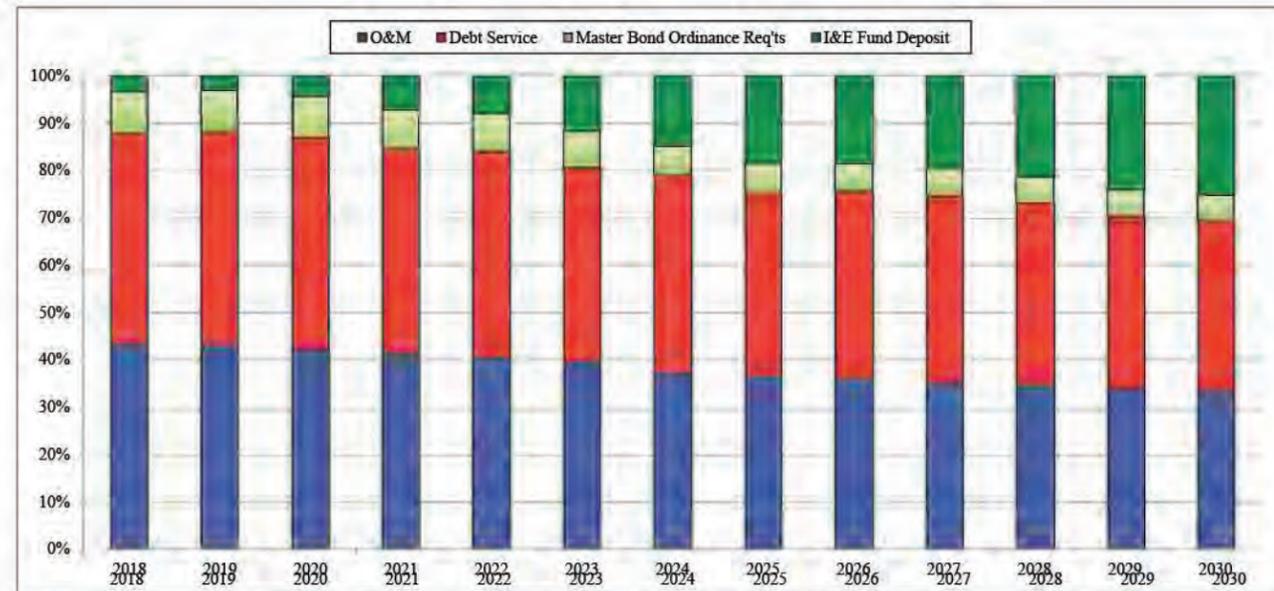
Financial Forecast Summary - Sewage Disposal System Revenue Requirements
Change in Relative BUDGET - \$ millions

Scenario 1 - Baseline FY 2019 Budget Forecast
SEWER Page 2 of 5



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M		2.0	3.9	3.9	4.0	4.1	4.2	4.3	4.3	4.4	4.5	4.6	4.7
Debt Service		8.0	6.5	1.2	10.4	(5.3)	12.9	(8.4)	15.5	8.7	4.7	(3.0)	8.7
Master Bond Ordinance Req'ts		0.7	0.7	0.1	0.1	0.1	(16.3)	1.9	0.1	(0.2)	(0.2)	0.1	0.1
I&E Fund Deposit		(1.4)	7.9	14.5	6.0	22.4	21.5	25.4	4.1	12.1	16.9	25.3	14.6
Total		9.3	19.0	19.8	20.5	21.4	22.2	23.1	24.0	25.0	26.0	27.0	28.1

Relative BUDGET

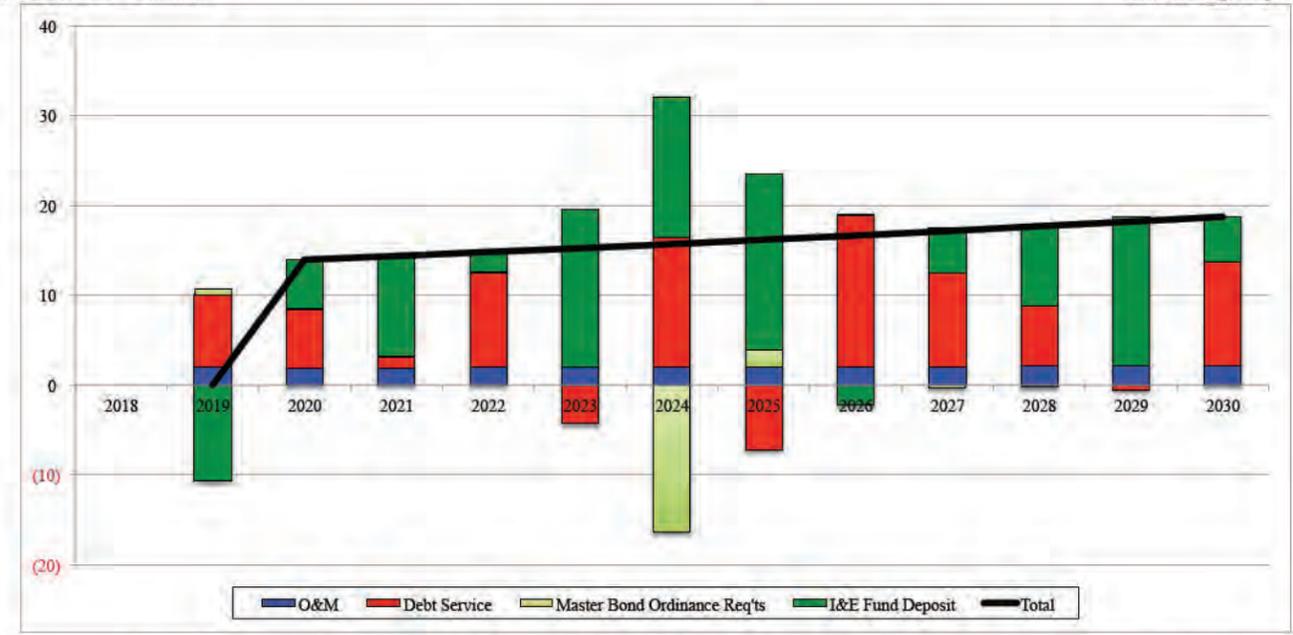


	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M	43%	43%	42%	41%	40%	40%	37%	37%	36%	35%	34%	34%	33%
Debt Service	44%	45%	45%	43%	44%	41%	42%	39%	40%	39%	39%	37%	36%
Master Bond Ordinance Req'ts	9%	9%	9%	8%	8%	8%	6%	6%	6%	6%	6%	5%	5%
I&E Fund Deposit	3%	3%	4%	7%	8%	12%	15%	19%	19%	20%	21%	24%	25%

SCENARIO 2

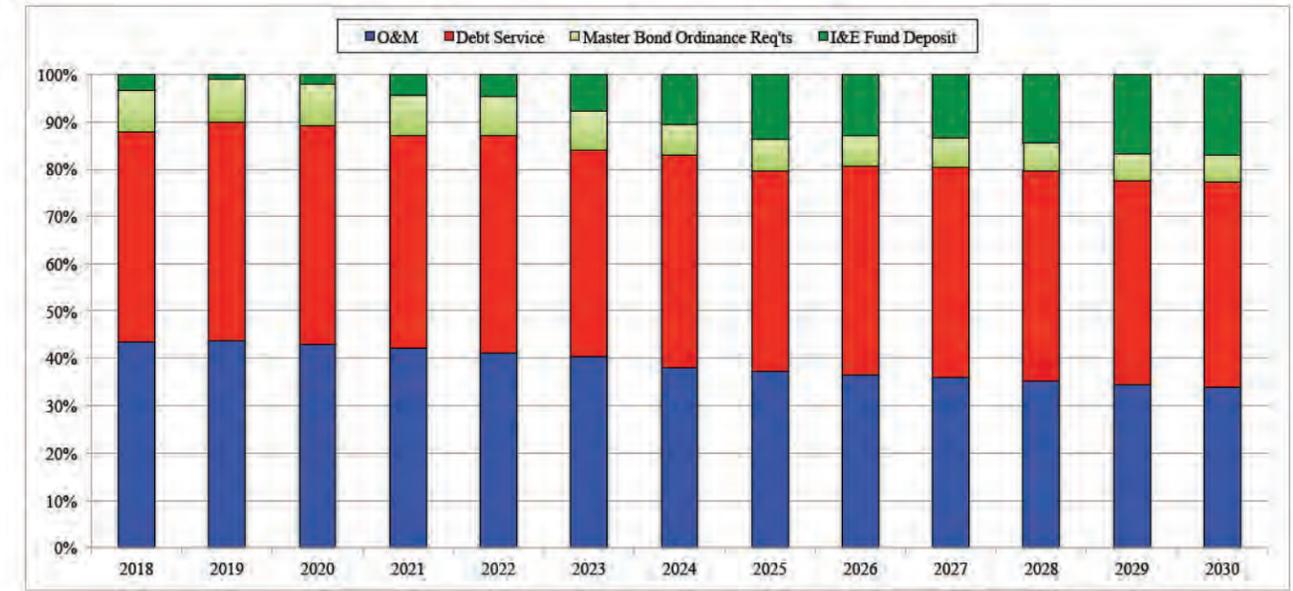
Financial Forecast Summary - Sewage Disposal System Revenue Requirements
Change in Relative BUDGET - \$ millions

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
SEWER Page 2 of 5



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M		2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1
Debt Service		8.0	6.5	1.2	10.5	(4.3)	14.4	(7.3)	16.9	10.4	6.7	(0.5)	11.5
Master Bond Ordinance Req'ts		0.6	0.0	0.1	0.1	0.1	(16.4)	1.8	0.0	(0.3)	(0.2)	0.0	0.0
I&E Fund Deposit		(10.7)	5.5	11.2	2.2	17.5	15.7	19.6	(2.3)	5.0	9.1	16.6	5.1
Total		0.0	14.0	14.4	14.8	15.3	15.7	16.2	16.7	17.2	17.7	18.2	18.8

Relative BUDGET

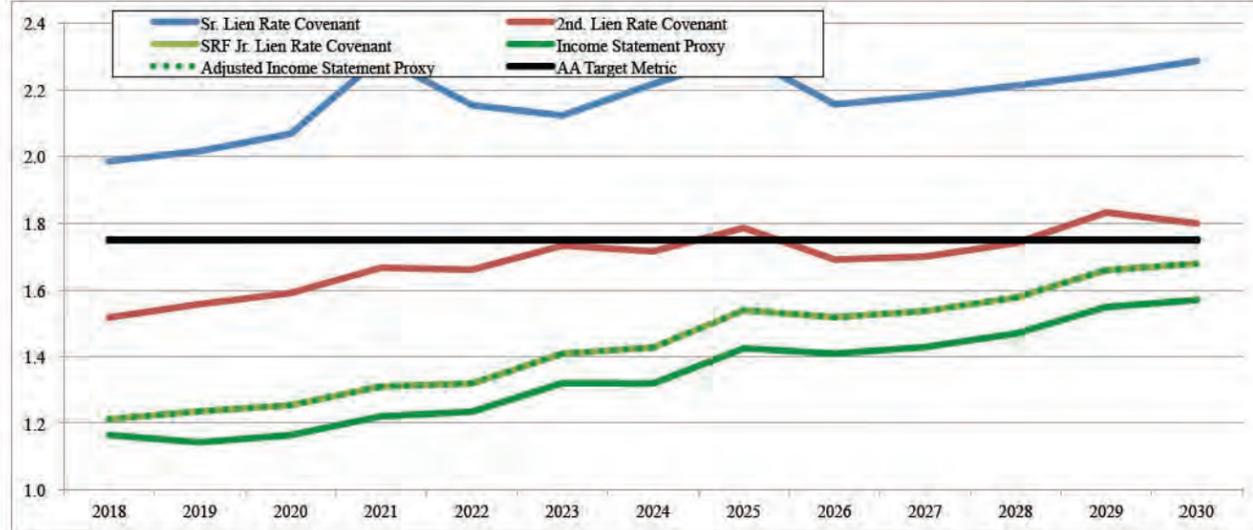


	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
O&M	43%	44%	43%	42%	41%	40%	38%	37%	37%	36%	35%	34%	34%
Debt Service	44%	46%	46%	45%	46%	44%	45%	42%	44%	45%	44%	43%	44%
Master Bond Ordinance Req'ts	9%	9%	9%	9%	8%	8%	6%	7%	6%	6%	6%	6%	6%
I&E Fund Deposit	3%	1%	2%	4%	5%	8%	11%	14%	13%	13%	15%	17%	17%

SCENARIO 1

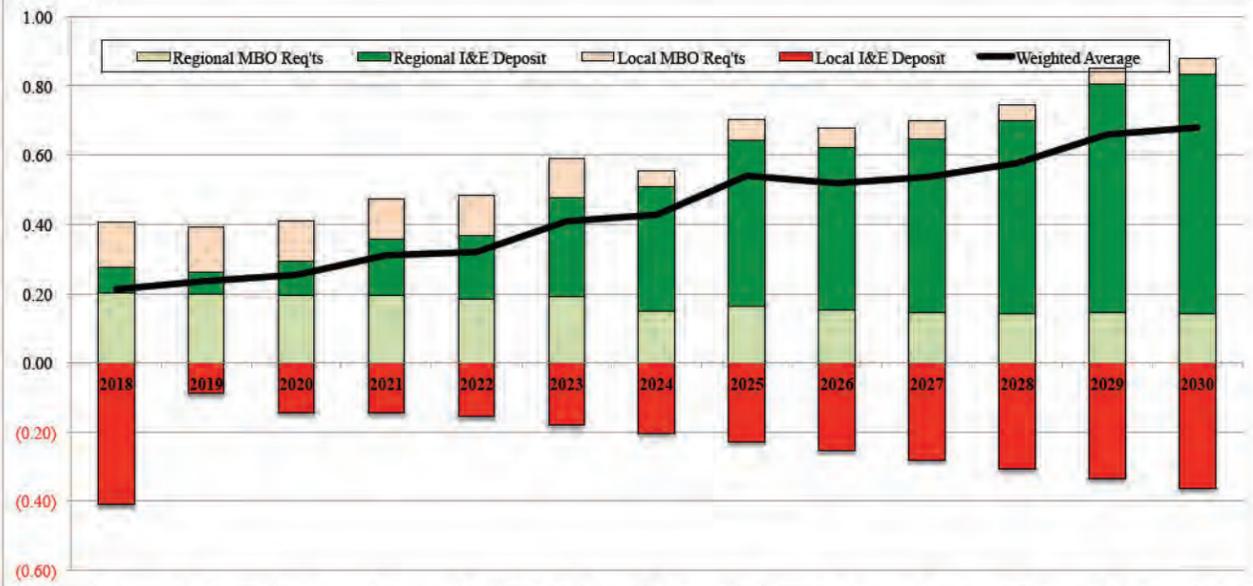
Financial Forecast Summary - Sewage Disposal System
Debt Service Coverage

Scenario 1 - Baseline FY 2019 Budget Forecast
SEWER Page 3 of 5



Sr. Lien Rate Covenant	1.99	2.02	2.07	2.30	2.15	2.12	2.22	2.30	2.16	2.18	2.21	2.25	2.29
2nd. Lien Rate Covenant	1.52	1.56	1.59	1.67	1.66	1.73	1.72	1.79	1.69	1.70	1.74	1.83	1.80
SRF Jr. Lien Rate Covenant	1.21	1.24	1.25	1.31	1.32	1.41	1.43	1.54	1.52	1.54	1.58	1.66	1.68
Income Statement Proxy	1.16	1.14	1.16	1.22	1.23	1.32	1.32	1.42	1.41	1.43	1.47	1.55	1.57
Adjusted Income Statement F	1.21	1.24	1.25	1.31	1.32	1.41	1.43	1.54	1.52	1.54	1.58	1.66	1.68
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

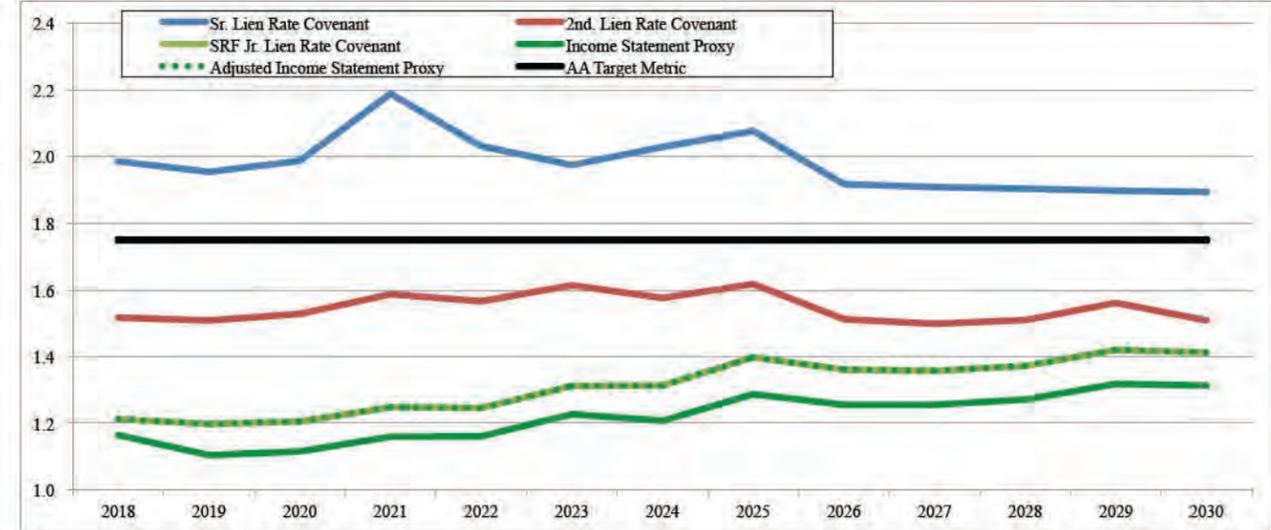


Regional MBO Req'ts	0.20	0.20	0.19	0.19	0.19	0.19	0.15	0.16	0.15	0.15	0.14	0.14	0.14
Regional I&E Deposit	0.08	0.07	0.10	0.16	0.18	0.29	0.36	0.48	0.47	0.50	0.56	0.66	0.69
Local MBO Req'ts	0.13	0.13	0.12	0.12	0.12	0.11	0.05	0.06	0.06	0.05	0.05	0.05	0.04
Local I&E Deposit	(0.41)	(0.09)	(0.15)	(0.15)	(0.16)	(0.18)	(0.20)	(0.23)	(0.25)	(0.28)	(0.31)	(0.34)	(0.36)
Weighted Average	0.21	0.24	0.25	0.31	0.32	0.41	0.43	0.54	0.52	0.54	0.58	0.66	0.68
Regional Total	0.28	0.26	0.29	0.36	0.37	0.48	0.51	0.64	0.62	0.65	0.70	0.81	0.83
Local Total	(0.28)	0.04	(0.03)	(0.03)	(0.04)	(0.07)	(0.16)	(0.17)	(0.20)	(0.23)	(0.26)	(0.29)	(0.32)
Weighted Average	0.21	0.24	0.25	0.31	0.32	0.41	0.43	0.54	0.52	0.54	0.58	0.66	0.68

SCENARIO 2

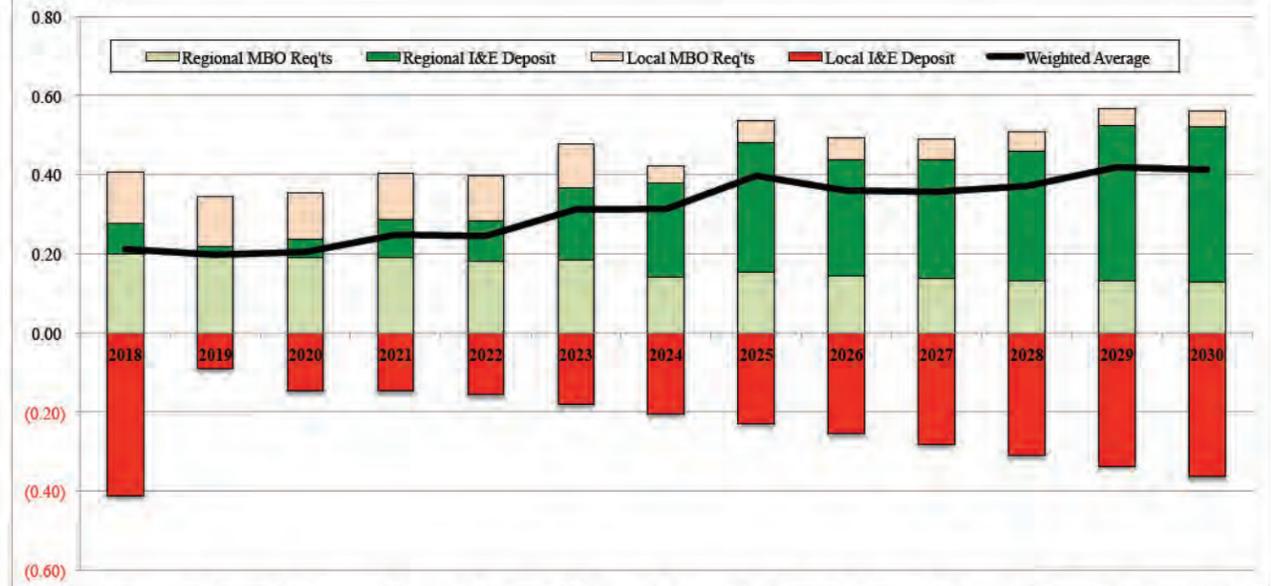
Financial Forecast Summary - Sewage Disposal System
Debt Service Coverage

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
SEWER Page 3 of 5



Sr. Lien Rate Covenant	1.99	1.95	1.99	2.19	2.03	1.98	2.03	2.08	1.92	1.91	1.90	1.90	1.89
2nd. Lien Rate Covenant	1.52	1.51	1.53	1.59	1.57	1.61	1.58	1.62	1.51	1.50	1.51	1.56	1.51
SRF Jr. Lien Rate Covenant	1.21	1.20	1.20	1.25	1.25	1.31	1.31	1.40	1.36	1.36	1.37	1.42	1.41
Income Statement Proxy	1.16	1.10	1.12	1.16	1.16	1.23	1.21	1.29	1.26	1.26	1.27	1.32	1.31
Adjusted Income Statement F	1.21	1.20	1.20	1.25	1.25	1.31	1.31	1.40	1.36	1.36	1.37	1.42	1.41
AA Target Metric	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75

Debt Service Coverage Providers

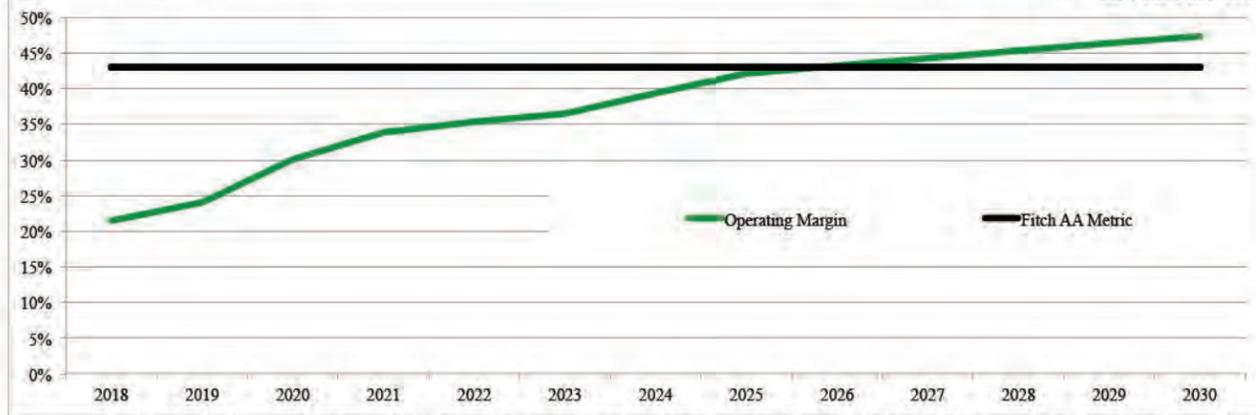


Regional MBO Req'ts	0.20	0.20	0.19	0.19	0.18	0.19	0.14	0.16	0.14	0.14	0.13	0.13	0.13
Regional I&E Deposit	0.08	0.02	0.05	0.10	0.10	0.18	0.23	0.32	0.29	0.30	0.33	0.39	0.39
Local MBO Req'ts	0.13	0.13	0.12	0.12	0.12	0.11	0.05	0.06	0.06	0.05	0.05	0.05	0.04
Local I&E Deposit	(0.41)	(0.09)	(0.15)	(0.15)	(0.16)	(0.18)	(0.20)	(0.23)	(0.25)	(0.28)	(0.31)	(0.34)	(0.36)
Weighted Average	0.21	0.20	0.20	0.25	0.25	0.31	0.31	0.40	0.36	0.36	0.37	0.42	0.41
Regional Total	0.28	0.22	0.24	0.29	0.28	0.37	0.38	0.48	0.44	0.44	0.46	0.52	0.52
Local Total	(0.28)	0.04	(0.03)	(0.03)	(0.04)	(0.07)	(0.16)	(0.17)	(0.20)	(0.23)	(0.26)	(0.29)	(0.32)
Weighted Average	0.21	0.20	0.20	0.25	0.25	0.31	0.31	0.40	0.36	0.36	0.37	0.42	0.41

SCENARIO 1

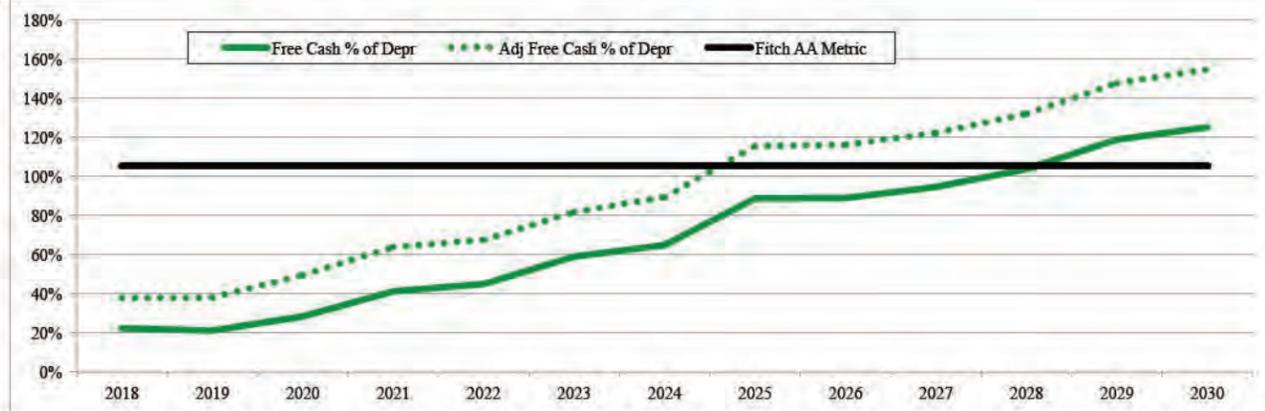
Financial Forecast Summary - Sewage Disposal System
Operating Margin

