



# Comprehensive Annual Financial Report

*Fiscal Year Ended June 30, 2018*

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



**GLWA**  
*Great Lakes Water Authority*

*Prepared by Great Lakes Water Authority Financial Services*

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# GREAT LAKES WATER AUTHORITY

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## CHIEF EXECUTIVE OFFICER'S TRANSMITTAL LETTER

December 14, 2018

Board of Directors  
Great Lakes Water Authority

Dear Members of the Board,

I am pleased to present the Comprehensive Annual Financial Report (CAFR) for the Great Lakes Water Authority (GLWA) for the fiscal year which ended June 30, 2018. This is significant for GLWA as it provides the second full 12 month fiscal year of operations since GLWA's operational effective date of January 1, 2016. Having two full years of financial information allows the GLWA team to demonstrate delivery of the high level of performance that we have pledged.

GLWA's financial statements were prepared in accordance with U.S. generally accepted accounting principles ("GAAP"), as promulgated by the Governmental Accounting Standards Board ("GASB") and audited by a firm of independent certified public accountants engaged by the GLWA Board of Directors. This is consistent with the GLWA Articles of Incorporation and By-laws which require an annual audit of GLWA's financial statements by independent certified public accountants.

Responsibility for the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with GLWA management. To the best of my knowledge and belief, the information contained in this report is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of GLWA. All disclosures necessary for the reader to gain an understanding of GLWA's financial activity have been included.

GLWA management is responsible for establishing and maintaining an internal control structure designed to ensure that its assets are adequately safeguarded against loss, theft, or misuse and to maintain accurate and reliable financial records for the preparation of financial statements and the representations made by management. The internal control structure is designed to provide reasonable, but not absolute, assurance that these objectives are met. The concept of reasonable assurance recognizes that: 1) the cost of internal controls should not exceed the benefits derived from the controls; and 2) the evaluation of costs and benefits requires management's exercise of judgment. To the best of my knowledge and belief, GLWA's internal accounting controls adequately safeguard its assets and provide reasonable assurance of the proper recording of financial transactions in accordance with GAAP.

Rehmann Robson, LLC, Certified Public Accountants, has been retained by GLWA to serve as its independent auditors and has issued an unmodified ("clean") opinion on GLWA's financial statements for the year ended June 30, 2018 with comparative amounts for June 30, 2017.

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 supplement the MD&A and should be read in conjunction with it. GLWA's MD&A is located immediately following the independent auditors' report.

## A Model of Regional Collaboration

GLWA is the result of a monumental collaboration among regional leaders. Working to meet the needs of sustainable and affordable infrastructure, a memorandum of understanding was agreed upon on September 9, 2014. Subsequently, GLWA was incorporated by the City of Detroit (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 the 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; 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, 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 debt obligations. GLWA also funds a Water Residential Assistance Program (WRAP) to assist low-income residential households in enrolled member partner communities.

The service area covered by GLWA is large and diverse. See the water system and sewer system maps on the following pages.

### Water System

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 1,760 square miles located in eight southeast Michigan counties with an estimated population of nearly 3.8 million or approximately 38 percent of Michigan's population. This encompasses 87 wholesale services contracts spanning 127 communities.

The water supply system consists of three intake facilities, five water treatment plants, 19 booster pumping stations, 32 water storage reservoirs and a conveyance system with over 803 miles of transmission mains.

The long-term strategy for the water system is a focus on flexibility. The Water System Master Plan was updated in August 2016. The master plan addressed declining water usage trends which has been a significant and consistent decline. Because GLWA's water system is large and made up of multiple facilities, the team had flexibility in charting a course forward. The overarching strategy is to address excess system capacity by derating a facility to reduce operating costs, but more significantly, avoiding future capital costs. Presently, the engineering team is evaluating an option to convert the Northeast Water Treatment Plant into a storage and pumping facility and invest in new transmission mains to support Northeast's service area.

## Wastewater System

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 southeast Michigan counties, with an estimated population of nearly 2.8 million or approximately 28 percent of Michigan's population. This encompasses 18 wholesale services contracts spanning 76 communities.

The wastewater system consists of one of the largest single-site wastewater treatment plants in the world, three major interceptors, five pump stations, eight Combined Sewer Overflow (CSO) Control Facilities, including five retention treatment basins and three flow-through type facilities, and a conveyance system with 181 miles of trunk sewers and interceptors.

The long-term strategy for the sewer system is a focus on regional efficiencies. The Wastewater Master Planning Process, launched in April 2017 and supported by a Wastewater Master Plan Steering Committee including the Michigan Department of Environmental Quality, holds monthly meetings with stakeholders. The 40-year master planning process is focusing on water quality, leveraging the entire region's existing infrastructure, maximize the use of dynamic wet weather operations, strategic use of green infrastructure, addressing changes in weather patterns and rain event intensities, extensive system modeling including surface water and wastewater treatment, evaluation of resource recovery options and energy reduction opportunities.

## Financial Highlights

The publication of this report is on the heels of the return of a "AA" category bond rating for the debt held by GLWA (which was assumed from DWSD on January 1, 2016). In preparing for a bond transaction, on September 5, 2018, Standard & Poor's (S&P) increased GLWA's senior lien water system rating by three notches to AA- and its second lien water system rating by three notches to A+. The rating agency also increased GLWA's senior lien sewer system rating by two notches to A+ and its second lien sewer system was increased by two notches to A.

This rating increase was followed by a successful refunding, on October 3, 2018, of \$155,595,000 of Water Supply System Revenue Bonds and \$257,465,000 of Sewage Disposal System Revenue Bonds (\$81,595,000 in new money and \$175,870,000 in refunding bonds). The net present value savings from the refunding transactions was a total of \$59.42 million, with \$24.90 million for the water fund and \$34.52 million for the sewage disposal fund.

This demonstration of an improved credit rating to secure a lower cost of capital was a key objective in the creation of GLWA.

## *FY 2018 Results*

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

1. **Liquidity** - Strong liquidity with 1,066 days cash on hand for the water system and 432 days for the sewer system as shown on the Schedule of Days Cash in the supplementary information.
2. **Debt Service Coverage** - Excellent debt service coverage for both the water and sewer funds. The water fund reports debt coverage for senior lien bonds at 2.03 times and all bonds at 1.51 times. The sewer fund reports debt coverage for senior lien bonds at 2.11 times and all bonds at 1.29 times. Detail for all debt types can be found in the Debt Service Coverage schedule in the statistical section.

3. Revenue Stability - Predictable wholesale budgeted versus actual revenues with a positive variance of approximately \$13.1 million, or 4.2 percent, for the water system and \$2.0 million, or 0.7 percent, for the sewer system in the Schedule of Revenue Requirements in the Supplementary Information section.

4. Controlled Spending - Sound performance results with an overall Operations and Maintenance (O&M) budget positive variance of \$6.6 million, or 5.75 percent, for the water system and \$14.0 million, or 7.35 percent, for the sewer system as shown on the Schedule of Operations and Maintenance Expense for each system in the Supplementary Information section. The positive budget variances support subsequent year pay-as-you go capital investment.

#### Solid Foundation for Sustainability

As GLWA matures as an organization, the connections that our team members have with each other, and with our many stakeholders, is evident. This is most noticeable when you see the passion of multi-disciplinary teams, working through the development of a long-term plan that encompasses engineering, operations, finance, and many others to chart the course for the future - while never forgetting about the end-consumer and the environment. Below are topics that we cover when talking about GLWA. At the core of each item is a connection between our stakeholders and a foundational element of sustainability.

Revenues - The water and sewer system charge structure, developed collaboratively with member partners, supports a high degree of financial stability. The Water System revenues are billed on a basis of 60 percent fixed monthly charge and 40 percent commodity consumption using a 36-months historical average usage. The sewer system charge revenues are 100 percent fixed monthly billing based on each member partner's share of the annual forecasted revenue requirement.

Bondholder Protections - All GLWA and DWSD customer payments deposited to Bond Trustee Account and are disbursed in accordance the Master Bond Ordinance (MBO) flow of funds.

Defined Contribution Benefit Plans - All employee benefit plans are defined contribution which provider shorter term vesting and flexibility for the employee while creating zero risk on unfunded liabilities for GLWA.

Moderate Budget and Charges Requests - GLWA balances steady and controlled O&M budget requests for the short-term, while continuing to focus on increasing cash reserves for capital investment and decreasing long-term liabilities. This provides stability in the cost of supply for our member partners.

Flexible Capital Program - The majority of the GLWA FY 2019 - FY 2023 five-year capital improvement plan (CIP) is driven by optimizing the system and fostering innovation rather than driven by specific regulatory mandates. Almost no projects in the water system CIP are driven by mandates while less than 6 percent of the five-year sewer system CIP is driven by mandated permit requirements. The water system CIP calls for \$712.8 million of major capital expenditures over the next five fiscal years (2019-2023) and the sewer system CIP calls for \$633.2 million of capital expenditures over the same time period. The staff from Michigan Department of Environmental Quality (MDEQ) regularly engage with GLWA on capital project matters.

Customer Assistance Program - The WRAP (Water Residential Assistance Program) provided \$4.5 million of resources to support customer assistance needs in the region for the year ended June 30, 2018. Services include payment assistance, consumption audit, basic plumbing repairs, conservation education, and limited lead fixture replacement. This means that qualified households, can receive payment assistance as well take steps to sustainably reduce their bills in the future.

**Strong Economy** - The regional system is supported by a broad-based economy that is experiencing the lowest rate of unemployment in over a decade at 3.7 percent. Other statistical information is shown in Schedule 10.

**Service to the City of Flint** - On December 1, 2017, GLWA entered into a 30-year master contract with the City of Flint (which is located in Genesee County). As part of this arrangement, the Genesee County Drain Commission (GCDC) and GLWA have a contractual arrangement for as needed reciprocal emergency water service. This provides redundant, backup service for customers in that area with very little capital investment. In addition, GLWA provides Flint with a credit on its monthly water bill equal to its debt service payment obligations on existing Karegnondi Water Authority bonds in exchange for a license to raw water rights.

**Workforce Development** - As a significant number of employees in the water service sector prepare for retirement, GLWA is focused on workforce development and succession planning. The inaugural Apprenticeship Program for Electrical Instrumentation Control Technicians (EICT-I) is currently in the second year of its three-year duration, training 20 apprentices to receive their EICT-I certification. This program, which operates in conjunction with the Department of Labor, will soon be expanding to include a new apprenticeship for maintenance technicians.

**Vendor Outreach** - Expanding the base of our vendor community is a top priority for GLWA. One way to do this is to foster relationships with small businesses to expand their water service sector experience. By doing so, GLWA lessens risk from reliance on a shorter list of firms that support our operations.

**Governance Structure that Supports Collaboration** - GLWA's Board of Directors consists of six members. Two members are appointed by the Mayor of the city of Detroit, the chief executive of each of the three counties (Macomb, Oakland, and Wayne), as well as the governor of the state of Michigan all appoint one member each to the Board. The Governor's appointee represents other suburban customer areas outside the tri-county service area, and that appointee must reside within that geographic area.

**One Water Partnership** - In September 2017, the first One Water Partnership Agreement was signed by GLWA and its member partners. This historic agreement outlines the mutual commitments to working together for the greater good of the region, and details the responsibilities of all parties to moving the agreement forward. A critical addition to the agreement is the development of a multi-jurisdictional, multi-agency approach to infrastructure renewal and investment.

## **Recognition Among Our Peers**

**AMWA Gold Award** - GLWA received acknowledgement of its Effective Utility Management (EUM) efforts in November 2017 when the Association of Metropolitan Water Agencies (AMWA) honored the Authority with its annual Gold Award for Exceptional Utility Performance. AMWA is an organization of the largest publicly owned drinking water systems in the United States and is the only policy-making organization solely for metropolitan drinking water suppliers. The Gold Award recognizes drinking water systems that exhibit high levels of performance in the 10 EUM attributes. It was a tremendous accomplishment to be one of only three recipients in the country, made even more special in that it was our first submission and just our second year of operations.

**APWA Project of the Year** - GLWA received the 2017 Project of the Year from the American Public Works Association (APWA) Downriver Chapter for its Wick Road reconstruction, 48-inch water transmission main installation and resurfacing of Vining Road with the city of Romulus. This project is an example of collaboration and project coordination between GLWA and its member partner, Romulus. The result was a successful completion of more than one-half mile of road construction, a quarter mile of road resurfacing and nearly 4,000 linear feet of large diameter water transmission main installation in a single coordinated effort.

## 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.

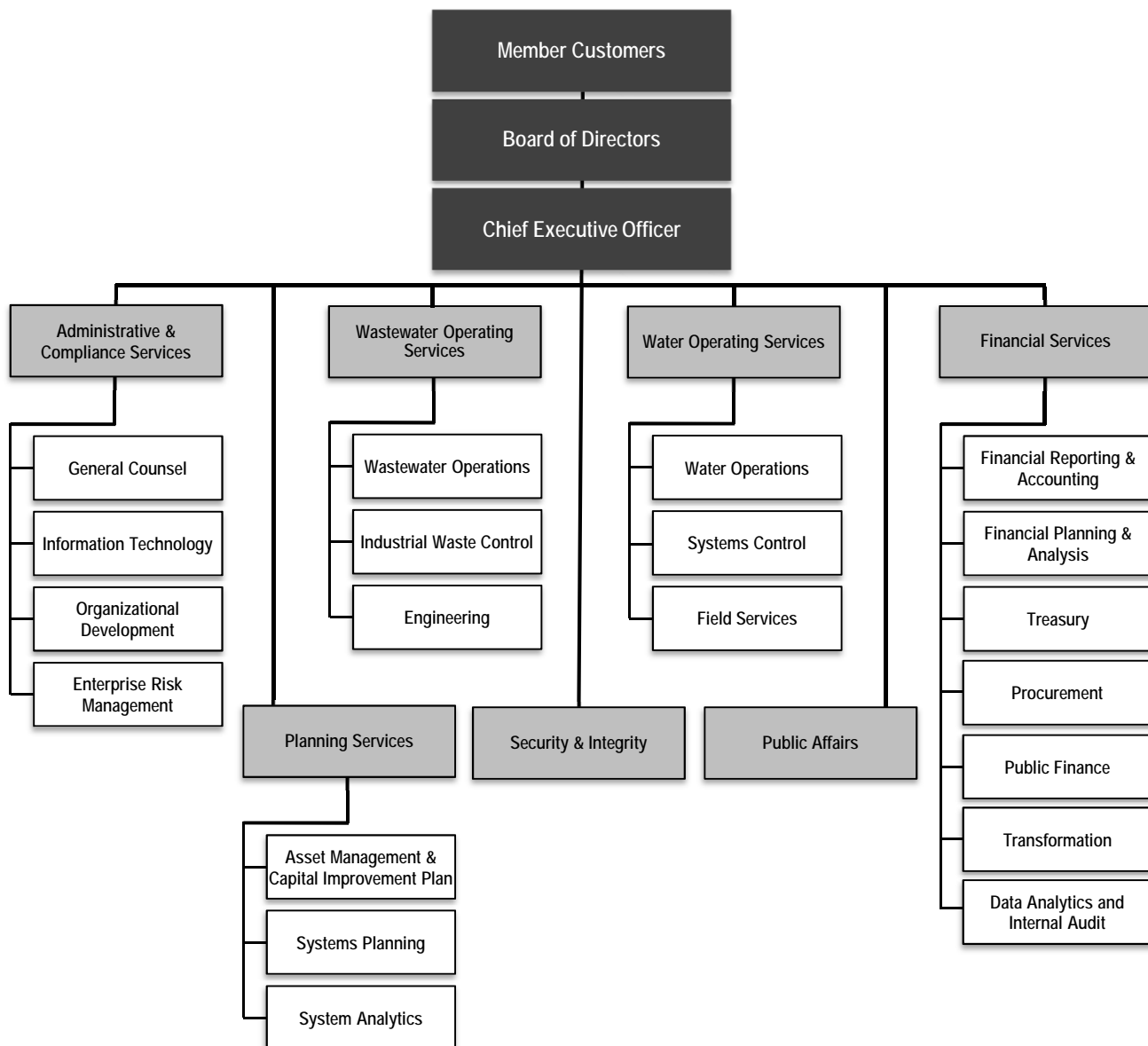


Sue F. McCormick  
Chief Executive Officer





## Organizational Line of Reporting Chart



## **Great Lakes Water Authority Board of Directors**

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

## **Great Lakes Water Authority Executive Leadership Team**

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

## INDEPENDENT AUDITORS' REPORT

December 14, 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, 2018, 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, 2018, 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, combining and individual fund schedules and the statistical section 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 December 14, 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.

*Rehmann Robson LLC*

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## **MANAGEMENT'S DISCUSSION AND ANALYSIS**

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

June 30, 2018

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, 2018. 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

The 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 1,790 square miles located in eight Michigan counties and an estimated population of nearly 3.8 million or approximately 38 percent of Michigan's population. Suburban wholesale service contracts comprise approximately 82 percent of the population served by the Authority while the retail water customers served by DWSD comprise the remaining 18 percent.

The 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 944 square miles located in three Michigan counties and an estimated population of nearly 2.8 million or approximately 28 percent of Michigan's population. Suburban wholesale service contracts comprise approximately 77 percent of the population served by the Authority, while retail sewer customers served by the City of Detroit Water and Sewerage Department comprise the remaining 23 percent.

GLWA began operations on January 1, 2016. This fiscal year ended June 30, 2018 report represents the second full twelve-month report for GLWA. Now, with two years of information available, comparative information for the fiscal year-ended June 30, 2017 has been provided for total business-type activities in the basic financial statements.

### Creation of a Regional Authority

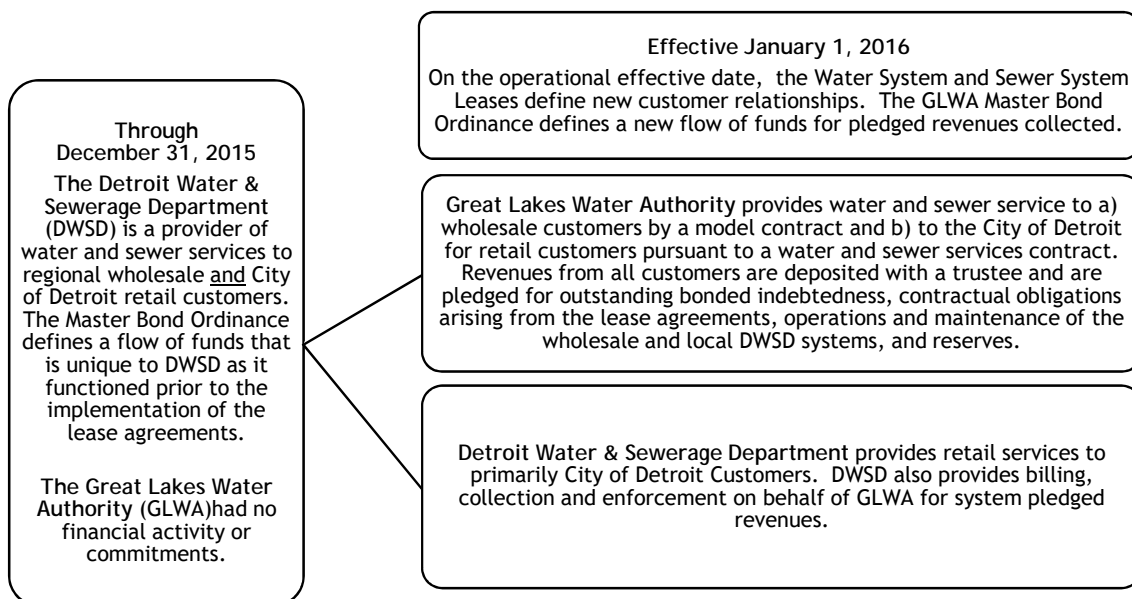
The creation of a regional water authority was an outcome of the City of Detroit's Chapter 9 Bankruptcy. Collaboration among regional stakeholders, supported by mediation proceedings, resulted in a "Memorandum of Understanding Regarding the Formation of The Great Lakes Water Authority" signed on September 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 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 ("GRS") 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 percent of bondholders of the outstanding DWSD Water Bonds and DWSD Sewer Bonds, respectively, consented to the adoption by GLWA of the Master Bond Ordinance ("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 MBO 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 of Directors determined that all conditions precedent were satisfied to commence operations on January 1, 2016.

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

Activity for the Leases was recorded based upon GASB 69, *Government Combinations and Disposals of Government Operations*. This required lease accounting resulted in the following Statement of Net Asset categories. An explanation of those categories and how they relate to the leases and the establishment of the Authority's opening Statement of Net Assets is below:

**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 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 percent of the liability was allocable to the GLWA regional operations and 29.7 percent 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 percent 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 percent borrowing rate for both systems.

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

### Financial Highlights

Total business-type current assets of \$880.1 million exceed current liabilities of \$283.1 million by \$597.0 million in total or 3.1 times. For the Water System, current assets of \$479.9 million exceed current liabilities of \$139.1 million by \$340.8 million in total or 3.45 times. For the Sewer System, current assets of \$400.2 million exceed current liabilities of \$144.1 million by \$256.1 million in total or 2.8 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, 2018 by \$178.7 million (a net deficit). The net deficit for the water fund was \$60.4 million and \$118.3 million for the sewage disposal fund.

The largest category of expense is depreciation at \$331.2 million in total with \$144.0 million for the water fund and \$187.2 million for the sewage disposal fund. The second largest category of expense is interest expense at \$300.4 million in total with \$139.3 million for the water fund and \$161.1 million for the sewage disposal fund. The Authority implemented GASB 89 during this fiscal year and no longer capitalizes interest expense.

### 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 borrowings and the related 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 (although some may geographically overlap).

### 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, 2018 with a \$178.7 million net deficit. The net deficit for the water fund was \$60.4 million and \$118.3 million for the sewage disposal fund.

	Net Position	
	2018	2017
Current and other assets	\$ 1,725,147,253	\$ 1,557,125,361
Restricted assets	489,334,606	573,822,933
Capital assets	4,690,263,860	4,908,786,837
Total assets	<u>6,904,745,719</u>	<u>7,039,735,131</u>
Deferred outflows of resources	<u>332,991,599</u>	<u>357,600,919</u>
Current liabilities	283,126,328	318,134,242
Long-term debt	5,714,095,283	5,842,482,161
Net pension liability	178,961,907	194,075,547
Other liabilities	1,113,876,457	1,014,782,772
Total liabilities	<u>7,290,059,975</u>	<u>7,369,474,722</u>
Deferred inflows of resources	<u>126,432,107</u>	<u>130,696,321</u>
Net position		
Net investment in capital assets	350,745,726	528,875,506
Restricted for debt service	125,235,904	134,125,957
Restricted for capital acquisition	243,238,577	323,905,502
Restricted for payment assistance program	5,771,110	5,336,117
Unrestricted (deficit)	<u>(903,746,081)</u>	<u>(1,095,078,075)</u>
Total net position	<u>\$ (178,754,764)</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 \$350.7 million (\$60.8 million the water system and \$289.9 for the sewage disposal system). Increases during the year were attributable to the acquisition of assets and repayment of debt which were 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 \$125.2 million with \$23.2 million in the water system and \$102.0 million for the sewage disposal system.

Net position restricted for capital acquisition primarily represents unspent bond proceeds of \$243.2 million in total with \$140.7 million in the water system and \$102.5 million in the sewage disposal system.

The remaining unrestricted deficit is significant: a total of \$903.7 million with \$287.6 million for the water system and \$616.1 for the sewage disposal system. Unrestricted net position (deficit) is generally defined as the net result of the other components of net position. There has been an improvement of \$191.3 million in the unrestricted net position since 2017. This unrestricted deficit is representative of numerous cumulative historical financial activities via 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. Evidence of those efforts are demonstrated by key financial performance measures. These include strong days cash on hand, debt service coverage well above the minimum requirements, achievement of revenue targets, and positive operations and maintenance expense budget variances. The performance measures in the table below are presented in the Supplementary Information section of this report.