Scenario 1 - Baseline FY 2019 Budget Forecast
SEWER Page 4 of 5



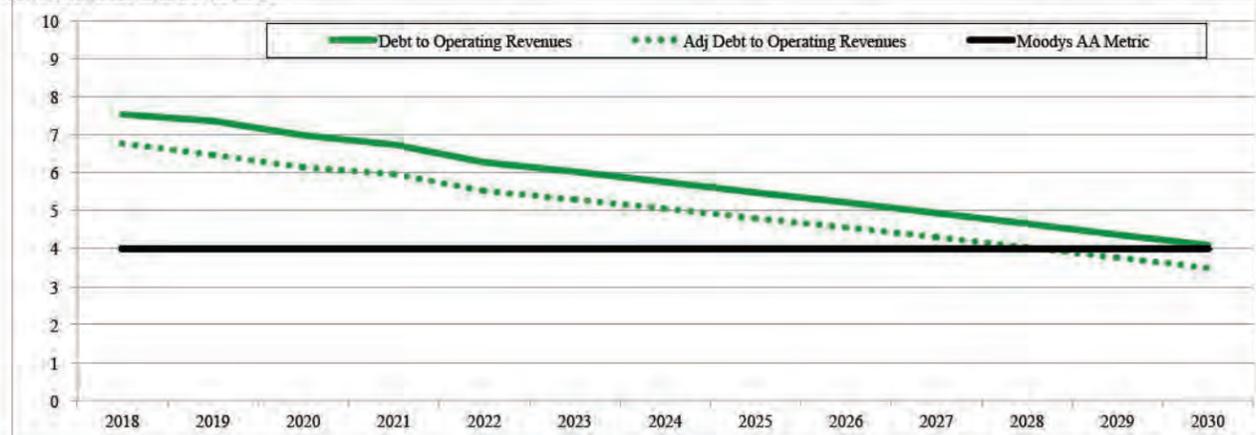
Operating Margin	21%	24%	30%	34%	35%	37%	39%	42%	43%	44%	45%	46%	47%
Fitch AA Metric	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%

Free Cash % of Depr



Free Cash % of Depr	22%	21%	28%	41%	45%	59%	65%	89%	89%	94%	104%	119%	125%
Adj Free Cash % of Depr	38%	38%	50%	64%	67%	82%	89%	115%	116%	122%	132%	147%	154%
Fitch AA Metric	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%

Debt to Operating Revenues (lower metric is positive)

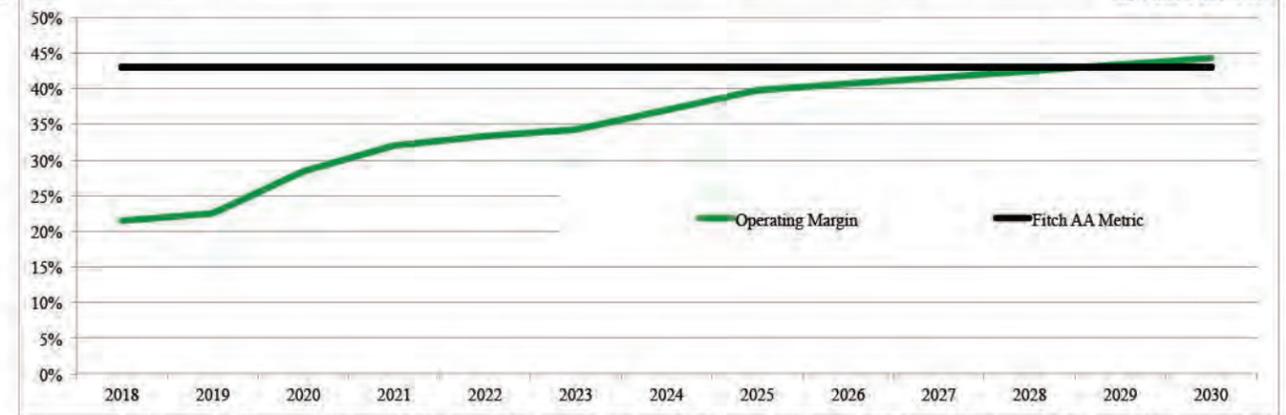


Debt to Operating Revenues	7.5	7.4	7.0	6.7	6.3	6.0	5.8	5.5	5.2	4.9	4.7	4.4	4.1
Adj Debt to Operating Reven	6.8	6.5	6.1	6.0	5.5	5.3	5.1	4.8	4.6	4.3	4.0	3.8	3.5
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

SCENARIO 2

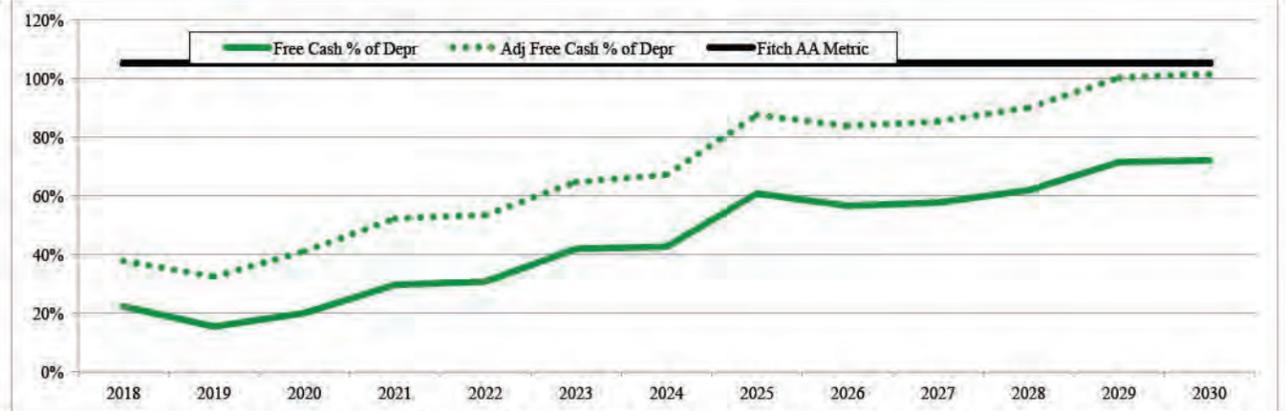
Financial Forecast Summary - Sewage Disposal System
Operating Margin

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
SEWER Page 4 of 5



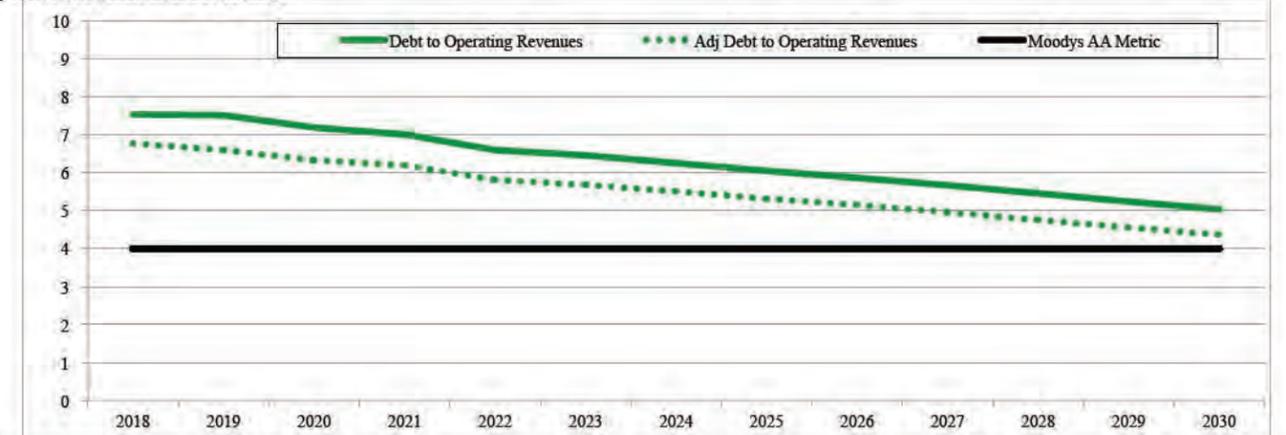
Operating Margin	21%	23%	28%	32%	33%	34%	37%	40%	41%	42%	42%	43%	44%
Fitch AA Metric	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%

Free Cash % of Depr



Free Cash % of Depr	22%	15%	20%	30%	31%	42%	43%	61%	57%	58%	62%	71%	72%
Adj Free Cash % of Depr	38%	32%	41%	52%	53%	65%	67%	87%	84%	85%	90%	100%	101%
Fitch AA Metric	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%

Debt to Operating Revenues (lower metric is positive)

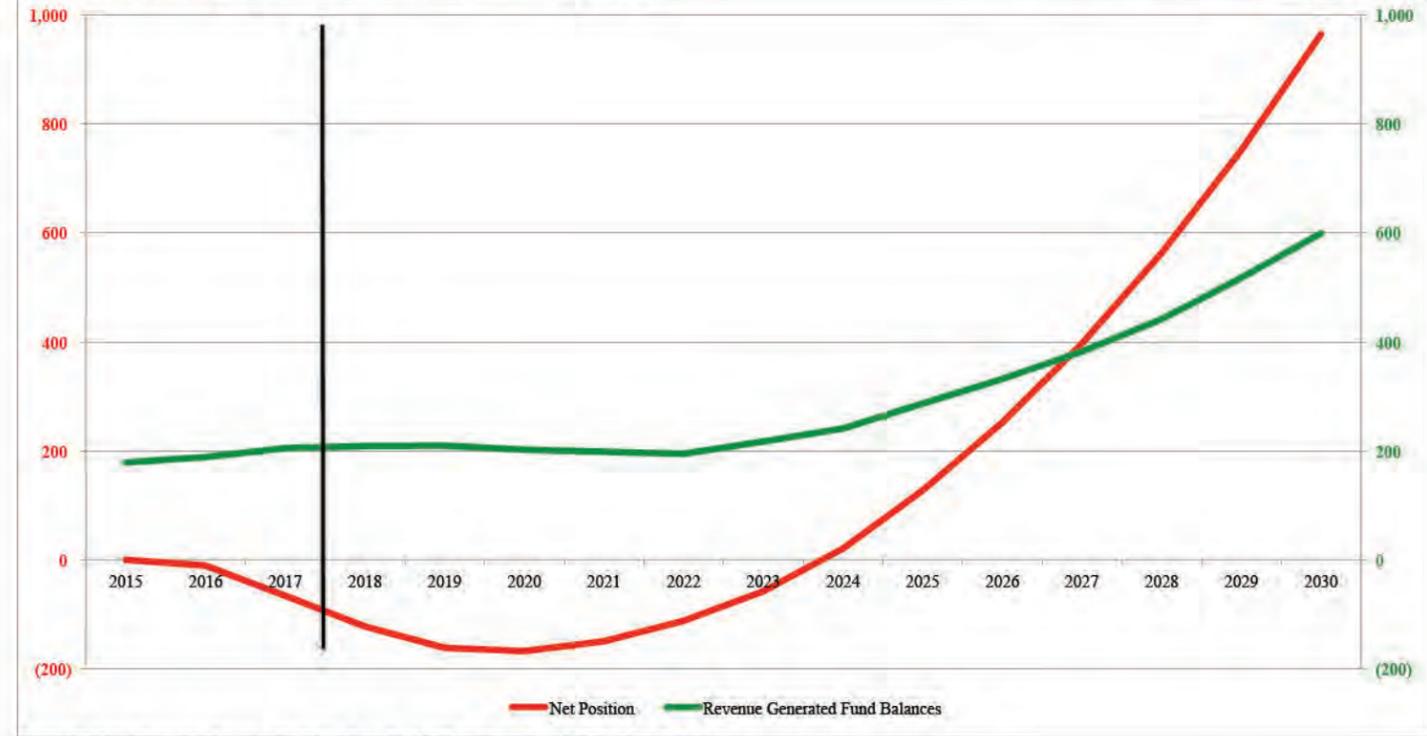


Debt to Operating Revenues	7.5	7.5	7.2	7.0	6.6	6.5	6.3	6.1	5.9	5.7	5.5	5.2	5.0
Adj Debt to Operating Reven	6.8	6.6	6.3	6.2	5.8	5.7	5.5	5.3	5.2	5.0	4.8	4.6	4.4
Moodys AA Metric	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

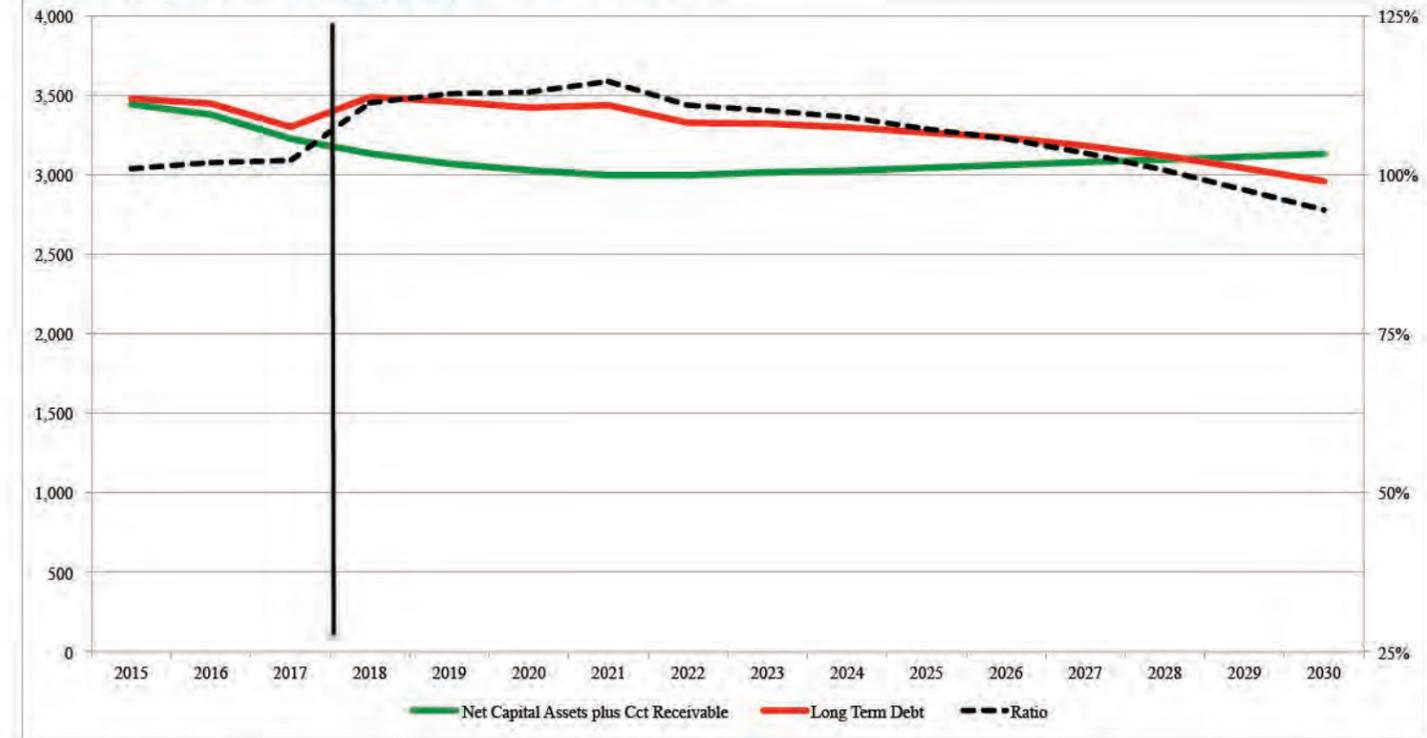
SCENARIO 1

Financial Forecast Summary - Sewage Disposal System
 Projected Net Position and Unrestricted MBO Fund Balances (\$ millions)

Scenario 1 - Baseline FY 2019 Budget Forecast
 SEWER Page 5 of 5



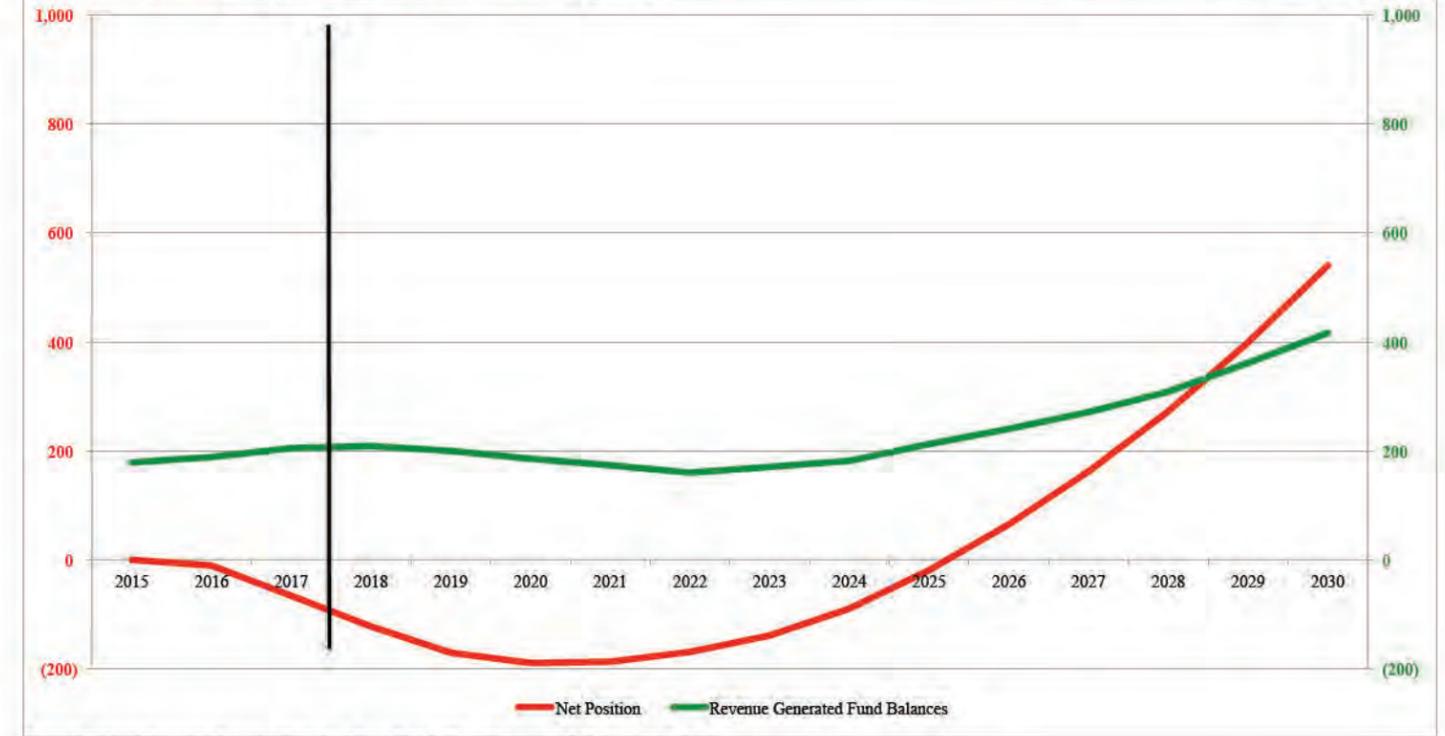
Projected Net Capital Assets, Outstanding Debt (\$ millions) and Debt/Asset Ratio



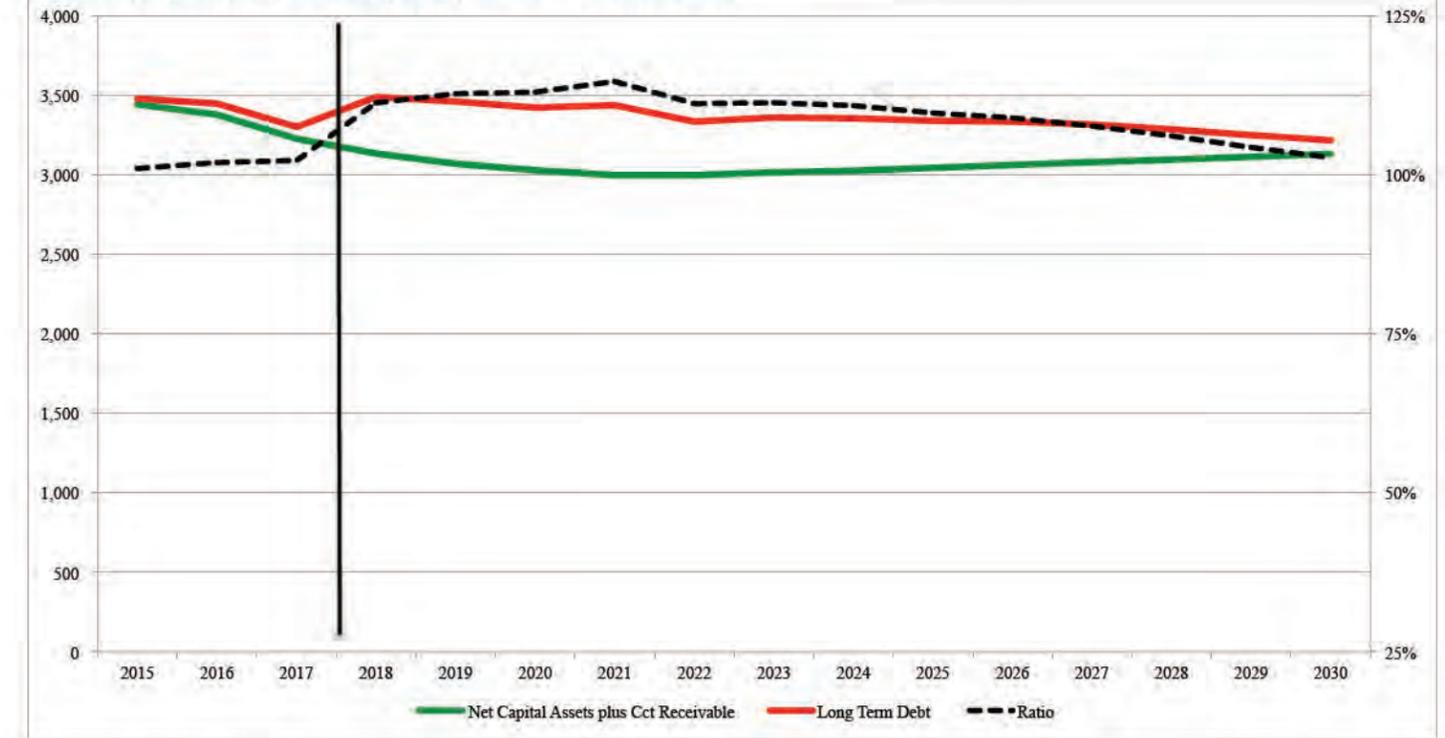
SCENARIO 2

Financial Forecast Summary - Sewage Disposal System
 Projected Net Position and Unrestricted MBO Fund Balances (\$ millions)

Scenario 2 - No FY 2019 Budget Increase, 3% Thereafter, 1% O&M Increase
 SEWER Page 5 of 5



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





Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Proposed Public Hearing: State Revolving Fund Project Plan Submittal for the Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project

Background: The Great Lakes Water Authority (GLWA) has identified one wastewater system project in the proposed FY 2019 to FY 2023 Capital Improvement Plan (CIP) for submittal to the Michigan Department of Environmental Quality (MDEQ) for the State Revolving Fund (SRF) financing program for funding in the state's 2019 fiscal year. The deadline for submitting all SRF project plans to MDEQ is July 1, 2018, but prior to submitting the project plans, GLWA must hold a public hearing to present the project plan.

The FY 2019 SRF Project Plan and public hearing notice for the Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project have been posted on the GLWA website and can be found at: <http://www.gwater.org/category/news/hearing-notice>. This project plan will be presented at the public hearing. After the public hearing is closed, the included draft resolution will be scheduled for action by the GLWA Board of Directors at its regularly scheduled meeting also on June 13, 2018. 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 July 1, 2018.

The Project: Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project – (CIP# 211008): The primary purpose of the project is to provide efficient and reliable operations at the Water Resource Recovery Facility (WRRF) by implementing necessary improvements to the Pump Station No. 1 Ferric Chloride System and Waste Activated Sludge (WAS) Transfer Pipeline.

Currently, WAS is thickened at the WRRF Complex B Gravity Thickeners. There is a single line that transports WAS to Complex A where the thickened WAS is blended with thickened Primary Sludge. The blended sludge is then pumped on for dewatering and then ultimate disposal. Recent investigations have indicated significant buildup of struvite in the pipe that transports thickened WAS to Complex A. Addressing the issues associated with the

struvite buildup in the WAS transport line will allow the WRRF to continue to thicken, dewater and ultimately dispose of biosolids that are removed during the treatment process.

Justification: GLWA is seeking low interest loan assistance through the SRF program for this project. Although the Michigan Department of Environmental Quality (MDEQ) interest rate for FY 2019 will not be determined until October 2018, the current year's interest rate of 2.00% is less than the present conventional revenue bond interest rates. Based on the project amount of \$10.3 million, GLWA could save an estimated \$1.2 million in interest costs and avoided issuance costs, based on a similar open market revenue bond with a 30-year term and 5.00% interest rate, over the life of the 30-year bond issue. This will afford savings to both GLWA and its members.

Budget Impact: Debt service on this project is anticipated to begin in FY 2020 and will be included as part of the FY 2020 financial plan.

Proposed Action: The Audit Committee recommends that the Great Lakes Water Authority Board hold the public hearing on June 13, 2018 for the proposed SRF project and approve the resolutions to accept and submit the SRF Project Plan for the Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project as presented, at its regular meeting on June 13, 2018.

GREAT LAKES WATER AUTHORITY

PUBLIC HEARING NOTICE WATER RESOURCE RECOVERY FACILITY FY 2019 STATE REVOLVING FUND (SRF) PROJECTS

The Great Lakes Water Authority (GLWA) announces a Public Hearing regarding its Project Plan for the proposed Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project. GLWA will be seeking low interest State Revolving Fund (SRF) loan assistance for FY 2019. The primary purpose of the project is to provide efficient and reliable operations at the Water Resource Recovery Facility (WRRF) by implementing necessary improvements to the Pump Station No. 1 Ferric Chloride System and Waste Activated Sludge (WAS) Transfer Pipeline.

GLWA is required to remove phosphorus from wastewater flows to reach limits as specified by the NPDES permit. Phosphorus has been shown to be a contributor to algae buildup in the Great Lakes. The primary method for removing phosphorous at the GLWA WRRF is by adding iron salts (ferric or ferrous chloride) to the wastewater stream at each of the two (2) pump stations (PS-1 and PS-2) and then precipitating it out in the primary clarifiers. The ferric chloride feed system at PS-2 has been recently rehabilitated, but the system at PS-1 is in need of rehabilitation. Rehabilitating the ferric chloride feed system at PS-1 will be critical for the WRRF to continue to remove phosphorus to the limits required in the NPDES permit.

Currently, WAS is thickened at the WRRF Complex B Gravity Thickeners. There is a single line that transports WAS to Complex A where the thickened WAS is blended with thickened Primary Sludge. The blended sludge is then pumped on for dewatering and then ultimate disposal. Recent investigations have indicated significant buildup of struvite in the pipe that transports thickened WAS to Complex A. Addressing the issues associated with the struvite buildup in the WAS transport line will allow the WRRF to continue to thicken, dewater and ultimately dispose of biosolids that are removed during the treatment process.

The total cost of this project is currently estimated at \$10,297,181, which will be allocated to GLWA and suburban customers similar to other wastewater system capital improvements. The PS-1 Ferric Chloride System Rehabilitation and Struvite Removal Project is eligible for participation under the State of Michigan low interest SRF loan program. The Public Hearing will present a description of the recommended project, its evaluation, estimated costs and 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: Wednesday, June 13, 2018
PLACE: Great Lakes Water Authority
Water Board Building
735 Randolph
5th Floor, Board Room
Detroit, Michigan 48226
TIME: 1:00 p.m.

Information on the Project Plan will be available for review after May 11, 2018 at the following locations:

GLWA Website: www.glwater.org

or

**Great Lakes Water Authority
Water Board Building
735 Randolph, Suite 1601
Detroit, Michigan 48226**

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

**Jonathan Wheatley, Public Finance Manager
Great Lakes Water Authority
735 Randolph, Suite 1601
Detroit, Michigan 48226
(313) 224-4771**

Written comments will be accepted at the above address if received prior to 5:00 p.m. EST, Wednesday, June 13, 2018.

**Great Lakes Water Authority
Sue F. McCormick
Chief Executive Officer**

Great Lakes Water Authority
Resolution

RE: Resolution for the Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project, FY 2019 State Revolving Fund (SRF) Project Plan

- Whereas The Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project Plan for the FY 2019 SRF has been prepared by the GLWA;
- Whereas: The Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project is necessary to remove phosphorus at the GLWA Water Resource Recovery Facility (WRRF) from wastewater flows to reach limits as specified by the National Pollution Discharge System (NPDES) permit
- Whereas The rehabilitation of the ferric chloride feed system at Pump Station No. 1 (PS-1) will be critical for the WRRF to continue to remove phosphorus to the limits required in the NPDES permit;
- Whereas This project will provide efficient and reliable operations at the Water Resource Recovery Facility (WRRF) by implementing necessary improvements to the Pump Station No. 1 Ferric Chloride System and Waste Activated Sludge (WAS) Transfer Pipeline;
- Whereas The FY 2019 SRF Project Plan has been placed on public notice and a Public Hearing was held on June 13, 2018 at 1:00 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 SRF program; and
- Whereas Formal action by the GLWA Board of Directors is needed to adopt the recommended FY 2019 SRF Project Plan for the Water Conveyance System – North Interceptor – East Arm Interceptor Evaluation and Rehabilitation Project, as a requirement for participation in the State of Michigan’s SRF program.

Now, Therefore Be It:

- Resolved: That this Board hereby accepts the FY 2019 Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal Project, dated June 2018, and directs staff members of the GLWA to address all public comments, prepare the responsiveness summary, and public the final Project Plan; and Be It Further
- Resolved That the Chief Executive Officer (CEO) is authorized to transmit the final FY 2019 SRF Project Plan for the Pump Station No. 1 (PS-1) Ferric Chloride System Rehabilitation and Struvite Removal 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 SRF procedures so that the project can proceed expeditiously to construction.



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Review of the FY 2017 Detroit General Retirement System Plan Actuarial Report

Background: When the Great Lakes Water Authority (GLWA) assumed operations of the regional water and sewer systems on January 1, 2016, it also assumed a pro-rata share of the frozen legacy defined benefit pension (referenced as “Component II”) liabilities related to service provided to the regional systems for the Detroit Water & Sewerage Department (DWSD) Division of the Detroit General retirement System Plan (DGRS) pension plan. The allocation of those liabilities is 70.3% GLWA and 29.7% DWSD. As part of the City of Detroit’s bankruptcy Plan of Adjustment (POA), the DWSD Division is required to be funded at \$45.4 million per year with representations that the Division would be nearly fully funded by June 30, 2023 with any tail liability payment in FY 2024.

Analysis: The FY 2017 DGRS Actuarial Report was issued by the retirement system’s actuaries, GRS Retirement Consulting, on May 1, 2018. That actuarial report is attached.

As this report was recently received, there are a number of questions that staff has identified and will report the results of the follow-up at a subsequent Audit Committee meeting.

Topic 1 – FY 2024 and Beyond Funding Requirements

From pages 2 and 11 of the report (excerpt below), the FY 2024 is projected to be either \$7.1 Million or \$9.1 Million depending on the funding policy selected by DGRS.

Funding Policy 1 is based on amortizing the UAAL over the average remaining service life of active members (7 years for DWSD) using level dollar amortization.

Funding Policy 2 is based on amortizing the UAAL with level principal payments over a closed 30-year period plus interest. This method is also known as level principal declining interest amortization.

While it is good news that the annual, combined DWSD Division payments by DWSD and GLWA move from \$42.9 million (net of plan administrative fees of \$2.5 million) per year to \$7.1 Million or \$9.1 Million, this is significantly more than what was outlined in the POA.

Valuation Results (Continued)

Unfunded Actuarial Accrued Liability (UAAL)⁺

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
UAAL as of June 30, 2017	\$ 508.9	\$ 235.6	\$ 266.9	\$ 17.6	\$ 1,029.1
Anticipated POA Contribution (EOY)	16.4	6.4	42.9	2.5	68.3
Anticipated Expenses@	-	-	-	-	-
Interest at 6.75%	34.4	15.9	18.0	1.2	69.5
Projected UAAL as of June 30, 2018	\$ 526.9	\$ 245.0	\$ 242.1	\$ 16.3	\$ 1,030.3
Anticipated POA Contributions for FY2019	16.4	6.5	42.9	2.5	68.3
Estimated Employer Contributions for FY 2024 #!					
Alternate 1:Level Principal	\$ 70.3	\$ 33.4	\$ 9.1	\$ 0.8	\$ 113.5
Alternate 2:Level Dollar##	\$ 54.8	\$ 26.0	\$ 7.1	\$ 0.6	\$ 88.5

Totals may not add due to rounding.

⁺ *Unfunded Actuarial Accrued Liability.*

@ *In accordance with Plan Document, the mandated 6.75% rate of return is net of investment and administrative expenses.*

Assuming the POA contributions through 2023 and a 30-year closed amortization thereafter. When determining the Fiscal Year 2024 illustrative amounts, only the total contributions and the DWSD contributions are stipulated in the POA. The remaining amounts were allocated to the other groups as described on page 1. A different allocation would result in different results by group.

! *Total employer contributions, including amounts paid by employer but funded from other sources as required by POA.*

Contributions at this level may not be sufficient to prevent fund depletion prior to satisfaction of all liabilities. Included at System's request.

DWSD (Water/Sewer) Projections

Based on this valuation, the DWSD (Water/Sewer) division is not expected to be fully funded by 2024. As a result, their contributions will continue to be needed in FY 2024 (see page 2 for estimated FY 2024 contributions) to fund DWSD liabilities.

Topic 2 – Clarity Regarding Terminate Employees

It also appears that there is a legal question by the actuaries (except below) as noted below. The third sentence below is consistent with prior years and GLWA’s expectations. It is expected that this could be readily addressed with the appropriate parties.

Great Lakes Water Authority (GLWA) Members

The Retirement System does not currently identify GLWA employees. The DWSD division had a large number of terminations in 2016. We have discussed with the Board's legal counsel whether or not GLWA employees are considered active members for purposes of Component II and do not have a definitive answer. We have treated these numbers as terminated members who are entitled to either a vested deferred benefit or a refund of ASF contributions. We recommend the Board's legal counsel research this point. If it is determined that these members are still active and are continuing to earn vesting and eligibility service under the plan, then we recommend the Retirement System work with GLWA to identify these members.

For this valuation (6/30/2017) we received a separate file indicating the June 30, 2014 DWSD status of members. Any members that were indicated as being DWSD division members on that file were valued under the DWSD for this valuation, regardless of the division reported on the main valuation data (which we understand to be the division as of June 30, 2017 in the Component I plan).

Proposed Action: None.

The General Retirement System of the City of Detroit

Annual Actuarial Valuation of Component II
June 30, 2017



May 1, 2018

Board of Trustees
The General Retirement System of the City of Detroit

Dear Board Members:

This report provides key results from the **Annual Actuarial Valuation** of the annuity and pension liabilities of the General Retirement System of the City of Detroit – Component II benefits. The date of the valuation was **June 30, 2017**.

The City of Detroit filed for bankruptcy on July 18, 2013. A final Plan of Adjustment (“POA”) was confirmed on November 7, 2014 and the official exit from bankruptcy was on December 10, 2014. In connection with the POA, very significant changes were made to the benefits that the General Retirement System provides and to the contributions that it will receive. In particular, the benefits provided by the Retirement System were divided into two separate plans, referred to as “Component I” and “Component II.” The benefits provided in each component are effective July 1, 2014 and are described in detail in Emergency Manager Order No. 44, dated December 8, 2014. In very general terms, Component I provides benefits for service rendered on and after July 1, 2014 and Component II provides benefits for service rendered prior to July 1, 2014.

The results provided herein relate solely to the Component II benefits. Component I benefits will be the subject of a separate report. The purposes of the valuation are to measure the funding progress of Component II in accordance with the terms of the POA and to provide illustrative actuarially determined contribution amounts, given POA conditions and assumptions for Fiscal Year 2019 for Component II, for comparison with the contribution amounts provided in the POA. The results of the valuation are not applicable for other purposes. In particular, the information provided in this report is not suitable for financial reporting in connection with GASB Statement No. 67. Such information is provided in a separate report. Information regarding potential benefit restoration as allowed for in the POA will also be provided in a separate report, at the Board’s request.

The contribution amounts on page 3 include POA stipulated contributions plus two illustrative contribution amounts from alternate funding policies. Users of this report should be aware that contributions made at these amounts do not guarantee benefit security.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan’s funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary’s assignment, the actuary did not perform an analysis of the potential range of such future measurements.

The valuation was based upon records maintained and furnished by the Retirement System staff concerning active members, retirees and beneficiaries, and financial accounts as of the valuation date. Data was checked for year-to-year consistency, but was not audited by the actuary. We are not responsible for the completeness or accuracy of the data. Certain necessary data was not available in time to be considered in this report and, therefore, it was necessary for us to use approximations. Please see related discussion in the Comments section as well as the Data section of this report.

The assumptions used in the valuations concerning future experience are summarized in Section D of this report. Except for the assumed rate of investment return, the actuarial assumptions used for the valuation are set by the Board based upon advice of the actuary and other parties. The assumed rate of investment return was set to 6.75% in the POA and is, therefore, a “prescribed assumption set by another party” as discussed in Actuarial Standard of Practice No. 4. In our judgement, all of the actuarial assumptions used for the valuation are reasonable for purposes of the measurement being made.

This report has been prepared by individuals who have substantial experience valuing public sector retirement systems. To the best of our knowledge, this report is complete and accurate and was made in accordance with Actuarial Standards of Practice promulgated by the Actuarial Standards Board.

The signing individuals are independent of the plan sponsor.

David T. Kausch and Judith A. Kermans are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

This report does not evaluate the plan sponsor’s ability or willingness to make contributions to the Retirement System. Given the funded level of Component II, plan sponsor contributions are critical if further benefit reductions are to be avoided. Indeed, the employer contributions set forth in the POA are expected to lead to a decrease in the funded status through June 30, 2023 (as contemplated by the POA), even if all assumptions are met.

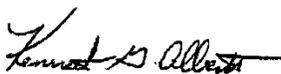
Respectfully submitted,



David T. Kausch, FSA, EA, FCA, MAAA, PhD



Judith A. Kermans, EA, FCA, MAAA



Kenneth G. Alberts

DTK/JAK/KGA:rmn



Table of Contents

	<u>Page</u>
Section A	Valuation Results
	Principle Valuation Results 1-5
	POA Liability and Funded Ratio..... 6
	Solvency Liability 6
	Comments 7-11
	POA Liability by Division..... 12
Section B	Fund Assets
	Statement of Plan Assets 13
	Market Value of Assets 14
	Allocation of Assets Used for Valuation..... 15
Section C	Participant Data
	Summary of Member Data 16
	Active Member Data and Assumptions Included in Valuation 17-21
	Retiree and Beneficiary Data Included in Valuation 22-23
Section D	Methods and Assumptions 24-30
Section E	Plan Provisions 31-33
Section F	Glossary 34-35

SECTION A

VALUATION RESULTS

Valuation Results

Required contributions to the Plan through FY 2023 are provided in the POA. Certain agreements (as allowed for in the POA) have resulted in some of the contributions being accelerated. The schedule below details our understanding of the remaining contributions required by the POA.

Contribution Source (\$ millions)

Fiscal Year	For DWSD Liabilities		For Other Liabilities					Total
	DWSD	Transfers	UTGO	State	DIA	Transfers from		
						Other	DWSD	
2018	\$ 45.4	\$ (2.5)	\$ -	\$ -	\$ 0.4	\$ 22.5	\$ 2.5	\$ 68.3
2019	45.4	(2.5)	-	-	0.4	22.5	2.5	68.3
2020	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3
2021	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3
2022	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3
2023	45.4	(2.5)	-	-	0.4	2.5	2.5	48.3

We have assumed the contributions outlined above as called for in the POA (with adjustments) will not change. An estimate of the probability of those payments being made was outside the scope of this project, not required by Actuarial Standards, and was not made.

In order to develop divisional valuation results in accordance with POA provisions, we were instructed to allocate the above contributions to the various divisions. This was done by allocating DWSD transfer amounts to the General City division and remaining DWSD contributions to the DWSD division; allocating \$2.5 million per year to the Library; and allocating remaining contributions to DOT and General in proportion to their unfunded liabilities.

The chart below shows this allocation.

	General	D.O.T.	Subtotal	Library	DWSD	Totals
	\$ Thousands					
Unfunded Liabilities	\$ 508,947	\$ 235,593	\$ 744,540	\$ 17,579	\$ 266,944	\$ 1,029,064
% of Subtotal	68.4%	31.6%	100.0%	N/A	N/A	
FY 2018 Contributions	\$ 13,928	\$ 6,447	\$ 20,375	\$ 2,500	\$ 45,400	\$ 68,275
Transfers	\$ 2,500	\$ -	\$ 2,500	\$ -	\$ (2,500)	\$ -
FY 2018 UAAL Contributions	\$ 16,428	\$ 6,447	\$ 22,875	\$ 2,500	\$ 42,900	\$ 68,275

A different allocation procedure would produce different results. If a different allocation procedure should be used, please let us know and we will revise this report.

Valuation Results (Continued)

Unfunded Actuarial Accrued Liability (UAAL)⁺

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
UAAL as of June 30, 2017	\$ 508.9	\$ 235.6	\$ 266.9	\$ 17.6	\$ 1,029.1
Anticipated POA Contribution (EOY)	16.4	6.4	42.9	2.5	68.3
Anticipated Expenses@	-	-	-	-	-
Interest at 6.75%	34.4	15.9	18.0	1.2	69.5
Projected UAAL as of June 30, 2018	\$ 526.9	\$ 245.0	\$ 242.1	\$ 16.3	\$ 1,030.3
Anticipated POA Contributions for FY2019	16.4	6.5	42.9	2.5	68.3
Estimated Employer Contributions for FY 2024 #!					
Alternate 1:Level Principal	\$ 70.3	\$ 33.4	\$ 9.1	\$ 0.8	\$ 113.5
Alternate 2:Level Dollar##	\$ 54.8	\$ 26.0	\$ 7.1	\$ 0.6	\$ 88.5

Totals may not add due to rounding.

+ Unfunded Actuarial Accrued Liability.

@ In accordance with Plan Document, the mandated 6.75% rate of return is net of investment and administrative expenses.

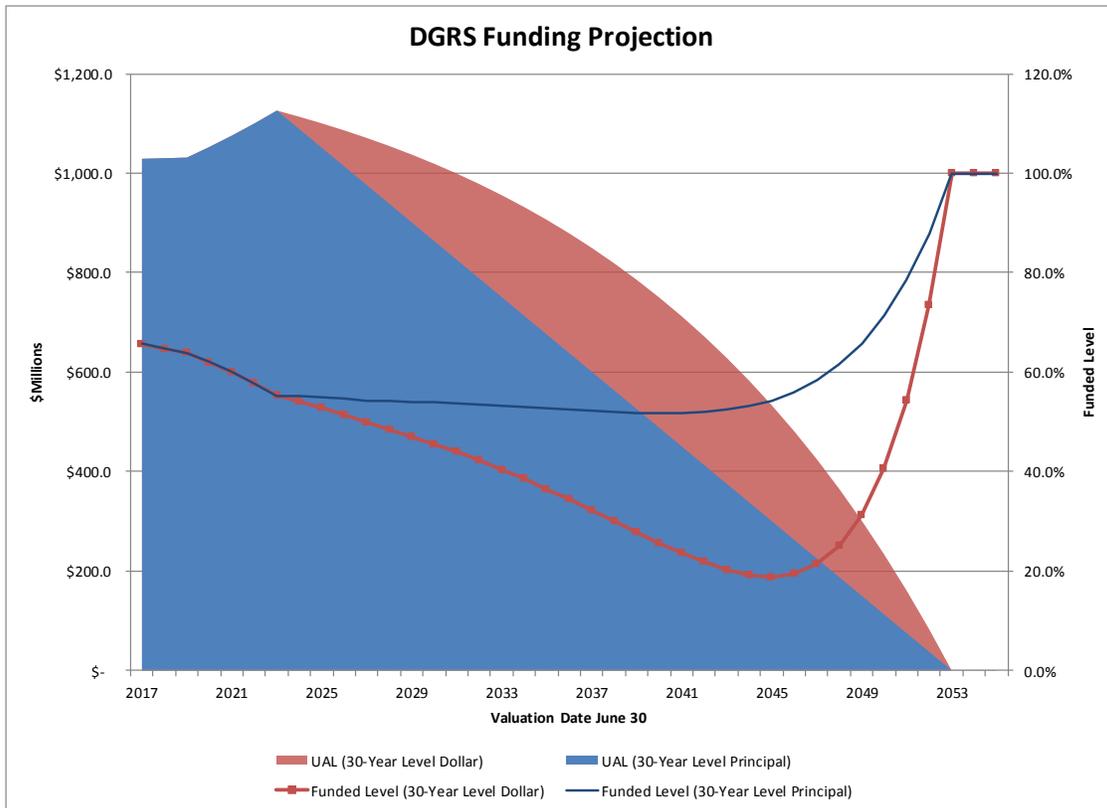
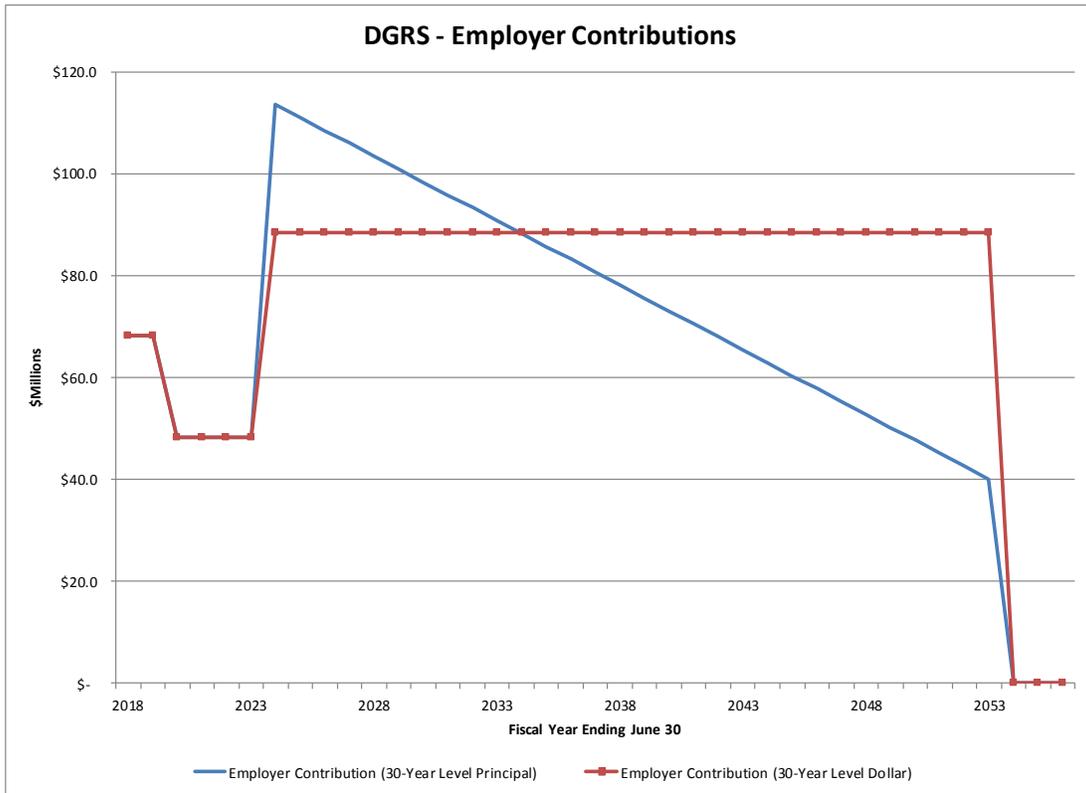
Assuming the POA contributions through 2023 and a 30-year closed amortization thereafter. When determining the Fiscal Year 2024 illustrative amounts, only the total contributions and the DWSD contributions are stipulated in the POA. The remaining amounts were allocated to the other groups as described on page 1. A different allocation would result in different results by group.

! Total employer contributions, including amounts paid by employer but funded from other sources as required by POA.

Contributions at this level may not be sufficient to prevent fund depletion prior to satisfaction of all liabilities. Included at System's request.

The POA contributions result in a defunding of the plan between now and June 30, 2023, which was contemplated by the POA. In fact, the anticipated POA contributions do not project benefit restoration even if all assumptions are met (including the POA mandated assumed rate of return of 6.75%). Also, the 2018 to 2023 contributions are less than the amount of nominal interest that accrues on the UAAL. The Estimated Employer Contribution for FY 2024 is based on a projection of results assuming only the POA contributions are made and all future experience between the valuation date and FY 2024 is as assumed. Actual experience will result in changes to this estimate and the final result (from the June 30, 2022 actuarial valuation) could be materially different than shown above.

We understand that the City has set aside additional money to be contributed to the pension plans in the future. This potential additional contribution has not been taken into account in this valuation.



Notes: 30-year amortization periods are assumed to begin in FY 2024.
 30-year level dollar may result in fund depletion and pay-as-you-go funding before the end of the 30-year period.

Valuation Results (Continued)

We have recommended that the Board establish a funding policy for the contribution determinations on and after fiscal year 2024. The Board has accepted this recommendation and has begun the process. Once that process has been completed we will incorporate the adopted policy in future valuation reports. Until that process is completed, we will continue to show the following two possible policies.

In the chart below, the first policy funds the UAAL over the expected remaining active service life of this group. The second policy is similar to the Board’s pre-bankruptcy policy, but with accelerated principle payments of the UAAL to prevent insolvency prior to the end of the funding period. The illustrations are intended to show that there are a broad range of possible funding policies, but are not intended to provide a specific recommendation or a minimum or maximum level of contributions.

Funding Policy 1 is based on amortizing the UAAL over the average remaining service life of active members (8 years for general; 6 years for DOT; 7 years for DWSD; and 7 years for Library) using level dollar amortization.

Funding Policy 2 is based on amortizing the UAAL with level principal payments over a closed 30-year period plus interest. This method is also known as level principal declining interest amortization.

Illustrative Contribution Shortfall

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
(1) Illustrative Contribution for FY 2019 (Funding Policy 1)	\$ 87.4	\$ 51.0	\$ 44.5	\$ 3.0	\$ 185.9
(2) Illustrative Contribution for FY 2019 (Funding Policy 2)	53.1	24.7	24.4	1.6	103.9
(3) Actual Contributions for FY 2019 (POA)	16.4	6.5	42.9	2.5	68.3
Fiscal Year 2019 Shortfall - Funding Policy 1: (1) - (3)	\$ 71.0	\$ 44.5	\$ 1.6	\$ 0.5	\$ 117.6
Fiscal Year 2019 Shortfall - Funding Policy 2: (2) - (3)	\$ 36.7	\$ 18.2	\$ (18.5)	\$ (0.9)	\$ 35.6

We understand the Employer has set aside money to contribute to the Pension Plans in the future. Since the portion of the fund this Plan will receive has not been determined, we have not taken those assets into account in our calculations. We commend the Employer for taking proactive steps to manage the estimated increase in funding requirements beginning in FY 2024. In the meantime, we recommend continued consideration of increasing contributions actually deposited into the trust.

In addition, as the Board works through the funding policy, we would suggest considering a funding period less than 30 years. Given the fact that not all of the retiree liabilities are funded, a period of 15 years or less should be considered.