Financial Performance Measure	Water	Sewage Disposal
Days cash on hand (Schedule of Days Cash - Liquidity)	1066 days	432 days
Debt service coverage - (all bonds including junior lien state revolving fund junior lien) (Pledges of Revenue and Debt Service Coverage)	1.51x	1.29x
Revenue target (Schedules of Revenue Requirement)	14.7 million or 4.5% positive budget variance	9.3 million or 2.0% positive budget variance
Operations & maintenance budget (Schedules of Operations and Maintenance Expense)	\$6.6 million or 5.75% positive budget variance	\$14.0 million or 7.35% positive budget variance

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

### Change in Net Position

The following is a comparative summary of the business-type activities changes in net position for the current and prior year (followed by a detailed discussion of the significant changes by activity):

	Changes in Net Position	
	2018	2017
Operating revenues	\$ 811,894,703	\$ 857,557,026
Operating expenses	<u>618,232,739</u>	<u>582,815,592</u>
Operating income	193,661,964	274,741,434
Nonoperating expenses	<u>(269,581,735)</u>	<u>(268,922,991)</u>
Income before contributions and special item	(75,919,771)	5,818,443
Capital contributions	-	320,707
Special item - MOU with DWSD	<u>-</u>	<u>(94,290,263)</u>
Change in net position	(75,919,771)	(88,151,113)
Net position, beginning	<u>(102,834,993)</u>	<u>(14,683,880)</u>
Net position, end of year	<u><u>\$ (178,754,764)</u></u>	<u><u>\$ (102,834,993)</u></u>

### Water

Operating revenues, as shown in the table below, are primarily from wholesale water charges of \$323.1 million (95.51 percent of Water System revenues). GLWA provides services to 87 customers in addition there is one emergency backup service customer. Revenue and charge stability are important goals for GLWA and its member partners.

1. 40 percent is based on the average annual sales for each customer from their 36 prior months of usage ending September 30th each year.
2. 60 percent is based on fixed monthly charges.

Fiscal year 2018 wholesale revenue billed was 104% of budget meeting the goal of revenue stability.

## GREAT LAKES WATER AUTHORITY

### Management's Discussion and Analysis

Local system revenues of \$15.1 million account for 4.47 percent of the total operating revenue. Pursuant to the terms of the WSSA with DWSD, a \$20.7 million credit is applied against forecasted 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.

	Amount	Percent of Operating Revenues
Wholesale customer charges	\$ 323,117,344	95.51%
Local system charges	15,130,600	4.47%
Other revenues	64,200	0.02%
	<u>                    </u>	<u>                    </u>
Total operating revenues	<u>\$ 338,312,144</u>	<u>100%</u>

Operating expenses of \$254.6 million represent 75.3 percent of total operating revenue which consists primarily of depreciation expense and operations and maintenance activities. Depreciation is the larger category of expense at \$144 million or 56.6 percent of operating expense. Amortization was .8% of operating expenses. The remaining 42.6 percent of operating expenses is shown in the table below. Given the nature of GLWA's water operations, it is expected that personnel, contractual services, and utilities would represent the higher dollar amount. Contractual services include field services contracts for timely repairs to minimize disruption in service, technology related services for both operational and enterprise data networks, and outsourcing of janitorial, fleet, and other functions.

	Amount	Percent of Operating Expenses
Personnel	\$ 41,845,295	16.4%
Contractual services	35,794,549	14.1%
Utilities	26,871,081	10.6%
Chemicals	4,804,768	1.9%
Supplies and other expenses	9,543,615	3.7%
Capital program allocation	(713,779)	-0.3%
Shared services allocation	(9,615,146)	-3.8%
	<u>                    </u>	<u>                    </u>
Total operating expenses before depreciation and amortization	<u>\$ 108,530,383</u>	<u>42.6%</u>

Operating income after operating expenses (including depreciation) equals \$83.7 million or 24.7 percent of operating revenue.

Net nonoperating expense of \$107.7 million is primarily related to interest expense of \$139.3 million of which 118.2 million is from debt service. The remainder of interest is from the water lease, obligation payable and raw water rights lease. The largest offset to the expense is interest revenue on the obligations receivable which is also related to the terms of the Water Lease.

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

### Sewage Disposal

Operating revenues, as shown in the table below, are primarily from wholesale sewer charges of \$269 million account (56.8 percent of Sewer System revenues) pursuant to from 18 services contracts. Wholesale contract charges are based on a “share” percentage of the annual revenue requirement 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.

Local system revenues of \$179 million account for 37.8 percent 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 5.4 percent of operating revenue is due to other charges such as industrial waste charges and pollutant surcharges which are charged to non-residential users.

	Amount	Percent of Operating Revenues
Wholesale customer charges	\$ 268,978,831	56.8%
Industrial waste charges	14,334,979	3.0%
Pollutant surcharges	6,908,404	1.5%
Local system charges	178,969,200	37.8%
Other revenues	4,391,145	0.9%
Total operating revenues	<u>\$ 473,582,559</u>	<u>100%</u>

Operating expenses of \$363.6 million represent 76.8 percent of total operating revenue which consists primarily of depreciation expense and operations and maintenance activities. Depreciation is the larger category of expense at \$187.3 million or 51.5 percent of operating expense. The remaining 48.5 percent of operating expenses is shown in the table below. Given the nature of GLWA’s wastewater operations, it is expected that personnel, contractual services, and utilities would represent the higher dollar amount. Contractual services include operation and management of the biosolids dryer facility, timely repairs for the wastewater resources recovery facility, staff augmentation for operations, technology related services for both operational and enterprise data networks, and outsourcing of janitorial, fleet, and other functions.

	Amount	Percent of Operating Expenses
Personnel	\$ 53,680,162	14.8%
Contractual services	64,082,761	17.6%
Utilities	26,823,299	7.4%
Chemicals	8,073,045	2.2%
Supplies and other expenses	24,982,773	6.9%
Capital program allocation	(969,671)	-0.3%
Shared services allocation	(292,965)	-0.1%
Total operating expenses before depreciation	<u>\$ 176,379,404</u>	<u>48.5%</u>

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

Operating income after operating expenses (including depreciation) equals \$110 million or 23.2 percent of operating revenue.

Net nonoperating expense of \$161.9 million is primarily related to interest expense of \$161.1 million of which \$137.6 million is related to debt service. The remainder of interest is from the sewer lease and obligation payable. The largest offset to the expense is interest revenue on the obligations receivable which is also related to the terms of the Sewer Lease.

### Capital Assets and Debt Administration

GLWA's investment in capital assets as of June 30, 2018 is \$4.7 billion (net of accumulated depreciation) with \$1.9 billion assigned to the Water System and \$2.8 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 \$218.5 million or 4.5 percent 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 a net increase in construction work-in-progress of \$36.6 million.

Approximately one-half of that amount, \$17.8 million, is due to construction related to the following projects:

- Project # 114001: 1958 Filter Rehabilitation at the Springwell Water Treatment Plant (Contracts CS-1425, CS-200, SP- 563). The project has a total budget of \$ 93.5 million. Life to date costs through June 30, 2018 total \$89.3 million. Fiscal year 2018 expenditures were \$6.4 million. The project is expected to be completed in fiscal year 2019. Approximately \$22.7 was placed into service during fiscal year 2018.
- Project # 170502: Transmission System Valve Assessment and Rehabilitation/Replacement (Contract CON-181). The project has a total budget of \$15.3 million. Life to date costs which were all incurred in fiscal year 2018 total \$3.4 million. Approximately \$3.1 million was placed into service during fiscal year 2018.
- Project # 114003: Water Production Flow Metering Improvements (CON-133). The project has a total budget of \$7.2 million. Life to date costs through June 30, 2018 total \$3.4 million. Fiscal year 2018 expenditures were \$3.3 million. The project is expected to be completed in fiscal year 2021.
- Project # 116002: Raw Water Supply Tunnel Improvements (DB-150). The project has a total budget of \$33.1 million. Life to date costs through June 30, 2018 total \$2.2 million. Fiscal year 2018 expenditures were \$2.2 million. The project is expected to be completed in fiscal year 2023.
- Project # 114015: Emergency Grating Replacement (DB-112). The project has a total budget of \$2.8 million. Life to date costs through June 30, 2018 total \$2.7 million. Fiscal year 2018 expenditures were \$2.5 million. Approximately \$2.5 million was placed into service during fiscal year 2018.
- The remaining \$18.8 million is attributable to 49 projects that are near closeout or are design and study contracts related to larger projects.

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

### Sewage Disposal Fund

Sewer System additions were also largely due to a net increase in construction work-in-progress of \$71.6 million.

Slightly more than one-half of that amount, \$41.6 million, is due to construction related to the following projects:

- Project # 260201: Conveyance System Interceptor Rehabilitation (CON-149). The project has a total budget of \$14.9 million. Life to date costs through June 30, 2018 total \$8.9 million. Fiscal year 2018 expenditures were \$8.8 million. The project is expected to be completed in fiscal year 2020.
- Project # 211001: Rehabilitation of Primary Clarifiers, Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery (PC-757). The project has a total budget of \$54 million. Life to date costs through June 30, 2018 total \$25.1 million. Fiscal year 2018 expenditures were \$13.2 million. The project is expected to be completed in fiscal year 2021.
- Project # 212006: Rouge River Outfall Project (Contracts PC-797, CS-1781). The project has a total budget of \$47.5 million. Life to date costs through June 30, 2018 total \$26.4 million. Fiscal year 2018 expenditures were \$19.6 million. The project is expected to be completed in fiscal year 2020.
- The remaining \$30.0 million is attributable to 28 projects that are near closeout or are design and study contracts related to larger projects.

	GLWA's Capital Assets, Net	
	2018	2017
Land	\$ 63,151,369	\$ 62,900,069
Easements	354,843,720	354,843,720
Construction in progress	288,051,906	312,728,003
Site improvements	71,714,835	70,555,592
Buildings and structures	1,477,410,969	1,499,761,392
Infrastructure	1,076,353,519	1,106,299,521
Machinery and equipment	1,354,950,446	1,499,528,421
Vehicles	2,164,263	2,170,119
Leasehold improvements	1,622,833	-
Total	<u>\$ 4,690,263,860</u>	<u>\$ 4,908,786,837</u>

Additional information on the Authority's capital assets can be found in Note 7.

### Intangible Asset and Related Obligation - Water Fund

Effective December 1, 2017, GLWA, the City of Flint (the City), Karegnondi Water Authority (KWA), Genesee County Drain Commission (GCDC) and the 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.



# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

The 30-year water service contract with the City includes a license to raw water rights on 17.46 MGD of the 18 MGD purchased by Flint as part of KWA bond obligation. These licensed rights constitute an intangible asset under governmental accounting standards. Therefore, the Authority has recorded an offsetting intangible asset and lease obligation of approximately \$107 million associated with this agreement as part of the fiscal year ending June 30, 2018 financial statements. The Authority recognized \$2.1 million of amortization expense through June 30, 2018 on the intangible asset. The lease obligation for the raw water rights was reduced by \$0.8 million during the year.

**Long-term Debt.** At year-end, the Authority had \$5.4 billion of long-term debt. All the outstanding bonds are revenue bonds, including capital appreciation bonds and state revolving fund loans. Of the total with \$2.3 billion is assigned to the Water System and \$3.1 billion assigned to the Sewer System.

### Water Fund

The total outstanding bonds for the Water System is \$2.3 billion, decreasing by \$47.8 million from the prior year. No new debt was issued for the year ended June 30, 2018 other than state revolving fund activity.

Repayment of GLWA bonds issued are funded by charges to all member partners. Repayment of the debt service assigned to DWSD for Local System improvements are paid from retail customer collections by DWSD.

Less than 1.1 percent 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 \$12.5 million in new state revolving fund loans and received a \$2.9 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 \$67.6 million from the prior year. No new debt was issued for the year ended June 30, 2018 other than state revolving fund activity.

Repayment of GLWA bonds issued are funded by charges to all member partners. Repayment of the debt service assigned to DWSD for Local System improvements are paid from retail customer collections by DWSD.

Approximately 15.4 percent 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 \$34.7 million in new state revolving fund loans.

	GLWA's Outstanding Debt		
	Water Fund	Sewage Disposal Fund	Total
Revenue bonds	\$ 2,284,825,000	\$ 2,584,065,000	\$ 4,868,890,000
Capital appreciation bonds	-	17,250,000	17,250,000
State revolving loans	25,435,902	475,677,540	501,113,442
<b>Total</b>	<b>\$ 2,310,260,902</b>	<b>\$ 3,076,992,540</b>	<b>\$ 5,387,253,442</b>

# GREAT LAKES WATER AUTHORITY

## Management's Discussion and Analysis

### Credit Ratings

As of June 30, 2018, the same ratings were in place since the last rating agency reviews in September 2016. For both the Water and Sewage Disposal Funds, 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 11.

### Economic Factors Affecting Next Year's Operations and Rates

On June 20, 2018, the GLWA Board adopted the biennial budget for the Authority for fiscal years 2019 and 2020. That two-year financial plan remains true to a foundational commitment to control the budget within a 4 percent revenue cap as further described below.

### Water Fund

For FY 2019 the budget increased by one percent. This translated into a system average charge increase of 1.6 percent and wholesale member partner average charge increase of 0.1 percent depending on each customers usage in relation to other customers.

### Sewage Disposal Fund

For FY 2019 budget increased by one percent. This translated into a system average charge increase of 0.1 percent and wholesale member partner average charge increase of 1.3 percent.

### 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](http://www.glwater.org).

## BASIC FINANCIAL STATEMENTS

# GREAT LAKES WATER AUTHORITY

## Statement of Net Position

June 30, 2018

With Comparative Amounts at June 30, 2017

	Enterprise Funds		Total Business-type Activities	2017 Total Business-type Activities
	Water Fund	Sewage Disposal Fund		
<b>Assets</b>				
Current assets:				
Cash and cash equivalents	\$ 310,085,221	\$ 199,056,556	\$ 509,141,777	\$ 470,231,842
Restricted cash and cash equivalents	51,097,342	54,832,050	105,929,392	132,967,081
Restricted cash for the benefit of DWSD	8,418,827	-	8,418,827	288,378
Investments	7,004,525	9,506,712	16,511,237	2,283,028
Restricted investments	1,234,954	31,790,386	33,025,340	32,541,021
Receivables:				
Billed	38,272,740	50,439,450	88,712,190	88,694,341
Unbilled	29,229,709	25,200,108	54,429,817	53,818,603
Other	5,850	3,723,036	3,728,886	3,158,350
Allowance for doubtful accounts	(6,221,815)	(32,863,001)	(39,084,816)	(35,352,009)
Due from other governments	23,588,754	24,339,106	47,927,860	50,789,041
Due from other funds	330,293	3,447,927	3,778,220	-
Contractual obligation receivable, current portion	13,560,086	11,253,800	24,813,886	23,339,242
Loan receivable - DWSD	-	9,367,355	9,367,355	-
Prepaid items and other assets	3,265,972	1,683,659	4,949,631	3,526,568
Inventories	-	8,471,626	8,471,626	8,509,454
Total current assets	<u>479,872,458</u>	<u>400,248,770</u>	<u>880,121,228</u>	<u>834,794,940</u>
Noncurrent assets:				
Restricted cash and cash equivalents	18,261,706	30,001,353	48,263,059	306,318,331
Restricted investments	150,436,225	143,261,763	293,697,988	101,708,122
Contractual obligation receivable	477,039,443	335,574,500	812,613,943	830,432,680
Loan receivable - DWSD	-	19,932,645	19,932,645	-
Prepaid lease	11,250,000	13,750,000	25,000,000	25,000,000
Assets not subject to depreciation	434,684,895	271,362,100	706,046,995	730,471,792
Capital assets being depreciated, net	1,499,118,693	2,485,098,172	3,984,216,865	4,178,315,045
Intangible asset - raw water rights, net	104,919,365	-	104,919,365	-
Prepaid insurance on debt	13,002,376	16,931,255	29,933,631	32,694,221
Total noncurrent assets	<u>2,708,712,703</u>	<u>3,315,911,788</u>	<u>6,024,624,491</u>	<u>6,204,940,191</u>
Total assets	<u>3,188,585,161</u>	<u>3,716,160,558</u>	<u>6,904,745,719</u>	<u>7,039,735,131</u>
Deferred outflows of resources				
Deferred charge on refunding	94,431,823	186,544,140	280,975,963	297,646,441
Deferred pension amounts	18,645,719	33,369,917	52,015,636	59,954,478
Total deferred outflows of resources	<u>113,077,542</u>	<u>219,914,057</u>	<u>332,991,599</u>	<u>357,600,919</u>

continued...

# GREAT LAKES WATER AUTHORITY

## Statement of Net Position

June 30, 2018

With Comparative Amounts at June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
<b>Liabilities</b>				
Current liabilities:				
Accounts and contracts payable	\$ 33,754,534	\$ 34,077,602	\$ 67,832,136	\$ 64,298,400
Accrued salaries, wages and benefits	4,734,956	-	4,734,956	3,190,038
Other accrued liabilities	12,679,692	-	12,679,692	2,252,616
Due to other governments	11,935,868	47,539	11,983,407	61,242,386
Due to other funds	3,447,927	330,293	3,778,220	-
Interest payable	39,322,324	41,108,994	80,431,318	80,340,520
Current portion of:				
Long-term debt	20,569,843	61,186,207	81,756,050	89,314,212
Leases payable	4,814,476	5,884,359	10,698,835	10,262,609
Lease obligation - raw water rights	2,999,458	-	2,999,458	-
Obligation payable	167,794	377,419	545,213	519,251
Accrued compensated absences	2,212,326	717,086	2,929,412	2,837,148
Accrued workers' compensation	228,239	-	228,239	25,000
Claims and judgments	2,195,000	334,392	2,529,392	3,852,062
Total current liabilities	139,062,437	144,063,891	283,126,328	318,134,242
Noncurrent liabilities:				
Long-term debt	2,545,529,255	3,168,566,028	5,714,095,283	5,842,482,161
Long-term leases payable	421,488,871	515,153,064	936,641,935	947,340,770
Lease obligation - raw water rights	103,241,118	-	103,241,118	-
Obligation payable	17,097,709	38,458,178	55,555,887	56,101,100
Accrued compensated absences	2,174,506	-	2,174,506	2,288,125
Accrued workers' compensation	75,000	-	75,000	225,000
Claims and judgments	50,000	7,500,000	7,550,000	262,500
Other noncurrent liabilities	2,634,471	6,003,540	8,638,011	8,565,277
Net pension liability	64,151,352	114,810,555	178,961,907	194,075,547
Total noncurrent liabilities	3,156,442,282	3,850,491,365	7,006,933,647	7,051,340,480
Total liabilities	3,295,504,719	3,994,555,256	7,290,059,975	7,369,474,722
Deferred inflows of resources				
Deferred amounts for swap terminations	80,342	189,808	270,150	299,461
Deferred gain on refunding	59,252,431	46,654,836	105,907,267	112,080,430
Deferred pension amounts	7,260,572	12,994,118	20,254,690	18,316,430
Total deferred inflows of resources	66,593,345	59,838,762	126,432,107	130,696,321
Net position				
Net investment in capital assets	60,799,635	289,946,091	350,745,726	528,875,506
Restricted for debt service	23,239,368	101,996,536	125,235,904	134,125,957
Restricted for capital acquisition	140,732,216	102,506,361	243,238,577	323,905,502
Restricted for payment assistance program	2,462,214	3,308,896	5,771,110	5,336,117
Unrestricted deficit	(287,668,794)	(616,077,287)	(903,746,081)	(1,095,078,075)
Total net position	\$ (60,435,361)	\$ (118,319,403)	\$ (178,754,764)	\$ (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 Fund Net Position

For the Year Ended June 30, 2018

With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds			
	Water Fund	Sewage Disposal Fund	Total Business-type Activities	2017 Total Business-type Activities
Operating revenues				
Wholesale customer charges	\$ 323,117,344	\$ 268,978,831	\$ 592,096,175	\$ 594,426,876
Industrial waste charges	-	14,334,979	14,334,979	14,381,106
Pollutant surcharges	-	6,908,404	6,908,404	5,206,294
Local system charges	15,130,600	178,969,200	194,099,800	202,794,400
Bad debt recovery	-	-	-	40,172,155
Other revenues	64,200	4,391,145	4,455,345	576,195
Total operating revenues	338,312,144	473,582,559	811,894,703	857,557,026
Operating expenses				
Operating expenses before depreciation and amortization:				
Personnel	41,845,295	53,680,162	95,525,457	86,156,304
Contractual services	35,794,549	64,082,761	99,877,310	90,135,859
Utilities	26,871,081	26,823,299	53,694,380	55,661,469
Chemicals	4,804,768	8,073,045	12,877,813	14,765,181
Supplies and other expenses	9,543,615	24,982,773	34,526,388	20,162,690
Capital program allocation	(713,779)	(969,671)	(1,683,450)	(2,128,078)
Shared services allocation	(9,615,146)	(292,965)	(9,908,111)	(11,704,210)
Total operating expenses before depreciation and amortization	108,530,383	176,379,404	284,909,787	253,049,215
Depreciation	143,991,815	187,250,583	331,242,398	329,766,377
Amortization of intangible asset - raw water rights	2,080,554	-	2,080,554	-
Total operating expenses	254,602,752	363,629,987	618,232,739	582,815,592
Operating income	83,709,392	109,952,572	193,661,964	274,741,434
Nonoperating revenues (expenses)				
Earnings on investments	6,129,530	5,266,255	11,395,785	4,042,790
Interest on obligations receivable	23,351,220	15,505,300	38,856,520	42,332,428
Interest expense	(139,343,204)	(161,052,102)	(300,395,306)	(291,592,097)
Costs of issuance and amortization of debt related items	13,837,585	(5,153,300)	8,684,285	(14,937,182)
Legacy pension expense	(8,933,691)	(15,988,471)	(24,922,162)	(7,021,006)
WRAP (Water Residential Assistance Program)	(1,506,554)	(2,248,980)	(3,755,534)	(2,127,333)
Other	(544,813)	(709,537)	(1,254,350)	661,734
Gain (loss) on disposal of capital assets	(6,225)	2,469,703	2,463,478	(250,826)
Loss on impairment of capital assets	(654,451)	-	(654,451)	(31,499)
Total nonoperating expenses	(107,670,603)	(161,911,132)	(269,581,735)	(268,922,991)
Income before contributions and special item	(23,961,211)	(51,958,560)	(75,919,771)	5,818,443
Capital contributions	-	-	-	320,707
Special item - memorandum of understanding with DWSD	-	-	-	(94,290,263)
Change in net position	(23,961,211)	(51,958,560)	(75,919,771)	(88,151,113)
Net position (deficit), beginning of year	(36,474,150)	(66,360,843)	(102,834,993)	(14,683,880)
Net position (deficit), end of year	\$ (60,435,361)	\$ (118,319,403)	\$ (178,754,764)	\$ (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, 2018

With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities	2017 Total Business-type Activities
	Water Fund	Sewage Disposal Fund		
Cash flows from operating activities				
Cash received from customers	\$ 345,806,584	\$ 469,355,447	\$ 815,162,031	\$ 797,342,886
Cash payments to suppliers for goods and services	(74,885,689)	(120,179,052)	(195,064,741)	(143,744,039)
Cash payments for employee services	(40,069,277)	(52,672,665)	(92,741,942)	(127,285,222)
Cash received (paid) for interfund services	3,117,634	(3,117,634)	-	-
Cash paid for DWSD budget stabilization	-	-	-	(418,741)
Cash payments to other governments for:				
MOU and bifurcation liabilities	(13,968,170)	(30,924,662)	(44,892,832)	-
B&C obligation payable	(3,187,796)	(6,832,237)	(10,020,033)	-
Cash payments for WRAP	(1,506,554)	(2,248,980)	(3,755,534)	(2,127,333)
Cash payments for GLWA share pension agreement	(11,440,800)	(20,475,400)	(31,916,200)	(31,916,200)
Cash received for DWSD nonoperating pension	4,827,211	3,370,621	8,197,832	7,484,210
Cash paid for DWSD nonoperating pension	(5,650,328)	(4,095,900)	(9,746,228)	(6,355,800)
Cash received for DWSD WRAP	448,200	369,000	817,200	785,900
Cash payments for DWSD WRAP	(395,805)	(348,661)	(744,466)	(424,667)
Cash received (paid) for DWSD budgetary excess (shortfall)	8,613,320	(18,480,620)	(9,867,300)	43,749,198
Nonoperating cash received (paid)	50,886	(867)	50,019	1,355,774
Cash payments from other receipts	-	-	-	477,474
Cash payments from fire remediation for operations	-	3,685,867	3,685,867	-
Principal payments received on obligation receivable	11,946,700	11,262,300	23,209,000	13,428,392
Interest received on obligation receivable	23,472,763	15,505,300	38,978,063	42,417,814
Payments of long-term debt proceeds to DWSD	-	-	-	(56,995,800)
Payments for bond issuance costs on DWSD debt	-	-	-	(222,234)
Payments of state revolving fund loan proceeds to DWSD	(9,968,428)	-	(9,968,428)	(2,032,280)
Transfer affordability bank account to DWSD	-	-	-	(977,278)
Net cash provided by operating activities	237,210,451	244,171,857	481,382,308	534,542,054
Cash flows from noncapital financing activities				
Proceeds from long-term debt for DWSD	-	-	-	57,218,034
Proceeds from state revolving fund loans for DWSD	9,529,926	-	9,529,926	2,436,781
Interest payments	(99,283)	-	(99,283)	(451,023)
Net cash provided by noncapital financing activities	9,430,643	-	9,430,643	59,203,792
Cash flows from capital and related financing activities				
Proceeds from fire remediation	-	200,533	200,533	5,000,000
Proceeds from long-term refunding debt	-	-	-	1,482,167,976
Payment to bond refunding escrow agent	-	-	-	(1,303,556,172)
Proceeds from sale of assets	650	-	650	-
Proceeds from state revolving fund loans	3,003,520	34,750,504	37,754,024	22,216,294
(Payments) returns of bond issuance costs	18,000	45,000	63,000	(6,688,373)
Principal payments on bonds	(57,495,000)	(102,350,000)	(159,845,000)	(154,240,000)
Principal payments on lease	(4,618,174)	(5,644,435)	(10,262,609)	(9,844,169)
Interest payments	(136,124,442)	(158,310,595)	(294,435,037)	(299,733,595)
Purchase of capital assets	(38,642,987)	(67,808,804)	(106,451,791)	(98,957,016)
Net cash used in capital and related financing activities	(233,858,433)	(299,117,797)	(532,976,230)	(363,635,055)

continued...