Valuation Results (Concluded)

Present Value	June 30, 2017	June 30, 2016
Accrued Pension Liabilities (Employer Financed)		
Retirees and beneficiaries	\$2,182,334,703	\$2,194,305,695
Inactive members future deferred pensions	269,387,584	305,393,499
Active members	311,667,455	272,852,100
Total accrued pensions	2,763,389,742	2,772,551,294
Pension fund balances	1,839,375,685	1,775,122,658
Unfunded accrued pension liabilities	\$ 924,014,057	\$ 997,428,636
Accrued Annuity Liabilities (Member Financed)		
Retirees and beneficiaries Future annuities	\$ 111,482,100	\$ 113,362,921
Member annuities & future refunds	120,921,554	146,377,716
Total accrued annuity liabilities	232,403,654	259,740,637
Annuity fund balances	127,353,290	158,418,649
Unfunded accrued annuity liabilities*	\$ 105,050,364	\$ 101,321,988
Totals		
Actuarial Accrued Liabilities	\$2,995,793,396	\$3,032,291,931
Market Value of Assets	1,966,728,975	1,933,541,307
Unfunded Actuarial Accrued Liabilities	\$1,029,064,421	\$1,098,750,624

* Liabilities are gross before accounting for ASF claw-back. Assets currently include a receivable of approximately \$105.6 million related to the ASF claw-back. We believe the receivable is included in the Pension fund balances.

Funded Ratio - POA

	Defined Benefit	ASF	Total
A Actuarial Accrued Liability	\$2,874,871,842	\$120,921,554	\$2,995,793,396
B Market Value of Assets	\$1,845,807,421	\$120,921,554	\$1,966,728,975
C Unfunded Actuarial Accrued Liability (A-B)	\$1,029,064,421	\$ 0	\$1,029,064,421
D Funded Ratio (B/A)	64.2%	100.0%	65.6%

The POA Funded Ratio measurement above is an expected return-based measurement of the pension obligation. It is based upon the mandated 6.75% interest rate assumption (assumption prescribed by another party). It determines an amount that will be sufficient to provide benefits if the portfolio earns the expected 6.75% return on assets and all other assumptions are met. This measure is appropriate for assessing the need for or amount of future contributions (if all assumptions are met). This measure is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation, in other words, of transferring the obligation to a third party in a market value type transaction.

Funded Ratio - Solvency

	Defined Benefit	ASF	Total
A Market-Based Liability	\$3,982,786,305	\$120,921,554	\$4,103,707,859
B Market Value of Assets	\$1,845,807,421	\$120,921,554	\$1,966,728,975
C Unfunded Actuarial Accrued Liability (A-B)	\$2,136,978,884	\$ 0	\$2,136,978,884
D Funded Ratio (B/A)	46.3%	100.0%	47.9%

The Solvency Funded Ratio is a market-based measurement of the pension obligation. It estimates the amount the plan would need to invest in low risk securities to provide the benefits with greater certainty. For this purpose, the solvency liability is computed at 3.56% interest as of June 30, 2017, based on the long-term municipal bond rate ("20-Year Municipal GO AA Index" rate from the Fidelity Index as of June 30, 2017). We are not able to assess the credit quality of the plan sponsor and, as such, no adjustment has been made for the credit quality of the plan sponsor. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The difference between the two measures (POA and Solvency) is one illustration of the savings the sponsor anticipates by taking on the risk in a diversified portfolio.

Comments

Experience

Experience was more favorable than assumed during the year ending June 30, 2017. The chart below shows the estimated gain by division.

Development of Actuarial Gain/(Loss)

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total
(1) UAAL as of June 30, 2016 (BOY)	\$ 561.9	\$ 199.0	\$ 315.3	\$ 22.5	\$ 1,098.8
(2) Actual POA Contribution (EOY)	45.4	0.1	42.9	2.8	91.2
(3) Interest at 6.75%	37.9	13.4	21.3	1.5	74.2
(4) Projected UAAL* as of June 30, 2017	\$ 554.5	\$ 212.3	\$ 293.6	\$ 21.2	\$ 1,081.7
(5) Actual UAAL* as of June 30, 2017	508.9	235.6	266.9	17.6	1,029.1
Gain (Loss): (4) - (5)	\$ 45.5	\$ (23.2)	\$ 26.7	\$ 3.6	\$ 52.6
Gain (Loss) From Investments	\$ 48.3	\$ 9.2	\$ 25.5	\$ 3.0	\$ 86.0
Gain (Loss) From Liabilities	\$ (2.8)	\$ (32.4)	\$ 1.1	\$ 0.6	\$ (33.4)

* Unfunded actuarial accrued liability.

Source of Actuarial Gain/(Loss)

Type of Risk Area	Gain (Loss) in Period	
	Totals (\$ in millions)	Percent of Liabilities
Data Improvements*	(43.3)	(1.5)%
Risks Related to Assumptions		
Economic Risk Areas:		
Investment Return	86.0	3.0 %
Demographic Risk Areas:		
Full and Reduced Service Retirements	4.4	0.2 %
Death Benefits[^]	0.1	0.0 %
Disability Benefits	(0.2)	0.0 %
Other Terminations	3.5	0.1 %
Post-Retirement Mortality	2.1	0.1 %
Total Gain (or Loss) Related to Assumptions	95.9	3.3 %
Total Gain (or Loss) During Period	52.6	1.8 %
Beginning of Year Accrued Liabilities	2,885.9	100.0 %

* Including adjustments to modeling as a result of improved data.

[^] Estimate may not be accurate due to limitations related to data.

Comments (Continued)

Experience (Continued)

The estimated FY 2024 contributions are very sensitive to changes in year-to-year experience. The chart below reconciles our estimate from the June 30, 2016 valuation to our estimate from this valuation (June 30, 2017).

Reconciliation of Projected June 30, 2024 Contributions – Level Principal

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total*
Estimated FY 2024 Employer Contribution (Level Principal) from 6/30/16 Valuation	\$ 78.4	\$ 28.5	\$ 13.1	\$ 1.4	\$ 121.5
Experience Gain (Loss) of \$52.6 Million	(6.8)	3.5	(4.0)	(0.5)	(7.9)
Modified Contributions (see below)	0.8	(0.1)	-	-	0.6
Actual FY 2017 Contribution above Expected	(2.1)	1.5	-	(0.1)	(0.7)
Estimated FY 2024 Employer Contribution (Level Principal) from 6/30/17 Valuation	\$ 70.3	\$ 33.4	\$ 9.1	\$ 0.8	\$ 113.5

*Totals may not add due to rounding.

Reconciliation of Projected June 30, 2024 Contributions – Level Dollar

	(\$ millions)				
	General City	D.O.T.	DWSD	Library	System Total*
Estimated FY 2024 Employer Contribution (Level Dollar) from 6/30/16 Valuation	\$ 61.1	\$ 22.2	\$ 10.2	\$ 1.1	\$ 94.6
Experience Gain (Loss) of \$52.6 Million	(5.3)	2.7	(3.1)	(0.4)	(6.1)
Modified Contributions (see below)	0.6	(0.1)	-	-	0.5
Actual FY 2017 Contribution above Expected	(1.7)	1.2	-	-	(0.5)
Estimated FY 2024 Employer Contribution (Level Dollar) from 6/30/17 Valuation	\$ 54.8	\$ 26.0	\$ 7.1	\$ 0.6	\$ 88.5

*Totals may not add due to rounding.

Modified Contributions

We understand that the UTGO scheduled contributions for FY 2018 were accelerated to FY 2017. See page 9 for additional comments on allocation.

ASF Claw-Back Data

For the June 30, 2015 valuation, the Systems auditors determined a receivable in accordance with GAAP accounting that was included in the reported June 30, 2015 assets. The reported assets for the June 30, 2017 status valuation also included a receivable for the remaining claw-back payments. While we did not audit any of the assets, we reviewed the change in this receivable for reasonableness.

Annuity Reserve Fund (ARF)

In general, assets were reviewed for reasonableness. During that review, we discovered that the ARF was not credited any interest. As a result, we recommend that all the reserve amounts be reviewed.

Comments (Continued)

Plan Provisions

Section B-1 (b) of the plan provides that members who terminate employment and are subsequently rehired before incurring a six-year break in service are eligible to earn additional vesting and eligibility service under the plan. For purposes of this valuation, we have assumed no terminated members are rehired.

Great Lakes Water Authority (GLWA) Members

The Retirement System does not currently identify GLWA employees. The DWSD division had a large number of terminations in 2016. We have discussed with the Board's legal counsel whether or not GLWA employees are considered active members for purposes of Component II and do not have a definitive answer. We have treated these numbers as terminated members who are entitled to either a vested deferred benefit or a refund of ASF contributions. We recommend the Board's legal counsel research this point. If it is determined that these members are still active and are continuing to earn vesting and eligibility service under the plan, then we recommend the Retirement System work with GLWA to identify these members.

For this valuation (6/30/2017) we received a separate file indicating the June 30, 2014 DWSD status of members. Any members that were indicated as being DWSD division members on that file were valued under the DWSD for this valuation, regardless of the division reported on the main valuation data (which we understand to be the division as of June 30, 2017 in the Component I plan).

Allocation of Contributions between General and DOT

Our understanding of the allocation of contributions between General and DOT is discussed on page 1 of this report. Based on the reported assets, a different allocation method appears to have been used in FY2017. If the System supplies us with this asset method actually used, we can incorporate that method in future valuations.

Magnitude of Administrative Expenses

Combined Component I (Hybrid) and Component II (Legacy) administrative expenses for the 2017 fiscal year are approximately 30% higher when compared to the 2016 fiscal year. We have been informed that this increase is temporary.

Data Changes

System staff has undertaken several data improvement projects (some specifically discussed in other comments herein). As these data improvements are provided to us in the valuation data, we have removed earlier adjustments and approximations. These improvements are the primary source of the liability losses shown on page 7. In particular, the data review process seems to indicate that new AFC amounts for DOT were larger than reported annual compensation due to overtime included in AFC that was not included in reported compensation. As data continues to improve, additional liability gains and losses may result in future valuations.

Comments (Continued)

Annuity Savings Fund (ASF) Interest Credits

The ASF fund is credited with the lesser of 5.25% interest and the total fund earnings. We understand that any earning in excess of 5.25% (that otherwise would have been credited to the ASF fund if not for the 5.25% cap) will be transferred to Component I assets, to the extent needed, for funding of transition liability. Since ASF liabilities are equal to ASF balances, we did not model any such future excess earnings as part of this valuation. However, since the fund earned approximately 11% during FY 2017, we expect that there will be a transfer of excess ASF interest in FY 2019 related to this year's performance.

Approximately \$5.9 million was added to the liabilities in this report to account for anticipated excess earnings expected to occur as a result of return on assets in the 2017 fiscal year. We have discussed this additional liability with the Plan's accountants and have been instructed that the excess earnings should not be included as a liability in the GASB 67 and 68 reports.

Census Data and Approximations

We understand that data provided this year contained new estimates of the 2014 frozen AFC for active members. Benefit calculations we collected for members who retired on or after 7/1/2017 support the 2017 reported AFC as being more accurate. We have therefore removed the AFC load that was used in prior valuations. However, the AFC provided for this valuation appeared to be unreasonably small for a portion of the population. Therefore, in cases where the AFC reported for this valuation was less than 75% of the AFC reported in the 2014 valuation, the AFC as reported in the 2014 valuation was used.

Data was reported separately for Component I and Component II. Additional time was needed to reconcile these two data sets as they came from different source data. Processing time for the valuation could be shortened if data for future valuations is reconciled before being provided to GRS. We would be happy to work with the Retirement System staff to help them provide the information that is needed for the valuation.

System staff has been working on several data clean-up projects. We understand that the reported service and reported 2014 frozen AFC amounts for this year's valuation include the results of this data clean-up, to date. As a result, we saw liability losses related to the improved data that partially offset the gains from investment returns.

Actuarial Assumptions

The Retirement System routinely has five-year experience studies in accordance with the City ordinance. The last experience study for the period from July 1, 2007 through June 30, 2012 was started but not completed due to the bankruptcy. We conducted a review of the mortality experience in 2013. We recommend that the System consider the experience study schedule. The next experience study would be scheduled for the period from July 1, 2012 through June 30, 2017. However, in order to avoid distortions from the bankruptcy, the next experience study could be scheduled to begin just after the City emerged from bankruptcy. This, however, would suggest a study based on the period July 1, 2015 through June 30, 2020. We understand the Board has chosen to follow this suggestion and has scheduled the next experience study to begin subsequent to the June 30, 2020 valuation.

Comments (Concluded)

Restoration

This valuation assumes no future restoration of Component II benefits (consistent with the expectation of the POA). Any future restoration will be reflected beginning in the next valuation after being granted.

DWSD (Water/Sewer) Projections

Based on this valuation, the DWSD (Water/Sewer) division is not expected to be fully funded by 2024. As a result, their contributions will continue to be needed in FY 2024 (see page 2 for estimated FY 2024 contributions) to fund DWSD liabilities.

Future Results

While FY 2018 investment performance has not yet been provided to us, the S&P 500 and the DOW have so far both returned more than 6.75%. If the Retirement System's experience is similar, this will result in upward pressure on the funded status and downward pressure on the FY 2024 contribution requirements (below what is shown in this report), all other assumptions being met.

The POA mandated contributions for FY 2018 and beyond are expected to defund the Retirement System, when all assumptions are realized. In FY 2018, the POA mandated contributions are less than the interest on the projected UAAL. This defunding was contemplated in the POA.

Recommendation

We recommend that every potential action be taken to generate contributions to the Retirement System above those provided in the POA. Benefit payments to retirees in the Plan were almost \$250 million compared to FY 2018 contribution of \$68.3 million. See benefit projections on page 21.

Prior Recommendation

We understand the Retirement System is working on a project to compute the frozen accrued benefits for active and deferred members. We are currently working with staff to determine if the data audit projects they have completed are sufficient for purposes of the prior recommendation.

Prior Recommendation

The Board is currently working on the development of a funding policy for FY 2024 and beyond.

Conclusion

The funded status of the plan improved this year from 63.8% to 65.6% as a result of investment performance.

Liability by Division - POA

(\$Thousands)

	General	D.O.T.	DWSD	Library	Totals
Accrued Pension Liabilities					
Retirees and beneficiaries	\$1,195,160	\$299,986	\$628,243	\$ 58,946	\$2,182,335
Inactive members future deferred pensions	145,325	35,377	83,116	5,569	269,387
Active members	168,041	84,111	35,335	24,180	311,667
Total accrued pension liabilities	1,508,526	419,474	746,694	88,695	2,763,389
Pension fund balances	1,059,149	192,427	512,499	75,301	1,839,376
Unfunded accrued pension liabilities	449,377	227,047	234,195	13,394	924,013
Accrued Annuity Liabilities					
Retirees and beneficiaries#	62,274	10,185	35,280	3,744	111,483
Members annuities & future refunds	60,816	34,543	17,079	8,484	120,922
Total accrued annuity liabilities	123,090	44,728	52,359	12,228	232,405
Annuity fund balances	63,520	36,181	19,610	8,043	127,354
Unfunded accrued annuity liabilities#	59,570	8,547	32,749	4,185	105,051
Totals					
Actuarial Accrued Liabilities	1,631,616	464,202	799,053	100,923	2,995,794
Accrued Assets	1,122,669	228,608	532,109	83,344	1,966,730
Funded Ratio	68.8%	49.2%	66.6%	82.6%	65.6%
Unfunded Actuarial Accrued Liabilities	\$ 508,947	\$235,594	\$266,944	\$ 17,579	\$1,029,064

Totals may be off slightly due to rounding.

Liabilities are shown gross, before the annuity savings claw-back. The pension fund balance includes a receivable of approximately \$105.6 million for future claw-back payments.

SECTION B

FUND ASSETS

Statement of Plan Assets (Reported Assets at Market Value)

Market Value - June 30, 2017	
Cash and cash equivalents	\$ 105,393,594
Global equities	993,355,081
Global fixed income	96,803,311
Real assets	315,072,600
Private equities	81,149,584
Diversifying strategies	266,163,808
Accrued investment income	1,657,147
Contributions	4,250,318
Receivables from investment sales	6,884,559
Other receivable	135,354
ASF recoupment receivable	105,619,901
Notes receivable from participants	4,846,803
Asset-backed securities	13,264,422
Time deposit	2,729,819
Repurchase agreements	19,699,114
Corporate floating rate	38,815,711
Capital assets	267,889
Accrued expenses	(4,844,383)
Payables for Investment purchases	(7,817,063)
Due to the City of Detroit	(1,190,533)
Amounts due broker under securities lending arrangements	(73,670,689)
Other liabilities	(1,857,372)
Total Current Assets	\$ 1,966,728,975

Market Value of Assets

Reserve Accounts (Market Value)

Funds	Fund Balances	
	June 30, 2017	June 30, 2016
Annuity Savings	\$ 120,921,554	\$ 146,377,716
Annuity Reserve	6,431,736	12,040,933
Pension Accumulation	(122,691,271)	(158,885,695)
Pension Reserve	1,962,066,956	1,934,008,353
Total Fund Balances	\$ 1,966,728,975	\$1,933,541,307

Revenues and Expenditures (Market Value)

	Pension Funds	Annuity Funds	Total Funds
Balance, July 1, 2016	\$1,775,122,659	\$158,418,648	\$1,933,541,307
Prior valuation audit adjustment	0	0	0
Market Value July 1, 2016	\$1,775,122,659	\$158,418,648	\$1,933,541,307
Revenues			
Member Contributions	0	0	0
Employer Contributions	68,249,000	0	68,249,000
DIA Contributions	375,000	0	375,000
State of Michigan Contributions	0	0	0
UTGO Contributions	22,614,402	0	22,614,402
ASF Recoupment Interest	7,374,918	0	7,374,918
Investment Income (Net)	203,352,603	3,543,964	206,896,567
Other	547,983	401,174	949,157
Transfers	0	0	0
Total	\$ 302,513,906	\$ 3,945,138	\$ 306,459,044
Expenditures			
Benefit Payments	232,239,043	10,698,963	242,938,006
Refund of Member Contributions	0	21,413,027	21,413,027
Other	0	2,898,506	2,898,506
Expenses	6,021,837	0	6,021,837
Total	\$ 238,260,880	\$ 35,010,496	\$ 273,271,376
Market Value June 30, 2017	\$1,839,375,685	\$127,353,290	\$1,966,728,975
Market Value Rate of Return (Net of all expenses)	12.4%	0.7%	11.5%

Rates of return are dollar weighted estimates assuming contributions occur at the end of the year and remaining items are mid-year cash flows. "ASF Recoupment Interest" and "Other" items are treated as investment cash flows.

Note that interest credits to the ASF (and other reserves) are determined by plan provisions and Board policy (including any timing issues) as calculated by Retirement System staff.

Allocation of Assets Used for Valuation by Reserve Account and Division

	June 30, 2016	Adjustment	Contributions	Benefit Payments	Other	Investment Return (net of all expenses)	June 30, 2017
Annuity Savings Fund							
General	\$ 75,400,247	\$ (3,670,089)	\$ 0	\$ (11,542,509)	\$ (1,195,187)	\$ 1,823,648	\$ 60,816,110
D.O.T.	38,507,842	(225,709)	0	(4,263,837)	(440,009)	964,502	34,542,789
DWSD	23,987,557	(1,153,544)	0	(5,430,343)	(855,327)	530,207	17,078,550
Library	8,482,070	(40,425)	0	(176,338)	(6,809)	225,607	8,484,105
Totals	146,377,716	(5,089,767)	0	(21,413,027)	(2,497,332)	3,543,964	120,921,554
Annuity Reserve Fund							
General	5,020,125	3,670,088	0	(5,986,803)	0	0	2,703,410
D.O.T.	2,307,394	225,709	0	(894,775)	0	0	1,638,328
DWSD	4,698,690	1,153,544	0	(3,320,781)	0	0	2,531,453
Library	14,724	40,425	0	(496,604)	0	0	(441,455)
Totals	12,040,933	5,089,766	0	(10,698,963)	0	0	6,431,736
Pension Accumulation Fund							
General	(65,094,589)	(112,046,104)	45,388,561	0	4,361,467	112,562,761	(14,827,904)
D.O.T.	(67,102,310)	(26,253,216)	100,841	0	1,333,370	22,256,122	(69,665,193)
DWSD	(44,999,470)	(115,396,883)	42,900,000	0	2,060,653	54,679,245	(60,756,455)
Library	18,310,674	(6,601,442)	2,849,000	0	167,412	7,832,637	22,558,281
Totals	(158,885,695)	(260,297,645)	91,238,402	0	7,922,902	197,330,765	(122,691,271)
Pension Reserve Fund							
General	1,093,490,894	112,046,106	0	(131,560,537)	0	0	1,073,976,463
D.O.T.	266,980,784	26,253,214	0	(31,141,533)	0	0	262,092,465
DWSD	520,849,117	115,396,882	0	(62,990,946)	0	0	573,255,053
Library	52,687,558	6,601,444	0	(6,546,027)	0	0	52,742,975
Totals	1,934,008,353	260,297,646	0	(232,239,043)	0	0	1,962,066,956
Retirement System Totals	\$1,933,541,307	\$ 0	\$91,238,402	\$ (264,351,033)	\$ 5,425,570	\$ 200,874,729	\$1,966,728,975

SECTION C

PARTICIPANT DATA

Reconciliation of Raw Data

Active Members

A) Count reported in GC_Benefits table	3,438
B) Not in GC_Benefits but in Hybrid file and PF_Benefits	45
C) In prior year Legacy active data and Hybrid data but not in current GC_Benefits	44
D) In GC_Benefits file but not in Hybrid file	(69)
E) Hired after valuation date	(197)
F) No hire date in Hybrid file	(2)
G) Zero salary in Hybrid file	(9)
H) Non-active Status	(80)
I) Non-eligible class code & bargaining unit	(20)
J) Agency "88"	(24)
K) Rehire estimated termination prior to 2011	(101)
L) Number of records to value	3,025

Inactive Vested Members

A) Number of records reported on data file	3,326
B) In Legacy active file but not otherwise in database and not in Hybrid active file	72
C) Valued as inactive in prior year and would not have otherwise been valued this year	374
D) Valued as a vested active member in prior year but not in this year's active file and would not have otherwise been valued this year	132
E) Non-eligible bargaining unit	(46)
F) In General file with Police and Fire Revenue Group	(49)
G) In Police and Fire file with General Revenue Group	18
H) Valued as Legacy Retiree	(327)
I) Other Changes	(4)
J) Duplicate Records	-
K) Less than 8 years of service	(177)
L) Valued as inactive in prior year and in this year's Hybrid active data but not valued as Legacy active and would not have otherwise been valued in Legacy this year	20
M) Valued as a vested active member in prior year and in this year's Hybrid active data but valued as Legacy active and would not have otherwise been valued in Legacy this year	16
N) Number of records to value	3,355

Retired Members and Beneficiaries

A) Number of records reported on data file:	42,360
B) Number of records in Police and Fire plan:	(15,724)
C) Records not currently in receipt of benefits:	(14,602)
D) Component I (Hybrid) Records:	(200)
E) Number of records valued:	11,834

Data Approximations and Assumptions

Active

For active members, frozen AFC amounts and frozen service as of June 30, 2014 was reported. For purposes of this valuation, we matched the June 30, 2017 actives to the active data reported for the June 30, 2014 valuation to check against AFC as of June 30, 2014. In cases where the frozen AFC as reported in the 2017 data file was less than 75% of the AFC as reported on the 2014 data file, the AFC as reported on the 2014 data file was used.

Deferred

Data provided for deferred vested members was incomplete. As part of the processing of deferred member data, we attempted to fill in missing data with data from; 1) the previous year's deferred file; 2) the current year's active file and/or; 3) the previous year's active files. In cases where AFC was still incomplete after comparing to other files, we used \$30,000 to estimate the AFC. Since vesting service is not directly provided on the file, we estimated vesting service based on reported benefit service increased by the elapsed time between date of termination and June 30, 2014. Members with estimated vesting service of less than 8 years were assumed to be non-vested and were not valued. We estimated the commencement date with the following rules:

- Age 55 if 30 or more years of service and hired before July 1986;
- Age 60 if less than 30 years of service, but more than 10 years of service and hired before 1986; and
- Age 62 for all others.

Entire amount of deferred benefits was assumed to commence at the same time regarding the date of hire.

Retired and Beneficiary

It is our understanding that the current pension amount provided in the retiree data includes the 4.5% reduction as mandated in the POA. However, for members that retired prior to July 2015, the other pension amounts provided in the data (original pension amount, equated pension amount, and prior year's pension amount) did not reflect the 4.5% reduction and, as such, were reduced by 4.5% when valuing any related liability. Other adjustment assumptions include:

- In cases where the benefit is identified to be a joint and survivor benefit and a beneficiary is not listed in the data, it was assumed that male spouses were 3 years older than females;
- For non-equated members that elected a pop-up benefit, the pop-up amount is estimated based on the chosen option and benefit amounts provided in the data;
- Benefits for dependent children are assumed to cease at age 21; and
- For non-converted disabled members, converted benefits are:
 - assumed to commence at age 60; and
 - estimated, based on reported service and projected service from the date of disability to age 60.

Please see our correspondence dated April 3, 2017 for additional information regarding data reconciliation, processing instructions, and assumptions regarding unresolved issues. Note, this letter disclosed our data procedures and assumptions and we received confirmation from staff.

Summary of Member Data June 30, 2017 Active Members

	General	D.O.T.	DWSD*	Library	Totals^
Number	1,800	616	362	247	3,025
% Change in active members	0.7 %	(8.6)%	(27.9)%	(9.2)%	(6.5)%
Annual payroll (\$ millions)	\$ 89.4	\$ 23.9	\$ 17.3	\$ 10.9	\$ 141.5
Average pay	\$49,654	\$38,826	\$47,805	\$43,950	\$46,762
% Change in average pay	5.8 %	2.7 %	5.0 %	2.6 %	5.2 %

^ May not add due to rounding.

* Includes 7 members that were listed with a General revenue group in the 2017 active data file. These 7 members also appeared in a separate file that listed DWSD members as of June 30, 2014.