# GREAT LAKES WATER AUTHORITY

## Statement of Cash Flows

For the Year Ended June 30, 2018

With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities	2017 Total Business-type Activities
	Water Fund	Sewage Disposal Fund		
Cash flows from investing activities				
Investment purchases	\$ (419,794,161)	\$ (453,549,077)	\$ (873,343,238)	\$ (501,031,428)
Investment maturities	284,500,479	383,480,724	667,981,203	570,268,743
Interest received	4,909,839	4,562,898	9,472,737	3,500,272
Net cash provided by (used in) investing activities	(130,383,843)	(65,505,455)	(195,889,298)	72,737,587
Net change in cash and cash equivalents	(117,601,182)	(120,451,395)	(238,052,577)	302,848,378
Cash and cash equivalents, beginning of year	505,464,278	404,341,354	909,805,632	606,957,254
Cash and cash equivalents, end of year	<u>\$ 387,863,096</u>	<u>\$ 283,889,959</u>	<u>\$ 671,753,055</u>	<u>\$ 909,805,632</u>
Statement of net position classification of cash				
Cash and cash equivalents	\$ 310,085,221	\$ 199,056,556	\$ 509,141,777	\$ 470,231,842
Restricted cash and cash equivalents	51,097,342	54,832,050	105,929,392	132,967,081
Restricted cash for the benefit of DWSD	8,418,827	-	8,418,827	288,378
Noncurrent restricted cash and cash equivalents	18,261,706	30,001,353	48,263,059	306,318,331
	<u>\$ 387,863,096</u>	<u>\$ 283,889,959</u>	<u>\$ 671,753,055</u>	<u>\$ 909,805,632</u>

continued...



# GREAT LAKES WATER AUTHORITY

## Statement of Cash Flows

For the Year Ended June 30, 2018

With Comparative Amounts for the Year Ended June 30, 2017

	Enterprise Funds		Total Business-type Activities	2017 Total Business-type Activities
	Water Fund	Sewage Disposal Fund		
Reconciliation of operating income to net cash provided by operating activities:				
Operating income	\$ 83,709,392	\$ 109,952,572	\$ 193,661,964	\$ 274,741,434
Adjustments to reconcile operating income to net cash provided by operating activities:				
Depreciation	143,991,815	187,250,583	331,242,398	329,766,377
Amortization of intangible asset - raw water rights	2,080,554	-	2,080,554	-
Credits for raw water rights	(3,176,073)	-	(3,176,073)	-
Miscellaneous nonoperating income (expense)	50,886	(867)	50,019	1,355,774
Legacy pension expense and administrative fee	(9,329,667)	(16,697,141)	(26,026,808)	(7,715,046)
WRAP (Water Residential Assistance Program)	(1,506,554)	(2,248,980)	(3,755,534)	(2,127,333)
Loan forgiveness pass-through to DWSD	(2,534,779)	-	(2,534,779)	(1,168,307)
Interest income on contractual obligation receivable	23,351,220	15,505,300	38,856,520	42,332,428
Interest expense on obligation payable	(709,737)	(1,596,417)	(2,306,154)	(2,332,421)
Special item	-	-	-	(94,290,263)
Changes in:				
Receivables:				
Billed	(1,813,177)	1,795,328	(17,849)	(3,018,237)
Unbilled	309,724	(920,938)	(611,214)	1,526,733
Other (excludes capital item)	(4,550)	1,709,309	1,704,759	106,489,685
Allowance for doubtful accounts	1,280,038	2,452,769	3,732,807	(88,657,233)
Due from other governments	(2,261,041)	(24,177,778)	(26,438,819)	56,899,259
Due from other funds	5,081,793	11,262,300	16,344,093	65,971
Contractual obligation receivable	(330,293)	(3,447,927)	(3,778,220)	(9,270,922)
Prepaid items and other assets (excludes investing item)	(439,276)	(401,099)	(840,375)	(852,646)
Inventories	-	37,828	37,828	1,474,609
Prepaid lease	-	-	-	(25,000,000)
Accounts and contracts payable (excludes capital items)	(3,580,141)	(67,562)	(3,647,703)	(10,422,715)
Accrued salaries, wages and benefits	1,544,918	-	1,544,918	302,758
Other accrued liabilities (excludes capital items)	11,325,876	(898,800)	10,427,076	528,559
Due to other governments (excludes non-capital financing)	(13,457,945)	(35,801,034)	(49,258,979)	23,348,483
Due to other funds	3,447,927	330,293	3,778,220	(65,971)
Obligation payable including accrued interest	(159,803)	(359,448)	(519,251)	(494,524)
Accrued compensated absences	(59,181)	37,826	(21,355)	(626,037)
Accrued workers' compensation	53,239	-	53,239	(8,489,427)
Claims and judgments	2,170,000	3,794,830	5,964,830	(26,563,732)
Other noncurrent liabilities	52,395	20,339	72,734	(57,508)
Net pension liability and deferred items	(1,877,109)	(3,359,429)	(5,236,538)	(23,137,694)
Net cash provided by operating activities	<u>\$ 237,210,451</u>	<u>\$ 244,171,857</u>	<u>\$ 481,382,308</u>	<u>\$ 534,542,054</u>

concluded.

### Noncash transactions

During the year the Authority applied credits to Flint billings totaling \$3,176,073 for payments made by the City of Flint for the KWA bonds in the water fund. These credits are recorded as payments on the raw water lease rights which have been recorded as an intangible asset and a lease obligation payable.

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 1,760 square miles located in eight Michigan counties and an estimated population of approximately 3.8 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 944 square miles located in three Michigan counties and an estimated population of approximately 2.8 million or approximately 28% of Michigan's population. Suburban customers comprise approximately 77% 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 chief executive of 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 Net Position*

#### *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 of Surplus Funds of Political Subdivisions*.

#### *Restricted Assets*

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 aforementioned Water and Sewer Services Agreement, 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 the City and DWSD is also included in the contractual obligation receivable.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### *Prepaid Items and other assets*

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

### *Inventories*

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.

### *Prepaid Lease*

As described in Note 13, 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 noted in the 2018 Memorandum of Understanding (MOU), dated June 2018, this will be applied at the end of the 40 year term and, hence, it is classified as a noncurrent asset.

### *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 capitalization threshold is \$5,000 for capital assets with the exception of information technology which is \$1 million dollars. 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.

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
Leasehold improvements	15

Capital assets acquired as of the operational effective date of the Authority 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.

### *Intangible Asset - Raw Water Rights*

The Authority has recorded an intangible asset for raw water rights which is being amortized on a straight-line basis over 30 years. See Note 9 for a description of these rights.

# 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. At that time, the activity will be recognized as an outflow of resources (or expense). 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 18.

### *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 12.

### *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 14 for the details of the leases.

### *Lease Obligation - Raw Water Rights*

The Authority has recorded a liability for the lease obligation on its raw water rights. See Note 15 for the details of this obligation.

### *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 \$1,743,000 for the water fund and \$717,000 for the sewage disposal fund on June 30, 2018.

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, 2018 balance of the accrued compensated absences for the liability assumed on January 1, 2016 is approximately \$2,644,000 of which \$469,000 is current. 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.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### *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.

### *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. At that time, the activity will be recognized as an inflow of resources (or revenues). 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 \$1,280,039 for the water fund and \$2,452,769 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, which are shown as a reduction to operating expenses.

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



# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### *Taxes*

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

### *Interest Income on Obligations Receivable*

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

### *Capital Contributions*

Contributed capital, if any, represents the forgiveness of debt related to capital construction through the State of Michigan Revolving Loan Fund.

### *Centralized Services and Administrative Services*

Various common costs incurred by the Authority are allocated between the water and sewer funds. The allocations are based on an annual cost allocation analysis and may change from year to year based upon that analysis. The following table shows the allocation of these common costs for the year ended June 30, 2018:

Common Costs	Water % Allocation	Water Allocation	Sewer % Allocation	Sewer Allocation	Total Common Costs
Centralized services	43.4%	\$ 35,404,225	56.6%	\$ 46,200,320	\$ 81,604,545
Administrative services	42.9%	11,527,546	57.1%	15,332,770	26,860,316

Centralized services includes security, systems operations control, field engineering and service operations, facilities and fleet management, information technology, planning, asset management, 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.

### *Reclassifications*

Certain prior year amounts have been reclassified to conform with current year presentation.

# 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 are 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 adopts a two-year budget for the regional water and sewer systems as required by its Articles of Incorporation. 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 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 GLWA provide wholesale customers with written notice of a proposed charge, meet to review the proposed charge, 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 charge and the underlying data used to calculate the charge not less than 120 calendar days prior to the effective date of any new charge.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 3. CASH DEPOSITS AND INVESTMENTS

The deposits and investments of the Authority at June 30, 2018 are reported in the basic financial statements as follows:

	Water Fund	Sewage Disposal Fund	Total
Statement of Net Position			
Cash and cash equivalents	\$ 310,085,221	\$ 199,056,556	\$ 509,141,777
Restricted cash and cash equivalents	51,097,342	54,832,050	105,929,392
Restricted cash for the benefit of DWSD	8,418,827	-	8,418,827
Investments	7,004,525	9,506,712	16,511,237
Restricted investments	1,234,954	31,790,386	33,025,340
Noncurrent restricted cash and cash equivalents	18,261,706	30,001,353	48,263,059
Noncurrent restricted investments	150,436,225	143,261,763	293,697,988
Total	<u>\$ 546,538,800</u>	<u>\$ 468,448,820</u>	<u>\$ 1,014,987,620</u>
Cash deposits and investments			
Bank deposits - checking and savings accounts	\$ 54,724,497	\$ 30,172,238	\$ 84,896,735
Money market accounts	333,138,599	253,717,721	586,856,320
Investments in securities	158,675,704	184,558,861	343,234,565
Total	<u>\$ 546,538,800</u>	<u>\$ 468,448,820</u>	<u>\$ 1,014,987,620</u>

*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 \$387,863,096 for the water fund and \$283,889,959 for the sewage disposal fund. The bank balance of the water fund deposits and money markets was \$392,809,518 of which \$349,684,515 was uninsured and uncollateralized. The bank balance of the sewage disposal fund deposits and money markets was \$283,050,764 of which \$260,963,021 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, 2018:

	Water Fund	Sewage Disposal Fund	Total
U.S. treasury notes	\$ 73,964,522	\$ 129,268,053	\$ 203,232,575
U.S. government agencies	78,853,306	35,659,724	114,513,030
Commercial paper	5,857,876	19,631,084	25,488,960
<b>Total</b>	<b>\$ 158,675,704</b>	<b>\$ 184,558,861</b>	<b>\$ 343,234,565</b>

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, 2018, all of the Authority's investments in securities of U.S. agencies were rated AA+ by Standard & Poor's and Aaa by Moody's. The Authority's commercial paper was rated A1 by Standard and Poor's and P1 by Moody's. U.S. treasury notes 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, 2018, the Authority had greater than 5% of its total investment portfolio concentrated as follows:

Investment Type	Issuer	% of Portfolio
<b>Water fund</b>		
U.S. government agencies	Federal Home Loan Bank	21.2%
U.S. government agencies	Federal National Mortgage Association	18.8%
U.S. government agencies	Federal Home Loan Mortgage Company	9.7%
<b>Sewage disposal fund</b>		
U.S. government agencies	Federal Home Loan Bank	5.6%
U.S. government agencies	Federal National Mortgage Association	8.1%
U.S. government agencies	Federal Home Loan Mortgage Company	5.6%

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

*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.

As of June 30, 2018, the Authority's fixed income investments had the following maturities:

	< 1 year	1 - 5 years	Total
Water fund			
U.S. treasury notes	\$ 55,374,505	\$ 18,590,017	\$ 73,964,522
U.S. government agencies	42,024,965	36,828,341	78,853,306
Commercial paper	5,857,876	-	5,857,876
	<u>103,257,346</u>	<u>55,418,358</u>	<u>158,675,704</u>
Sewage disposal fund			
U.S. treasury notes	98,858,779	30,409,274	129,268,053
U.S. government agencies	20,691,497	14,968,227	35,659,724
Commercial paper	19,631,084	-	19,631,084
	<u>139,181,360</u>	<u>45,377,501</u>	<u>184,558,861</u>
Total	<u>\$ 242,438,706</u>	<u>\$ 100,795,859</u>	<u>\$ 343,234,565</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, 2018:

	Level 1	Level 2	Total
Water fund			
Investments by fair value level:			
U.S. treasury notes	\$ 73,964,522	\$ -	\$ 73,964,522
U.S. government agencies	-	78,853,306	78,853,306
Commercial paper	-	5,857,876	5,857,876
	<u>73,964,522</u>	<u>84,711,182</u>	<u>158,675,704</u>
Sewage disposal fund			
Investments by fair value level:			
U.S. treasury notes	129,268,053	-	129,268,053
U.S. government agencies	-	35,659,724	35,659,724
Commercial paper	-	19,631,084	19,631,084
	<u>129,268,053</u>	<u>55,290,808</u>	<u>184,558,861</u>
Total	<u>\$ 203,232,575</u>	<u>\$ 140,001,990</u>	<u>\$ 343,234,565</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 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 Leases, the Authority follows a sequential flow of funds in segregated accounts through which revenue receipts are deposited and are maintained at certain levels in satisfaction of all legal requirements.

The following schedules provide, in the order of the flow of funds per the Master Bond Ordinance, the assignment 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, 2018.

	Funded from Revenue		Funded from Debt Issuance	Total
	Unrestricted	Restricted	Restricted	
Water fund				
Receiving fund	\$ 36,870,425	\$ -	\$ -	\$ 36,870,425
Operations and maintenance	31,890,282	10,554,899	-	42,445,181
Senior lien debt service	-	25,596,861	-	25,596,861
Senior lien bond reserve	-	-	122,272,919	122,272,919
Second and junior lien debt service	-	15,994,996	-	15,994,996
Second and junior lien debt reserve	-	-	52,360,349	52,360,349
Pension obligation	-	185,543	-	185,543
Water residential assistance program (WRAP)	-	3,096,685	-	3,096,685
Budget stabilization	-	2,000,000	-	2,000,000
Extraordinary repair and replacement	27,520,400	-	-	27,520,400
Improvement and extension - regional	220,808,639	-	-	220,808,639
Subtotal - reserves defined by ordinance	317,089,746	57,428,984	174,633,268	549,151,998
Less: funded by surety (non-cash)	-	-	(153,663,433)	(153,663,433)
Total - reserves defined by				
Ordinance (net of surety coverage)	317,089,746	57,428,984	20,969,835	395,488,565
Cash held for the benefit of DWSD	-	8,418,827	-	8,418,827
Unspent construction bond proceeds	-	-	142,631,408	142,631,408
Total cash, cash equivalents and investments	317,089,746	65,847,811	163,601,243	546,538,800

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

	Funded from Revenue		Funded from Debt Issuance	Total
	Unrestricted	Restricted	Restricted	
Sewage disposal fund				
Receiving fund	\$ 24,905,202	\$ -	\$ -	\$ 24,905,202
Operations and maintenance	77,177,762	8,024,414	-	85,202,176
Senior lien debt service	-	37,718,807	-	37,718,807
Senior lien bond reserve	-	-	143,404,305	143,404,305
Second and junior lien debt service	-	40,590,259	-	40,590,259
Second and junior lien debt reserve	-	-	71,643,990	71,643,990
Pension obligation	-	288,956	-	288,956
Water residential assistance program (WRAP)	-	3,812,436	-	3,812,436
Budget stabilization	-	5,000,000	-	5,000,000
Extraordinary repair and replacement	44,027,511	-	-	44,027,511
Improvement and extension - regional	62,452,793	-	-	62,452,793
Subtotal - reserves defined by ordinance	208,563,268	95,434,872	215,048,295	519,046,435
Less: funded by surety (non-cash)	-	-	(150,251,830)	(150,251,830)
Total - reserves defined by ordinance (net of surety coverage)	208,563,268	95,434,872	64,796,465	368,794,605
Unspent construction bond proceeds	-	-	99,654,215	99,654,215
Total cash, cash equivalents and investments	208,563,268	95,434,872	164,450,680	468,448,820
Total cash, cash equivalents and investments - business-type activities	\$ 525,653,014	\$ 161,282,683	\$ 328,051,923	\$ 1,014,987,620

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

A reconciliation of restricted assets to restricted net position is as follows:

	Water Fund	Sewage Disposal Fund	Total Business-type Activities
Restricted assets from schedule above:			
From revenue	\$ 65,847,811	\$ 95,434,872	\$ 161,282,683
From debt issuance	163,601,243	164,450,680	328,051,923
Amounts payable to liabilities	(63,015,256)	(52,073,759)	(115,089,015)
Restricted net position	<u>\$ 166,433,798</u>	<u>\$ 207,811,793</u>	<u>\$ 374,245,591</u>
Restricted net position for:			
Debt service	23,239,368	101,996,536	\$ 125,235,904
Capital acquisition	140,732,216	102,506,361	243,238,577
Payment assistance program	2,462,214	3,308,896	5,771,110
	<u>\$ 166,433,798</u>	<u>\$ 207,811,793</u>	<u>\$ 374,245,591</u>

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 fund				
Cash and cash equivalents	\$ 310,085,221	\$ 51,097,342	\$ 18,261,706	\$ 379,444,269
Cash held for the benefit of DWSD	-	8,418,827	-	8,418,827
Investments	7,004,525	1,234,954	150,436,225	158,675,704
	<u>317,089,746</u>	<u>60,751,123</u>	<u>168,697,931</u>	<u>546,538,800</u>
Sewage disposal fund				
Cash and cash equivalents	199,056,556	54,832,050	30,001,353	283,889,959
Investments	9,506,712	31,790,386	143,261,763	184,558,861
	<u>208,563,268</u>	<u>86,622,436</u>	<u>173,263,116</u>	<u>468,448,820</u>
Total	<u>\$ 525,653,014</u>	<u>\$ 147,373,559</u>	<u>\$ 341,961,047</u>	<u>\$ 1,014,987,620</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.



# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 5. DUE FROM OTHER GOVERNMENTS

Due from other governments, which consists entirely of amounts due from the City of Detroit, in the statement of net position are as follows:

	Water Fund	Sewage Disposal Fund
Billed shared services	\$ 16,238,829	\$ -
Unbilled shared services	6,836,377	-
Budgetary shortfall advance	-	18,468,427
Wayne County 2017 tax settlement	482,870	5,870,679
Accrued interest on obligation receivable	30,678	-
	<u>\$ 23,588,754</u>	<u>\$ 24,339,106</u>

### 6. LOAN RECEIVABLE - DWSD

Under the terms of the WSSA, dated June 12, 2015, and the 2018 MOU, dated June 27, 2018, if DWSD experiences a cumulative negative variance of more than two percent (2%) of the total budget for either local system (a "budget shortfall") from its budget adopted, DWSD, as the agent of GLWA, shall, within thirty (30) days thereafter, schedule a meeting of the Reconciliation Committee to discuss a remedy for the shortfall.

In accordance with the 2018 MOU, dated June 27, 2018, budget shortfalls not cured by the end of the fiscal year following the year in which they arise shall be repaid in full, in installments, over a period not to exceed the next three fiscal years, plus a surcharge calculated as provided below, as part of the revenue requirement payable by DWSD. The surcharge factor on the portion of the budget shortfall for the sewage disposal fund which remains unpaid of \$29,300,000 at June 30, 2018 shall be based on the three-year U.S. treasury note rate of 2.63%, plus 150 basis points for a total of 4.13%.