Retired Members and Survivor Beneficiaries

	General	D.O.T.	DWSD	Library	Totals
Number	7,069	1,638	2,799	328	11,834
Annual benefits (\$ millions) #	\$ 134.1	\$ 31.4	\$ 65.3	\$ 7.1	\$ 238.0
Average benefits #	\$18,976	\$19,183	\$23,335	\$21,695	\$20,111
% Change in reported average benefit	0.4 %	1.3 %	(0.3)%	(0.3)%	0.3 %

Includes annuities. Does not include reductions resulting from the annuity claw-backs.

Inactive Vested Members

	General	D.O.T.	DWSD	Library	Totals
Number	1,864	413	991	87	3,355
Average FAC	40,201	42,761	48,373	31,780	42,711
Average service	15.9	15.9	15.8	15.5	15.9
Annual benefits (\$ millions)	\$ 19.6	\$ 4.6	\$ 12.4	\$ 0.7	\$ 37.3
Average benefits	\$10,496	\$11,218	\$12,519	\$8,252	\$11,124
% Change in average service	0.0 %	0.0 %	0.0 %	6.9 %	0.1 %
% Change in average FAC	(2.5)%	1.6 %	(0.1)%	(0.4)%	(1.0)%

Active Members as of June 30, 2017 by Attained Age and Years of Service Retirement System Totals

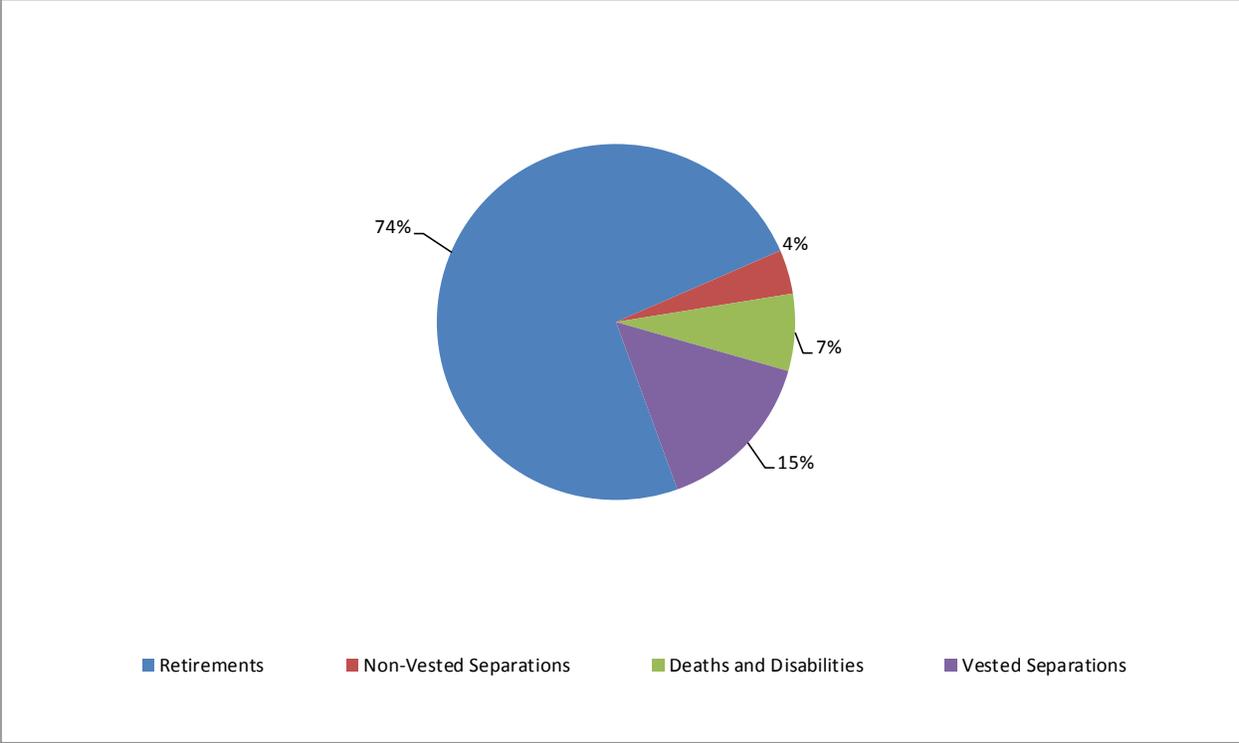
Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	11	0						11	\$ 331,556
25-29	50	12	1					63	2,353,554
30-34	31	44	19	1				95	4,028,703
35-39	33	41	63	54	1			192	7,834,573
40-44	48	62	72	91	50	1		324	14,909,950
45-49	29	50	82	168	133	37	3	502	23,937,051
50-54	25	40	69	170	182	113	48	647	31,164,687
55-59	42	39	62	139	132	137	114	665	31,764,471
60-64	16	41	40	75	77	65	76	390	18,469,796
65-69	8	12	18	14	10	14	13	89	4,501,307
70-74	3	3	4	9	4	4	7	34	1,571,163
75-79	0	1	4	2	1	2	3	13	587,906
Totals	296	345	434	723	590	373	264	3,025	\$141,454,717

Group Averages:

Age: 51.1 years
Service: 17.8 years
Annual Pay: \$46,762

Service shown in this schedule is Legacy benefit service plus Hybrid Benefit service. Hybrid service provided on the data file was reduced by two months to account for additional service granted past the valuation date.

Expected Terminations from Active Employment for Current Active Members



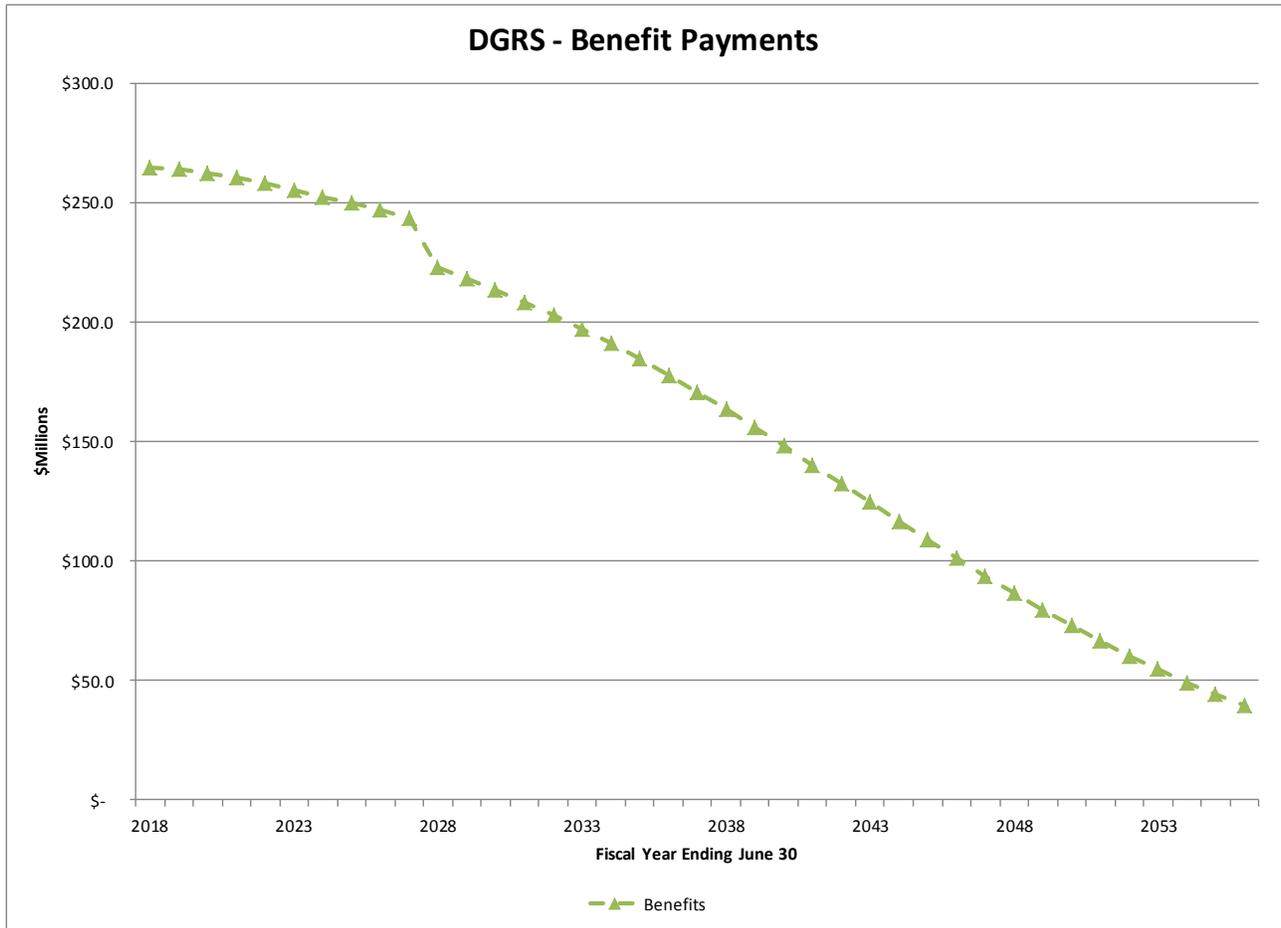
The chart shows the expected future development of the present population in simplified terms. The Retirement System presently covers 3,025 active members. Eventually, 131 people are expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 2,674 people are expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 220 people are expected to become eligible for benefits as a result of death-in-service or disability.

Actual versus expected retirements for the 2017 fiscal year is shown below:

Year Ended June 30,	Expected	Actual
2017	210	107

Expected Benefit Payments

Shown below is a graph of projected benefit payments remaining in the Retirement System.



This chart illustrates the continued cash flow needs anticipated in the next 5-10 years as most of the individuals in the plan move to payment status.

Retirees and Beneficiaries June 30, 2017
Tabulated by Attained Ages
Retirement System Totals

Attained Ages	Age & Service#		Disability		Death-in-Service		Totals	
	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances	No.	Monthly Allowances
Under 20*	10	\$ 13,204	0	\$ 0	4	\$ 2,403	14	\$ 15,607
20-24	2	4,628					2	4,628
25-29	9	7,636					9	7,636
30-34	7	3,066	0	0			7	3,066
35-39	9	5,868	3	1,650			12	7,518
40-44	18	12,854	13	7,540	2	1,387	33	21,781
45-49	70	87,362	32	18,732	4	4,237	106	110,331
50-54	291	505,689	82	57,330	13	15,847	386	578,866
55-59	792	1,652,940	177	151,949	33	37,840	1,002	1,842,729
60-64	1,693	3,334,973	259	348,778	36	42,234	1,988	3,725,985
65-69	2,199	3,999,446	185	219,450	44	72,266	2,428	4,291,162
70-74	1,781	3,211,802	131	137,807	36	55,083	1,948	3,404,692
75-79	1,180	1,755,850	70	62,747	36	40,514	1,286	1,859,111
80-84	862	1,183,770	44	37,797	32	37,140	938	1,258,707
85-89	759	919,650	26	18,615	41	30,434	826	968,699
90-94	570	610,952	29	21,271	40	33,838	639	666,061
95 and Over	189	167,319	3	1,977	18	12,815	210	182,111
Totals	10,441	\$17,477,009	1,054	\$1,085,643	339	\$386,038	11,834	\$18,948,690

* May include records with defective birth dates.
Includes survivor beneficiaries of deceased retirees.

Retirees and Beneficiaries June 30, 2017 Tabulated by Year of Retirement

Year of Retirement	No.	Monthly Allowances	
		Total	Average
1950 & before	4	\$ 7,141	\$1,785
1951-1955	2	4,158	2,079
1956-1960	3	1,272	424
1961-1965	8	3,457	432
1966-1970	30	13,584	453
1971-1975	112	66,342	592
1976-1980	317	226,749	715
1981-1985	637	646,114	1,014
1986-1990	771	846,607	1,098
1991-1995	1,294	1,628,225	1,258
1996-2000	1,524	2,287,447	1,501
2001-2005	1,973	3,734,166	1,893
2006-2010	2,140	4,053,777	1,894
2011	590	1,200,001	2,034
2012	784	1,475,655	1,882
2013	453	734,004	1,620
2014	402	657,288	1,635
2015	274	419,379	1,531
2016	400	750,718	1,877
2017	116	192,606	1,660
Totals	11,834	\$18,948,690	\$1,601

SECTION D

METHODS AND ASSUMPTIONS

Summary of Assumptions and Methods Used for Actuarial Valuations Adopted by Board of Trustees

All assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on experience studies where noted.

Economic Assumptions

The investment return rate used in making the valuation was 6.75% per year, compounded annually (net after investment and administrative expenses). This assumption is prescribed by the Eighth Amended Plan for the Adjustment of Debts of the City of Detroit (POA).

Price inflation is not directly used in the valuation. For purposes of assessing the reasonability of the investment return assumptions, we assumed price inflation of 2.50% per year.

Non-Economic Assumptions

The mortality table used to measure retired life mortality was 100% of the RP-2014 Blue Collar Annuitant Table for set-forward 1 year for males and 100% of the RP-2014 Blue Collar Annuitant Table set-forward 1 year for females. Tables were extended below age 50 with a cubic spline to the published Juvenile rates. Pre-retirement mortality is based on the corresponding Employee tables with corresponding set forward. The tables are projected to be fully generational, based on the 2-dimensional, sex distinct mortality improvement scale MP-2014 (which was published and intended to be used with RP-2014). 75% of all deaths-in-service are assumed to be non-duty related. This table was first used as of June 30, 2014. For disabled members, the same tables are used. The rationale for the mortality assumption is based on the 2008-2013 Mortality Experience Study issued February 4, 2015.

The probabilities of retirement for members eligible to retire are shown on pages 27 and 28. These probabilities were revised for the June 30, 2008 valuation. The rationale is based on the 2002-2007 Experience Study.

The probabilities of separation from service (including *death-in-service* and *disability*) are shown for sample ages on page 29. These probabilities were revised for the June 30, 2008 valuation. The rationale is based on the 2002-2007 Experience Study.

Summary of Assumptions and Methods Used for Actuarial Valuations Adopted by Board of Trustees (Concluded)

Funding Methods

The unit credit cost method was used in determining age & service pension liabilities, vesting liabilities, and casualty pension liabilities. Under this method, there is no normal cost since benefits are frozen and there are no future accruals and actuarial accrued liability is the present value of each individual's accrued benefit.

Unfunded Actuarial Accrued Liabilities. Actual employer contributions through June 30, 2023 are set by the POA. The amortization period and method after 2023 has not yet been established by the Board.

Employer contribution dollars were assumed to be paid at the end of the employer fiscal year.

Present assets are set equal to the Market Value.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

Single Life Retirement Values

**Based on RP-2014 Blue Collar
100% of Male Rates Set-Forward 1 Year
100% of Female Rates Set-Forward 1 Year**

Sample Attained Ages in 2017	Future Life Expectancy (years)	
	Men	Women
45	38.51	41.86
50	33.56	36.81
55	28.80	31.91
60	24.26	27.17
65	19.97	22.60
70	15.99	18.30
75	12.37	14.34
80	9.19	10.84

Probabilities of Age/Service Retirement for Members Eligible to Retire

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year with Unreduced Benefits		
	EMS	D.O.T.	Others
45	25%		
46	25%		
47	25%		
48	22%		
49	20%		
50	18%	55%	50%
51	15%	50%	50%
52	15%	50%	45%
53	15%	50%	45%
54	15%	55%	40%
55	15%	50%	30%
56	15%	50%	30%
57	15%	50%	30%
58	15%	50%	30%
59	15%	55%	40%
60	40%	40%	25%
61	30%	30%	25%
62	30%	30%	25%
63	30%	30%	25%
64	30%	30%	25%
65	30%	30%	35%
66	30%	30%	30%
67	30%	30%	25%
68	30%	50%	25%
69	30%	50%	25%
70	100%	100%	20%
71			20%
72			20%
73			20%
74			20%
75			20%
76			20%
77			20%
78			20%
79			20%
80			100%
Ref	537	1648	1647

Rationale for assumption is 2002 to 2007 Experience Study. Additional retirement rates for Component I (Hybrid Plan) eligibility are not reflected in this valuation due to materiality.

Probabilities of Early Retirement for Members Eligible for Early Retirement

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year with Reduced Benefits
55	7%
56	8%
57	9%
58	10%
59	12%
60	12%
61	12%
62	12%
63	12%
64	12%
Ref	1649

Rationale for assumption is 2002 to 2007 Experience Study.

Sample Rates of Separation from Active Employment Before Retirement

Sample Ages	Years of Service	% of Active Members Separating Within Next Year			
		Withdrawal			
		EMS	D.O.T.	Others	
				Men	Women
ALL	0	11.00%	18.00%	18.00%	20.00%
	1	10.00%	16.00%	15.00%	16.00%
	2	8.00%	14.00%	13.00%	14.00%
	3	8.00%	11.00%	11.00%	12.00%
	4	7.00%	9.00%	10.00%	10.00%
25	5 & Over	6.70%	8.00%	7.60%	7.60%
30		5.90%	7.60%	7.22%	7.22%
35		5.20%	5.56%	5.28%	5.28%
40		4.40%	4.26%	4.05%	4.05%
45		3.40%	3.69%	3.51%	3.51%
50		2.40%	3.50%	3.33%	3.33%
55		2.00%	3.50%	3.33%	3.33%
60		0.00%	3.50%	3.33%	3.33%
Ref		338	143	584	188
		1068	212	212 x 0.95	212 x 0.95

Sample Ages	% of Active Members Becoming Disabled Within Next Year			
	D.O.T.		Others	
	Ordinary	Duty	Ordinary	Duty
25	0.02%	0.03%	0.01%	0.25%
30	0.05%	0.08%	0.04%	0.29%
35	0.14%	0.21%	0.11%	0.34%
40	0.27%	0.42%	0.21%	0.39%
45	0.51%	0.79%	0.40%	0.45%
50	0.66%	1.03%	0.51%	0.52%
55	0.76%	1.18%	0.59%	0.60%
60	0.86%	1.34%	0.67%	0.70%
Ref	23 x 0.45	23 x 0.70	23 x 0.35	423 x 0.90

Rationale for assumption is 2002 to 2007 Experience Study.

Miscellaneous and Technical Assumptions

Benefit Service	Exact Fractional service is used to determine the amount of benefit payable.
Decrement Operation	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and rounded service on the date the decrement is assumed to occur.
Forfeitures	None.
Incidence of Contributions	Contributions are assumed to be received at the end of the year.
Marriage Assumption	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Normal Form of Benefit	Straight life is the normal form of benefit. Straight life is generally the most valuable under valuation assumptions. Actuarial equivalent factors are based on 7.5% interest and 1984 Group Annuity Mortality table.
Service Credit Accruals	Service accruals stop as of June 30, 2014 for measurement of Component II liabilities. However, future service in Component I may be used to satisfy benefit eligibility requirement in Component II. Members who became duty disabled prior to June 30, 2014 are assumed to get projected service from date of disability to conversion date. Member who become disabled after June 30, 2014 are assumed to get their frozen accrued benefit as of June 30, 2014 at date of conversion.
Administrative Expenses	The investment return assumption is mandated to be net of investment and administrative expense in the plan document. No other provision for administrative expenses is included in this valuation.
Sick Leave	Sick leave banks as of June 30, 2014 were included in the 2014 data file provided by the System.
Member Contributions	Member contributions to this Component II plan are assumed to have ceased with the bankruptcy.

Rationale for assumption is 2002 to 2007 Experience Study, modified as necessary for changes in data or administration.

SECTION E

PLAN PROVISIONS

Summary of Benefit Provisions Evaluated

Component II Frozen Benefits

All Component II benefits are frozen as of June 30, 2014 based on service and average final compensation accrued as of that date and the provisions of the Detroit General Retirement System as it existed on June 30, 2014. Frozen benefits are further reduced by 4.5% and all future cost-of-living adjustments (“COLA’s”) were eliminated. Benefits resulting from the Annuity Savings Fund and benefits paid from the Annuity Reserve Fund were subject to a separate reduction described as a “Claw-back.” Details of the claw-back provision are complicated and can be found in the Eighth Amended Plan of Adjustment. The benefits evaluated in this report are the frozen reduced benefits after adjusting the assets for the claw-back. Component II benefits are payable after separation from service, upon meeting the eligibility conditions of the plan as it existed on June 30, 2014, regardless of whether the individual is eligible to receive a Component I benefit at that time.

Our understanding of the June 30, 2014 plan provisions is provided below for completeness. The material below does not have legal standing and is not intended to cover all potential situations that could occur. If there are discrepancies between the description below and appropriate legal documents, the latter necessarily govern.

Age and Service Pension

Eligibility - Any age (minimum age 55 for non-EMS members hired after 1995) with 30 years of service (25 for EMS members), or age 60 with 10 years of service, or age 65 with 8 years of service.

Annual Amount - EMS Members: Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to 2.0% of AFC multiplied by years of service. Maximum benefit is 90% of AFC.

Other Members: Sum of a) a basic pension of \$12 for each of the first 10 years of service, plus b) a pension equal to the first 10 years of service multiplied by 1.6% of AFC, plus 1.8% of AFC for each year of service greater than 10 years up to 20 years, plus 2.0% of AFC for each year of service greater than 20 years up to 25 years, plus 2.2% of AFC for each year of service greater than 25 years. Future benefit accruals for certain active members (depending on bargaining unit) were reduced to 1.5% of final average compensation per year of service.

Type of Average Final Compensation (AFC) - Highest 3 consecutive years out of the last 10. Pension benefits will not be diminished if compensation is reduced because of a fiscal emergency. Effective July 1, 1999, in computing the AFC, a member shall have the option of adding the value of 25% of unused accrued sick leave to the earnings used in computing the AFC. Longevity is added to AFC in accordance with the following schedule: \$150 after 5 years, \$300 after 10 years, \$450 after 15 years, \$600 after 20 years, and \$750 after 25 years.

Early Retirement

Eligibility - Any age with 25 or more years of service (min. age 55 for members hired after 1995).

Annual Amount - Same as regular retirement but actuarially reduced.

Summary of Benefit Provisions Evaluated (Continued)

Deferred Retirement (Vested Benefit)

Eligibility - Hired prior to 7-1-80: Age 40 with 8 years of service. Hired on or after 7-1-80: Any age with 10 years of service.

Benefit Commencement - APTE hired prior to July 1, 1988: Benefit begins at the age the member would have become eligible for regular retirement if service had continued. **SAAA, Non-Union and lawyers hired prior to June 30, 1986:** Benefit begins at the age the member would have become eligible for regular retirement. **Others:** Benefits based on service rendered by June 30, 1986 begin at the age the member would have become eligible for regular retirement. Benefits based on service rendered after July 1, 1986 begin at age 62.

Annual Amount - Same as regular retirement but based on average final compensation and service at the time of termination.

Duty Disability Retirement

Eligibility - Service related disability before eligibility for service retirement prior to and July 1, 2014. No service requirement.

Annual Amount - An annuity which is the actuarial equivalent of the accumulated contributions at date of disability plus a pension of two-thirds of average final compensation at time of disability. The maximum annual pension is \$5,700 (\$9,000 for EMS). At the earliest of when the member would have accrued 30 years of service credit (25 for EMS) or age 60, the annuity is recomputed assuming contributions would have continued at a salary level equal to final compensation. The pension is recomputed with additional service credit granted from the date of disability to age 60 (or 30 years of service credit) or June 30, 2014, whichever is earlier.

Non-Duty Disability Retirement

Eligibility - Disability from any cause before age 60 with 10 or more years of service prior to July 1, 2014.

Annual Amount - Computed in the same manner as a regular retirement benefit. Maximum annual pension to age 60 is \$6,000. Benefit is recomputed at age 60 with no maximum.

Duty Death Before Retirement

Eligibility - Death from service related causes. No age or service requirements.

Annual Amount - One-third of final compensation as of June 30, 2014 to the surviving spouse for life or until remarriage, plus an equal share of 1/4 of final compensation to each unmarried child under age 18. If there is no eligible spouse, eligible children each receive 1/4 of final compensation; if there are more than 2 such children, each child shares an equal part of 1/2 of final compensation. Maximum total amount for spouse and children is \$9,000 annually. If there is no eligible spouse or children, dependent parents each receive 1/6 of deceased's final compensation, to a total maximum of \$600 annually.

Summary of Benefit Provisions Evaluated (Concluded)

Non-Duty Death Before Retirement

Eligibility - Death-in-service at any age with 15 years of service; or after age 60 with 10 years of service; or after age 65 with 8 years of service.

Annual Amount - To Surviving Spouse: Computed as a regular retirement benefit but reduced in accordance with a 100% joint and survivor election for members with 20 or more years of service. For members with 15 years of service but less than 20, benefit is reduced in accordance with a 50% joint and survivor election. To Dependent Children if no Surviving Spouse: \$9,000 payable to age 19 of the youngest child or for life if child is physically or mentally impaired for members with 20 or more years of service (\$6,000 if less than 20 years of service).

Post-Retirement Cost-of-Living Adjustments

Benefit is increased annually by 2.25% of the **original** pension amount at retirement. Post-retirement cost-of-living increases were eliminated on future accruals for certain active members (depending on bargaining unit).

Member Contributions

Members have the option of choosing one of four contribution amounts: (1) 0%; (2) 3.0% of compensation up to the Social Security wage base, plus 5.0% of compensation in excess of the Social Security wage base; (3) 5.0% of total compensation; or (4) 7.0% of total compensation. Member contributions can be paid as a lump sum or annuitized at retirement to provide an annuity in addition to the pension (which is not affected by the level of member contributions).

SECTION F

GLOSSARY

Glossary

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

AFC. Average Final Compensation.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

APTE. Association of Professional and Technical Employees.

Contribution Budgeting Liability. An expected return based measure of pension obligation.

DIA. Detroit Institute of Art.

D.O.T. Department of Transportation.

DWSD. Detroit Water and Sewerage Department.

EMS. Emergency Medical Service.

Glossary

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

GASB. The Governmental Accounting Standards Board.

GLWA. Great Lakes Water Authority.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

POA. The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

SAAA. Senior Accountants, Analysts, and Appraisers Association.

Solvency Liability. A market-based measure of the present value of accrued benefits at a municipal bond discount rate unadjusted for the credit quality of the plan sponsor.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”

UTGO. Unlimited Tax General Obligation.

Valuation Assets. The value of current plan assets recognized for valuation purposes.