The balance of the loan receivable to be paid by DWSD is as follows:

Year Ended June 30,	Principal	Interest	Total
2019	\$ 9,367,355	\$ 1,032,800	\$ 10,400,155
2020	9,761,148	639,000	10,400,148
2021	<u>10,171,497</u>	<u>228,700</u>	<u>10,400,197</u>
	<u>\$ 29,300,000</u>	<u>\$ 1,900,500</u>	<u>\$ 31,200,500</u>

### 7. INTERFUND RECEIVABLES AND PAYABLES

Interfund balances result from the time lag between the dates interfund goods and services are provided or reimbursable expenditures occur and the payment between funds are made. Interfund balances for the year ended June 30, 2018 consisted of the following:

	Water Fund	Sewage Disposal Fund
Due to	\$ 3,447,927	\$ 330,293
Due from	<u>330,293</u>	<u>3,447,927</u>
Total	<u>\$ 3,778,220</u>	<u>\$ 3,778,220</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 8. CAPITAL ASSETS

Capital assets activity for the year ended June 30, 2018 was as follows:

	Beginning Balance	Additions	Disposals	Transfers	Ending Balance
<b>Water fund</b>					
Nondepreciable capital assets:					
Land	\$ 34,166,736	\$ -	\$ -	\$ -	\$ 34,166,736
Easements	258,632,397	-	-	-	258,632,397
Construction in progress	159,386,541	36,598,938	-	(54,099,717)	141,885,762
Total nondepreciable assets	452,185,674	36,598,938	-	(54,099,717)	434,684,895
Depreciated capital assets:					
Site improvements	58,181,927	-	-	14,815,712	72,997,639
Buildings and structures	555,265,762	62,876	-	10,606,573	565,935,211
Infrastructure	586,432,994	-	-	21,601,352	608,034,346
Machinery and equipment	601,013,556	1,728,446	(1,169,618)	6,945,973	608,518,357
Vehicles	1,741,979	519,474	(57,019)	-	2,204,434
Leasehold improvements	-	142,876	-	130,107	272,983
Total depreciable assets	1,802,636,218	2,453,672	(1,226,637)	54,099,717	1,857,962,970
Less accumulated depreciation:					
Site improvements	(13,712,222)	(9,166,204)	-	-	(22,878,426)
Buildings and structures	(53,133,903)	(35,423,438)	-	-	(88,557,341)
Infrastructure	(56,599,277)	(37,736,981)	-	-	(94,336,258)
Machinery and equipment	(91,151,843)	(61,251,023)	447,601	-	(151,955,265)
Vehicles	(747,370)	(407,804)	44,552	-	(1,110,622)
Leasehold improvements	-	(6,365)	-	-	(6,365)
Total accumulated depreciation	(215,344,615)	(143,991,815)	492,153	-	(358,844,277)
Total capital assets being depreciated, net	1,587,291,603	(141,538,143)	(734,484)	54,099,717	1,499,118,693
Water fund net capital assets	2,039,477,277	(104,939,205)	(734,484)	-	1,933,803,588

# 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	\$ -	\$ -	\$ 251,300	\$ 28,984,633
Easements	96,211,323	-	-	-	96,211,323
Construction in progress	153,341,462	71,000,089	-	(78,175,407)	146,166,144
Total nondepreciable assets	278,286,118	71,000,089	-	(77,924,107)	271,362,100
Depreciated capital assets:					
Site improvements	36,278,911	-	-	2,305,901	38,584,812
Buildings and structures	1,077,473,004	248,710	-	55,639,989	1,133,361,703
Infrastructure	597,177,020	-	-	-	597,177,020
Machinery and equipment	1,149,389,092	2,676,212	(15,611)	18,732,247	1,170,781,940
Vehicles	2,025,964	364,562	(61,610)	-	2,328,916
Leasehold improvements	-	117,851	-	1,245,970	1,363,821
Total depreciable assets	2,862,343,991	3,407,335	(77,221)	77,924,107	2,943,598,212
Less accumulated depreciation:					
Site improvements	(10,193,024)	(6,796,166)	-	-	(16,989,190)
Buildings and structures	(79,843,471)	(53,485,133)	-	-	(133,328,604)
Infrastructure	(20,711,216)	(13,810,373)	-	-	(34,521,589)
Machinery and equipment	(159,722,384)	(112,681,684)	9,482	-	(272,394,586)
Vehicles	(850,454)	(469,621)	61,610	-	(1,258,465)
Leasehold improvements	-	(7,606)	-	-	(7,606)
Total accumulated depreciation	(271,320,549)	(187,250,583)	71,092	-	(458,500,040)
Total capital assets being depreciated, net	2,591,023,442	(183,843,248)	(6,129)	77,924,107	2,485,098,172
Sewage disposal fund net capital assets	2,869,309,560	(112,843,159)	(6,129)	-	2,756,460,272
Business-type activities capital assets, net	\$ 4,908,786,837	\$ (217,782,364)	\$ (740,613)	\$ -	\$ 4,690,263,860

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.

## 9. INTANGIBLE ASSET

### *Raw Water Rights Asset*

Effective December 1, 2017, the Authority, the City of Flint, 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 includes: 1) a 30-year water service contract with the City of Flint that establishes the Authority as the long-term water source for the City of Flint and credits the City of Flint for its debt service payment obligations on existing KWA bonds for the building of its raw water intake and supply line; 2) a long-term lease to the Authority of the 72-inch line serving the City of Flint; and 3) a 30-year contract for reciprocal, emergency water services between the Authority and GCDC.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

The 30-year water service contract with the City of Flint includes a license to raw water rights on 17.46 MGD of the 18 MGD purchased by Flint as part of KWA bond obligation. These license rights constitute an intangible asset under governmental accounting standards. Therefore, the Authority has recorded an intangible asset and purchase obligation liability of approximately \$107 million associated with this agreement in the accompanying financial statements. The Authority is amortizing the intangible asset over 30 years. As the City of Flint satisfies its monthly bond payment obligations to KWA, the Authority credits Flint's water invoice for that payment and reduces the Authority's purchase obligation. This process will continue each year over the 30-year life of the asset.

Intangible asset activity for the year ended June 30, 2018 was as follows:

	Beginning Balance	Additions	Disposals	Ending Balance
Water fund				
Intangible asset - raw water rights	\$ -	\$ 106,999,919	\$ -	\$ 106,999,919
Accumulated amortization	-	(2,080,554)	-	(2,080,554)
Total intangible asset	<u>\$ -</u>	<u>\$ 104,919,365</u>	<u>\$ -</u>	<u>\$ 104,919,365</u>

## 10. OTHER ACCRUED LIABILITIES

Other accrued liabilities in the statement of net position are as follows:

	Water Fund	Sewage Disposal Fund
Cash held for the benefit of DWSD	\$ 8,923,677	\$ -
Customer deposit	3,756,015	-
	<u>\$ 12,679,692</u>	<u>\$ -</u>

## 11. DUE TO OTHER GOVERNMENTS

Due to other governments, which consists entirely of amounts due to the City of Detroit, in the statement of net position is as follows:

	Water Fund	Sewage Disposal Fund
Shared services	\$ 11,935,868	\$ -
2018 MOU - inspection fees	-	47,539
	<u>\$ 11,935,868</u>	<u>\$ 47,539</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 12. LONG-TERM DEBT

Changes in long-term debt and accrued compensated absences for the year ended June 30, 2018 were as follows:

	Beginning Balance	Increase	Decrease	Debt Forgiveness	Ending Balance	Due Within One Year
<b>Water fund</b>						
Revenue bonds	\$2,340,885,000	\$ -	\$ (56,060,000)	\$ -	\$2,284,825,000	\$ 2,785,000
State revolving loans	17,252,235	12,533,446	(1,435,000)	(2,914,779)	25,435,902	1,775,000
Total installment debt	2,358,137,235	12,533,446	(57,495,000)	(2,914,779)	2,310,260,902	4,560,000
Deferred amounts for:						
Unamortized premiums	287,690,320	-	(19,117,333)	-	268,572,987	18,195,511
Unamortized discounts	(15,968,219)	-	3,233,428	-	(12,734,791)	(2,185,668)
Total debt, net	2,629,859,336	12,533,446	(73,378,905)	(2,914,779)	2,566,099,098	20,569,843
Compensated absences	4,446,013	3,866,359	(3,925,540)	-	4,386,832	2,212,326
<b>Total water fund</b>	<b>2,634,305,349</b>	<b>16,399,805</b>	<b>(77,304,445)</b>	<b>(2,914,779)</b>	<b>2,570,485,930</b>	<b>22,782,169</b>
<b>Sewage disposal fund</b>						
Revenue bonds	2,636,510,000	-	(52,445,000)	-	2,584,065,000	7,555,000
Capital appreciation bonds	22,815,000	-	(5,565,000)	-	17,250,000	2,470,000
State revolving loans	485,267,036	34,750,504	(44,340,000)	-	475,677,540	45,915,000
Total installment debt	3,144,592,036	34,750,504	(102,350,000)	-	3,076,992,540	55,940,000
Discount on capital appreciation bonds	(3,313,263)	-	1,047,305	-	(2,265,958)	(863,930)
Deferred amounts for:						
Unamortized premiums	272,803,640	-	(17,944,003)	-	254,859,637	17,199,177
Unamortized discounts	(112,145,376)	-	12,311,392	-	(99,833,984)	(11,089,040)
Total debt, net	3,301,937,037	34,750,504	(106,935,306)	-	3,229,752,235	61,186,207
Compensated absences	679,260	488,748	(450,922)	-	717,086	717,086
<b>Total sewage disposal fund</b>	<b>3,302,616,297</b>	<b>35,239,252</b>	<b>(107,386,228)</b>	<b>-</b>	<b>3,230,469,321</b>	<b>61,903,293</b>
<b>Total business-type activities</b>	<b>\$5,936,921,646</b>	<b>\$ 51,639,057</b>	<b>\$ (184,690,673)</b>	<b>\$ (2,914,779)</b>	<b>\$5,800,955,251</b>	<b>\$ 84,685,462</b>

## GREAT LAKES WATER AUTHORITY

### Notes To Financial Statements

As of June 30, 2018, 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
<b>Water fund</b>				
	2019	\$ 4,560,000	\$ 95,567,148	\$ 100,127,148
	2020	54,935,000	114,381,116	169,316,116
	2021	63,850,000	111,465,843	175,315,843
	2022	71,220,000	108,039,437	179,259,437
	2023	71,040,000	104,427,547	175,467,547
	2024-2028	434,717,820	459,796,626	894,514,446
	2029-2033	548,020,941	337,071,223	885,092,164
	2034-2038	550,225,000	192,521,143	742,746,143
	2039-2043	305,450,000	89,580,836	395,030,836
	2044-2048	206,242,141	21,240,304	227,482,445
		<u>\$2,310,260,902</u>	<u>\$1,634,091,223</u>	<u>\$ 3,944,352,125</u>
<b>Sewage disposal fund</b>				
	2019	\$ 55,940,000	\$ 110,187,959	\$ 166,127,959
	2020	108,155,000	132,399,241	240,554,241
	2021	113,580,000	128,371,601	241,951,601
	2022	112,450,000	124,259,188	236,709,188
	2023	122,879,430	119,734,928	242,614,358
	2024-2028	643,823,758	519,019,867	1,162,843,625
	2029-2033	746,374,048	370,842,380	1,117,216,428
	2034-2038	791,455,304	192,377,557	983,832,861
	2039-2043	317,830,000	43,526,669	361,356,669
	2044-2045	64,505,000	3,259,375	67,764,375
		<u>\$3,076,992,540</u>	<u>\$1,743,978,765</u>	<u>\$ 4,820,971,305</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, 2018 are not included in the debt service requirements amounts above as they were paid on June 25, 2018.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### Revenue and Capital Appreciation Bonds Payable

Net revenues of the Authority are pledged to repayment of bonds; following are the revenue bonds payable at June 30, 2018:

Issue	Bond Date	Original Issue Amount	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance	Callable
Water fund						
Series 2001C	5/14/08	\$ 4,055,000	4.25%	7/01/18	\$ 415,000	
Series 2001C	5/14/08	186,350,000	4.50-5.75%	7/01/19-29	178,735,000	c
Series 2003A	1/30/03	234,805,000	5.00%	7/01/34	100,000	c
Series 2003B	1/30/03	172,945,000	5.00%	7/01/34	100,000	c
Series 2005B	5/14/08	19,070,000	5.50%	7/01/18	1,770,000	
Series 2005B	5/14/08	175,830,000	5.25%	7/01/35	100,000	c
Series 2006A	8/16/06	237,205,000	5.00%	7/01/34	100,000	c
Series 2006B	4/01/09	900,000	4.80-5.00%	7/01/18-19	200,000	
Series 2006B	4/01/09	119,100,000	6.25%	7/01/36	100,000	c
Series 2011A	12/22/11	37,880,000	5.00%	7/01/19-20	4,365,000	
Series 2011A	12/22/11	341,710,000	5.00-5.75%	7/01/27-41	289,605,000	c
Series 2011B	12/22/11	7,455,000	5.00%	7/01/18-21	2,155,000	
Series 2011B	12/22/11	9,740,000	6.00%	7/01/22-33	2,295,000	c
Series 2011C	12/22/11	3,925,000	5.00%	7/01/21	1,020,000	
Series 2011C	12/22/11	99,965,000	4.50-5.25%	7/01/23-41	74,125,000	c
Series 2014D-1	9/04/14	162,350,000	5.00%	7/01/19-23	145,685,000	
Series 2014D-1	9/04/14	44,190,000	5.00%	7/01/35-37	44,190,000	c
Series 2014D-2	9/04/14	51,530,000	5.00%	7/01/23-24	51,530,000	
Series 2014D-2	9/04/14	136,925,000	5.00%	7/01/25-28	136,925,000	c
Series 2014D-3	9/04/14	62,700,000	5.00%	7/01/19-20	23,290,000	
Series 2014D-4	9/04/14	209,360,000	5.00%	7/01/29-34	209,360,000	c
Series 2014D-5	9/04/14	9,270,000	2.85%	7/01/19	9,270,000	
Series 2014D-6	9/04/14	21,735,000	5.00%	7/01/19-24	21,735,000	
Series 2014D-6	9/04/14	43,690,000	5.00%	7/01/25-36	43,690,000	c
Series 2015D-1	12/15/15	20,155,000	5.00%	7/01/19-22	19,650,000	
Series 2015D-1	12/15/15	69,275,000	5.00%	7/01/27-35	69,275,000	c
Series 2015D-2	12/15/15	37,235,000	5.00%	7/01/34	37,235,000	c
Series 2016A	10/27/16	30,000	5.00%	7/01/21-26	30,000	
Series 2016A	10/27/16	87,970,000	5.00%	7/01/27-46	87,970,000	c
Series 2016B	10/27/16	30,000	5.00%	7/01/21-26	30,000	
Series 2016B	10/27/16	163,800,000	5.00%	7/01/27-46	163,800,000	c
Series 2016C	10/27/16	76,245,000	5.00%	7/01/22-26	76,245,000	
Series 2016C	10/27/16	367,685,000	5.00-5.25%	7/01/27-35	367,685,000	c
Series 2016D	10/27/16	4,665,000	5.00%	7/01/24-26	4,665,000	
Series 2016D	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>2,284,825,000</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 1998A	12/14/06	\$ 49,075,000	5.50%	7/01/18-23	\$ 18,485,000	c
Series 1998B	12/14/06	48,770,000	5.25%	7/01/20-23	18,260,000	c
Series 1999A **	12/01/99	33,510,118	—	7/01/18-21	14,984,042	
Series 2001B	9/15/01	110,550,000	5.50%	7/01/23-29	78,895,000	
Series 2001C-1	6/17/09	6,360,000	5.25%	7/01/18-19	810,000	
Series 2001C-1	6/17/09	148,510,000	6.50-7.00%	7/01/20-27	40,705,000	c
Series 2001C-2	5/08/08	3,275,000	4.00%	7/01/18	380,000	
Series 2001C-2	5/08/08	119,630,000	4.00-5.25%	7/01/19-29	107,045,000	c
Series 2003A	5/15/03	213,395,000	5.50%	7/01/18	415,000	
Series 2003B	6/17/09	150,000,000	7.50%	7/1/33	100,000	c
Series 2004A	2/12/04	101,435,000	5.25%	7/01/19-24	35,010,000	
Series 2005A	3/17/05	237,805,000	4.50%	7/1/35	100,000	c
Series 2005A	3/17/05	31,785,000	5.00%	7/01/34-35	31,785,000	c
Series 2005B	3/17/05	40,215,000	5.50%	7/01/21-22	17,115,000	
Series 2005C	4/05/05	41,095,000	5.00%	7/1/25	100,000	c
Series 2006B	8/10/06	183,150,000	5.00%	7/1/36	100,000	c
Series 2006B	8/10/06	55,000,000	5.00%	7/01/34-36	55,000,000	c
Series 2006D	12/14/06	370,000,000	Variable (*)	7/01/26-32	239,475,000	c
Series 2012A	6/26/12	95,445,000	5.00%	7/01/18-22	62,115,000	
Series 2012A	6/26/12	564,335,000	5.00-5.50 %	7/01/23-39	462,810,000	c
Series 2014C-1	9/04/14	20,000	5.00%	7/01/19-22	20,000	
Series 2014C-1	9/04/14	123,200,000	5.00%	7/01/23-44	123,200,000	c
Series 2014C-2	9/04/14	20,000	5.00%	7/01/19-22	20,000	
Series 2014C-2	9/04/14	27,450,000	5.00%	7/01/23-44	27,450,000	c
Series 2014C-3	9/04/14	142,600,000	5.00%	7/01/21-24	142,600,000	
Series 2014C-3	9/04/14	303,570,000	5.00%	7/01/25-33	303,570,000	c
Series 2014C-5	9/04/14	95,165,000	5.00%	7/01/18-20	34,430,000	
Series 2014C-6	9/04/14	88,900,000	5.00%	7/01/32-33	88,900,000	c
Series 2014C-7	9/04/14	32,650,000	5.00%	7/01/19-24	32,650,000	
Series 2014C-7	9/04/14	44,065,000	5.00%	7/01/25-36	44,065,000	c
Series 2015C	12/15/15	197,160,000	5.00%	7/01/26-35	197,160,000	c
Series 2016B	10/27/16	14,445,000	5.00%	7/01/24-26	14,445,000	
Series 2016B	10/27/16	111,660,000	5.00%	7/01/27-34	111,660,000	c
Series 2016C	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

2,599,049,042

Total business-type activities

\$4,883,874,042

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 Authority's 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 which are reported in the financial statements of DWSD. The pledged revenues calculation for the fiscal year ending June 30, 2018 includes revenues reported by the Authority and DWSD as this revenue is pledged for payment of the bonds and loans of the Authority.

The general purpose of the Water System debt 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 bonds is through 2047 and through 2045 for the sewer bonds.

See table below for pledged revenue requirements as of June 30, 2018:

	Water Fund	Sewage Disposal Fund
Remaining principal and interest requirement	\$ 3,944,352,125	\$4,820,971,304
Principal and interest funding requirement for the year ending June 30, 2018 (Computed consistent with rate covenant basis for rate determination purposes. Not applicable for purposes of additional bond test.)	\$ 172,549,891	\$ 232,491,813
Pledged revenue for the year ending June 30, 2018	\$ 259,822,627	\$ 299,055,461
Pledged revenue collected as a percentage of funding requirement	150.6%	124.1%
Amount in restricted cash and investments related to various bond indentures at June 30, 2018	\$ 142,631,408	\$ 99,654,215

# 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, 2018:

Issue	Bond Date	Amount Issued	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance
<b>Water fund</b>					
Series 2005 SRF-1	9/22/05	\$ 13,805,164	2.125%	10/01/18-26	\$ 6,710,164
Series 2005 SRF-2	9/22/05	8,891,730	2.125%	10/01/18-26	4,221,730
Series 2006 SRF-1	9/21/06	5,180,926	2.125%	10/01/18-26	2,495,926
Series 2008 SRF-1	9/29/08	2,590,941	2.500%	10/01/18-28	1,120,941
Series 2016 SRF-1	9/16/16	9,605,000	2.500%	4/01/19-48	7,533,598
Series 2016 SRF-2	9/16/16	4,180,000	2.500%	4/01/19-28	3,353,543
Total water fund state revolving loans payable					<u>25,435,902</u>
<b>Sewage disposal fund</b>					
Series 1997B SRF	9/30/97	5,430,174	2.25%	10/01/18	330,000
Series 1999 SRF-1	6/24/99	21,475,000	2.50%	4/01/19-20	2,650,000
Series 1999 SRF-2	9/30/99	46,000,000	2.50%	10/01/18-22	13,735,000
Series 1999 SRF-3	9/30/99	31,030,000	2.50%	10/01/18-20	5,700,000
Series 1999 SRF-4	9/30/99	40,655,000	2.50%	10/01/18-20	7,465,000
Series 2000 SRF-1	3/30/00	44,197,995	2.50%	10/01/18-22	11,947,995
Series 2000 SRF-2	9/28/00	64,401,066	2.50%	10/01/18-22	19,141,066
Series 2001 SRF-1	6/28/01	82,200,000	2.50%	10/01/18-24	33,535,000
Series 2001-SRF-2	12/20/01	59,850,000	2.50%	10/01/18-24	24,420,000
Series 2002 SRF-1	6/27/02	18,985,000	2.50%	4/01/19-23	5,660,000
Series 2002 SRF-2	6/27/02	1,545,369	2.50%	4/01/19-23	460,369
Series 2002 SRF-3	12/19/02	31,549,466	2.50%	10/01/18-24	11,864,466
Series-2003 SRF-1	6/26/03	48,520,000	2.50%	10/01/18-25	22,350,000
Series 2003 SRF-2	9/25/03	25,055,370	2.50%	4/01/18-25	10,150,370
Series-2004 SRF-1	6/24/04	2,910,000	2.125%	10/01/18-24	1,160,000
Series 2004 SRF-2	6/24/04	18,353,459	2.125%	4/01/19-25	7,298,459
Series 2004 SRF-3	6/24/04	12,722,575	2.125%	4/01/19-25	5,042,575
Series 2007 SRF-1	9/20/07	167,540,598	1.625%	10/01/18-29	106,940,598
Series 2009 SRF-1	4/17/09	13,970,062	2.50%	4/01/19-30	8,910,062
Series 2010 SRF-1	1/22/10	4,214,763	2.50%	4/01/19-31	2,925,763
Series 2012 SRF-1	8/30/12	14,950,000	2.50%	10/01/18-34	13,150,000
Series 2015A SRF	3/20/15	79,500,000	2.50%	4/01/19-36	73,200,000
Series 2015B SRF	3/20/15	27,175,304	2.50%	10/01/18-35	24,565,304
Series 2015D SRF	12/11/15	19,485,000	2.50%	10/01/18-35	13,781,478
Series 2016 SRF-1	9/16/16	19,305,000	2.50%	4/01/19-38	9,051,147
Series 2016 SRF-2	9/16/16	51,310,000	2.50%	4/01/20-39	19,153,758
Series 2016 SAW-1	5/25/16	10,000,000	2.50%	10/01/19-38	10,000,000
Series 2017 SRF-1	6/23/17	38,450,000	2.50%	10/01/19-38	11,089,130
Total sewage disposal fund state revolving loans payable					<u>475,677,540</u>
Total business-type activities					<u>\$ 501,113,442</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 prior years, the Authority's water fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts for the purpose of generating resources for all future debt service payments on the refunded debt. As a result, the refunded bonds are considered to be defeased and the trust fund assets and related liabilities have been removed from the statement of net position. At June 30, 2018, the balance of the bonds considered to be defeased are \$147,985,000 for Series 2005B revenue bonds and \$85,250,000 for Series 2006B revenue bonds.

### *Refunded Debt - Sewage Disposal Fund*

In prior years, the Authority's sewage disposal fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts for the purpose of generating resources for all future debt service payments on the refunded debt. As a result, the refunded bonds are considered to be defeased and the trust fund assets and related liabilities have been removed from the statement of net position. At June 30, 2018, the balance of the bonds considered to be defeased are \$25,550,000 for Series 2003B revenue bonds, \$134,745,000 for Series 2001E revenue bonds and \$123,185,000 for Series 2006A revenue bonds.

### *Issuance of State Revolving Loans*

The Authority's water fund received loans from the State of Michigan Revolving Loan Fund totaling \$12,533,446 of which \$2,914,779 has been forgiven, and the sewage disposal fund received \$34,750,504 during the year ended June 30, 2018. 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 regional sewer system. The water fund loans were for DWSD, the subrecipient of the loans. At June 30, 2018, \$9,572,859 for the water fund and \$73,934,487 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-. See note 20 for rating agency upgrades received in September 2018.

### *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 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. The Memorandum of Understanding (MOU) dated June 27, 2018 defines an agreed upon allocation and amortization schedule. The total obligation receivable at June 30, 2018 is \$490,599,529 for the water fund and \$346,828,300 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.

In 2018, the governing body of the City of Detroit authorized the use of general funds for the full redemption of the General Obligation Bonds, 2014 Series C, including the amount allocated to the Authority. The 2014 Series C debt was fully redeemed on April 13, 2018. The Authority will repay the City of Detroit General Fund under the terms of the original debt payment schedule for the General Obligation Bonds, 2014 Series C, including interest of 5 percent per year, with principal and interest due on June 30 each year, and a final payment in fiscal year 2027.

The following is a schedule of the obligation payable for the Financial Recovery Bonds at June 30, 2018:

	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	4/1/44	\$ 15,556,024
	Series 2014-C	3,829,794	5.00%	12/10/26	<u>1,709,479</u>
	Total water fund				<u>17,265,503</u>
Sewage disposal fund					
	Series 2014-B	44,233,463	4.00% and variable	4/1/44	34,990,439
	Series 2014-C	6,382,990	5.00%	12/10/26	<u>3,845,158</u>
	Total sewage disposal fund				<u>38,835,597</u>
Total business-type activities					<u>\$ 56,101,100</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

As of June 30, 2018, debt service requirements of the Financial Recovery Bonds were as follows:

	Year Ended June 30,	Principal	Interest	Total
<b>Water fund</b>				
2019	\$	167,794	\$ 707,715	\$ 875,509
2020		176,183	699,325	875,508
2021		184,992	690,516	875,508
2022		194,242	681,267	875,509
2023		203,954	671,555	875,509
2024-2028		3,893,520	3,011,604	6,905,124
2029-2033		3,889,006	2,177,843	6,066,849
2034-2038		3,889,006	1,928,947	5,817,953
2039-2043		3,889,006	933,361	4,822,367
2044		777,800	46,668	824,468
		17,265,503	11,548,801	28,814,304
	Year Ended June 30,	Principal	Interest	Total
<b>Sewage disposal fund</b>				
2019	\$	377,419	\$ 1,591,876	\$ 1,969,295
2020		396,291	1,573,005	1,969,296
2021		416,106	1,553,190	1,969,296
2022		436,911	1,532,385	1,969,296
2023		458,757	1,510,539	1,969,296
2024-2028		8,757,762	6,774,054	15,531,816
2029-2033		8,747,610	4,898,661	13,646,271
2034-2038		8,747,610	4,338,814	13,086,424
2039-2043		8,747,609	2,099,426	10,847,035
2044		1,749,522	104,972	1,854,494
		38,835,597	25,976,922	64,812,519
<b>Total business-type activities</b>	<b>\$</b>	<b>56,101,100</b>	<b>\$ 37,525,723</b>	<b>\$ 93,626,823</b>

### Interest expense

The following represents the amounts recorded as interest expense for the year ended June 30, 2018:

	Water Fund	Sewage Disposal Fund	Total
Bonded debt	\$ 118,248,715	\$ 137,619,732	\$ 255,868,447
Obligation payable	709,737	1,596,417	2,306,154
Lease payable	17,865,778	21,835,953	39,701,731
Raw water rights	2,518,974	-	2,518,974
	<u>\$ 139,343,204</u>	<u>\$ 161,052,102</u>	<u>\$ 300,395,306</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 13. NET INVESTMENT IN CAPITAL ASSETS

The composition of net investment in capital assets as of June 30, 2018, was as follows:

	Water Fund	Sewage Disposal Fund	Total Business-type Activities
Capital assets and contractual obligation receivable:			
Capital assets not being depreciated	\$ 434,684,895	\$ 271,362,100	\$ 706,046,995
Capital assets being depreciated, net	1,499,118,693	2,485,098,172	3,984,216,865
Obligation receivable	490,599,529	346,828,300	837,427,829
	<u>2,424,403,117</u>	<u>3,103,288,572</u>	<u>5,527,691,689</u>
Related debt:			
Revenue bonds	2,284,825,000	2,584,065,000	4,868,890,000
Less: current debt that was used for swaps	(167,396,566)	(276,710,258)	(444,106,824)
Capital appreciation bonds	-	17,250,000	17,250,000
State revolving loans	25,435,902	475,677,540	501,113,442
Discount on capital appreciation bonds	-	(2,265,958)	(2,265,958)
Bond premium	268,572,987	254,859,637	523,432,624
Bond discount	(12,734,791)	(99,833,984)	(112,568,775)
Deferred charge on refunding	(94,431,823)	(186,544,140)	(280,975,963)
Deferred gain on refunding	59,252,431	46,654,836	105,907,267
Deferred amounts for swap terminations	80,342	189,808	270,150
	<u>2,363,603,482</u>	<u>2,813,342,481</u>	<u>5,176,945,963</u>
Net investment in capital assets	<u>\$ 60,799,635</u>	<u>\$ 289,946,091</u>	<u>\$ 350,745,726</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 14. LONG-TERM LEASES PAYABLE AND RELATED PREPAID

On January 1, 2016, the Authority effectuated lease agreements with the City for the regional water and sewer systems 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 be 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, 2018 were as follows:

	Beginning Balance	Increase	Decrease	Ending Balance	Amount Due Within One Year *
Water fund	\$ 430,921,520	\$ -	\$ (4,618,173)	\$ 426,303,347	\$ 4,814,476
Sewage disposal fund	526,681,859	-	(5,644,436)	521,037,423	5,884,359
Total business-type activities	<u>\$ 957,603,379</u>	<u>\$ -</u>	<u>\$ (10,262,609)</u>	<u>\$ 947,340,770</u>	<u>\$ 10,698,835</u>

\* The current portion of the long-term leases payable represents the 12 monthly payments required from July 1, 2018 through June 30, 2019. Future revenues are intended to cover these payments.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

As of June 30, 2018, aggregate requirements of the Authority's leases were as follows:

	Year Ended June 30,	Principal	Interest	Total
Water fund				
	2019	\$ 4,814,476	\$ 17,685,524	\$ 22,500,000
	2020	5,019,121	17,480,879	22,500,000
	2021	5,232,465	17,267,535	22,500,000
	2022	5,454,878	17,045,122	22,500,000
	2023	5,686,745	16,813,255	22,500,000
	2024-2028	32,271,718	80,228,282	112,500,000
	2029-2033	39,738,870	72,761,130	112,500,000
	2034-2038	48,933,801	63,566,199	112,500,000
	2039-2043	60,256,289	52,243,711	112,500,000
	2044-2048	74,198,617	38,301,383	112,500,000
	2049-2053	91,366,974	21,133,026	112,500,000
	2054-2057	53,329,393	2,920,607	56,250,000
		<u>426,303,347</u>	<u>417,446,653</u>	<u>843,750,000</u>
Sewage disposal fund				
	2019	\$ 5,884,359	\$ 21,615,641	\$ 27,500,000
	2020	6,134,481	21,365,519	27,500,000
	2021	6,395,235	21,104,765	27,500,000
	2022	6,667,073	20,832,927	27,500,000
	2023	6,950,466	20,549,534	27,500,000
	2024-2028	39,443,211	98,056,789	137,500,000
	2029-2033	48,569,730	88,930,270	137,500,000
	2034-2038	59,807,979	77,692,021	137,500,000
	2039-2043	73,646,575	63,853,425	137,500,000
	2044-2048	90,687,199	46,812,801	137,500,000
	2049-2053	111,670,746	25,829,254	137,500,000
	2054-2057	65,180,369	3,569,631	68,750,000
		<u>521,037,423</u>	<u>510,212,577</u>	<u>1,031,250,000</u>
Total business-type activities		<u>\$ 947,340,770</u>	<u>\$ 927,659,230</u>	<u>\$1,875,000,000</u>



# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

The assets acquired through the leases noted above are summarized as follows:

	Cost	Accumulated Depreciation	Ending Book Value
<b>Water fund</b>			
Land	\$ 34,166,736	\$ -	\$ 34,166,736
Easements	258,632,397	-	258,632,397
Site Improvements	57,687,528	22,853,706	34,833,822
Buildings and Structures	555,224,787	88,551,667	466,673,120
Infrastructure	586,102,646	94,332,129	491,770,517
Machinery and Equipment	596,885,206	151,008,134	445,877,072
Vehicles	1,481,013	1,060,071	420,942
	<u>2,090,180,313</u>	<u>357,805,707</u>	<u>1,732,374,606</u>
<b>Sewage disposal fund</b>			
Land	28,733,333	-	28,733,333
Easements	96,211,323	-	96,211,323
Site Improvements	36,265,930	16,989,529	19,276,401
Buildings and Structures	1,058,604,451	133,918,374	924,686,077
Infrastructure	596,856,313	34,515,910	562,340,403
Machinery and Equipment	1,090,752,050	261,514,220	829,237,830
Vehicles	1,352,511	1,105,940	246,571
	<u>2,908,775,911</u>	<u>448,043,973</u>	<u>2,460,731,938</u>
<b>Total business-type activities</b>	<u><u>\$4,998,956,224</u></u>	<u><u>\$ 805,849,680</u></u>	<u><u>\$4,193,106,544</u></u>

As part of the 2018 Memorandum of Understanding (MOU) with DWSD dated June 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.

## 15. LEASE OBLIGATION - RAW WATER RIGHTS

A lease obligation has been recorded related to the license of the raw water rights that were part of the 30-year service contract with the City of Flint. This lease obligation represents the future credits to the City of Flint's water bills as the City of Flint satisfies its monthly bond payment obligations to KWA. See related footnote for the raw water rights intangible asset (Note 8).

	Beginning Balance	Increase	Decrease	Ending Balance
Lease obligation - raw water rights	\$ -	\$ 106,999,919	\$ (759,343)	\$ 106,240,576

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

The future credits to be issued are detailed below:

Year Ended June 30,	Principal	Interest	Total
2019	\$ 2,999,458	\$ 3,980,046	\$ 6,979,504
2020	2,520,996	4,131,352	6,652,348
2021	2,624,820	4,027,432	6,652,252
2022	2,734,246	3,919,206	6,653,452
2023	2,845,282	3,806,495	6,651,777
2024-2028	16,090,783	17,172,823	33,263,606
2029-2033	19,688,493	13,571,493	33,259,986
2034-2038	24,097,490	9,164,433	33,261,923
2039-2043	28,187,150	3,811,606	31,998,756
2044-2046	4,451,858	158,742	4,610,600
	<u>\$ 106,240,576</u>	<u>\$ 63,743,628</u>	<u>\$ 169,984,204</u>

## 16. 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 officials 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 since inception of the Authority.

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.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

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.

*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.

	2018	2017
Unpaid claims, beginning of year	\$ 1,026,178	\$ 933,567
Incurred claims (including change in IBNR provisions)	8,598,908	8,986,780
Claims payments	<u>(8,581,019)</u>	<u>(8,894,169)</u>
Unpaid claims, end of year	<u>\$ 1,044,067</u>	<u>\$ 1,026,178</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.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

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

	2018	2017
Unpaid claims, beginning of year	\$ 250,000	\$ 351,231
Incurred claims (including change in IBNR provisions)	254,899	238,483
Claims payments	(201,660)	(339,714)
Unpaid claims, end of year	<u>\$ 303,239</u>	<u>\$ 250,000</u>

## 17. DEFINED CONTRIBUTION PENSION PLANS

### *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 \$4,278,051 for the year ended June 30, 2018. At June 30, 2018, there were 1,025 plan members.

The Great Lakes Water Authority Defined Contribution Plan Make-Up Benefit 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 rollover to the Authority's Section 457 Deferred Compensation Plan their refunded employee mandatory contribution from GRS. The amount of the make-up benefit determined by an actuary based on the present value of the lost GRS benefit was \$791,113 as of June 30, 2018. No contributions were made or required during the current year. 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, 2018, there were 830 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 \$1,878,206 and employee contributions were \$236,262 for the year ended June 30, 2018. At June 30, 2018, there were 1,175 plan members.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

### 18. 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, 2018" 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.

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](http://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 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.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

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

Employer contributions to the GRS were determined by the provisions of the POA. The 2016 employer contributions in Component II were 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 2017 employer contributions were sourced from the Foundation for Detroit's Future in the amount of \$375,000, \$22,588,402 from unlimited tax general obligation bonds received and receivable in 2017 and \$68,275,000 of contributions from the City, City-related entities and the Authority. Employer contributions were also made into the Income Stabilization Fund in the amount of \$9,539,874 from the unlimited tax general obligation bond refunding proceeds. In 2018 employer contributions were sourced from the Foundation for Detroit's Future in the amount of \$375,000, and approximately \$67.9 million of contributions from the City, City-related entities and the Authority. Employer contributions were also made into the Income Stabilization Fund for \$88,494 from the unlimited tax general obligation stub 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 2018. 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 GRS Board of Trustees in accordance with the City Charter, union contracts, and plan provisions. For the year ended June 30, 2018, 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, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

*Actuarial Assumptions.* The total pension liability in the June 30, 2017 actuarial valuation was determined using the following actuarial assumptions.

Inflation	not applicable
Salary increases	not applicable
Investment rate of return	6.91%, 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.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

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, 2017, 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%	5.33%	2.29%
Global fixed income	16.0%	3.07%	0.49%
Private equity	8.0%	7.23%	0.58%
Cash	1.0%	0.29%	0.00%
Real estate	10.0%	3.46%	0.35%
Global asset allocation/risk parity/real assets	17.0%	4.06%	0.69%
Hedge funds	5.0%	4.17%	0.21%
	<u>100.0%</u>		<u>4.61%</u>
Inflation			<u>2.30%</u>
Investment rate of return			<u>6.91%</u>

**Discount Rate.** The discount rate used to measure the total pension liability was 6.91%. 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.

**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	\$ 198,242,719	\$ 354,791,535	\$ 553,034,254
Plan fiduciary net position	<u>(134,091,367)</u>	<u>(239,980,980)</u>	<u>(374,072,347)</u>
Authority's net pension liability	<u>\$ 64,151,352</u>	<u>\$ 114,810,555</u>	<u>\$ 178,961,907</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
<b>Water fund</b>			
Balances at June 30, 2017	\$ 196,712,089	\$ 127,143,045	\$ 69,569,044
Changes for the year:			
Interest	13,560,348	-	13,560,348
Differences between expected and actual experience	849,266	-	849,266
Changes in assumptions	5,431,838	-	5,431,838
Employer contributions	-	10,810,800	(10,810,800)
Net investment income	-	13,912,782	(13,912,782)
Benefit payments, including refunds of employee contributions	(18,310,822)	(18,310,822)	-
Other changes	-	535,562	(535,562)
Net changes	1,530,630	6,948,322	(5,417,692)
Balances at June 30, 2018	\$ 198,242,719	\$ 134,091,367	\$ 64,151,352
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
<b>Sewage disposal fund</b>			
Balances at June 30, 2017	\$ 352,052,192	\$ 227,545,688	\$ 124,506,504
Changes for the year:			
Interest	24,268,718	-	24,268,718
Differences between expected and actual experience	1,519,917	-	1,519,917
Changes in assumptions	9,721,266	-	9,721,266
Employer contributions	-	19,347,900	(19,347,900)
Net investment income	-	24,899,462	(24,899,462)
Benefit payments, including refunds of employee contributions	(32,770,558)	(32,770,558)	-
Other changes	-	958,488	(958,488)
Net changes	2,739,343	12,435,292	(9,695,949)
Balances at June 30, 2018	\$ 354,791,535	\$ 239,980,980	\$ 114,810,555



# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

*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 6.91%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is 1% lower (5.91%) or 1% higher (7.91%) than the current rate:

	1% Decrease (5.91%)	Current Discount Rate (6.91%)	1% Increase (7.91%)
Water	\$ 83,392,249	\$ 64,151,352	\$ 48,655,803
Sewage disposal	147,455,969	114,810,555	87,078,442
Authority's net pension liability	<u>\$ 230,848,218</u>	<u>\$ 178,961,907</u>	<u>\$ 135,734,245</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.

*Pension Expense and Deferred Outflows and Inflows of Resources Related to Pensions.* For the year ended June 30, 2018, the Authority recognized pension expense of \$8,933,691 and \$15,988,471 for the water and sewage disposal funds, respectively. At June 30, 2018, the Authority reported deferred outflows and inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
Water fund			
Net difference between projected and actual earnings on pension plan investments	\$ 7,834,919	\$ 7,260,572	\$ 574,347
Employer contributions to the plan subsequent to the measurement date	10,810,800	-	10,810,800
	<u>18,645,719</u>	<u>7,260,572</u>	<u>11,385,147</u>
Sewage disposal fund			
Net difference between projected and actual earnings on pension plan investments	14,022,017	12,994,118	1,027,899
Employer contributions to the plan subsequent to the measurement date	19,347,900	-	19,347,900
	<u>33,369,917</u>	<u>12,994,118</u>	<u>20,375,799</u>
Total business-type activities	<u>\$ 52,015,636</u>	<u>\$ 20,254,690</u>	<u>\$ 31,760,946</u>

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

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, 2019. 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
2019	\$ (1,431,522)	\$ (2,561,970)	\$ (3,993,492)
2020	1,851,365	3,313,356	5,164,721
2021	1,148,925	2,056,211	3,205,136
2022	(994,421)	(1,779,698)	(2,774,119)
Total	<u>\$ 574,347</u>	<u>\$ 1,027,899</u>	<u>\$ 1,602,246</u>

*Payable to the Pension Plan.* At June 30, 2018, the Authority did not have any outstanding contributions payable to the pension plan for the year then ended.

## 19. 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 \$712.8 million for the water fund and \$633.2 million for the sewage disposal fund through fiscal year 2023. The Program is being financed primarily from revenue bond proceeds in addition to customer charges revenue. The latter is accounted for in the Improvement and Extension Fund as defined in the MBO. As of June 30, 2018, the water fund has unspent bond proceeds of \$142.6 million and Improvement and Extension funds of \$220.8 million available for use in addition to state revolving fund loan resources of \$9,572,859 in funding these commitments. Similarly, the sewage disposal fund has unspent bond proceeds of \$100.0 million and Improvement and Extension funds of \$62.5 million available for use in addition to state revolving loan resources of \$73,934,487 in funding these commitments.

The total amount of construction contract commitments outstanding at June 30, 2018 was approximately \$52.0 million for the water fund and \$134.0 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, 2018.

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

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 the NPDES Permit. The Authority's current NPDES permit expired on October 1, 2018; however, it remains in effect until the MDEQ issues a new NPDES permit. GLWA expects the MDEQ to issue a new NPDES permit between March-May 2019.

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 \$2,245,000 for the water fund and \$7,834,392 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.

## 20. SUBSEQUENT EVENTS

### *Reconciliation Committee and DWSD Budget Shortfall*

On June 27, 2018, the Board of Directors for the Authority and the Board of Water Commissioners for the DWSD approved a Memorandum of Understanding (MOU). 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 purpose 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. Most financial provisions of the MOU were recorded by GLWA in the June 30, 2017 year-end financial statements based on an executed term sheet that preceded the final MOU in April 2018. Because DWSD's financial statements were already issued, the financial impact of the MOU will be reflected in the DWSD financial statements for the year ending June 30, 2018.

Item 9 of the executed MOU outlines requirements for the Reconciliation Committee—originally defined by the WSSA—to meet quarterly to "expand the level of communication between the two entities related to financial, operational, legal, capital planning, and other matters and opportunities for improved management and coordination of both entities and foster a positive partnership in the water services sector." Item 12 further describes a specific function of the Reconciliation Committee to address any "cumulative negative variance of more than two percent (2%) of the total budget for either Local System."

# GREAT LAKES WATER AUTHORITY

## Notes To Financial Statements

As of June 30, 2018, GLWA reports a net positive water fund balance for the DWSD balance of required trust receipts and disbursements under the MBO. GLWA reports a negative balance of \$47,768,427 for the DWSD sewer fund which exceeds the two percent variance threshold. The budget shortfall not cured by the end of the fiscal year following the year in which they arise shall be repaid in full, in installments over a period not to exceed three fiscal years. A surcharge based on the three-year U.S treasury note rate plus 150 basis points. The negative balance of \$27,514,000 from the prior year is recorded as a loan receivable (note 6). The Reconciliation Committee has met and discussed this variance as required. As of November 7, 2018, DWSD (as operator of the Local System) has discussed options to cure this shortfall with its Board of Water Commissioners and at a Reconciliation Committee meeting on October 19, 2018. A written agreement is presently under discussion to document the plan to cure.

### *Water Bond Refunding, Sewer Bond Refunding and Sewer New Money Bond Transaction*

On October 3, 2018, the Authority issued a water bond refunding transaction and a bond refunding and new money sewage system transaction. The Authority issued \$155,595,000 of Water Supply System Revenue Bonds and \$257,465,000 of Sewage Disposal System Revenue Bonds (\$81,595,000 in new money and \$175,870,000 in refunding bonds). The net present value savings from the refunding transactions was a total of \$59.42 million with \$24.90 million for the water fund and \$34.52 million for the sewage disposal fund.

### *Rating Agency Upgrades*

In September 2018, S&P Global Ratings upgraded the Authority's senior lien water system rating by three notches to AA- and its second lien water system rating by three notches to A+. It also upgraded the Authority's senior lien sewer system rating up by two notches to A+, and its second lien sewer system was increased by two notches to A. Both the senior and second sewer liens were assigned a positive outlook. Moody's Investors Service upgraded the Authority's water system and sewer system senior lien ratings one notch to A2, and its second lien ratings one notch to A3. All were assigned a stable outlook. Fitch affirmed the Authority's ratings for its water system and sewer system senior lien bonds at an A, and its second lien bonds at an A-, both with positive outlooks.

The Authority has increased its use of the State of Michigan's state revolving fund (SRF) loans as a lower cost of borrowing resource. Given the Authority's level of participation in the program, the Authority was asked by the State to seek a rating for the corresponding debt category (i.e. junior lien bonds). In November 2018, S&P Global Ratings assigned an A+ rating to the Authority's junior lien water system SRF bonds and an A rating to the Authority's junior lien sewer system SRF bonds.