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Detroit General Retirement System Plan Reporting Request

Background: When the Great Lakes Water Authority (GLWA) assumed operations of the regional water and sewer systems on January 1, 2016, it also assumed a pro-rata share of the frozen legacy defined benefit pension (referenced as “Component II”) liabilities related to service provided to the regional systems for the Detroit Water & Sewerage Department (DWSD) Division of the Detroit General retirement System Plan (DGRS) pension plan. Pursuant to the “Agreement Re GRS Defined Benefit Plan Among City of Detroit and General Retirement System of City of Detroit and Great Lakes Water Authority” dated December 1, 2015, certain reporting requirements are in place. Section 2.2 (a)(4) is provided below.

(iv) An audit of the Statement of Changes in Fiduciary Net Position by Division expressing an opinion on each divisional column commencing with the Fiscal Year ending June 30, 2015. In lieu of a direct audit opinion on this schedule, the parties may agree in writing to secure an in-relation-to audit opinion on this schedule (in-relation-to the audited financial statement of the GRS) on a regular or occasional basis at any time after the Fiscal Year ending June 30, 2017. The audit firm indicated that the audit of this Statement will be performed after the Leases become effective on the Effective Date. To the extent that the actual net asset amounts as reflected in the final audit report differ from the net assets utilized to determine the UAAL for the DWSD Pension Pool reflected in Section 2.1, the difference shall be adjusted in a future GRS actuarial report and the UAAL provided in Section 2.1 shall be considered amended accordingly.

Analysis: Representatives from GRS have reached out to GLWA to modify the above audit requirement under the pension reporting agreement to "an in relation to opinion". This would reduce the administrative expenses for the cost of the annual audit. The GRS auditors have suggested a further refinement the GRS request. This includes the divisional allocation schedule within the regular GRS financial statements, as supplementary information. There would still be an in relation to opinion, which is the minimum allowed under the pension reporting agreement. This would be less costly, however, than preparing and issuing separate financial statements.

Recommendation: It is recommended that the Audit Committee authorize staff to work with the General Retirement System and its auditors to provide an “in relation to” opinion for the divisional allocation schedule within the regular GRS financial statements, as supplementary information.



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Update: Pre-approved Underwriter Pool Proposal Selection for the 2018 Financing Program

Background: At its meeting on June 27, 2016, as part of the underwriter selection process related to its inaugural 2016 bond transaction, the Great Lakes Water Authority (GLWA) Board of Directors (Board) approved the following list of ten (10) firms that were deemed qualified to act as senior managing underwriters for subsequent GLWA bond issuances.

- Barclays Capital, Inc.
- Citigroup Global Markets, Inc.
- Goldman Sachs & Co.
- JP Morgan Securities LLC
- Morgan Stanley & Co.
- Piper Jaffray & Co.
- PNC Capital Markets
- Ramirez & Co.
- Siebert Brandford Shank
- Wells Fargo Securities

Furthermore, the GLWA Board directed that in the event of a subsequent bond issuance, the Chief Procurement Officer shall:

1) Convene an evaluation panel to interview and review the qualifications of each of the ten (10) firms listed below to serve as Bookrunning Senior Managing Underwriter or Co-Senior Managing Underwriter for that issuance; or

2) Issue a Request for Proposals (RFP) to select a Senior Managing Underwriter(s) for that transaction.

Justification: Pursuant to Option 1 above, GLWA will seek updates to the proposals submitted by the underwriter pool pre-selected by the GLWA Board of Directors on June 27, 2016. This proposal update shall provide financing recommendations and information for the potential refunding of certain GLWA water and sewer system series of outstanding

bonds and new money for the sewer system of the Detroit Water and Sewer Department (DWSD). The refunding component generally contemplates the current refunding of selected GLWA series bonds that have call dates of July 1, 2018 but may also consider current taxable advance refunding of other savings candidates with 2019 (or later) call dates.

Proposed Transactions: The outstanding GLWA bonds for the water and sewer systems that are the focus of the refunding plan total approximately \$178 million for the water system approximately and approximately \$190 million for the sewer system. These include the current refunding of Series 2001C second lien bonds of the Water System, the current refunding of the senior lien 1998A, 1998B, and 2001 C2 Sewer System Bonds, as well as the potential taxable advance refunding of the senior lien Series 2001 C1 Sewer System Bonds. Additionally, GLWA has been notified by DWSD that it will need GLWA to issue approximately \$75 million of new money sewer bonds on its behalf.

Proposed Process: GLWA, through its Procurement Department, will send out the underwriter solicitations in the form of proposal update questionnaires to the list of 10 qualified underwriting firms. The firms will have almost 2 weeks to submit their responses to GLWA Procurement. After the responses are received, PFM (GLWA's financial advisor) will provide its analysis on the responses received. The written responses will also be scored by the evaluation panel. Oral interviews will be conducted with all underwriting firms that submit responses to the solicitation update questionnaire, in accordance with the Board's directive. Once the oral interviews are held and the final scoring is tabulated, GLWA management, along with its registered municipal advisor, Public Financial Management (PFM), will present the recommendation of the evaluation panel to the GLWA Audit Committee for further recommendation to the GLWA Board.

Proposed Time Schedule: Below is the proposed time schedule for the underwriter solicitation process.

Underwriter Solicitation Time Schedule	
Category	Date
Review Strategy at Audit Committee	May 22, 2018
Send out Underwriter Solicitation	May 23, 2018
Solicitation Responses Due	June 5, 2018
PFM to Provide Summary Analysis of Underwriter Responses	June 8, 2018
Meeting with Underwriters	June 12, 2018
Final Scoring of Responses and Oral Interviews	June 13, 2018
Audit Committee Review of Recommended Underwriting Team	June 15, 2018
Board Approval of Underwriting Team	June 27, 2018

Proposed Action: The Audit Committee approves the proposed approach for the underwriter solicitation as presented and consistent with the June 27, 2016 GLWA Board directive.



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Monthly Revenue & Collections Report for March 2018

The Monthly Revenue & Collections Report includes the following.

1. FY 2018 Retail and Wholesale Sewer Revenue
2. FY 2018 Retail and Wholesale Water Revenue
3. City of Highland Park Billings and Collections
4. City of Flint Billings and Collections
5. Water & Sewer System Wholesale Accounts Receivable Aging Report

Note: Wholesale customer revenues are billed by the Great Lakes Water Authority (GLWA). Pursuant to the terms of the lease agreement between the City of Detroit and the Great Lakes Water Authority, the Detroit Water & Sewerage Department (DWSD) serves as GLWA's agent for billing activities for the City of Detroit retail customer class. All revenues collected by both GLWA and DWSD are deposited in a trust account in accordance with the GLWA Master Bond Ordinance.

1. FY 2018 Retail and Wholesale Sewer Revenue Report

Table 1 summarizes the unaudited FY 2018 billed revenues through March 31, 2018 and do not reflect collections of those revenues. It should also be noted that the revenues are shown in the month that the billed flow was accrued and not the following month when the bills are usually sent out to customers.

Table 1 – Combined DWSD and GLWA Wholesale FY 2018 Sewer Revenue

RETAIL SEWER CUSTOMERS						
<u>Month</u>	<u>FY 2018 - Budget</u>		<u>FY 2018 - Actual</u>		<u>Variance</u>	
	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
July	260,000	24,615,100	244,512	24,624,820	(15,488)	9,720
August	260,600	24,754,400	239,911	24,348,011	(20,689)	(406,389)
September	222,800	22,752,800	228,122	23,517,204	5,322	764,404
October	205,500	22,717,800	224,159	23,573,505	18,659	855,705
November	189,900	21,987,300	188,312	22,084,385	(1,588)	97,085
December	204,400	22,774,800	190,811	21,937,291	(13,589)	(837,509)
January	195,300	22,296,100	213,373	22,944,848	18,073	648,748
February	198,300	23,060,600	193,452	21,926,685	(4,848)	(1,133,915)
March	203,000	23,026,900	-	-	-	-
April	189,300	22,215,900	-	-	-	-
May	219,400	23,798,700	-	-	-	-
June	251,500	24,635,500	-	-	-	-
Total	2,600,000	278,635,900	1,722,652	184,956,749	(14,148)	(2,151)
<i>Subtotals ytd</i>	<i>1,736,800</i>	<i>184,958,900</i>	<i>1,722,652</i>	<i>184,956,749</i>	<i>(14,148)</i>	<i>(2,151)</i>
<i>Achievement of Budget</i>			<i>99.19%</i>	<i>100.00%</i>		

WHOLESALE SEWER CUSTOMERS						
<u>Month</u>	<u>FY 2018 - Budget</u>		<u>FY 2018 - Actual</u>		<u>Variance</u>	
	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
July	N/A	22,619,300	N/A	22,619,300	N/A	-
August	N/A	22,619,300	N/A	22,619,300	N/A	-
September	N/A	22,619,300	N/A	22,619,300	N/A	-
October	N/A	22,619,300	N/A	22,619,300	N/A	-
November	N/A	22,619,300	N/A	22,619,300	N/A	-
December	N/A	22,619,300	N/A	22,619,300	N/A	-
January	N/A	22,619,300	N/A	22,619,300	N/A	-
February	N/A	22,619,300	N/A	22,619,300	N/A	-
March	N/A	22,619,300	N/A	22,619,300	N/A	-
April	N/A	22,619,300	N/A	-	N/A	-
May	N/A	22,619,300	N/A	-	N/A	-
June	N/A	22,619,300	N/A	-	N/A	-
Total		271,431,600		203,573,700		0
<i>Subtotals ytd</i>		<i>203,573,700</i>		<i>203,573,700</i>		<i>0</i>
<i>Achievement of Budget</i>				<i>100.00%</i>		

TOTAL - ALL CUSTOMERS						
<u>Month</u>	<u>FY 2018 - Budget</u>		<u>FY 2018 - Actual</u>		<u>Variance</u>	
	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
July	260,000	47,234,400	244,512	47,244,120	(15,488)	9,720
August	260,600	47,373,700	239,911	46,967,311	(20,689)	(406,389)
September	222,800	45,372,100	228,122	46,136,504	5,322	764,404
October	205,500	45,337,100	224,159	46,192,805	18,659	855,705
November	189,900	44,606,600	188,312	44,703,685	(1,588)	97,085
December	204,400	45,394,100	190,811	44,556,591	(13,589)	(837,509)
January	195,300	44,915,400	213,373	45,564,148	18,073	648,748
February	198,300	45,679,900	193,452	44,545,985	(4,848)	(1,133,915)
March	203,000	45,646,200	-	22,619,300	-	-
April	189,300	44,835,200	-	-	-	-
May	219,400	46,418,000	-	-	-	-
June	251,500	47,254,800	-	-	-	-
Total	2,600,000	550,067,500	1,722,652	388,530,449	(14,148)	(2,151)
<i>Subtotals ytd</i>	<i>1,736,800</i>	<i>388,532,600</i>	<i>1,722,652</i>	<i>388,530,449</i>	<i>(14,148)</i>	<i>(2,151)</i>
<i>Achievement of Budget</i>			<i>99.19%</i>	<i>100.00%</i>		

DWSD Retail Billings: Due to DWSD's reporting software transition, the updated DWSD billed usage and billed revenue information for March 2018 were not available. The March 2018 numbers will be included in next report provided at the June 2018 Audit Committee meeting.

GLWA Wholesale Customer Billings: **Table 1** shows the FY 2018 sewer billed revenue. As a result of the sewer rate simplification which provides a more stable revenue stream, the wholesale sewer customers are billed a fixed monthly fee. The results of this effort can be seen as the billed revenue is at 100.00% of budget through March 2018.

Total System Billings: **Table 1** shows the FY 2018 combined DWSD and GLWA Wholesale sewer billed usage and billed revenue. Based on the combined billings available at the time of this report, the GLWA Sewer System had billed revenues of 100.0% of budget without the March 2018 DWSD billings.

2. FY 2018 Retail and Wholesale Water Revenue Report

Table 2 summarizes the unaudited FY 2018 wholesale customer water revenues billed by GLWA and the retail water revenues billed by DWSD. Please note these are billed revenues and do not reflect collections of those revenues. It should also be noted that the revenues are shown in the month that the billed flow was accrued and not the following month when the bills are usually sent out.

Table 2 – Combined DWSD and GLWA Wholesale FY 2018 Water Revenue Report

RETAIL WATER CUSTOMERS									
Month	FY 2018 - Budget			FY 2018 - Actual			Variance		
	Volume	Revenue	Unit	Volume	Revenue	Unit	Volume	Revenue	
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$	
July	295,700	9,332,300	31.56	274,267	8,813,936	32.14	(21,433)	(518,364)	
August	303,100	9,517,000	31.40	269,802	8,631,595	31.99	(33,298)	(885,405)	
September	248,900	8,393,900	33.72	259,341	8,463,041	32.63	10,441	69,141	
October	236,100	7,947,500	33.66	247,700	8,187,943	33.06	11,600	240,443	
November	218,400	7,585,100	34.73	208,783	7,276,521	34.85	(9,617)	(308,579)	
December	238,500	8,008,200	33.58	213,026	7,333,094	34.42	(25,474)	(675,106)	
January	224,700	7,673,100	34.15	235,142	7,873,651	33.48	10,442	200,551	
February	224,700	7,813,100	34.77	235,436	7,879,874	33.47	10,736	66,774	
March	235,700	7,944,800	33.71	-	-	-	-	-	
April	217,700	7,529,200	34.59	-	-	-	-	-	
May	256,700	8,946,300	34.85	-	-	-	-	-	
June	284,800	9,089,900	31.92	-	-	-	-	-	
Total	2,985,000	99,780,400	33.43	1,943,498	64,459,654	33.17	(46,602)	(1,810,546)	
Subtotals ytd	1,990,100	66,270,200	33.30	1,943,498	64,459,654	33.17	(46,602)	(1,810,546)	
Achievement of Budget				97.66%	97.27%				

WHOLESALE WATER CUSTOMERS*									
Month	FY 2018 - Budget			FY 2018 - Actual			Variance		
	Volume	Revenue	Unit	Volume	Revenue	Unit	Volume	Revenue	
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$	
July	1,712,100	31,705,800	18.52	1,721,500	32,819,241	19.06	9,400	1,113,441	
August	1,615,000	30,914,600	19.14	1,573,478	31,520,853	20.03	(41,522)	606,253	
September	1,420,900	28,619,700	20.14	1,421,715	29,686,522	20.88	815	1,066,822	
October	1,064,900	25,002,100	23.48	1,158,883	26,949,856	23.26	93,983	1,947,756	
November	892,000	23,038,000	25.83	958,686	25,146,717	26.23	66,686	2,108,717	
December	946,600	23,392,700	24.71	1,024,164	24,434,241	23.86	77,564	1,041,541	
January	972,400	23,676,000	24.35	1,067,591	24,810,289	23.24	95,191	1,134,289	
February	893,000	23,017,200	25.78	894,635	23,326,980	26.07	1,635	309,780	
March	988,100	23,781,500	24.07	1,017,632	24,299,625	23.88	29,532	518,125	
April	997,900	23,859,300	23.91	-	-	-	-	-	
May	1,155,100	25,576,800	22.14	-	-	-	-	-	
June	1,472,900	28,727,800	19.50	-	-	-	-	-	
Total	14,130,900	311,311,500	22.03	10,838,285	242,994,324	22.42	333,285	9,846,724	
Subtotals ytd	10,505,000	233,147,600	22.19	10,838,285	242,994,324	22.42	333,285	9,846,724	
Achievement of Budget				103.17%	104.22%				

* Includes Revenues and Usage from the City of Flint.

TOTAL - ALL CUSTOMERS									
Month	FY 2018 - Budget			FY 2018 - Actual			Variance		
	Volume	Revenue	Unit	Volume	Revenue	Unit	Volume	Revenue	
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$	
July	2,007,800	41,038,100	20.44	1,995,768	41,633,177	20.86	(12,032)	595,077	
August	1,918,100	40,431,600	21.08	1,843,280	40,152,447	21.78	(74,820)	(279,153)	
September	1,669,800	37,013,600	22.17	1,681,056	38,149,562	22.69	11,256	1,135,962	
October	1,301,000	32,949,600	25.33	1,406,583	35,137,799	24.98	105,583	2,188,199	
November	1,110,400	30,623,100	27.58	1,167,469	32,423,237	27.77	57,069	1,800,137	
December	1,185,100	31,400,900	26.50	1,237,190	31,767,335	25.68	52,090	366,435	
January	1,197,100	31,349,100	26.19	1,302,733	32,683,940	25.09	105,633	1,334,840	
February	1,117,700	30,830,300	27.58	1,130,072	31,206,854	27.61	12,372	376,554	
March	988,100	23,781,500	24.07	1,017,632	24,299,625	23.88	29,532	518,125	
April	1,215,600	31,388,500	25.82	-	-	-	-	-	
May	1,411,800	34,523,100	24.45	-	-	-	-	-	
June	1,757,700	37,817,700	21.52	-	-	-	-	-	
Total	16,880,200	403,147,100	23.88	12,781,782	307,453,978	24.05	286,682	8,036,178	
Subtotals ytd	12,495,100	299,417,800	23.96	12,781,782	307,453,978	24.05	286,682	8,036,178	
Achievement of Budget				102.29%	102.68%				

* Figures are stated as "Service Months"; i.e. July figures represent bills issued in August, etc.

DWSD Retail Billings: Due to DWSD's reporting software transition, the updated DWSD billed usage and billed revenue information for March 2018 were not available. The March 2018 numbers will be included in next report provided at the June 2018 Audit Committee meeting.

GLWA Wholesale Customer Billings: **Table 2** shows the FY 2018 water billed usage and billed revenues. Starting FY 2016, wholesale water charges were re-structured to create a more stable revenue stream by using a historical rolling average to project customer volumes and allocating 60% of the customer revenue requirement to the monthly fixed charge. As of March 31, 2018, the billed usage was at 103.17% of budget and billed revenue at 104.22% of budget. As noted in **Table 2**, revenues and usage from the City of Flint *are* included as they were assumed in the FY 2018 Budget.

Total System Billings: **Table 2** shows the FY 2018 combined DWSD and GLWA Wholesale water billed usage and billed revenue. Based on the combined Retail and Wholesale Water billings, the GLWA Water System had billed usage of 102.29% of budget and billed revenues of 102.68% of budget without the March 2018 DWSD billings.

3. City of Highland Park Billings and Collections

As of April 30, 2018, Highland Park had a delinquent balance of \$37.7 million, including \$30.2 million for wastewater treatment services, \$1.6 million for industrial waste control services, and \$5.9 million for water supply services. **Table 3** provides a summary of the billing and collection history for Highland Park from June 30, 2012 to April 30, 2018 in the table below. Please note the numbers below reflect the month the invoice was sent and not the month the service was provided.

Payment in the amount of \$997,016,96 was received on April 23, 2018 and posted to the Highland Park Sewer account.

Table 3 - 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 (10 Months)	1,070,080	4,716,700	67,190	5,853,970
FY 2018 Payments (10 Months)	<u>-</u>	<u>(4,108,108)</u>	<u>-</u>	<u>(4,108,108)</u>
Balance as of April 30, 2018	<u>\$ 5,905,150</u>	<u>\$ 30,156,926</u>	<u>\$ 1,610,740</u>	<u>\$ 37,672,816</u>

4. Water & Sewer System Wholesale Accounts Receivable Aging Report

Table 4 is a summary of the total, current and non-current receivables by category as of April 30, 2018. **Table 5** is the same summary *without* the past due balances for the City of Highland Park. The detailed accounts receivable aging is attached to this report. This report reflects the wholesale receivables only and do not include DWSD. (Note: percentages vary from 100% due to rounding.)

Table 4 - Wholesale Accounts Receivable Aging Report

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 41,725,723.44	\$ 35,259,777.61	\$ 867,793.22	\$ 101,547.68	\$ 5,496,604.93
Sewer	\$ 45,048,226.82	\$ 15,361,499.50	\$ 470,200.00	\$ 470,200.00	\$ 28,746,327.32
IWC	\$ 2,973,800.74	\$ 969,399.97	\$ 64,669.64	\$ 64,769.04	\$ 1,874,962.09
Pollutant Surcharge	\$ 1,013,030.85	\$ 715,012.28	\$ 58,212.43	\$ 45,260.74	\$ 194,545.40
Total	<u>\$ 90,760,781.85</u>	<u>\$ 52,305,689.36</u>	<u>\$ 1,460,875.29</u>	<u>\$ 681,777.46</u>	<u>\$ 36,312,439.74</u>
	<u>100.0%</u>	<u>57.6%</u>	<u>1.6%</u>	<u>0.8%</u>	<u>40.0%</u>

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

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 35,820,572.95	\$ 35,054,926.76	\$ 765,646.19	\$ -	\$ -
Sewer	\$ 14,891,299.50	\$ 14,891,299.50	\$ -	\$ -	\$ -
IWC	\$ 1,363,060.89	\$ 956,395.61	\$ 58,146.16	\$ 58,109.24	\$ 290,409.88
Pollutant Surcharge	\$ 1,013,030.85	\$ 715,012.28	\$ 58,212.43	\$ 45,260.74	\$ 194,545.40
Total	<u>\$ 53,087,964.19</u>	<u>\$ 51,617,634.15</u>	<u>\$ 882,004.78</u>	<u>\$ 103,369.98</u>	<u>\$ 484,955.28</u>
	<u>100.0%</u>	<u>97.2%</u>	<u>1.7%</u>	<u>0.2%</u>	<u>0.9%</u>

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$349,062.07	\$349,062.07	\$0.00	\$0.00	\$0.00
ASH TOWNSHIP	\$63,006.03	\$63,006.03	\$0.00	\$0.00	\$0.00
BELLEVILLE	\$23,141.05	\$23,141.05	\$0.00	\$0.00	\$0.00
BERLIN TOWNSHIP	\$55,639.61	\$55,639.61	\$0.00	\$0.00	\$0.00
BROWNSTOWN TOWNSHIP	\$271,801.75	\$271,801.75	\$0.00	\$0.00	\$0.00
BRUCE TOWNSHIP	\$13,345.08	\$13,345.08	\$0.00	\$0.00	\$0.00
BURTCHVILLE TOWNSHIP	\$41,556.96	\$41,556.96	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$1,938,502.74	\$1,938,502.74	\$0.00	\$0.00	\$0.00
CENTER LINE	\$38,087.74	\$38,087.74	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$599,818.66	\$599,818.66	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$620,534.64	\$620,534.64	\$0.00	\$0.00	\$0.00
COMMERCE TOWNSHIP	\$371,054.03	\$371,054.03	\$0.00	\$0.00	\$0.00
DEARBORN	\$2,222,790.05	\$1,457,143.86	\$765,646.19	\$0.00	\$0.00
DEARBORN HEIGHTS	\$302,066.94	\$302,066.94	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$260,993.37	\$260,993.37	\$0.00	\$0.00	\$0.00
ECORSE	\$235,939.67	\$235,939.67	\$0.00	\$0.00	\$0.00
FARMINGTON	\$77,054.81	\$77,054.81	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$678,053.21	\$678,053.21	\$0.00	\$0.00	\$0.00
FERNDALE	\$163,466.22	\$163,466.22	\$0.00	\$0.00	\$0.00
FLAT ROCK	\$190,948.66	\$190,948.66	\$0.00	\$0.00	\$0.00
FLINT	\$514,624.29	\$514,624.29	\$0.00	\$0.00	\$0.00
FRASER	\$102,974.71	\$102,974.71	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$134,313.50	\$134,313.50	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
GENESEE COUNTY DRAIN COMM	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GIBRALTAR	\$37,449.76	\$37,449.76	\$0.00	\$0.00	\$0.00
GREENWOOD TOWNSHIP	\$23,659.09	\$23,659.09	\$0.00	\$0.00	\$0.00
GROSSE ILE TOWNSHIP	\$98,419.25	\$98,419.25	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$108,843.12	\$108,843.12	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$48,014.33	\$48,014.33	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$117,376.21	\$117,376.21	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$58,712.97	\$58,712.97	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$137,629.34	\$137,629.34	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$114,551.27	\$114,551.27	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$57,399.07	\$57,399.07	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$5,905,150.49	\$204,850.85	\$102,147.03	\$101,547.68	\$5,496,604.93
HURON TOWNSHIP	\$217,768.15	\$217,768.15	\$0.00	\$0.00	\$0.00
IMLAY CITY	\$76,500.35	\$76,500.35	\$0.00	\$0.00	\$0.00
IMLAY TOWNSHIP	\$1,865.78	\$1,865.78	\$0.00	\$0.00	\$0.00
INKSTER	\$159,845.42	\$159,845.42	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$23,712.10	\$23,712.10	\$0.00	\$0.00	\$0.00
LAPEER	\$114,151.97	\$114,151.97	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$46,871.59	\$46,871.59	\$0.00	\$0.00	\$0.00
LINCOLN PARK	\$196,906.48	\$196,906.48	\$0.00	\$0.00	\$0.00
LIVONIA	\$2,021,876.99	\$2,021,876.99	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$793,918.40	\$793,918.40	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MADISON HEIGHTS	\$158,660.94	\$158,660.94	\$0.00	\$0.00	\$0.00
MAYFIELD TOWNSHIP	\$4,558.51	\$4,558.51	\$0.00	\$0.00	\$0.00
MELVINDALE	\$55,195.74	\$55,195.74	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$44,182.04	\$44,182.04	\$0.00	\$0.00	\$0.00
NOCWA	\$3,601,502.40	\$3,601,502.40	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$56,972.31	\$56,972.31	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$450,146.41	\$450,146.41	\$0.00	\$0.00	\$0.00
NOVI	\$682,987.87	\$682,987.87	\$0.00	\$0.00	\$0.00
OAK PARK	\$111,065.88	\$111,065.88	\$0.00	\$0.00	\$0.00
OAKLAND CO DR COM	\$8,661.46	\$8,661.46	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$82,006.65	\$82,006.65	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$316,012.14	\$316,012.14	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$271,008.40	\$271,008.40	\$0.00	\$0.00	\$0.00
RIVER ROUGE	\$50,600.32	\$50,600.32	\$0.00	\$0.00	\$0.00
RIVERVIEW	\$77,391.48	\$77,391.48	\$0.00	\$0.00	\$0.00
ROCKWOOD	\$23,314.23	\$23,314.23	\$0.00	\$0.00	\$0.00
ROMEO	\$18,827.16	\$18,827.16	\$0.00	\$0.00	\$0.00
ROMULUS	\$593,152.32	\$593,152.32	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$216,970.85	\$216,970.85	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$19,484.95	\$19,484.95	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$985,488.24	\$985,488.24	\$0.00	\$0.00	\$0.00
SOCWA	\$3,487,454.96	\$3,487,454.96	\$0.00	\$0.00	\$0.00
SOUTH ROCKWOOD	\$8,126.49	\$8,126.49	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHGATE	\$177,009.80	\$177,009.80	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$244,930.63	\$244,930.63	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$2,345,054.03	\$2,345,054.03	\$0.00	\$0.00	\$0.00
SUMPTER TOWNSHIP	\$51,889.77	\$51,889.77	\$0.00	\$0.00	\$0.00
SYLVAN LAKE	\$18,440.00	\$18,440.00	\$0.00	\$0.00	\$0.00
TAYLOR	\$381,725.26	\$381,725.26	\$0.00	\$0.00	\$0.00
TRENTON	\$165,928.31	\$165,928.31	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$1,052,795.78	\$1,052,795.78	\$0.00	\$0.00	\$0.00
UTICA	\$48,441.95	\$48,441.95	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$478,214.03	\$478,214.03	\$0.00	\$0.00	\$0.00
VILLAGE OF ALMONT	\$17,724.73	\$17,724.73	\$0.00	\$0.00	\$0.00
WALLED LAKE	\$75,100.87	\$75,100.87	\$0.00	\$0.00	\$0.00
WARREN	\$1,532,380.63	\$1,532,380.63	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$157,274.84	\$157,274.84	\$0.00	\$0.00	\$0.00
WAYNE	\$240,916.89	\$240,916.89	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,505,291.66	\$1,505,291.66	\$0.00	\$0.00	\$0.00
WESTLAND	\$1,057,418.49	\$1,057,418.49	\$0.00	\$0.00	\$0.00
WIXOM	\$187,036.10	\$187,036.10	\$0.00	\$0.00	\$0.00
WOODHAVEN	\$157,802.54	\$157,802.54	\$0.00	\$0.00	\$0.00
YCUA	\$877,177.46	\$877,177.46	\$0.00	\$0.00	\$0.00
TOTAL WATER ACCOUNTS	\$41,725,723.44	\$35,259,777.61	\$867,793.22	\$101,547.68	\$5,496,604.93

GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$64,300.00	\$64,300.00	\$0.00	\$0.00	\$0.00
CENTER LINE	\$82,199.50	\$82,199.50	\$0.00	\$0.00	\$0.00
DEARBORN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EVERGREEN-FARMINGTON	\$2,811,100.00	\$2,811,100.00	\$0.00	\$0.00	\$0.00
FARMINGTON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$30,156,927.32	\$470,200.00	\$470,200.00	\$470,200.00	\$28,746,327.32
MELVINDALE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
OAKLAND COUNTY GWK DD	\$3,812,600.00	\$3,812,600.00	\$0.00	\$0.00	\$0.00
OMID	\$6,068,000.00	\$6,068,000.00	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROUGE VALLEY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY N.E.	\$2,053,100.00	\$2,053,100.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY-AREA #3	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL SEWER ACCOUNTS	\$45,048,226.82	\$15,361,499.50	\$470,200.00	\$470,200.00	\$28,746,327.32

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$2,575.88	\$2,575.88	\$0.00	\$0.00	\$0.00
AUBURN HILLS (C-O)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AUBURN HILLS (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BERKLEY	\$4,632.04	\$4,632.04	\$0.00	\$0.00	\$0.00
BEVERLY HILLS	\$1,596.08	\$1,596.08	\$0.00	\$0.00	\$0.00
BINGHAM FARMS	\$1,704.00	\$1,704.00	\$0.00	\$0.00	\$0.00
BIRMINGHAM (E-F)	\$3,797.08	\$3,797.08	\$0.00	\$0.00	\$0.00
BIRMINGHAM (SEOC)	\$17,789.76	\$17,752.84	\$36.92	\$0.00	\$0.00
BLOOMFIELD HILLS	\$2,459.44	\$2,459.44	\$0.00	\$0.00	\$0.00
BLOOMFIELD TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$274,020.24	\$60,923.68	\$30,461.84	\$30,461.84	\$152,172.88
CENTER LINE	\$5,884.48	\$5,884.48	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$19,320.52	\$19,320.52	\$0.00	\$0.00	\$0.00
CITY OF FARMINGTON (E-F)	\$445.88	\$445.88	\$0.00	\$0.00	\$0.00
CITY OF ROCHESTER	\$5,949.80	\$5,949.80	\$0.00	\$0.00	\$0.00
CLARKSTON	\$491.32	\$491.32	\$0.00	\$0.00	\$0.00
CLAWSON	\$4,413.36	\$4,413.36	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$40,225.76	\$40,225.76	\$0.00	\$0.00	\$0.00
DEARBORN	\$115,948.68	\$115,948.68	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$15,284.88	\$15,284.88	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$170.40	\$170.40	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$10,158.68	\$10,158.68	\$0.00	\$0.00	\$0.00
FARMINGTON	\$5,289.93	\$5,289.93	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FARMINGTON HILLS	\$37,888.44	\$37,888.44	\$0.00	\$0.00	\$0.00
FERNDALE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FRASER	\$7,923.60	\$7,923.60	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$9,701.44	\$9,701.44	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$3,337.00	\$3,337.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$1,888.60	\$1,888.60	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$5,092.12	\$5,092.12	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$6,668.32	\$6,668.32	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$3,030.28	\$3,030.28	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$5,012.60	\$5,012.60	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$5,273.88	\$5,273.88	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$1,610,739.85	\$13,004.36	\$6,523.48	\$6,659.80	\$1,584,552.21
HUNTINGTON WOODS	\$457.24	\$457.24	\$0.00	\$0.00	\$0.00
INDEPENDENCE	\$7,631.08	\$7,631.08	\$0.00	\$0.00	\$0.00
INKSTER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$1,090.56	\$1,090.56	\$0.00	\$0.00	\$0.00
LAKE ORION	\$1,283.68	\$1,283.68	\$0.00	\$0.00	\$0.00
LATHRUP	\$2,246.44	\$2,246.44	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$2,090.24	\$2,090.24	\$0.00	\$0.00	\$0.00
LIVONIA	\$63,621.68	\$63,621.68	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MACOMB TWP	\$329.44	\$329.44	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELVINDALE	\$5,799.28	\$5,799.28	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$991.16	\$991.16	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$2,916.68	\$2,916.68	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$65,765.88	\$14,614.64	\$7,307.32	\$7,307.32	\$36,536.60
NOVI	\$27,548.00	\$27,548.00	\$0.00	\$0.00	\$0.00
OAK PARK	\$11,027.72	\$11,027.72	\$0.00	\$0.00	\$0.00
OAKLAND TOWNSHIP	\$735.56	\$735.56	\$0.00	\$0.00	\$0.00
ORCHARD LAKE VILLAGE	\$590.72	\$590.72	\$0.00	\$0.00	\$0.00
ORION TOWNSHIP (C-O)	\$8,991.44	\$8,991.44	\$0.00	\$0.00	\$0.00
OXFORD TOWNSHIP	\$ (25.56)	\$ (25.56)	\$0.00	\$0.00	\$0.00
OXFORD VILLAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLEASANT RIDGE	\$863.36	\$863.36	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$183,060.72	\$40,680.16	\$20,340.08	\$20,340.08	\$101,700.40
REDFORD TOWNSHIP	\$19,409.60	\$19,409.60	\$0.00	\$0.00	\$0.00
ROCHESTER HILLS	\$29,050.36	\$29,050.36	\$0.00	\$0.00	\$0.00
ROMULUS	\$2,959.28	\$2,959.28	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$22,680.24	\$22,680.24	\$0.00	\$0.00	\$0.00
ROYAL OAK	\$448.72	\$448.72	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$1,150.20	\$1,150.20	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$19,067.76	\$19,067.76	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHFIELD (E-F)	\$44,962.88	\$44,962.88	\$0.00	\$0.00	\$0.00
SOUTHFIELD (SEOC)	\$5,986.72	\$5,986.72	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$19,505.12	\$19,505.12	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$49,788.04	\$49,788.04	\$0.00	\$0.00	\$0.00
TROY (E-F)	\$613.44	\$613.44	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$58,901.60	\$58,901.60	\$0.00	\$0.00	\$0.00
UTICA	\$4,694.52	\$4,694.52	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$550.96	\$550.96	\$0.00	\$0.00	\$0.00
VILLAGE OF FRANKLIN	\$105.08	\$105.08	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$2,206.68	\$2,206.68	\$0.00	\$0.00	\$0.00
WATERFORD TOWNSHIP	\$19,823.20	\$19,823.20	\$0.00	\$0.00	\$0.00
WAYNE	\$8,017.32	\$8,017.32	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,508.04	\$1,508.04	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (E-F)	\$10,062.12	\$10,062.12	\$0.00	\$0.00	\$0.00
WESTLAND	\$36,579.20	\$36,579.20	\$0.00	\$0.00	\$0.00
TOTAL IWC ACCOUNTS	\$2,973,800.74	\$969,399.97	\$64,669.64	\$64,769.04	\$1,874,962.09

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
A & R PACKING CO., LLC	\$4,172.60	\$4,172.60	\$0.00	\$0.00	\$0.00
AACTRON	\$(0.30)	\$69.61	\$0.00	\$(69.91)	\$0.00
ACADEMY PACKING CO.	\$253.81	\$253.81	\$0.00	\$0.00	\$0.00
ACME RUSTPROOF	\$100.95	\$100.95	\$0.00	\$0.00	\$0.00
ADVANCED RESOURCE RECOVERY	\$1,932.26	\$1,932.26	\$0.00	\$0.00	\$0.00
AEVITAS SPECIALITY SERVICES	\$18,366.39	\$12,672.73	\$5,693.66	\$0.00	\$0.00
ALEXANDER & HORNING	\$7,853.40	\$7,853.40	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNING	\$26,434.64	\$26,434.64	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNING	\$1,574.11	\$1,574.11	\$0.00	\$0.00	\$0.00
ALGAL SCIENTIFIC CORPORATION	\$10,760.15	\$2,578.05	\$723.48	\$1,086.89	\$6,371.73
ALL CHEM CORP, LLC.	\$(147.26)	\$(147.26)	\$0.00	\$0.00	\$0.00
ALPHA STAMPING COMPANY	\$326.16	\$326.16	\$0.00	\$0.00	\$0.00
AMERICAN WASTE TECH INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ATWATER BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ATWATER BREWERY	\$2,446.59	\$2,446.59	\$0.00	\$0.00	\$0.00
AUTOMOTIVE FINISH	\$6.86	\$6.86	\$0.00	\$0.00	\$0.00
AXLE BREWING COMPANY, LLC	\$206.39	\$206.39	\$0.00	\$0.00	\$0.00
BAFFIN BREWING COMPANY	\$305.23	\$0.00	\$0.00	\$0.00	\$305.23
BARON INDUSTRIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARTZ BAKERY	\$71.79	\$71.79	\$0.00	\$0.00	\$0.00
BASTONE BREWERY	\$42.84	\$34.61	\$0.00	\$8.23	\$0.00
BATCH BREWING COMPANY	\$(713.70)	\$0.00	\$0.00	\$0.00	\$(713.70)
BAYS MICHIGAN CORPORATION	\$778.56	\$778.56	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
BEIRUT BAKERY, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BETTER MADE SNACK FOOD	\$20,279.42	\$20,279.42	\$0.00	\$0.00	\$0.00
BLACK LOTUS BREWING CO.	\$29.22	\$29.22	\$0.00	\$0.00	\$0.00
BOZEK'S MARKET	\$76.16	\$76.16	\$0.00	\$0.00	\$0.00
BREW DETROIT	\$6,091.36	\$6,091.36	\$0.00	\$0.00	\$0.00
BROADWAY MKT CORNED BEEF	\$(100.00)	\$0.00	\$0.00	\$(100.00)	\$0.00
BROOKS BREWING, LLC.	\$(52.95)	\$0.00	\$0.00	\$(52.95)	\$0.00
CANTON BREW WORKS	\$138.01	\$77.25	\$0.00	\$60.76	\$0.00
CAPITAL REPRODUCTIONS	\$5.99	\$1.36	\$0.00	\$0.00	\$4.63
CF BURGER CREAMERY	\$15,589.72	\$15,589.72	\$0.00	\$0.00	\$0.00
CHILANGO'S BAKERY	\$1,929.28	\$60.63	\$116.47	\$90.94	\$1,661.24
CINTAS CORP. - MACOMB TWP.	\$57,316.33	\$57,316.33	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$36,858.21	\$36,858.21	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$12,621.41	\$12,621.41	\$0.00	\$0.00	\$0.00
CITY LAUNDRY, INC.	\$5.56	\$5.56	\$0.00	\$0.00	\$0.00
CLASSIC CONTAINER CORP.	\$330.70	\$330.70	\$0.00	\$0.00	\$0.00
COCA-COLA REFRESHMENTS USA,	\$1,394.09	\$1,394.09	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$2,705.42	\$2,705.42	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$619.52	\$619.52	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$1,716.34	\$1,716.34	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COUNTRY FRESH DAIRY CO.	\$35,659.03	\$35,659.03	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
CROSS CHEMICAL COMPANY, INC.	\$ (1,475.35)	\$ (1,475.35)	\$0.00	\$0.00	\$0.00
DARLING INGREDIENTS, INC.	\$9,586.69	\$9,586.69	\$0.00	\$0.00	\$0.00
DAVE'S SAUSAGE FACTORY 2	\$376.50	\$376.50	\$0.00	\$0.00	\$0.00
DEARBORN BREWING	\$50.80	\$50.80	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE	\$9,184.54	\$9,184.54	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE CO., INC.	\$11,009.00	\$11,009.00	\$0.00	\$0.00	\$0.00
DETROIT BEER	\$110.95	\$110.95	\$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 SAUSAGES CO INC	\$64.86	\$33.84	\$16.92	\$14.10	\$0.00
DETRONIC INDUSTRIES, INC.	\$100.66	\$100.66	\$0.00	\$0.00	\$0.00
DIFCO LABORATORIES, INC.	\$31,094.93	\$20,613.99	\$10,480.94	\$0.00	\$0.00
DIVERSIFIED CHEM TECH. INC.	\$157.32	\$157.32	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$984.02	\$984.02	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,433.77	\$1,433.77	\$0.00	\$0.00	\$0.00
E.W. GROBBEL'S SONS, INC.	\$2,798.07	\$2,798.07	\$0.00	\$0.00	\$0.00
ENVIROSOLIDS, L.L.C.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$4,549.59	\$4,549.59	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$9,204.00	\$9,204.00	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$ (1,471.73)	\$ (1,471.73)	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$ (4,640.79)	\$ (4,640.79)	\$0.00	\$0.00	\$0.00
EQ RESOURCES RECOVERY, INC.	\$497.32	\$497.32	\$0.00	\$0.00	\$0.00
ETON ST BREWERY- GRIFFIN CLA	\$3,023.85	\$3,023.85	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
EXTRUDE HONE CORPORATION	\$322.86	\$322.86	\$0.00	\$0.00	\$0.00
EXTRUDEHODE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FARMINGTON BREWING COMPANY	\$73.03	\$73.03	\$0.00	\$0.00	\$0.00
FAYGO BEVERAGES, INC.	\$247,809.56	\$56,940.18	\$33,286.75	\$25,544.06	\$132,038.57
FORD NEW MODEL PROGRAM	\$2,359.60	\$2,359.60	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$2,037.33	\$2,037.33	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$7,302.44	\$7,302.44	\$0.00	\$0.00	\$0.00
GENERAL LINEN SUPPLY CO.	\$63,083.16	\$12,191.58	\$6,499.41	\$12,118.11	\$32,274.06
GLOBAL TITANIUM, INC.	\$2,979.91	\$2,979.91	\$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	\$51.19	\$0.00	\$0.00	\$51.19	\$0.00
GRANITE CITY FOOD & BREWERY	\$212.02	\$0.00	\$0.00	\$110.26	\$101.76
GREAT BARABOO BREWING CO.	\$(2,452.90)	\$0.00	\$0.00	\$0.00	\$(2,452.90)
HACIENDA MEXICAN FOODS	\$3,803.75	\$1,234.42	\$601.74	\$545.51	\$1,422.08
HENKEL CORPORATION	\$265.90	\$131.43	\$0.00	\$134.47	\$0.00
HOME STYLE FOOD INC.	\$4,184.13	\$4,184.13	\$0.00	\$0.00	\$0.00
HOOD CLEANERS	\$210.36	\$1.96	\$1.96	\$6.84	\$199.60
HOUGHTON INTERNATIONAL INC.	\$1,120.83	\$1,120.83	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$850.03	\$850.03	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$3,610.70	\$3,610.70	\$0.00	\$0.00	\$0.00
HUNTINGTON CLEANERS	\$742.07	\$742.07	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
INDUSTRIAL METAL COATING	\$826.45	\$826.45	\$0.00	\$0.00	\$0.00
ISLAMIC SLAUGHTER HOUSE	\$492.37	\$492.37	\$0.00	\$0.00	\$0.00
ITALIAN BUTTER BREAD STICKS	\$6.38	\$6.38	\$0.00	\$0.00	\$0.00
J & G FOOD PRODUCTS, INC.	\$107.18	\$107.18	\$0.00	\$0.00	\$0.00
KAR NUT PRODUCTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KOWALSKI SAUSAGES, CO.	\$770.58	\$770.58	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$672.04	\$672.04	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$89.98	\$89.98	\$0.00	\$0.00	\$0.00
LEAR CORPORATION DBA EAGLE C	\$4,801.92	\$4,801.92	\$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	\$47.22	\$47.22	\$0.00	\$0.00	\$0.00
MACDERMID, INC.	\$2,710.24	\$2,710.24	\$0.00	\$0.00	\$0.00
MCNICHOLS POLISHING & ANODIZ	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELLO MEATS INC, - KUBISCH S	\$84.62	\$84.62	\$0.00	\$0.00	\$0.00
METROPOLITAN BAKERY	\$459.48	\$459.48	\$0.00	\$0.00	\$0.00
MIBA HYDRAMECHANICA CORP.	\$390.19	\$390.19	\$0.00	\$0.00	\$0.00
MICHIGAN DAIRY	\$76,984.88	\$76,984.88	\$0.00	\$0.00	\$0.00
MICHIGAN PROD. MACHINING	\$1,347.55	\$1,347.55	\$0.00	\$0.00	\$0.00
MICHIGAN SOY PRODUCTS CO.	\$672.04	\$672.04	\$0.00	\$0.00	\$0.00
MIDWEST WIRE PRODUCTS, INC.	\$(2.94)	\$0.00	\$0.00	\$0.00	\$(2.94)
MILANO BAKERY	\$769.06	\$769.06	\$0.00	\$0.00	\$0.00
MILTON CHILI CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MINNIE MARIE BAKERS, INC	\$2,373.35	\$2,373.35	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MISTER UNIFORM & MAT RENTALS	\$502.61	\$75.98	\$49.05	\$39.38	\$338.20
MOTOR CITY BREWING WORKS	\$663.80	\$0.00	\$0.00	\$663.80	\$0.00
NATIONAL CHILI COMPANY	\$12.80	\$12.80	\$0.00	\$0.00	\$0.00
NATIONAL CHILI COMPANY	\$ (12.80)	\$0.00	\$ (12.80)	\$0.00	\$0.00
NORTH CENTER BREWING COMPANY	\$90.42	\$90.42	\$0.00	\$0.00	\$0.00
NORTHERN LAKES SEAFOOD & MEAT	\$43.73	\$43.73	\$0.00	\$0.00	\$0.00
OAKWOOD BAKERY	\$188.90	\$188.90	\$0.00	\$0.00	\$0.00
PELLERITO FOODS INC.	\$1,514.05	\$1,514.05	\$0.00	\$0.00	\$0.00
PEPSI COLA, INC.	\$33,468.01	\$33,468.01	\$0.00	\$0.00	\$0.00
PERSONAL UNIFORM SERVICE, IN	\$69.91	\$69.91	\$0.00	\$0.00	\$0.00
PETRO ENVIRON TECH, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PINE TREE ACRES, INC.	\$43,460.48	\$43,460.48	\$0.00	\$0.00	\$0.00
PLATING SPEC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
POWER VAC OF MICHIGAN, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PREMIER PLATING, LLC	\$2,369.04	\$1,222.51	\$0.00	\$1,146.53	\$0.00
PRODUCTION SPRING, LLC.	\$201.01	\$201.01	\$0.00	\$0.00	\$0.00
QUALA SERVICES, LLC	\$256.62	\$256.62	\$0.00	\$0.00	\$0.00
RAY'S ICE CREAM CO.	\$52.57	\$52.57	\$0.00	\$0.00	\$0.00
RED SPOT PAINT #409139	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RIVER ROUGE BREWING COMPANY	\$414.75	\$414.75	\$0.00	\$0.00	\$0.00
ROAK BREWING CO. LLC	\$1,973.20	\$678.43	\$0.00	\$1,294.77	\$0.00
ROCHESTER MILLS BEER COMPANY	\$241.71	\$241.71	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ROCHESTER MILLS BREWERY	\$2,485.06	\$1,198.52	\$0.00	\$1,286.54	\$0.00
RTT	\$23,143.92	\$399.25	\$655.91	\$1,169.24	\$20,919.52
SEAFARE FOODS, INC.	\$56.24	\$56.24	\$0.00	\$0.00	\$0.00
SHERWOOD BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPRAYTEK, INC.	\$4,005.93	\$54.08	\$29.80	\$29.88	\$3,892.17
SWEETHEART BAKERY, INC.	\$329.86	\$178.62	\$69.14	\$82.10	\$0.00
THE CROWN GROUP-LIVONIA PLAN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
THE ROYAL OAK BREWERY	\$(1,813.37)	\$0.00	\$0.00	\$0.00	\$(1,813.37)
TOM LAUNDRY CLEANERS	\$11.71	\$11.71	\$0.00	\$0.00	\$0.00
TRAFFIC JAM & SNUG	\$(0.48)	\$0.00	\$0.00	\$0.00	\$(0.48)
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$18,533.70	\$18,533.70	\$0.00	\$0.00	\$0.00
U-METCO, INC.	\$2,781.66	\$2,781.66	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$70,753.75	\$70,753.75	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNIQUE LINEN SERVICES, INC.	\$82.05	\$82.05	\$0.00	\$0.00	\$0.00
UNITED FISH DISTRIBUTORS	\$9.66	\$9.66	\$0.00	\$0.00	\$0.00
UNITED LINEN SERVICE, LLC.	\$522.75	\$522.75	\$0.00	\$0.00	\$0.00
UNITED MEAT & DELI	\$609.26	\$609.26	\$0.00	\$0.00	\$0.00
US ECOLOGY MICHIGAN	\$(4,990.72)	\$(4,990.72)	\$0.00	\$0.00	\$0.00
USHER OIL SERVICES	\$6,637.04	\$6,637.04	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS	\$12,520.36	\$12,520.36	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS, INC.	\$4,098.36	\$4,098.36	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 4/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
VERNOR FOOD PRODUCTS	\$81.54	\$81.54	\$0.00	\$0.00	\$0.00
WIGLEY'S MEAT PROCESS	\$871.57	\$871.57	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$761.57	\$761.57	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$104.36	\$104.36	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO	\$6,554.35	\$6,554.35	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO.	\$2,578.06	\$2,578.06	\$0.00	\$0.00	\$0.00
WOODWARD AVENUE BREWERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL POLLUTANT SURCHARGE ACCOUNTS	\$1,013,030.85	\$715,012.28	\$58,212.43	\$45,260.74	\$194,545.40



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

From: Deirdre Henry, Treasury Manager

Re: Master Bond Ordinance Monthly Cash Transfers to Detroit Water & Sewerage Department (DWSD) and Great Lakes Water Authority (GLWA)

Background: The Master Bond Ordinances for the water and sewer systems prescribe monthly distributions of cash receipts.

Analysis: The attached documents summarize the monthly cash transfers to DWSD and GLWA as stipulated by the Master Bond Ordinances for the period January 2016 – May 2018.

Proposed Action: Receive and file report.