## 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		
	2017*	2016*	2015**
Share of total pension liability			
Interest	\$ 13,560,348	\$ 14,475,348	\$ 18,422,673
Differences between expected and actual experience	849,266	(1,815,233)	(153,112)
Changes in assumptions	5,431,838	6,318,782	(7,093,982)
Benefit changes	-	-	(54,618,440)
Benefit payments, including refunds of employee contributions	(18,310,822)	(24,963,262)	(19,462,302)
Net change	1,530,630	(5,984,365)	(62,905,163)
Share of total pension liability, beginning of year	196,712,089	202,696,454	265,601,617
Share of total pension liability, end of year	198,242,719	196,712,089	202,696,454
Share of plan fiduciary net position			
Employer contributions	10,810,800	10,810,800	10,808,000
Employee contributions	-	-	46,941
Net investment income (loss)	13,912,782	(470,295)	6,194,355
Benefit payments, including refunds of employee contributions	(18,310,822)	(24,963,262)	(19,462,302)
Administrative expense	-	-	(7,633)
Other changes	535,562	90,427	9,950,436
Net change	6,948,322	(14,532,330)	7,529,797
Share of plan fiduciary net position, beginning of year	127,143,045	141,675,375	134,145,578
Share of plan fiduciary net position, end of year	134,091,367	127,143,045	141,675,375
Share of net pension liability	\$ 64,151,352	\$ 69,569,044	\$ 61,021,079
Nonemployer contributing entity share of collective net pension liability - Water Fund	6.8%	7.0%	7.4%
Plan fiduciary net position as a percentage of total pension liability	67.6%	64.6%	69.9%

\*As described in Notes 1 and 12 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. This 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		
	2017*	2016*	2015**
Share of total pension liability			
Interest	\$ 24,268,718	\$ 25,906,278	\$ 32,970,738
Differences between expected and actual experience	1,519,917	(3,248,690)	(274,022)
Changes in assumptions	9,721,266	11,308,613	(12,695,976)
Benefit changes	-	-	(97,749,668)
Benefit payments, including refunds of employee contributions	(32,770,558)	(44,676,314)	(34,831,342)
Net change	2,739,343	(10,710,113)	(112,580,270)
Share of total pension liability, beginning of year	352,052,192	362,762,305	475,342,575
Share of total pension liability, end of year	354,791,535	352,052,192	362,762,305
Share of plan fiduciary net position			
Employer contributions	19,347,900	19,347,900	19,342,889
Employee contributions	-	-	84,010
Net investment income (loss)	24,899,462	(841,679)	11,085,930
Benefit payments, including refunds of employee contributions	(32,770,558)	(44,676,314)	(34,831,342)
Administrative expense	-	-	(13,661)
Other changes	958,488	161,836	17,808,122
Net change	12,435,292	(26,008,257)	13,475,948
Share of plan fiduciary net position, beginning of year	227,545,688	253,553,946	240,077,998
Share of plan fiduciary net position, end of year	239,980,980	227,545,689	253,553,946
Share of net pension liability	\$ 114,810,555	\$ 124,506,503	\$ 109,208,359
Nonemployer contributing entity share of collective net pension liability - Sewage Disposal Fund	12.2%	12.5%	13.2%
Plan fiduciary net position as a percentage of total pension liability	67.6%	64.6%	69.9%

\*As described in Notes 1 and 12 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. This 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	
	2017*	2016*
Water fund		
Contractually required contribution**	\$ 10,810,800	\$ 10,810,800
Actual contribution	10,810,800	10,810,800
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>
Sewage disposal fund		
Contractually required contribution**	\$ 19,347,900	\$ 19,347,900
Actual contribution	19,347,900	19,347,900
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>

\*As described in Notes 1 and 12 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. This 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, 2018

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
<b>Assets</b>				
Current assets:				
Cash and cash equivalents	\$ 89,276,582	\$ 220,808,639	\$ -	\$ 310,085,221
Restricted cash and cash equivalents	45,229,953	9,997	5,857,392	51,097,342
Restricted cash for the benefit of DWSD	8,418,827	-	-	8,418,827
Investments	7,004,525	-	-	7,004,525
Restricted investments	1,234,954	-	-	1,234,954
Receivables:				
Billed	38,272,740	-	-	38,272,740
Unbilled	29,229,709	-	-	29,229,709
Other	5,850	-	-	5,850
Allowance for doubtful accounts	(6,221,815)	-	-	(6,221,815)
Due from other governments	23,588,754	-	-	23,588,754
Due from other funds	-	317,866	12,427	330,293
Due from other water funds	-	64,114	6,183,209	6,247,323
Contractual obligation receivable, current portion	13,560,086	-	-	13,560,086
Prepaid items and other assets	2,897,947	-	368,025	3,265,972
Total current assets	252,498,112	221,200,616	12,421,053	486,119,781
Noncurrent assets:				
Restricted cash and cash equivalents	7,946,754	-	10,314,952	18,261,706
Restricted investments	18,119,767	-	132,316,458	150,436,225
Contractual obligation receivable	477,039,443	-	-	477,039,443
Prepaid lease	11,250,000	-	-	11,250,000
Assets not subject to depreciation	434,684,895	-	-	434,684,895
Capital assets being depreciated, net	1,499,118,693	-	-	1,499,118,693
Intangible asset - raw water rights, net	104,919,365	-	-	104,919,365
Prepaid insurance on debt	13,002,376	-	-	13,002,376
Total noncurrent assets	2,566,081,293	-	142,631,410	2,708,712,703
Total assets	2,818,579,405	221,200,616	155,052,463	3,194,832,484
Deferred outflows of resources				
Deferred charge on refunding	94,431,823	-	-	94,431,823
Deferred pension amounts	18,645,719	-	-	18,645,719
Total deferred outflows of resources	113,077,542	-	-	113,077,542

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GREAT LAKES WATER AUTHORITY

UNAUDITED

Combining Schedule of Net Position

Water Fund  
June 30, 2018

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
<b>Liabilities</b>				
Current liabilities:				
Accounts and contracts payable	\$ 18,866,647	\$ 567,640	\$ 14,320,247	\$ 33,754,534
Accrued salaries, wages and benefits	4,734,956	-	-	4,734,956
Other accrued liabilities	12,679,692	-	-	12,679,692
Due to other governments	11,935,868	-	-	11,935,868
Due to other funds	3,290,460	157,467	-	3,447,927
Due to other water funds	6,247,323	-	-	6,247,323
Interest payable	39,322,324	-	-	39,322,324
Current portion of:				
Long-term debt	20,569,843	-	-	20,569,843
Lease payable	4,814,476	-	-	4,814,476
Lease obligation - raw water rights	2,999,458	-	-	2,999,458
Obligation payable	167,794	-	-	167,794
Accrued compensated absences	2,212,326	-	-	2,212,326
Accrued workers' compensation	228,239	-	-	228,239
Claims and judgments	2,195,000	-	-	2,195,000
Total current liabilities	130,264,406	725,107	14,320,247	145,309,760
Noncurrent liabilities:				
Long-term debt	2,545,529,255	-	-	2,545,529,255
Long-term lease payable	421,488,871	-	-	421,488,871
Lease obligation - raw water rights	103,241,118	-	-	103,241,118
Obligation payable	17,097,709	-	-	17,097,709
Accrued compensated absences	2,174,506	-	-	2,174,506
Accrued workers' compensation	75,000	-	-	75,000
Claims and judgments	50,000	-	-	50,000
Other noncurrent liabilities	2,634,471	-	-	2,634,471
Net pension liability	64,151,352	-	-	64,151,352
Total noncurrent liabilities	3,156,442,282	-	-	3,156,442,282
Total liabilities	3,286,706,688	725,107	14,320,247	3,301,752,042
Deferred inflows of resources				
Deferred amounts for swap terminations	80,342	-	-	80,342
Deferred gain on refunding	59,252,431	-	-	59,252,431
Deferred pension amounts	7,260,572	-	-	7,260,572
Total deferred inflows of resources	66,593,345	-	-	66,593,345
Net position				
Net investment in capital assets	60,799,635	-	-	60,799,635
Restricted for debt service	23,239,368	-	-	23,239,368
Restricted for capital acquisition	-	-	140,732,216	140,732,216
Restricted for payment assistance program	2,462,214	-	-	2,462,214
Unrestricted deficit	(508,144,303)	220,475,509	-	(287,668,794)
Total net position	\$ (421,643,086)	\$ 220,475,509	\$ 140,732,216	\$ (60,435,361)

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## GREAT LAKES WATER AUTHORITY

UNAUDITED

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

Water Fund

For the Year Ended June 30, 2018

	Water Operations	Water Improvement and Extension	Water Construction Projects	Total
Operating revenues				
Wholesale customer charges	\$ 323,117,344	\$ -	\$ -	\$ 323,117,344
Local system charges	15,130,600	-	-	15,130,600
Other revenues	64,200	-	-	64,200
Total operating revenues	338,312,144	-	-	338,312,144
Operating expenses				
Operating expenses before depreciation and amortization:				
Personnel	41,845,295	-	-	41,845,295
Contractual services	35,794,549	-	-	35,794,549
Utilities - gas	937,628	-	-	937,628
Utilities - electric	25,477,974	-	-	25,477,974
Utilities - sewage	453,433	-	-	453,433
Utilities - water	2,046	-	-	2,046
Chemicals	4,804,768	-	-	4,804,768
Supplies and other expenses	9,543,615	-	-	9,543,615
Capital program allocation	(713,779)	-	-	(713,779)
Shared services allocation	(9,615,146)	-	-	(9,615,146)
Total operating expenses before depreciation and amortization	108,530,383	-	-	108,530,383
Depreciation	143,991,815	-	-	143,991,815
Amortization of intangible asset - raw water rights	2,080,554	-	-	2,080,554
Total operating expenses	254,602,752	-	-	254,602,752
Operating income (loss)	83,709,392	-	-	83,709,392
Nonoperating revenues (expenses)				
Earnings on investments	3,629,807	859,590	1,640,133	6,129,530
Interest on obligations receivable	23,351,220	-	-	23,351,220
Interest expense	(139,343,204)	-	-	(139,343,204)
Costs of issuance and amortization of debt related items	13,770,418	-	67,167	13,837,585
Legacy pension expense	(8,933,691)	-	-	(8,933,691)
WRAP (Water Residential Assistance Program)	(1,506,554)	-	-	(1,506,554)
Other	(544,813)	-	-	(544,813)
Capital outlay	38,870,746	(1,984,317)	(36,886,429)	-
Gain (loss) on disposal of capital assets	(6,225)	-	-	(6,225)
Loss on impairment of capital assets	(654,451)	-	-	(654,451)
Total nonoperating revenues (expenses)	(71,366,747)	(1,124,727)	(35,179,129)	(107,670,603)
Income (loss) before transfers	12,342,645	(1,124,727)	(35,179,129)	(23,961,211)
Transfer in	859,590	46,739,700	2,936,351	50,535,641
Transfer out	(49,676,051)	(859,590)	-	(50,535,641)
Change in net position	(36,473,816)	44,755,383	(32,242,778)	(23,961,211)
Net position (deficit), beginning of year	(385,169,270)	175,720,126	172,974,994	(36,474,150)
Net position (deficit), end of year	\$ (421,643,086)	\$ 220,475,509	\$ 140,732,216	\$ (60,435,361)

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, 2018

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
<b>Assets</b>				
Current assets:				
Cash and cash equivalents	\$ 136,603,763	\$ 62,452,793	\$ -	\$ 199,056,556
Restricted cash and cash equivalents	46,807,635	-	8,024,415	54,832,050
Investments	9,506,712	-	-	9,506,712
Restricted investments	31,790,386	-	-	31,790,386
Receivables:				
Billed	50,439,450	-	-	50,439,450
Unbilled	25,200,108	-	-	25,200,108
Other	3,723,036	-	-	3,723,036
Allowance for doubtful accounts	(32,863,001)	-	-	(32,863,001)
Due from other governments	24,339,106	-	-	24,339,106
Due from other funds	2,091,163	-	1,356,764	3,447,927
Due from other sewage disposal funds	-	7,322,016	14,907,438	22,229,454
Contractual obligation receivable, current portion	11,253,800	-	-	11,253,800
Loan receivable - DWSD	9,367,355	-	-	9,367,355
Prepaid items and other assets	1,466,758	-	216,901	1,683,659
Inventories	8,471,626	-	-	8,471,626
Total current assets	328,197,897	69,774,809	24,505,518	422,478,224
Noncurrent assets:				
Restricted cash and cash equivalents	12,151,366	-	17,849,987	30,001,353
Restricted investments	61,457,535	-	81,804,228	143,261,763
Contractual obligation receivable	335,574,500	-	-	335,574,500
Loan receivable - DWSD	19,932,645	-	-	19,932,645
Prepaid lease	13,750,000	-	-	13,750,000
Assets not subject to depreciation	271,362,100	-	-	271,362,100
Capital assets being depreciated, net	2,485,098,172	-	-	2,485,098,172
Prepaid insurance on debt	16,931,255	-	-	16,931,255
Total noncurrent assets	3,216,257,573	-	99,654,215	3,315,911,788
Total assets	3,544,455,470	69,774,809	124,159,733	3,738,390,012
Deferred outflows of resources				
Deferred charge on refunding	186,544,140	-	-	186,544,140
Deferred pension amounts	33,369,917	-	-	33,369,917
Total deferred outflows of resources	219,914,057	-	-	219,914,057

continued...

# Combining Schedule of Net Position

Sewage Disposal Fund

June 30, 2018

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
<b>Liabilities</b>				
Current liabilities:				
Accounts and contracts payable	\$ 11,945,835	\$ 525,934	\$ 21,605,833	\$ 34,077,602
Due to other governments	-	-	47,539	47,539
Due to other funds	12,427	317,866	-	330,293
Due to other sewage disposal funds	22,229,454	-	-	22,229,454
Interest payable	41,108,994	-	-	41,108,994
Current portion of:				
Long-term debt	61,186,207	-	-	61,186,207
Lease payable	5,884,359	-	-	5,884,359
Obligation payable	377,419	-	-	377,419
Accrued compensated absences	717,086	-	-	717,086
Claims and judgments	334,392	-	-	334,392
Total current liabilities	143,796,173	843,800	21,653,372	166,293,345
Noncurrent liabilities:				
Long-term debt	3,168,566,028	-	-	3,168,566,028
Long-term lease payable	515,153,064	-	-	515,153,064
Obligation payable	38,458,178	-	-	38,458,178
Claims and judgments	7,500,000	-	-	7,500,000
Other noncurrent liabilities	6,003,540	-	-	6,003,540
Net pension liability	114,810,555	-	-	114,810,555
Total noncurrent liabilities	3,850,491,365	-	-	3,850,491,365
Total liabilities	3,994,287,538	843,800	21,653,372	4,016,784,710
Deferred inflows of resources				
Deferred amounts for swap terminations	189,808	-	-	189,808
Deferred gain on refunding	46,654,836	-	-	46,654,836
Deferred pension amounts	12,994,118	-	-	12,994,118
Total deferred inflows of resources	59,838,762	-	-	59,838,762
Net position				
Net investment in capital assets	289,946,091	-	-	289,946,091
Restricted for debt service	101,996,536	-	-	101,996,536
Restricted for capital acquisition	-	-	102,506,361	102,506,361
Restricted for payment assistance program	3,308,896	-	-	3,308,896
Unrestricted deficit	(685,008,296)	68,931,009	-	(616,077,287)
Total net position	\$ (289,756,773)	\$ 68,931,009	\$ 102,506,361	\$ (118,319,403)

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

Sewage Disposal Fund

For the Year Ended June 30, 2018

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Projects	Total
Operating revenues				
Wholesale customer charges	\$ 268,978,831	\$ -	\$ -	\$ 268,978,831
Industrial waste charges	14,334,979	-	-	14,334,979
Pollutant surcharges	6,908,404	-	-	6,908,404
Local system charges	178,969,200	-	-	178,969,200
Other revenues	4,391,145	-	-	4,391,145
Total operating revenues	473,582,559	-	-	473,582,559
Operating expenses				
Operating expenses before depreciation:				
Personnel	53,680,162	-	-	53,680,162
Contractual services	64,082,761	-	-	64,082,761
Utilities - gas	5,674,141	-	-	5,674,141
Utilities - electric	15,395,993	-	-	15,395,993
Utilities - sewage	1,262,253	-	-	1,262,253
Utilities - water	4,490,912	-	-	4,490,912
Chemicals	8,073,045	-	-	8,073,045
Supplies and other expenses	24,982,773	-	-	24,982,773
Capital program allocation	(969,671)	-	-	(969,671)
Shared services allocation	(292,965)	-	-	(292,965)
Total operating expenses before depreciation	176,379,404	-	-	176,379,404
Depreciation	187,250,583	-	-	187,250,583
Total operating expenses	363,629,987	-	-	363,629,987
Operating income	109,952,572	-	-	109,952,572
Nonoperating revenues (expenses)				
Earnings on investments	3,805,035	217,547	1,243,673	5,266,255
Interest on obligations receivable	15,505,300	-	-	15,505,300
Interest expense	(161,052,102)	-	-	(161,052,102)
Costs of issuance and amortization of debt related items	(5,153,300)	-	-	(5,153,300)
Legacy pension expense	(15,988,471)	-	-	(15,988,471)
WRAP (Water Residential Assistance Program)	(2,248,980)	-	-	(2,248,980)
Other	(709,537)	-	-	(709,537)
Capital outlay	74,118,673	(4,740,820)	(69,377,853)	-
Gain (loss) on disposal of capital assets	2,469,703	-	-	2,469,703
Total nonoperating revenues (expenses)	(89,253,679)	(4,523,273)	(68,134,180)	(161,911,132)
Income (loss) before transfers	20,698,893	(4,523,273)	(68,134,180)	(51,958,560)
Transfer in	-	30,834,215	34,750,504	65,584,719
Transfer out	(65,367,172)	(217,547)	-	(65,584,719)
Change in net position	(44,668,279)	26,093,395	(33,383,676)	(51,958,560)
Net position (deficit), beginning of year	(245,088,494)	42,837,614	135,890,037	(66,360,843)
Net position (deficit), end of year	\$ (289,756,773)	\$ 68,931,009	\$ 102,506,361	\$ (118,319,403)

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, 2018

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification and Capital Outlay Elimination
Operating expenses			
Personnel	\$ 66,479,800	\$ 60,296,700	\$ (18,337,300)
Contractual services	97,365,200	72,800,000	(36,077,800)
Utilities	31,727,200	28,788,000	(91,400)
Chemicals	6,338,300	5,198,400	-
Supplies and other expenses	20,453,900	19,541,000	(7,175,200)
Capital program allocation	(24,324,600)	(1,122,100)	-
Shared services allocation	(16,275,300)	(9,816,900)	-
Centralized services allocation	(56,455,500)	(43,247,500)	43,247,500
Administrative services allocation	(16,305,000)	(18,434,200)	18,434,200
Capital outlay	6,624,700	6,410,100	(6,410,100)
Unallocated reserve	5,933,900	1,149,100	-
Total operating expenses	<u>\$ 121,562,600</u>	<u>\$ 121,562,600</u>	<u>\$ (6,410,100)</u>

Note: Centralized and administrative services allocations have been applied to the expense categories above for presentation of the amended budget and actual amounts. Capital outlay is an expense for budget purposes but is capitalized for accrual-based actual purposes. The balance in the reclassification represents reconciliation between budget and accrual basis.

UNAUDITED



Final Amended Budget	Actual	Amount Variance Actual-Budget	Percent Over (Under) Budget
\$ 41,959,400	\$ 41,845,295	\$ (114,105)	-0.27%
36,722,200	35,794,549	(927,651)	-2.53%
28,696,600	26,871,081	(1,825,519)	-6.36%
5,198,400	4,804,768	(393,632)	-7.57%
12,365,800	9,543,615	(2,822,185)	-22.82%
(1,122,100)	(713,779)	408,321	-36.39%
(9,816,900)	(9,615,146)	201,754	-2.06%
-	-	-	0.00%
-	-	-	0.00%
-	-	-	0.00%
1,149,100	-	(1,149,100)	-100.00%
<u>\$ 115,152,500</u>	<u>\$ 108,530,383</u>	<u>\$ (6,622,117)</u>	-5.75%

# 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, 2018

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification and Capital Outlay Elimination
Operating expenses			
Personnel	\$ 34,633,400	\$ 37,302,000	\$ 18,337,300
Contractual services	30,452,700	35,679,900	36,077,800
Utilities	27,309,400	27,275,400	91,400
Chemicals	11,468,300	8,142,300	-
Supplies and other expenses	14,346,800	20,315,400	7,175,200
Capital program allocation	(1,034,000)	(890,800)	-
Shared services allocation	(6,400)	(292,600)	-
Centralized services allocation	56,455,500	43,247,500	(43,247,500)
Administrative services allocation	16,305,000	18,434,200	(18,434,200)
Capital outlay	728,700	704,600	(704,600)
Unallocated reserve	420,000	1,161,500	-
Total operating expenses	<u>\$ 191,079,400</u>	<u>\$ 191,079,400</u>	<u>\$ (704,600)</u>

Note: Centralized and administrative services allocations have been applied to the expense categories above for presentation of the amended budget and actual amounts. Capital outlay is an expense for budget purposes but is capitalized for accrual-based actual purposes. The balance in the reclassification represents reconciliation between budget and accrual basis.

UNAUDITED



Final Amended Budget	Actual	Amount Variance Actual-Budget	Percent Over (Under) Budget
\$ 55,639,300	\$ 53,680,162	\$ (1,959,138)	-3.52%
71,757,700	64,082,761	(7,674,939)	-10.70%
27,366,800	26,823,299	(543,501)	-1.99%
8,142,300	8,073,045	(69,255)	-0.85%
27,490,600	24,982,773	(2,507,827)	-9.12%
(890,800)	(969,671)	(78,871)	8.85%
(292,600)	(292,965)	(365)	0.12%
-	-	-	0.00%
-	-	-	0.00%
-	-	-	0.00%
1,161,500	-	(1,161,500)	-100.00%
<u>\$ 190,374,800</u>	<u>\$ 176,379,404</u>	<u>\$ (13,995,396)</u>	-7.35%

**Schedule of Revenue Requirement**

Budget to Actual - Consolidated Water System

For the Year Ended June 30, 2018

The schedule presents a consolidated calculation of revenue requirements for both the GLWA regional water system and the DWSD local water system based upon budgets adopted by both entities. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. Individual schedules for both entities (the GLWA Regional Water System and the DWSD Local Water System) follow. Amounts shaded in grey indicate local system components.

	2018 Budget	2018 Actual [2]	Variance
<b>Revenues</b>			
Regional system:			
Regional system wholesale revenues - suburban wholesale	\$ 310,019,800	\$ 323,117,344	\$ 13,097,544
Regional system wholesale revenues - Detroit customers	15,130,600	15,130,600	-
Total regional system revenues	325,150,400	338,247,944	13,097,544
DWSD local system revenues - Detroit customers	73,860,600	80,542,437	6,681,837
Miscellaneous revenue (local system)	4,750,000	3,441,349	(1,308,651)
Other operating revenue	-	64,200	64,200
Total operating revenue	403,761,000	422,295,930	18,534,930
Nonoperating revenue (regional system)	2,968,900	4,489,397	1,520,497
Total revenues	\$ 406,729,900	\$ 426,785,327	\$ 20,055,427
<b>Revenue Requirements [1]</b>			
Operations and maintenance:			
Regional system wholesale expenses	121,562,600	121,562,600	-
Local system expenses	35,059,700	35,059,700	-
GRS pension allocable to regional system	6,048,000	6,058,800	10,800
GRS pension allocable to local system	4,272,000	4,281,600	9,600
Total operations and maintenance	166,942,300	166,962,700	20,400
Net revenues as defined by the MBO	239,787,600	259,822,627	20,035,027
Nonoperating activities:			
Debt service allocable to regional system	135,464,400	135,324,819	(139,581)
Debt service allocable to local system	37,486,700	35,419,463	(2,067,237)
GRS accelerated pension from regional system	6,268,300	6,489,754	221,454
GRS accelerated pension from local system	4,427,400	4,584,890	157,490
WRAP contribution from regional system	1,711,200	1,711,200	-
WRAP contribution from local system	448,200	448,200	-
ER&R fund contribution from regional system [3]	645,700	645,700	-
Contribution to operating reserves	1,097,900	1,097,900	-
Total nonoperating activities	187,549,800	185,721,927	(1,827,873)
Amount available for revenue financed capital	52,237,800	74,100,700	21,862,900

continued...

**Schedule of Revenue Requirement**

Budget to Actual - Consolidated Water System

For the Year Ended June 30, 2018

	2018 Budget	2018 Actual [2]	Variance
Reserve for revenue financed capital from net revenues			
Lease payment	\$ 22,500,000	\$ 22,500,000	\$ -
Lease payment directed to debt service	(3,368,600)	(1,875,000)	1,493,600
Amount available for revenue financing capital			
And operating reserves regional system [3]	32,821,200	47,410,768	14,589,568
Local system revenues available for local system I&E	285,200	6,064,933	5,779,733
	<u>52,237,800</u>	<u>74,100,700</u>	<u>21,862,900</u>
Total revenue requirements	<u>\$ 406,729,900</u>	<u>\$ 426,785,327</u>	<u>\$ 20,055,427</u>

concluded.

- [1] 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 bank accounts that must be funded by revenue.
- [2] At the time of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.
- [3] Transfers are typically made in the subsequent year following the final analysis of year end results.

**Schedule of Revenue Requirement**

Budget to Actual - GLWA Regional Water System  
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the GLWA regional water system based upon the budget adopted by the GLWA Board of Directors. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Water System Schedule of Revenue Requirements combines this schedule and the DWSD Local Water System Schedule of Revenue Requirements.