Great Lakes Water Authority
Funds Transferred to Accounts Held by GLWA per Master Bond Ordinance
Through May 1, 2018

WATER							
	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization (For Benefit of DWSD)</u>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
Total FY 2016	\$71,052,000	\$6,037,100	\$10,297,200	\$1,983,300	\$2,326,900	\$606,000	\$92,302,500
Total FY 2017	\$111,879,600	\$6,037,200	\$10,297,200	\$2,077,200	\$360,000	\$0	\$130,651,200
FY 2018							
July 2017	\$10,130,217	\$504,000	\$891,308	\$179,950	-	-	\$11,705,475
August 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
September 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
October 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
November 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
December 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
January 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
February 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
March 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
April 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
May 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
June 2018							-
Total FY 2018	\$111,432,387	\$5,544,000	\$9,804,388	\$1,979,450	\$0	\$0	\$128,760,225
Total Water Since Jan 1 2016	\$294,363,987	\$17,618,300	\$30,398,788	\$6,039,950	\$2,686,900	\$606,000	\$351,713,925
SEWER							
	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization (For Benefit of DWSD)</u>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
Total FY 2016	\$100,865,600	\$10,838,400	\$14,025,800	\$2,523,400	\$5,591,700	\$779,600	\$134,624,500
Total FY 2017	\$175,858,800	\$10,838,400	\$14,026,800	\$2,654,400	\$2,654,400	\$0	\$206,032,800
FY 2018							
July 2017	\$15,923,283	\$902,000	\$1,223,958	\$230,067	-	-	\$18,279,308
August 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
September 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
October 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
November 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
December 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
January 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
February 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
March 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
April 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
May 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
June 2018							-
Total FY 2018	\$175,156,113	\$9,922,000	\$13,463,538	\$2,530,737	\$0	\$0	\$201,072,388
Total Sewer Since Jan 1 2016	\$451,880,513	\$31,598,800	\$41,516,138	\$7,708,537	\$8,246,100	\$779,600	\$541,729,688
Total FY 2016 Water & Sewer	\$171,917,600	\$16,875,500	\$24,323,000	\$4,506,700	\$7,918,600	\$1,385,600	\$226,927,000
Total FY 2017 Water & Sewer	\$287,738,400	\$16,875,600	\$24,324,000	\$4,731,600	\$3,014,400	\$0	\$336,684,000
Total FY 2018 Water & Sewer	\$286,588,500	\$15,466,000	\$23,267,926	\$4,510,187	\$0	\$0	\$329,832,613

Great Lakes Water Authority
Funds Transferred to DWSD per Master Bond Ordinance
Through May 1, 2018

DWSD WATER				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Water
Total FY 2016	\$ 26,185,600	\$ 4,262,700	\$ 20,173,100	\$ 50,621,400
Total FY 2017	\$ 33,596,400	\$ 4,262,400	\$ 22,500,000	\$ 60,358,800
FY 2018				
July 2017	\$ 2,799,700	\$ 356,000	\$ 1,875,000	\$ 5,030,700
August 2017	2,921,642	356,000	1,875,000	5,152,642
August 2017	121,942	-	-	121,942 ¹⁾
September 2017	2,921,642	356,000	1,875,000	5,152,642
October 2017	2,921,642	356,000	1,875,000	5,152,642
November 2017	2,921,642	356,000	1,875,000	5,152,642
December 2017	2,921,642	356,000	1,875,000	5,152,642
January 2018	2,921,642	356,000	1,875,000	5,152,642
February 2018	2,921,642	356,000	1,875,000	5,152,642
March 2018	2,921,642	356,000	1,875,000	5,152,642
April 2018	2,921,642	356,000	1,875,000	5,152,642
May 2018	2,921,642	356,000	1,875,000	5,152,642
June 2018				-
Total FY 2018	\$ 32,138,062	\$ 3,916,000	\$ 20,625,000	\$ 56,679,062
Total Water Since Jan 1 2016	\$ 91,920,062	\$ 12,441,100	\$ 63,298,100	\$ 167,659,262

DWSD SEWER				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Sewer
Total FY 2016	\$ 19,774,300	\$ 2,861,800	\$ 7,508,500	\$ 30,144,600
Total FY 2017	\$ 41,535,600	\$ 2,862,000	\$ 27,500,000	\$ 71,897,600
FY 2018				
July 2017	\$ 3,461,300	\$ 238,000	\$ 2,291,667	\$ 5,990,967
August 2017	5,043,166	238,000	2,291,667	7,572,833
August 2017	1,581,866	-	-	1,581,866 ¹⁾
September 2017	5,043,166	238,000	2,291,667	7,572,833
October 2017	5,043,166	238,000	2,291,667	7,572,833
November 2017	5,043,166	238,000	2,291,667	7,572,833
December 2017	5,043,166	238,000	2,291,667	7,572,833
January 2018	5,043,166	238,000	2,291,667	7,572,833
February 2018	5,043,166	238,000	2,291,667	7,572,833
March 2018	5,043,166	238,000	-	5,281,166 ²⁾
April 2018	5,043,166	238,000	-	5,281,166
May 2018	5,043,166	238,000	-	5,281,166
June 2018				-
Total FY 2018	\$ 55,474,826	\$ 2,618,000	\$ 18,333,336	\$ 76,426,162
Total Sewer Since Jan 1 2016	\$ 116,784,726	\$ 8,341,800	\$ 53,341,836	\$ 178,468,362
Total FY 2016 Water & Sewer	\$ 45,959,900	\$ 7,124,500	\$ 27,681,600	\$ 80,766,000
Total FY 2017 Water & Sewer	\$ 75,132,000	\$ 7,124,400	\$ 50,000,000	\$ 132,256,400
Total FY 2018 Water & Sewer	\$ 87,612,888	\$ 6,534,000	\$ 38,958,336	\$ 133,105,224

Note 1: 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 paid from the lease payment deposited to the Improvement & Extension (I&E) Fund.

Note 2: For FY 2016, \$22,318,500 million of the lease payment was directed by the City of Detroit to offset a portion of its FY 2016 water and sewer debt service in lieu of a cash transfer.

¹⁾ Additional Transfer in August to adjust July O&M to DWSD FY18 requested budget amount.

²⁾ Mid-Year adjustment in use of lease payment by Local System for FY 2018 budget results in \$0 transfer to Sewer I&E for remainder of FY.



Audit Committee

Tuesday, May 22, 2018 at Noon

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

MEETING BINDER ADDENDUM #1

- ✓ Agenda Item #6F - Correspondence: Oakland County Drain Commissioner's Office (Page 1)
- ✓ Agenda Item #7A - FY 2018 Budget Update and Amendments through March 31, 2018 (Page 20)



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Correspondence: Oakland County Drain Commissioner's Office

Background: Parties representing the Oakland Macomb Interceptor Drainage District have requested clarity related to FY 2019 charges and analysis related to a potential operating transfer to OMIDD for certain assets the service OMIDD.

Analysis: As part of the ongoing analysis and exchange of information, attached is follow-up from OMIDD related to materials presented to the GLWA Audit Committee in April 2018 received yesterday, May 21, 2018. Staff and consultant(s) will review and follow-up with OMIDD accordingly with a report back to the audit Committee at a future date.

Proposed Action: None.



Jim Nash

May 21, 2018

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

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

Dear Chairperson Baker:

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

1. Foster Group Memorandum:

"Capital Revenue Requirement Allocations

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

OMID Response:

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

“3. Summary of Post-Closing Debt

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

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

2. **Foster Group Memorandum:**

“Operating Revenue Requirement Allocations

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

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

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

OMID Response:

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

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

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

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

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

Remaining Foster Group Memo Item:

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

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

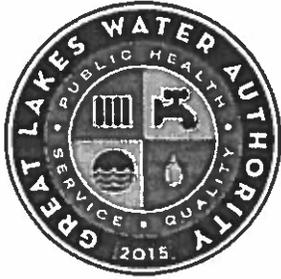
Sincerely,



Raphael Chirolla

Enclosure

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



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



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

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

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

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EXHIBIT A
COST METHODOLOGY INITIAL ALLOCATION

Cost Allocation Calculations for OPS-008 Systems Control

DWSD BUDGET DETAIL from Approved Budget FY 2016

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

12/7/2015

1 of 4

OPS-008 Systems Control

Cost Allocation Calculations for OPS-008 Systems Control

DWSD BUDGET DETAIL from Approved Budget FY 2016

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

12/7/2015

2 of 4

OPS-008 Systems Control

Cost Allocation Calculations for OPS-008 Systems Control

DWSD BUDGET DETAIL from Approved Budget FY 2016

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

Cost Allocation Calculations for OPS-008 Systems Control

Cost Allocation based on FTEs

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

Step 2

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



Audit Committee

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

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

MEETING BINDER ADDENDUM #1

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

TFG
THE FOSTER GROUP

P.O. BOX 26282
LEAWOOD, KS 66225
TEL: (913) 345-1410
FAX: (913) 345-1640

THE FOSTER GROUP, LLC
BART FOSTER, PRESIDENT
CELL: (913) 530-6240
BFOSTER@FOSTERGROUPLLC.COM

MEMORANDUM

FY 2019 Sewer Charges to OMID

April 19, 2018

To: Nicolette Bateson

From: Bart Foster

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

Background:

The GLWA cost allocation methodology¹ for purposes of establishing Sewer service charges includes a "customer specific" cost pool designed to capture the costs related to GLWA facilities that serve only the OMID. These facilities include the Northeast Sewer Pumping Station ("NEPS"), and the portion of the North Interceptor East Arm ("NIEA") downstream of the NEPS that conveys flow *only from* OMID. The cost of service allocation methodology has traditionally employed slightly different approaches for assigning capital and operating revenue requirements to this cost pool.

Capital Revenue Requirement Allocations

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

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

¹ The GLWA methodology is consistent with the methodology of the predecessor entity, DWSD.

Our cost of service study included a review of the GLWA asset records, which indicated that the net book value of \$19.6 million assigned to the NEPS. This NEPS asset value (and the representative annual depreciation expense) amounted to approximately 1.2% of the overall capital asset structure, and we used this ratio to subsequently allocate approximately \$2.81 million of direct capital revenue requirements. So our FY 2019 Cost of Service Study included \$3.59 million of direct capital revenue requirements assigned to the OMID cost pool, which was then directly assigned to the OMID Customer².

Operating Revenue Requirement Allocations

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

With regard to the NEPS operating costs, GLWA allocations of all budget operating expenses related to sewer pumping stations (including maintenance, SCADA, etc.) have been assigned to individual sewer pumping stations based on relative electric usage or costs. This approach was established several years ago, as detailed specific pumping station maintenance costs, etc. were difficult to isolate. For purposes of the FY 2019 Cost of Service Study, we obtained budgeted electric utility costs for several years. The relative budgeted electric utility costs for the NEPS, as a proportion of budgeted electric utility costs for all GLWA sewer pumping stations, ranged from 24% to 40%. In our FY 2019 Cost of Service Study we allocated 25% of all sewer pumping station operating expenses to the NEPS, which resulted in direct operating costs totaling \$5.88 million being assigned to the OMID cost pool. So our FY 2019 Cost of Service Study included \$6.05 million of direct operating revenue requirements assigned to the OMID cost pool, which was then directly assigned to the OMID Customer³.

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

Pending Potential Operating Agreement

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

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

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

OMID Request, Analyses, and Perspective:

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

- As noted in the request, subsequent to the establishment of the proposed FY 2019 charges, additional review of the sewer pumping station electric use and costs has been conducted. While the analysis continues⁴, the initial findings indicate that the NEPS accounts for approximately 36% of recent pumping station electric *bills*, and approximately 44% of recent total pumping station electric *usage*. Had we the benefit of this additional analysis at the time we conducted the FY 2019 Cost of Service Study, we likely would have allocated **at a minimum** 35% (rather than the 25% original figure) of total sewer pumping station operating revenue requirements to the NEPS. This hypothetical adjustment would have resulted in a \$2.74 million *increase* to the operating revenue requirements allocated to the OMID cost pool. However the OMID share of the reallocated common-to-all (“CTA”) revenue requirement would *decrease* by \$0.45 million, resulting in a net *increase* of \$2.49 million.
- As shown in the table, the net impact of incorporating all of the hypothetical adjustments noted above would result in a net increase of approximately \$0.94 million. Given that the parties are negotiating an Operating Agreement, and that GLWA is exploring a “Charges Stability Adjustment” to reflect potential adjustments of actual costs, we do not believe it is prudent to modify the originally proposed FY 2019 Sewer Charges.

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

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

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

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

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

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

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



Financial Services Audit Committee Communication

Date: May 22, 2018

To: Great Lakes Water Authority Audit Committee

From: Lisa Mancini, Interim Financial Planning & Analysis Manager

Re: FY 2018 Budget Update and Amendments through March 31, 2018

Background: The Great Lakes Water Authority (GLWA) is in the process of closing its most recent fiscal quarter ended March 31, 2018. A pre-close quarter ended report has been prepared to present the current budget progress. This report is a status report as we work through data points related to FY 2019 budget discussions and does not represent the final March 2018 quarterly report.

Analysis: This report contains the following for review and discussion.

- ✓ Operations & Maintenance (O&M) Category Analysis (including shared services)
- ✓ Staffing – Budget vs. Actual

It should be noted that these interim reports are being prepared on an accrual basis which is currently under final review as the Financial Reporting & Accounting team is rolling out new monthly closing procedures.

Proposed Action: Receive and file report.

**Great Lakes Water Authority
Fiscal Year 2018 Pre-Close
Operations & Maintenance Budget to Actual Report
Through March 31, 2018**

While the month of March 2018 has not been closed, the Financial Planning & Analysis (FP&A) team wanted to get a head start to see where the budget stands with budget amendments, both recorded through the end of the third quarter and pending for the fourth quarter of Fiscal Year 2018. The purpose of this report is to show the Audit Committee where the Operations & Maintenance (O&M) budget is at as of March 31, 2018 and the impact of the estimated pending fourth quarter budget amendments and reallocations before the Board is asked to approve the FY 2019 & FY 2020 Biennial Budget and Five-Year Financial Plan.

The following are categories of the estimated pending fourth quarter budget amendments and reallocations and references the table immediately following this narrative.

- ✓ Personnel – A comparison of the actual Salaries & Wages as well as the Employee Benefits to the amounts budgeted is showing that an increase to the budget of these areas will be needed. This increase is due to the following.
 - Increases in the Salaries & Wages of existing GLWA staff during FY 2018 for various reasons (market adjustment, merit raises, promotions, etc.).
 - Increase in Employee Benefits due to the increase in premiums charged for Calendar Year 2018. The amount of this increase was not known at the time the FY 2018 budget was prepared.
 - The timing of the filling of vacant staffing positions has varied from that which was originally budgeted.
- ✓ Chemicals – The FY 2018 budget was prepared using history which consisted of certain years containing high chemical usage. Now that we have FY 2017 behind us, nine months of data for FY 2018, and new processes in place, we are able to get a better look at what our chemical costs will be for FY 2018 and beyond.
- ✓ Contractual Services – Certain contracts were not known about at the time the FY 2018 budget was prepared. This has resulted in several budget amendments, both recorded and pending, to the category of Contractual Services. In addition, it is important to note that there are several contracts that are being initiated during the fourth quarter which will result in a higher spend rate than during the previous three quarters. Having noted that, Contractual Services is an area that is being closely reviewed for potential reallocation opportunities.
- ✓ Capital Program Allocation – This is a category that is under review. The FY 2018 budget was prepared based a prior methodology for recording time allocated to capital projects. A more conservative approach is now being taken to focus on those individuals who are working directly on the capital projects rather than those who are

working indirectly. In addition, there are processes being implemented to improve the tracking and reporting of the GLWA staff members' direct hours. Both scenarios have resulted in a decrease to the budget for the Capital Program Allocation contra accounts.

- ✓ Shared Services – The shared services budget was prepared based on the agreements as they were interpreted, before actual invoices were issued and the true-ups (actual costs incurred as compared to the estimates billed) analyzed. The FP&A and Shared Services teams are working together to review the billing trends for FY 2016 & FY 2017 to get a better projection for FY 2018 and beyond (a copy of the working Shared Services document follows the Budget to Actual table).
- ✓ Unallocated Reserves –
 - There is a correction that needs to be recorded to a previously posted budget amendment which will reclass \$7,201,100 from the O&M Unallocated Reserves to the Improvement & Extension fund. This reclass will bring the O&M budget back in line with the Original Board Adopted Budget of \$329,512,800.
 - **The posting of the pending budget amendments will result in a shortfall in the O&M Unallocated Reserves of approximately \$23,800,000 (shown as \$23,827,800 in the table on the following page) of which \$15,943,900 is primarily due to the capital program adjustment, \$4,517,800 for shared services, and \$3,276,600 for personnel adjustments. For purposes of this report, the entire shortfall is being reallocated to the Contractual Services category. The FP&A team is working with the GLWA Budget Managers to identify the correct categories for the reallocation of this shortfall.**

Despite the need for the additional budget amendments and the reallocation of the O&M Unallocated Reserves' shortfall, GLWA continues to operate within the Operations & Maintenance FY 2018 Board Adopted Budget. A word of caution: the fourth quarter expenses may be higher in certain categories such as chemicals, utilities, and personnel. The variances we are seeing in the various categories, however, causes us to re-visit the Five-Year Financial Plan as vacancies are being filled, new staffing needs arise, and new initiatives are being undertaken. Given that GLWA is now at the beginning of its third year of operations, we anticipated that there would be these types of budget revisions as the historical information was limited.

Great Lakes Water Authority
Interim Pre-Close Budget to Actual Report - Revenue Requirement Budget Basis
FY 2018 through March 31, 2018

O&M Category	FY 2018 Original Budget	FY 2018 Amended Budget thru 3/31/2018	Estimated Pending Budget Amendments	Estimated Pending Budget Reallocations	Estimated FY 2018 Amended Budget for Analysis	Percent of Total Amended Budget	Prorated FY 2018 Amended Budget (Nine Months)	Actual (*) (Accrual Basis) thru 03/31/2018	Dollar Variance Positive/ (Negative)	Percent Variance Positive/ (Negative)
Personnel	\$ 101,113,100	\$ 98,451,800	\$ 3,276,600		\$ 101,728,400	30.9%	\$ 76,296,300	\$ 70,284,000	\$ 6,012,300	7.9%
Capital Outlay	7,353,400	6,749,500			6,749,500	2.0%	5,062,100	3,788,200	1,273,900	25.2%
Utilities	59,036,600	58,976,200			58,976,200	17.9%	44,232,200	39,959,400	4,272,800	9.7%
Chemicals	17,806,600	17,827,000	(3,907,100)		13,919,900	4.2%	10,439,900	9,700,100	739,800	7.1%
Supplies & Other	34,800,600	35,412,800			35,412,800	10.7%	26,559,600	17,139,000	9,420,600	35.5%
Contractual Services	127,816,900	131,067,500	2,838,400	(23,827,800)	110,078,100	33.4%	82,558,600	77,109,200	5,449,400	6.6%
Capital Program Allocation	(25,358,600)	(19,943,900)	15,943,900		(4,000,000)	-1.2%	(3,000,000)	(967,100)	(2,032,900)	67.8%
Shared Services	(16,281,700)	(14,741,900)	4,517,800		(10,224,100)	-3.1%	(7,668,100)	(5,614,500)	(2,053,600)	26.8%
Unallocated Reserves	6,353,900	6,042,900	(29,870,700)	23,827,800	-	0.0%	-	-	-	0.0%
O&M Legacy Pension Allocation	16,872,000	16,872,000			16,872,000	5.1%	12,654,000	12,654,000	-	0.0%
Total	\$ 329,512,800	\$ 336,713,900	\$ (7,201,100)	\$ -	\$ 329,512,800	100.0%	\$ 247,134,600	\$ 224,052,300	\$ 23,082,300	9.3%

(*) The close for March 2018 is under review. There are no known material adjustments.

Great Lakes Water Authority
 GLWA / DWSD Shared Services
 Fiscal Year 2018

Shared Services Number and Description	Cost Center - Description	GLWA's Role	FY 2018	FY 2018	FY 2018	FY 2018
			GLWA Original Budget	GLWA Amended Budget thru 3/31/2018	GLWA Estimated Pending Budget Amendments	GLWA Estimated Amended Budget for Analysis
OPS-004 Water Quality Sampling, Testing, Reporting	882121 - Water Quality	Provider	(385,600)	(385,600)	235,600	(150,000)
OPS-005 Security and Integrity	881201 - Security and Integrity	Provider	(1,811,700)	(271,900)	(12,600)	(284,500)
OPS-006 Facilities	882421 - Facility Operations	Provider	-	-	(8,000)	(8,000)
OPS-008 Systems Control Center: Detroit Only Pump Stations/CSO	882301 - Systems Operations Control	Provider	(1,411,300)	(1,411,300)	411,300	(1,000,000)
ITS-001 Retail AMR	883341 - IT Enterprise Applications	Provider	(1,922,300)	(1,922,300)	1,357,300	(565,000)
ITS-002 Customer Service Tech Suite	883351 - IT Business Applications	Provider	(2,503,600)	(2,503,600)	2,378,600	(125,000)
ITS-003 See Click Fix	883321 - IT Service Delivery	Provider	-	-	(190,000)	(190,000)
ITS-004 WAM	883311 - IT Project Management Office	Provider	(236,500)	(236,500)	(1,873,500)	(2,110,000)
ITS-005 Mobile Work Force	883351 - IT Business Applications	Provider	-	-	(330,000)	(330,000)
ITS-006 ESRI - Geographic Information System	883301 - Office of the CIO	Provider	(270,400)	(270,400)	(839,600)	(1,110,000)
ITS-007 DADS	883351 - IT Business Applications	Provider	-	-	(120,000)	(120,000)
ITS-008 TIBCO	883351 - IT Business Applications	Provider	-	-	(75,000)	(75,000)
ITS-009 IT Infrastructure	883331 - Infrastructure	Provider	(4,606,200)	(4,606,200)	1,851,200	(2,755,000)
LS-001-A Litigation and Joint Defense (GLWA Provider)	883101 - General Counsel	Provider	(1,959,100)	(1,959,100)	1,951,000	(8,100)
New - DWSD - Bank Fees	884131 - Treasury	Provider	(734,100)	(734,100)	(173,700)	(907,800)
New - DWSD - Public Finance	884141 - Public Finance	Provider	-	-	(38,100)	(38,100)
New - HPE & West Coast	886401 - Systems Analytics	Provider	(440,900)	(440,900)	-	(440,900)
New - DWSD Staff Training by GLWA	883201 - Organizational Development	Provider	-	-	(6,700)	(6,700)
	Subtotal - Billings to DWSD		(16,281,700)	(14,741,900)	4,517,800	(10,224,100)
OPS-001 Fleet	882422 - Fleet Operations	Subscriber	2,150,900	2,150,900	-	2,150,900
OPS-002 MISS DIG	882411 - Field Engineering	Subscriber	-	-	94,900	94,900
OPS-003 As Needed Field Services	882431 - Field Service Operations	Subscriber	-	-	100,000	100,000
OPS-006 Shared Facilities Shared Costs	882421 - Facility Operations	Subscriber	1,106,000	1,106,000	394,000	1,500,000
DoIT-001 Financial Information System	883331 - Infrastructure	Subscriber	800,000	800,000	(650,000)	150,000
DoIT-002 Radios	883351 - IT Business Applications	Subscriber	-	-	150,000	150,000
DoIT-003 Customer Service Technology Suite	883351 - IT Business Applications	Subscriber	-	-	44,000	44,000
New - WAM (Annual License)	883351 - IT Business Applications	Subscriber	-	-	656,000	656,000
	Subtotal - Invoicing from DWSD		4,056,900	4,056,900	788,900	4,845,800
	Net Billings		(12,224,800)	(10,685,000)	5,306,700	(5,378,300)

This document is not final. Information contained in the document is subject to change.

**Great Lakes Water Authority
Staffing - Budget vs. Actual**

Legend
 Estimated Amount

Fiscal Year 2017

Line #	Annual Positions	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	
	Budgeted "Positions" (Staffing Plan)													
1	Employees	995.00	995.00	995.00	995.00	995.00	995.00	995.00	995.00	995.00	995.00	995.00	995.00	
2	Transition Services Contractors	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00	110.00	
3	Total Positions	1,105.00												
	Budgeted "FTEs" (Based on Quarterly Hiring Assumptions) (Requested FTEs)													
4	Employees	840.00	840.00	840.00	875.75	875.75	875.75	891.75	891.75	891.75	994.00	994.00	994.00	
5	Transition Services	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	
6	Total Positions	942.00	942.00	942.00	977.75	977.75	977.75	993.75	993.75	993.75	1,096.00	1,096.00	1,096.00	
	Actual Employee Positions													FY2017 Year to Date
7	Beginning Balances	770.00	781.00	791.00	783.00	791.00	793.00	798.00	799.00	801.00	814.00	836.00	848.00	770.00
8	New Hires	13.00	15.00	4.00	14.00	6.00	8.00	10.00	14.00	19.00	25.00	17.00	35.00	180.00
9	Rehires	-	-	-	1.00	-	2.00	-	-	-	-	2.00	2.00	7.00
10	Terminations	2.00	5.00	12.00	7.00	4.00	5.00	9.00	12.00	6.00	3.00	7.00	12.00	84.00
11	Ending Balance (1)	781.00	791.00	783.00	791.00	793.00	798.00	799.00	801.00	814.00	836.00	848.00	873.00	873.00
12	Ending Balance - Transition Service Contractors	100.00	100.00	100.00	95.00	95.00	95.00	90.00	90.00	90.00	85.00	85.00	85.00	
13	Budget to Actual Variance - Vacant Positions (Row 1 minus Row 11)	214.00	204.00	212.00	204.00	202.00	197.00	196.00	194.00	181.00	159.00	147.00	122.00	
14	Budget to Actual Variance - Transition Service Contractors (Row 2 minus Row 12)	10.00	10.00	10.00	15.00	15.00	15.00	20.00	20.00	20.00	25.00	25.00	25.00	
Note:	(1) Includes Active; Active-FMLA, and STD													
	Check Figure (New Hires - Terminations)	11	10	-8	7	2	3	1	2	13	22	10	23	
	Difference, if any	-	-	-	-	-	-	-	-	-	-	-	-	

Great Lakes Water Authority
Staffing - Budget vs. Actual

Legend

Estimated Amount

Fiscal Year 2018

Line #	Annual Positions												Year to Date	
<u>Budgeted Positions (Staffing Plan)</u>		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	
1	Employees	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	1,075.00	
2	Transition Services Contractors	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	102.00	
3	Total Positions	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	1,177.00	
<u>Budgeted FTEs (Based on Quarterly Hiring Assumptions) (Requested FTEs)</u>														
4	Employees	1,053.00	1,053.00	1,053.00	1,053.00	1,053.00	1,053.00	1,059.50	1,059.50	1,059.50	1,065.50	1,065.50	1,065.50	
5	Transition Services Contractors	102.00	102.00	102.00	102.25	102.25	102.25	102.25	102.25	102.25	102.25	102.25	102.25	
6	Total Positions	1,155.00	1,155.00	1,155.00	1,155.25	1,155.25	1,155.25	1,161.75	1,161.75	1,161.75	1,167.75	1,167.75	1,167.75	
														FY2018
														Year to Date
<u>Actual Employee Positions</u>														
7	Beginning Balances	873.00	870.00	896.00	899.00	909.00	920.00	924.00	924.00	947.00	961.00	957.00	957.00	873.00
8	New Hires	25.00	29.00	10.00	15.00	17.00	9.00	2.00	31.00	23.00	7.00			168.00
9	Rehires	-	1.00	-	1.00	-	-	-	2.00	-	1.00			5.00
10	Terminations	28.00	4.00	7.00	6.00	6.00	5.00	2.00	10.00	9.00	12.00			89.00
11	Ending Balance (1)	870.00	896.00	899.00	909.00	920.00	924.00	924.00	947.00	961.00	957.00	957.00	957.00	957.00
12	Ending Balance - Transition Service Contractors	80.00	80.00	80.00	80.00	89.00	83.00	83.00	83.00	87.00	75.00			
13	Budget to Actual Variance - Vacant Positions (Row 1 minus Row 11)	205.00	179.00	176.00	166.00	155.00	151.00	151.00	128.00	114.00	118.00	118.00	118.00	118.00
14	Budget to Actual Variance - Transition Service Contractors (Row 2 minus Row 12)	22.00	22.00	22.00	22.00	13.00	19.00	19.00	19.00	15.00	27.00	102.00	102.00	
Note:	(1) Includes Active; Active-FMLA, and STD													
	Check Figure (New Hires - Terminations)	-3	25	3	9	11	4	0	21	14	-5			
	Difference, if any	-	-	-	-	-	-	-	-	-	-	-	-	-