	2018 Budget	2018 Actual	Variance
<b>Revenues</b>			
Regional system:			
Regional system wholesale revenues - suburban wholesale	\$ 310,019,800	\$ 323,117,344	\$ 13,097,544
Regional system wholesale revenues - Detroit customers	15,130,600	15,130,600	-
Total regional system revenues	325,150,400	338,247,944	13,097,544
Other operating revenue	-	64,200	64,200
Total operating revenue	325,150,400	338,312,144	13,161,744
Nonoperating revenue (regional system)	2,968,900	4,489,397	1,520,497
<b>Total revenues</b>	<b>\$ 328,119,300</b>	<b>\$ 342,801,541</b>	<b>\$ 14,682,241</b>
<b>Revenue requirements [1]</b>			
Operations and maintenance:			
Regional system wholesale expenses	\$ 121,562,600	\$ 121,562,600	\$ -
GRS pension allocable to regional system	6,048,000	6,058,800	10,800
Total operations and maintenance	127,610,600	127,621,400	10,800
<b>Net revenues defined by the MBO</b>	<b>200,508,700</b>	<b>215,180,141</b>	<b>14,671,441</b>
Nonoperating activities:			
Debt service allocable to regional system	135,464,400	135,324,819	(139,581)
GRS accelerated pension from regional system	6,268,300	6,489,754	221,454
WRAP contribution from regional system	1,711,200	1,711,200	-
ER&R fund contribution from regional system [2]	645,700	645,700	-
Contribution to operating reserves	1,097,900	1,097,900	-
Total nonoperating activities	145,187,500	145,269,373	81,873
<b>Net revenues available for revenue financed capital</b>	<b>55,321,200</b>	<b>69,910,768</b>	<b>14,589,568</b>
Lease payment			
Amount available for revenue financing capital	22,500,000	22,500,000	-
and operating reserves regional system [2]	32,821,200	47,410,768	14,589,568
Reserve for revenue financed capital	55,321,200	69,910,768	14,589,568
<b>Total revenue requirements</b>	<b>\$ 328,119,300</b>	<b>\$ 342,801,541</b>	<b>\$ 14,682,241</b>

[1] These items are disbursements for establishing revenue requirements for customer charges and are not representative of full accrual basis accounting. Actual amounts are cash transfers in accordance with the MBO.

[2] Transfers are typically made in the subsequent year following the final analysis of year end results.



**Schedule of Revenue Requirement**

Budget to Actual - DWSD Local Water System  
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the DWSD local water system based upon the budget adopted by the DWSD Board of Water Commissioners. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Water System Schedule of Revenue Requirements combines this schedule and the GLWA regional Water System Schedule of Revenue Requirements. Amounts shaded in grey indicate local system components.

	2018 Budget [2]	2018 Actual [1]	Variance
Revenues			
Operating revenue:			
DWSD local system revenues - Detroit customers [3]	\$ 73,860,600	\$ 80,542,437	\$ 6,681,837
Miscellaneous revenue (local system)	4,750,000	3,441,349	(1,308,651)
Total revenues	<u>\$ 78,610,600</u>	<u>\$ 83,983,786</u>	<u>\$ 5,373,186</u>
Revenue requirements [4]			
Operations and maintenance:			
Local system expenses	\$ 35,059,700	\$ 35,059,700	\$ -
GRS pension allocable to local system	4,272,000	4,281,600	9,600
Total operations and maintenance	<u>39,331,700</u>	<u>39,341,300</u>	<u>9,600</u>
Net revenues as defined by the MBO	<u>39,278,900</u>	<u>44,642,486</u>	<u>5,363,586</u>
Nonoperating activities:			
Debt service allocable to local system	37,486,700	35,419,463	(2,067,237)
GRS accelerated pension from local system	4,427,400	4,584,890	157,490
WRAP contribution from local system	448,200	448,200	-
Lease payment directed to debt service [5]	(3,368,600)	(1,875,000)	1,493,600
Revenues available for local system I&E	285,200	6,064,933	5,779,733
Total nonoperating activities	<u>39,278,900</u>	<u>44,642,486</u>	<u>5,363,586</u>
Total Revenue Requirements (Local System)	<u>\$ 78,610,600</u>	<u>\$ 83,983,786</u>	<u>\$ 5,373,186</u>

[1] Reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.

[2] At the time of the issuance of the GLWA CAFR, DWSD's audited June 30, 2018 financial report had not been released. The amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

[3] Net of bad debt expense.

[4] These items are disbursements for establishing revenue requirements for customer charges and are not representative of full accrual basis accounting. Actual amounts are cash transfers in accordance with the MBO.

[5] Lease Payment Allocation:

Total Lease Payment	22,500,000	22,500,000	-
Amount Directed to Debt Service	(3,368,600)	(1,875,000)	1,493,600
Balance to be Deposited to Local System I&E Account for Revenue Financed Capital	19,131,400	20,625,000	1,493,600

**Schedule of Revenue Requirement**

Budget to Actual - Consolidated Sewer System

For the Year Ended June 30, 2018

The schedule presents a consolidated calculation of revenue requirements for both the GLWA regional sewer system and the DWSD local sewer system based upon budgets adopted by both entities. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. Individual schedules for both entities (the GLWA Regional Sewer System and the DWSD Local Sewer System) follow. Amounts shaded in grey indicate local system components.

	2018 Budget	2018 Actual [2]	Variance
<b>Revenues</b>			
Regional system:			
Regional system wholesale revenues - suburban wholesale	\$ 267,033,800	\$ 268,978,831	\$ 1,945,031
Regional system wholesale revenues - Detroit customers	178,969,200	178,969,200	-
Industrial waste control charges	14,457,700	14,334,979	(122,721)
Industrial surcharges	5,099,000	6,908,404	1,809,404
Total regional system revenues	465,559,700	469,191,414	3,631,714
DWSD local system revenues - Detroit customers	77,922,900	81,612,282	3,689,382
Miscellaneous revenue (local system)	5,000,000	5,089,230	89,230
Other operating revenue	-	4,391,145	4,391,145
Total operating revenue	548,482,600	560,284,071	11,801,471
Nonoperating revenue (regional system)	2,751,000	4,022,582	1,271,582
Total revenues	\$ 551,233,600	\$ 564,306,653	\$ 13,073,053
<b>Revenue requirements [1]</b>			
Operations and maintenance:			
Regional system wholesale expenses	\$ 191,079,400	\$ 191,079,400	\$ -
Local system expenses	60,402,000	60,517,992	115,992
GRS pension allocable to regional system	10,824,000	10,809,600	(14,400)
GRS pension allocable to local system	2,856,000	2,844,200	(11,800)
Total operations and maintenance	265,161,400	265,251,192	89,792
Net revenues as defined by the MBO	286,072,200	299,055,461	12,983,261
Nonoperating activities:			
Debt service allocable to regional system	207,615,500	202,965,506	(4,649,994)
Debt service allocable to local system	27,392,500	26,767,599	(624,901)
GRS accelerated pension from regional system	11,620,700	12,118,599	497,899
GRS accelerated pension from local system	3,066,800	3,197,100	130,300
WRAP contribution from regional system	2,391,800	2,391,800	-
WRAP contribution from local system	369,000	369,000	-
ER&R fund contribution from regional system [3]	813,600	813,600	-
Contribution to operating reserves	1,733,000	1,733,000	-
Total nonoperating activities	255,002,900	250,356,204	(4,646,696)
Amount available for revenue financed capital	31,069,300	48,699,257	17,629,957

continued...

**Schedule of Revenue Requirement**

Budget to Actual - Consolidated Sewer System

For the Year Ended June 30, 2018

	2018 Budget	2018 Actual	Variance
Reserve for revenue financed capital from net revenues			
Lease payment	\$ 27,500,000	\$ 27,500,000	\$ -
Lease payment directed to debt service	(11,163,400)	(9,166,667)	1,996,733
Amount available for revenue financing capital and operating reserves regional system [3]	14,732,700	28,193,636	13,460,936
Local system revenue requirement variance	-	2,172,288	2,172,288
Total reserve for revenue financed capital	<u>31,069,300</u>	<u>48,699,257</u>	<u>17,629,957</u>
Total revenue requirements	<u>\$ 551,233,600</u>	<u>\$ 564,306,653</u>	<u>\$ 13,073,053</u>

concluded.

- [1] 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 bank accounts that must be funded by revenue.
- [2] At the time of the issuance of the GLWA, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.
- [3] Transfers are typically made in the subsequent year following the final analysis of year end results.

**Schedule of Revenue Requirement**

Budget to Actual - GLWA Regional Sewer System

For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the GLWA regional sewer system based upon the budget adopted by the GLWA Board of Directors. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Sewer System Schedule of Revenue Requirements combines this schedule and the DWSD Local Sewer System Schedule of Revenue Requirements.

	2018 Budget	2018 Actual	Variance
<b>Revenues</b>			
Regional system:			
Regional system wholesale revenues - suburban wholesale	\$ 267,033,800	\$ 268,978,831	\$ 1,945,031
Regional system wholesale revenues - Detroit customers	178,969,200	178,969,200	-
Industrial waste control charges - suburban customers	14,457,700	14,334,979	(122,721)
Industrial surcharges	5,099,000	6,908,404	1,809,404
Total regional system revenues	465,559,700	469,191,414	3,631,714
Other operating revenue	-	4,391,145	4,391,145
Total operating revenue	465,559,700	473,582,559	8,022,859
Nonoperating revenue (regional system)	2,751,000	4,022,582	1,271,582
Total revenues	<u>\$ 468,310,700</u>	<u>\$ 477,605,141</u>	<u>\$ 9,294,441</u>
<b>Revenue requirements</b>			
Operations and maintenance:			
Regional system wholesale expenses	\$ 191,079,400	\$ 191,079,400	\$ -
GRS pension allocable to regional system	10,824,000	10,809,600	(14,400)
Total operations and maintenance	201,903,400	201,889,000	(14,400)
Net revenues after operations and maintenance	266,407,300	275,716,141	9,308,841
Nonoperating activities:			
Debt service allocable to regional system	207,615,500	202,965,506	(4,649,994)
GRS accelerated pension from regional system	11,620,700	12,118,599	497,899
WRAP contribution from regional system	2,391,800	2,391,800	-
ER&R fund contribution from regional system [2]	813,600	813,600	-
Contribution to operating reserves	1,733,000	1,733,000	-
Total nonoperating activities	224,174,600	220,022,505	(4,152,095)
Amount available for revenue financed capital	42,232,700	55,693,636	13,460,936
Reserve for revenue financed capital from net revenues			
Lease payment to local system I&E account [1]	\$ 27,500,000	\$ 27,500,000	\$ -
Net revenues available for revenue financing capital and operating reserves regional system [2]	14,732,700	28,193,636	13,460,936
Reserve for revenue financed capital both systems	42,232,700	55,693,636	13,460,936
Total revenue requirements	<u>\$ 468,310,700</u>	<u>\$ 477,605,141</u>	<u>\$ 9,294,441</u>

[1] These items are disbursements for establishing revenue requirements for customer charges and are not representative of full accrual basis accounting. Actual amounts are cash transfers in accordance with the MBO.

[2] Transfers are typically made in the subsequent year following the final analysis of year end results.

**Schedule of Revenue Requirement**

Budget to Actual - DWSD Local Sewer System  
For the Year Ended June 30, 2018

This schedule presents a calculation of revenue requirements for the DWSD local sewer system based upon the budget adopted by the DWSD Board of Water Commissioners. The revenue requirement components are presented in a manner consistent with the Master Bond Ordinance flow of funds. The Consolidated Sewer System Schedule of Revenue Requirements combines this schedule and the GLWA regional Sewer System Schedule of Revenue Requirements. Amounts shaded in grey indicate local system components.

	2018 Budget [1]	2018 Actual [2]	Variance
Revenues			
Operating revenue:			
DWSD local system revenues - Detroit customers [3]	\$ 77,922,900	\$ 81,612,282	\$ 3,689,382
Miscellaneous revenue (local system)	5,000,000	5,089,230	89,230
Total revenues	<u>\$ 82,922,900</u>	<u>\$ 86,701,512</u>	<u>\$ 3,778,612</u>
Revenue requirements [4]			
Operations and maintenance:			
Local system expenses	\$ 60,402,000	\$ 60,517,992	\$ 115,992
GRS pension allocable to local system	2,856,000	2,844,200	(11,800)
Total operations and maintenance	<u>63,258,000</u>	<u>63,362,192</u>	<u>104,192</u>
Net revenues as defined by the MBO	<u>19,664,900</u>	<u>23,339,320</u>	<u>3,674,420</u>
Nonoperating activities:			
Debt service allocable to local system	27,392,500	26,767,599	(624,901)
GRS accelerated pension from local system	3,066,800	3,197,100	130,300
WRAP contribution from local system	369,000	369,000	-
Lease payment directed to debt service [5]	(11,163,400)	(9,166,667)	1,996,733
Revenue requirement variance	-	2,172,288	2,172,288
Total nonoperating activities	<u>19,664,900</u>	<u>23,339,320</u>	<u>3,674,420</u>
Total Revenue Requirements (Local System)	<u>\$ 82,922,900</u>	<u>\$ 86,701,512</u>	<u>\$ 3,778,612</u>

[1] Reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.

[2] At the time of the issuance of the GLWA CAFR, DWSD's audited June 30, 2018 financial report had not been released. The amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

[3] Net of bad debt expense.

[4] 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 bank accounts that must be funded by revenue.

[5] Lease Payment Allocation:

Total Lease Payment	27,500,000	27,500,000	-
Amount Directed to Debt Service	(11,163,400)	(9,166,667)	1,996,733
Balance to be Deposited to Local System I&E Account for Revenue Financed Capital	16,336,600	18,333,333	1,996,733

GREAT LAKES WATER AUTHORITY

UNAUDITED

**Schedule of Days Cash - Liquidity**

June 30, 2018

	2018	2017	2016*
<b>Water fund</b>			
Cash and investments - Unrestricted	\$ 317,089,746	\$ 267,335,558	\$ 167,292,572
<i>Operating expense</i>			
Operating expense	\$ 254,602,752	\$ 245,868,861	\$ 120,841,204
Less: depreciation	(143,991,815)	(144,137,912)	(71,295,545)
Less: amortization of intangible asset - raw water rights	(2,080,554)	-	-
<i>Net operating expense</i>	\$ 108,530,383	\$ 101,730,949	\$ 49,545,659
<i>Operating expense per day (365 days)</i>	\$ 297,344	\$ 278,715	\$ 273,733
<i>Days cash</i>			
Number of days cash	1,066	959	611
<b>Sewage disposal fund</b>			
Cash and investments - Unrestricted	\$ 208,563,268	\$ 205,179,312	\$ 188,063,375
<i>Operating expense</i>			
Operating expense	\$ 363,629,987	\$ 336,946,731	\$ 170,401,050
Less: depreciation	(187,250,583)	(185,628,465)	(86,021,029)
<i>Net operating expense</i>	\$ 176,379,404	\$ 151,318,266	\$ 84,380,021
<i>Operating expense per day (365 days)</i>	\$ 483,231	\$ 414,571	\$ 466,188
<i>Days cash</i>			
Number of days cash	432	495	403
<b>Combined</b>			
Cash and investments - Unrestricted	\$ 525,653,014	\$ 472,514,870	\$ 355,355,947
<i>Operating expense</i>			
Operating expense	\$ 618,232,739	\$ 582,815,592	\$ 291,242,254
Less: depreciation	(331,242,398)	(329,766,377)	(157,316,574)
Less: amortization of intangible asset - raw water rights	(2,080,554)	-	-
<i>Net operating expense</i>	\$ 284,909,787	\$ 253,049,215	\$ 133,925,680
<i>Operating expense per day (365 days)</i>	\$ 780,575	\$ 693,286	\$ 739,921
<i>Days cash</i>			
Number of days cash	673	682	480

\*GLWA assumed operations on January 1, 2016. Data for 2016 includes six months of operation under GLWA. Operating expense per day for 2016 is computed using 181 days (six months of operations).

# Schedule of Interfund Receivables and Payables

For the Year Ended June 30, 2018

Interfund balances result from the time lag between the dates interfund goods and services provided or reimbursable expenditures occur and the payment between funds are made. Interfund balances for the year ended June 30, 2018 consisted of the following:

	Due From Other Funds			
	Operating	I&E	Construction	Total
Due to Other Funds				
Water	\$ 2,091,163	\$ -	\$ 1,356,764	\$ 3,447,927
Sewer	-	317,866	12,427	330,293
Total	<u>\$ 2,091,163</u>	<u>\$ 317,866</u>	<u>\$ 1,369,191</u>	<u>\$ 3,778,220</u>

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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 through 3	Financial trends information is intended to show how the Authority's financial position has changed over time.	109
Revenue Capacity Schedule 4	Revenue capacity information is intended to show the factors affecting the Authority's ability to generate its own-source revenue.	119
Debt Capacity Information Schedules 5 through 9	Debt capacity information is intended to show the Authority's debt burden and its ability to issue additional debt.	120
Demographic and Economic Schedules 10 through 15	Demographic and economic information is intended to show the socioeconomic environment within which the Authority operates.	131
Operating Information Schedule 16 through 19	Operating information is intended to show contextual information about operations and resources to provide understanding and assessing the Authority's economic condition.	140

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# GREAT LAKES WATER AUTHORITY

Schedule 1

UNAUDITED

## Net Position by Component - Business-type Activities

	2018	2017	2016*
<b>Water fund</b>			
Net investment in capital assets	\$ 60,799,635	\$ 134,919,107	\$ 400,187,482
Restricted for debt service	23,239,368	26,194,280	69,797,836
Restricted for capital acquisition	140,732,216	172,974,994	-
Restricted for payment assistance program	2,462,214	2,218,373	977,278
Unrestricted (deficit)	<u>(287,668,794)</u>	<u>(372,780,904)</u>	<u>(475,054,191)</u>
	<u>(60,435,361)</u>	<u>(36,474,150)</u>	<u>(4,091,595)</u>
<b>Sewage disposal fund</b>			
Net investment in capital assets	289,946,091	393,956,399	451,547,037
Restricted for debt service	101,996,536	107,931,677	108,742,193
Restricted for capital acquisition	102,506,361	150,930,508	164,326,618
Restricted for payment assistance program	3,308,896	3,117,744	-
Unrestricted (deficit)	<u>(616,077,287)</u>	<u>(722,297,171)</u>	<u>(735,208,133)</u>
	<u>(118,319,403)</u>	<u>(66,360,843)</u>	<u>(10,592,285)</u>
<b>Business-type activities</b>			
Net investment in capital assets	350,745,726	528,875,506	851,734,519
Restricted for debt service	125,235,904	134,125,957	178,540,029
Restricted for capital acquisition	243,238,577	323,905,502	164,326,618
Restricted for payment assistance program	5,771,110	5,336,117	977,278
Unrestricted (deficit)	<u>(903,746,081)</u>	<u>(1,095,078,075)</u>	<u>(1,210,262,324)</u>
<b>Total business-type activities net position</b>	<u>\$ (178,754,764)</u>	<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

GREAT LAKES WATER AUTHORITY

Schedule 2  
UNAUDITED

**Comparative Schedule of Net Position - Business-type Activities**  
June 30, 2018

	Business-type Activities		
	2018	2017	2016
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	\$ 509,141,777	\$ 470,231,842	\$ 311,735,186
Restricted cash and cash equivalents	105,929,392	132,967,081	134,210,268
Restricted cash for the benefit of DWSD	8,418,827	288,378	62,078
Investments	16,511,237	2,283,028	43,620,761
Restricted investments	33,025,340	32,541,021	56,661,000
Receivables:			
Billed	88,712,190	88,694,341	85,676,104
Unbilled	54,429,817	53,818,603	55,345,336
Other	3,728,886	3,158,350	114,648,035
Allowance for doubtful accounts	(39,084,816)	(35,352,009)	(124,009,242)
Due from other governments	47,927,860	50,789,041	107,688,300
Due from other funds	3,778,220	-	65,971
Contractual obligation receivable, current portion	24,813,886	23,339,242	11,929,259
Loan receivable - DWSD	9,367,355		
Prepaid items and other assets	4,949,631	3,526,568	2,591,049
Inventories	8,471,626	8,509,454	9,984,063
Total current assets	880,121,228	834,794,940	810,208,168
Noncurrent assets:			
Restricted cash and cash equivalents	48,263,059	306,318,331	160,949,722
Restricted investments	293,697,988	101,708,122	105,028,079
Contractual obligation receivable	812,613,943	830,432,680	832,571,741
Loan receivable - DWSD	19,932,645		
Prepaid lease	25,000,000	25,000,000	-
Assets not subject to depreciation	706,046,995	730,471,792	711,434,348
Capital assets being depreciated, net	3,984,216,865	4,178,315,045	4,427,945,555
Intangible asset - raw water rights, net	104,919,365	-	-
Prepaid insurance on debt	29,933,631	32,694,221	48,653,581
Total noncurrent assets	6,024,624,491	6,204,940,191	6,286,583,026
Total assets	6,904,745,719	7,039,735,131	7,096,791,194
Deferred outflows of resources			
Deferred charge on refunding	280,975,963	297,646,441	328,659,457
Deferred pension amounts	52,015,636	59,954,478	37,997,043
Total deferred outflows of resources	332,991,599	357,600,919	366,656,500

continued...

# GREAT LAKES WATER AUTHORITY

Schedule 2  
UNAUDITED

## Comparative Schedule of Net Position - Business-type Activities

June 30, 2018

	Business-type Activities		
	2018	2017	2016
<b>Liabilities</b>			
Current liabilities:			
Accounts and contracts payable	\$ 67,832,136	\$ 64,298,400	\$ 85,626,614
Accrued salaries, wages and benefits	4,734,956	3,190,038	2,887,280
Other accrued liabilities	12,679,692	2,252,616	1,550,254
Due to other governments	11,983,407	61,242,386	37,893,903
Due to other funds	3,778,220	-	65,971
Interest payable	80,431,318	80,340,520	81,139,013
Current portion of:			
Long-term debt	81,756,050	89,314,212	96,552,356
Leases payable	10,698,835	10,262,609	9,844,169
Lease obligation - raw water rights	2,999,458	-	-
Obligation payable	545,213	519,251	494,524
Accrued compensated absences	2,929,412	2,837,148	2,239,376
Accrued workers' compensation	228,239	25,000	785,953
Claims and judgments	2,529,392	3,852,062	4,763,944
Total current liabilities	<u>283,126,328</u>	<u>318,134,242</u>	<u>323,843,357</u>
Noncurrent liabilities:			
Long-term debt	5,714,095,283	5,842,482,161	5,876,115,822
Long-term leases payable	936,641,935	947,340,770	957,603,379
Lease obligation - raw water rights	103,241,118	-	-
Obligation payable	55,555,887	56,101,100	56,620,351
Accrued compensated absences	2,174,506	2,288,125	3,511,934
Accrued workers' compensation	75,000	225,000	7,953,474
Claims and judgments	7,550,000	262,500	25,914,350
Other noncurrent liabilities	8,638,011	8,565,277	8,622,785
Net pension liability	178,961,907	194,075,547	170,229,438
Total noncurrent liabilities	<u>7,006,933,647</u>	<u>7,051,340,480</u>	<u>7,106,571,533</u>
Total liabilities	<u>7,290,059,975</u>	<u>7,369,474,722</u>	<u>7,430,414,890</u>
Deferred inflows of resources			
Deferred amounts for swap terminations	270,150	299,461	4,373,886
Deferred gain on refunding	105,907,267	112,080,430	-
Deferred pension amounts	20,254,690	18,316,430	43,342,798
Total deferred inflows of resources	<u>126,432,107</u>	<u>130,696,321</u>	<u>47,716,684</u>
Net position			
Net investment in capital assets	350,745,726	528,875,506	851,734,519
Restricted for debt service	125,235,904	134,125,957	178,540,029
Restricted for capital acquisition	243,238,577	323,905,502	164,326,618
Restricted for payment assistance program	5,771,110	5,336,117	977,278
Unrestricted deficit	(903,746,081)	(1,095,078,075)	(1,210,262,324)
Total net position	<u>\$ (178,754,764)</u>	<u>\$ (102,834,993)</u>	<u>\$ (14,683,880)</u>

concluded.

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

GREAT LAKES WATER AUTHORITY

Schedule 2a  
UNAUDITED

**Comparative Schedule of Net Position - Water Fund**  
June 30, 2018

	Water Fund		
	2018	2017	2016
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	\$ 310,085,221	\$ 266,483,138	\$ 155,712,891
Restricted cash and cash equivalents	51,097,342	60,753,268	53,028,844
Restricted cash for the benefit of DWSD	8,418,827	288,378	10,430
Investments	7,004,525	852,420	11,579,681
Restricted investments	1,234,954	1,169,187	27,818,000
Receivables:			
Billed	38,272,740	36,459,563	37,629,170
Unbilled	29,229,709	29,539,433	32,307,945
Other	5,850	1,300	21,899,046
Allowance for doubtful accounts	(6,221,815)	(4,941,777)	(25,040,612)
Due from other governments	23,588,754	21,327,713	41,486,157
Due from other funds	330,293	-	-
Contractual obligation receivable, current portion	13,560,086	12,076,942	6,851,584
Prepaid items and other assets	3,265,972	2,437,047	2,183,690
Inventories	-	-	-
Total current assets	<u>479,872,458</u>	<u>426,446,612</u>	<u>365,466,826</u>
Noncurrent assets:			
Restricted cash and cash equivalents	18,261,706	177,939,494	5,460,942
Restricted investments	150,436,225	20,530,374	42,841,345
Contractual obligation receivable	477,039,443	483,604,380	466,317,666
Prepaid lease	11,250,000	11,250,000	-
Assets not subject to depreciation	434,684,895	452,185,674	415,558,090
Capital assets being depreciated, net	1,499,118,693	1,587,291,603	1,728,054,410
Intangible asset - raw water rights, net	104,919,365	-	-
Prepaid insurance on debt	13,002,376	14,112,324	20,831,496
Total noncurrent assets	<u>2,708,712,703</u>	<u>2,746,913,849</u>	<u>2,679,063,949</u>
Total assets	<u>3,188,585,161</u>	<u>3,173,360,461</u>	<u>3,044,530,775</u>
Deferred outflows of resources			
Deferred charge on refunding	94,431,823	99,294,499	116,511,949
Deferred pension amounts	18,645,719	21,491,506	13,620,562
Total deferred outflows of resources	<u>113,077,542</u>	<u>120,786,005</u>	<u>130,132,511</u>

continued...



# GREAT LAKES WATER AUTHORITY

Schedule 2a  
UNAUDITED

## Comparative Schedule of Net Position - Water Fund June 30, 2018

	Water Fund		
	2018	2017	2016
<b>Liabilities</b>			
Current liabilities:			
Accounts and contracts payable	\$ 33,754,534	\$ 36,751,842	\$ 49,474,527
Accrued salaries, wages and benefits	4,734,956	3,190,038	2,887,280
Other accrued liabilities	12,679,692	1,353,816	875,796
Due to other governments	11,935,868	25,393,813	13,668,890
Due to other funds	3,447,927	-	65,971
Interest payable	39,322,324	39,329,322	37,226,125
Current portion of:			
Long-term debt	20,569,843	23,393,905	35,650,167
Leases payable	4,814,476	4,618,174	4,429,876
Lease obligation - raw water rights	2,999,458	-	-
Obligation payable	167,794	159,803	152,193
Accrued compensated absences	2,212,326	2,157,888	1,784,746
Accrued workers' compensation	228,239	25,000	395,788
Claims and judgments	2,195,000	-	4,494,694
<b>Total current liabilities</b>	<b>139,062,437</b>	<b>136,373,601</b>	<b>151,106,053</b>
Noncurrent liabilities:			
Long-term debt	2,545,529,255	2,606,465,431	2,488,824,632
Long-term leases payable	421,488,871	426,303,346	430,921,520
Lease obligation - raw water rights	103,241,118	-	-
Obligation payable	17,097,709	17,265,503	17,425,306
Accrued compensated absences	2,174,506	2,288,125	3,511,934
Accrued workers' compensation	75,000	225,000	3,562,536
Claims and judgments	50,000	75,000	-
Other noncurrent liabilities	2,634,471	2,582,076	2,710,092
Net pension liability	64,151,352	69,569,044	61,021,079
<b>Total noncurrent liabilities</b>	<b>3,156,442,282</b>	<b>3,124,773,525</b>	<b>3,007,977,099</b>
<b>Total liabilities</b>	<b>3,295,504,719</b>	<b>3,261,147,126</b>	<b>3,159,083,152</b>
<b>Deferred inflows of resources</b>			
Deferred amounts for swap terminations	80,342	85,068	4,134,908
Deferred gain on refunding	59,252,431	62,822,646	-
Deferred pension amounts	7,260,572	6,565,776	15,536,821
<b>Total deferred inflows of resources</b>	<b>66,593,345</b>	<b>69,473,490</b>	<b>19,671,729</b>
<b>Net position</b>			
Net investment in capital assets	60,799,635	134,919,107	400,187,482
Restricted for debt service	23,239,368	26,194,280	69,797,836
Restricted for capital acquisition	140,732,216	172,974,994	-
Restricted for payment assistance program	2,462,214	2,218,373	977,278
Unrestricted deficit	(287,668,794)	(372,780,904)	(475,054,191)
<b>Total net position</b>	<b>\$ (60,435,361)</b>	<b>\$ (36,474,150)</b>	<b>\$ (4,091,595)</b>

concluded.

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

GREAT LAKES WATER AUTHORITY

Schedule 2b  
UNAUDITED

**Comparative Schedule of Net Position - Sewage Disposal Fund**  
June 30, 2018

	Sewage Disposal Fund		
	2018	2017	2016
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	\$ 199,056,556	\$ 203,748,704	\$ 156,022,295
Restricted cash and cash equivalents	54,832,050	72,213,813	81,181,424
Restricted cash for the benefit of DWSD	-	-	51,648
Investments	9,506,712	1,430,608	32,041,080
Restricted investments	31,790,386	31,371,834	28,843,000
Receivables:			
Billed	50,439,450	52,234,778	48,046,934
Unbilled	25,200,108	24,279,170	23,037,391
Other	3,723,036	3,157,050	92,748,989
Allowance for doubtful accounts	(32,863,001)	(30,410,232)	(98,968,630)
Due from other governments	24,339,106	29,461,328	66,202,143
Due from other funds	3,447,927	-	65,971
Contractual obligation receivable, current portion	11,253,800	11,262,300	5,077,675
Loan receivable - DWSD	9,367,355	-	-
Prepaid items and other assets	1,683,659	1,089,521	407,359
Inventories	8,471,626	8,509,454	9,984,063
Total current assets	400,248,770	408,348,328	444,741,342
Noncurrent assets:			
Restricted cash and cash equivalents	30,001,353	128,378,837	155,488,780
Restricted investments	143,261,763	81,177,748	62,186,734
Contractual obligation receivable	335,574,500	346,828,300	366,254,075
Loan receivable - DWSD	19,932,645	-	-
Prepaid lease	13,750,000	13,750,000	-
Assets not subject to depreciation	271,362,100	278,286,118	295,876,258
Capital assets being depreciated, net	2,485,098,172	2,591,023,442	2,699,891,145
Prepaid insurance on debt	16,931,255	18,581,897	27,822,085
Total noncurrent assets	3,315,911,788	3,458,026,342	3,607,519,077
Total assets	3,716,160,558	3,866,374,670	4,052,260,419
Deferred outflows of resources			
Deferred charge on refunding	186,544,140	198,351,942	212,147,508
Deferred pension amounts	33,369,917	38,462,972	24,376,481
Total deferred outflows of resources	219,914,057	236,814,914	236,523,989

continued...

# GREAT LAKES WATER AUTHORITY

Schedule 2b  
UNAUDITED

## Comparative Schedule of Net Position - Sewage Disposal Fund June 30, 2018

	Sewage Disposal Fund		
	2018	2017	2016
<b>Liabilities</b>			
Current liabilities:			
Accounts and contracts payable	\$ 34,077,602	\$ 27,546,558	\$ 36,152,087
Accrued salaries, wages and benefits	-	-	-
Other accrued liabilities	-	898,800	674,458
Due to other governments	47,539	35,848,573	24,225,013
Due to other funds	330,293	-	-
Interest payable	41,108,994	41,011,198	43,912,888
Current portion of:			
Long-term debt	61,186,207	65,920,307	60,902,189
Leases payable	5,884,359	5,644,435	5,414,293
Obligation payable	377,419	359,448	342,331
Accrued compensated absences	717,086	679,260	454,630
Accrued workers' compensation	-	-	390,165
Claims and judgments	334,392	3,852,062	269,250
<b>Total current liabilities</b>	<b>144,063,891</b>	<b>181,760,641</b>	<b>172,737,304</b>
Noncurrent liabilities:			
Long-term debt	3,168,566,028	3,236,016,730	3,387,291,190
Long-term leases payable	515,153,064	521,037,424	526,681,859
Obligation payable	38,458,178	38,835,597	39,195,045
Accrued compensated absences	-	-	-
Accrued workers' compensation	-	-	4,390,938
Claims and judgments	7,500,000	187,500	25,914,350
Other noncurrent liabilities	6,003,540	5,983,201	5,912,693
Net pension liability	114,810,555	124,506,503	109,208,359
<b>Total noncurrent liabilities</b>	<b>3,850,491,365</b>	<b>3,926,566,955</b>	<b>4,098,594,434</b>
<b>Total liabilities</b>	<b>3,994,555,256</b>	<b>4,108,327,596</b>	<b>4,271,331,738</b>
<b>Deferred inflows of resources</b>			
Deferred amounts for swap terminations	189,808	214,393	238,978
Deferred gain on refunding	46,654,836	49,257,784	-
Deferred pension amounts	12,994,118	11,750,654	27,805,977
<b>Total deferred inflows of resources</b>	<b>59,838,762</b>	<b>61,222,831</b>	<b>28,044,955</b>
<b>Net position</b>			
Net investment in capital assets	289,946,091	393,956,399	451,547,037
Restricted for debt service	101,996,536	107,931,677	108,742,193
Restricted for capital acquisition	102,506,361	150,930,508	164,326,618
Restricted for payment assistance program	3,308,896	3,117,744	-
Unrestricted deficit	(616,077,287)	(722,297,171)	(735,208,133)
<b>Total net position</b>	<b>\$ (118,319,403)</b>	<b>\$ (66,360,843)</b>	<b>\$ (10,592,285)</b>

concluded.

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

## GREAT LAKES WATER AUTHORITY

Schedule 3

UNAUDITED

## Changes in Net Position - Business-type Activities

	2018	2017	2016*
Operating revenues			
Wholesale customer charges	\$ 592,096,175	\$ 594,426,876	\$ 281,883,522
Industrial waste charges	14,334,979	14,381,106	6,910,192
Pollutant surcharges	6,908,404	5,206,294	2,423,910
Local system charges	194,099,800	202,794,400	102,660,400
Bad debt recovery	-	40,172,155	-
Other revenues	4,455,345	576,195	4,252,477
Total operating revenues	811,894,703	857,557,026	398,130,501
Operating expenses			
Personnel	95,525,457	86,156,304	21,590,763
Contractual services	99,877,310	90,135,859	17,179,869
Utilities	53,694,380	55,661,469	25,037,499
Chemicals	12,877,813	14,765,181	6,451,484
Supplies and other expenses	34,526,388	20,162,690	17,903,355
Capital program allocation	(1,683,450)	(2,128,078)	-
Shared services allocation	(9,908,111)	(11,704,210)	-
Centralized services	-	-	35,228,282
Administrative services	-	-	10,534,428
Depreciation	331,242,398	329,766,377	157,316,574
Amortization of intangible asset - raw water rights	2,080,554	-	-
Total operating expenses	618,232,739	582,815,592	291,242,254
Operating income	193,661,964	274,741,434	106,888,247
Nonoperating revenues (expenses)			
Earnings on investments	11,395,785	4,042,790	1,481,398
Interest on obligations receivable	38,856,520	42,332,428	21,062,500
Interest expense	(300,395,306)	(291,592,097)	(148,447,442)
Costs of issuance and amortization of debt related items	8,684,285	(14,937,182)	2,055,724
Legacy pension expense	(24,922,162)	(7,021,006)	-
WRAP (Water Residential Assistance Program)	(3,755,534)	(2,127,333)	-
Other	(1,254,350)	661,734	-
Gain (loss) on disposal of capital assets	2,463,478	(250,826)	275,693
Loss on impairment of capital assets	(654,451)	(31,499)	-
Total nonoperating expenses	(269,581,735)	(268,922,991)	(123,572,127)
Income (loss) before contributions and special item	(75,919,771)	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	(75,919,771)	(88,151,113)	(14,683,880)
Net position (deficit), beginning of year	(102,834,993)	(14,683,880)	-
Net position (deficit), end of year	\$ (178,754,764)	\$ (102,834,993)	\$ (14,683,880)

\*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

# GREAT LAKES WATER AUTHORITY

Schedule 3a

UNAUDITED

## Changes in Net Position - Water Fund

	2018	2017	2016*
Operating revenues			
Wholesale customer charges	\$ 323,117,344	\$ 331,115,131	\$ 160,777,169
Local system charges	15,130,600	15,490,300	6,833,500
Bad debt recovery	-	5,107,125	-
Other revenues	64,200	37,388	54,863
Total operating revenues	338,312,144	351,749,944	167,665,532
Operating expenses			
Personnel	41,845,295	38,261,393	8,301,022
Contractual services	35,794,549	34,257,419	3,304,113
Utilities	26,871,081	28,469,603	12,368,557
Chemicals	4,804,768	5,340,753	2,444,543
Supplies and other expenses	9,543,615	7,982,562	1,440,644
Capital program allocation	(713,779)	(977,762)	-
Shared services allocation	(9,615,146)	(11,603,019)	-
Centralized services	-	-	18,494,851
Administrative services	-	-	3,191,929
Depreciation	143,991,815	144,137,912	71,295,545
Amortization of intangible asset - raw water rights	2,080,554	-	-
Total operating expenses	254,602,752	245,868,861	120,841,204
Operating income	83,709,392	105,881,083	46,824,328
Nonoperating revenues (expenses)			
Earnings on investments	6,129,530	1,832,918	392,031
Interest on obligations receivable	23,351,220	25,269,750	12,231,250
Interest expense	(139,343,204)	(132,434,945)	(65,958,095)
Costs of issuance and amortization of debt related items	13,837,585	2,403,018	2,418,891
Legacy pension expense	(8,933,691)	(2,516,776)	-
WRAP (Water Residential Assistance Program)	(1,506,554)	(884,327)	-
Other	(544,813)	1,117,704	-
Gain (loss) on disposal of capital assets	(6,225)	(207,900)	-
Loss on impairment of capital assets	(654,451)	(31,499)	-
Total nonoperating expenses	(107,670,603)	(105,452,057)	(50,915,923)
Income (loss) before special item	(23,961,211)	429,026	(4,091,595)
Special item - memorandum of understanding with DWSD	-	(32,811,581)	-
Change in net position	(23,961,211)	(32,382,555)	(4,091,595)
Net position (deficit), beginning of year	(36,474,150)	(4,091,595)	-
Net position (deficit), end of year	\$ (60,435,361)	\$ (36,474,150)	\$ (4,091,595)

\*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 - Sewage Disposal Fund

	2018	2017	2016*
Operating revenues			
Wholesale customer charges	\$ 268,978,831	\$ 263,311,745	\$ 121,106,353
Industrial waste charges	14,334,979	14,381,106	6,910,192
Pollutant surcharges	6,908,404	5,206,294	2,423,910
Local system charges	178,969,200	187,304,100	95,826,900
Bad debt recovery	-	35,065,030	-
Other revenues	4,391,145	538,807	4,197,614
Total operating revenues	473,582,559	505,807,082	230,464,969
Operating expenses			
Personnel	53,680,162	47,894,911	13,289,741
Contractual services	64,082,761	55,878,440	13,875,756
Utilities	26,823,299	27,191,866	12,668,942
Chemicals	8,073,045	9,424,428	4,006,941
Supplies and other expenses	24,982,773	12,180,128	16,462,711
Capital program allocation	(969,671)	(1,150,316)	-
Shared services allocation	(292,965)	(101,191)	-
Centralized services	-	-	16,733,431
Administrative services	-	-	7,342,499
Depreciation	187,250,583	185,628,465	86,021,029
Total operating expenses	363,629,987	336,946,731	170,401,050
Operating income	109,952,572	168,860,351	60,063,919
Nonoperating revenues (expenses)			
Earnings on investments	5,266,255	2,209,872	1,089,367
Interest on obligations receivable	15,505,300	17,062,678	8,831,250
Interest expense	(161,052,102)	(159,157,152)	(82,489,347)
Costs of issuance and amortization of debt related items	(5,153,300)	(17,340,200)	(363,167)
Legacy pension expense	(15,988,471)	(4,504,230)	-
WRAP (Water Residential Assistance Program)	(2,248,980)	(1,243,006)	-
Other	(709,537)	(455,970)	-
Gain (loss) on disposal of capital assets	2,469,703	(42,926)	275,693
Total nonoperating expenses	(161,911,132)	(163,470,934)	(72,656,204)
Income (loss) before contributions and special item	(51,958,560)	5,389,417	(12,592,285)
Capital contributions	-	320,707	2,000,000
Special item - memorandum of understanding with DWSD	-	(61,478,682)	-
Change in net position	(51,958,560)	(55,768,558)	(10,592,285)
Net position (deficit), beginning of year	(66,360,843)	(10,592,285)	-
Net position (deficit), end of year	\$ (118,319,403)	\$ (66,360,843)	\$ (10,592,285)

\*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

# GREAT LAKES WATER AUTHORITY

Schedule 4

UNAUDITED

## Operating Revenues and Charge Increases

Last Three Years\*

	2018	2017	2016 [3]
<b>Water fund</b>			
Operating revenues:			
Wholesale customer charges	\$ 323,117,344	\$ 331,115,131	\$ 160,777,169
Local system charges	15,130,600	15,490,300	6,833,500
Bad debt recovery	-	5,107,125	-
Other revenues	64,200	37,388	54,863
<b>Total operating revenues</b>	<b>\$ 338,312,144</b>	<b>\$ 351,749,944</b>	<b>\$ 167,665,532</b>
Change in budgeted revenue requirement	-0.9%	4.0%	4.0%
Average annual charge increase all customers	1.9%	4.5%	9.8%
Average annual charge increase wholesale customers	2.0%	4.3%	11.3%
Detroit retail rate increase [2]	1.7%	3.3%	5.3%
Number of wholesale customers [1]	87	88	85
<b>Sewage disposal fund</b>			
Operating Revenues:			
Wholesale customer charges	\$ 268,978,831	\$ 263,311,745	\$ 121,106,353
Industrial waste and surcharges	21,243,383	19,587,400	9,334,102
Local system charges	178,969,200	187,304,100	95,826,900
Bad debt recovery	-	35,065,030	-
Other revenues	4,391,145	538,807	4,197,614
<b>Total operating revenues</b>	<b>\$ 473,582,559</b>	<b>\$ 505,807,082</b>	<b>\$ 230,464,969</b>
Change in budgeted revenue requirement	0.3%	4.0%	4.0%
Average annual charge increase all customers	-0.6%	8.3%	1.5%
Average annual charge increase wholesale customers	1.9%	4.9%	-1.1%
Detroit retail rate increase [2]	1.7%	3.5%	8.6%
Number of wholesale customers [1]	18	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.

[2] This is the rate increase the City of Detroit Water and Sewerage charges the local customers.

[3] Percentage increase based on previous budget of Detroit Water and Sewerage Department.

Source: Charge increases Great Lakes Water Authority minutes 6/7/17

Source: Charge increases Detroit retail rate Board of Water Commissioners minutes 6/21/17

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

# GREAT LAKES WATER AUTHORITY

Schedule 5

UNAUDITED

## Ratios of Outstanding Debt by Type

	2018	2017	2016*
<b>Water fund</b>			
Revenue bonds [1]	\$ 2,540,663,196	\$ 2,612,607,101	\$ 2,507,091,038
State revolving loans	25,435,902	17,252,235	17,383,761
<b>Total water fund</b>	<b>2,566,099,098</b>	<b>2,629,859,336</b>	<b>2,524,474,799</b>
<b>Sewage disposal fund</b>			
Revenue bonds [1]	2,739,090,653	2,797,168,264	2,922,089,599
Capital appreciation bonds [1]	14,984,042	19,501,737	19,668,138
State revolving loans	475,677,540	485,267,036	506,435,742
<b>Total sewage disposal fund</b>	<b>3,229,752,235</b>	<b>3,301,937,037</b>	<b>3,448,193,479</b>
<b>Business-type activities</b>			
Revenue bonds [1]	5,279,753,849	5,409,775,365	5,429,180,637
Capital appreciation bonds [1]	14,984,042	19,501,737	19,668,138
State revolving loans	501,113,442	502,519,271	523,819,503
<b>Total business-type activities debt</b>	<b>\$ 5,795,851,333</b>	<b>\$ 5,931,796,373</b>	<b>\$ 5,972,668,278</b>
<b>Total taxable value **</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>Total population served[2]:</b>			
Water	3,800,000	3,800,000	3,800,000
Sewage disposal	2,800,000	2,800,000	2,800,000
<b>Total debt per capita:</b>			
Water	\$ 675	\$ 692	\$ 664
Sewage disposal	1,153	1,179	1,231
<b>Per capital income [3]</b>	<b>51,493</b>	<b>50,863</b>	<b>48,692</b>
<b>Total debt as a percentage of income:</b>			
Water	1.31%	1.36%	1.36%
Sewage disposal	2.24%	2.32%	2.53%

[1] Amounts are reported net of premiums and discounts.

[2] Source: Estimated based on data from Southeast Michigan Council of Governments (SEMCOG).

[3] Source: FRED Economic Data, St. Louis Fed

\* 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.

\*\* GLWA does not levy property taxes; therefore, presentation of taxable values and the ratio of total debt to taxable value is not applicable.

Source: Great Lakes Water Authority Financial Services Area

Further details regarding the Authority's debt can be found in the notes to the financial statements.



# GREAT LAKES WATER AUTHORITY

Schedule 6

UNAUDITED

## Debt by Lien

as of June 30, 2018

	Original Principal Amount [1]	Outstanding as of June 30, 2018	Total Future Debt [2]
<b>Water Supply System Revenue Bonds</b>			
<b>Senior Lien Bonds</b>			
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	1,870,000	1,870,000
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	293,970,000	293,970,000
Water Supply System Revenue Senior Lien Bonds, Series 2011B	17,195,000	4,450,000	4,450,000
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 2014D-1	206,540,000	189,875,000	189,875,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-2	188,455,000	188,455,000	188,455,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-3	62,700,000	23,290,000	23,290,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-4	307,645,000	209,360,000	209,360,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2014D-5	9,270,000	9,270,000	9,270,000
Water Supply System Revenue Refunding Senior Lien Bonds, Series 2015D-1	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>1,616,740,000</u>	<u>1,616,740,000</u>
<b>Second Lien Bonds</b>			
Water Supply System Revenue Refunding Second Lien Bonds, Series 2001C	190,405,000	179,150,000	179,150,000
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	300,000	300,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2014D-6	65,425,000	65,425,000	65,425,000
Water Supply System Revenue Refunding Second Lien Bonds, Series 2015D-2	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>971,885,000</u>	<u>668,085,000</u>	<u>668,085,000</u>
<b>SRF Junior Lien Bonds</b>			
Water Supply System Revenue Bonds, Series 2005 SRF-1	13,805,164	6,710,164	6,710,164
Water Supply System Revenue Bonds, Series 2005 SRF-2	8,891,730	4,221,730	4,221,730
Water Supply System Revenue Bonds, Series 2006 SRF-1	5,180,926	2,495,926	2,495,926
Water Supply System Revenue Bonds, Series 2008 SRF-1	2,590,941	1,120,941	1,120,941
Water Supply System Revenue Bonds, Series 2016 SRF-1	9,605,000	7,533,598	9,605,000
Water Supply System Revenue Bonds, Series 2016 SRF-2	4,180,000	3,353,543	4,180,000
Water Supply System Revenue Bonds, Series 2017 SRF-1	6,675,000	-	6,675,000
	<u>50,928,761</u>	<u>25,435,902</u>	<u>35,008,761</u>
<b>Total water supply system revenue bonds</b>	<u><u>\$ 3,629,163,761</u></u>	<u><u>\$ 2,310,260,902</u></u>	<u><u>\$ 2,319,833,761</u></u>

continued...

# GREAT LAKES WATER AUTHORITY

Schedule 6

UNAUDITED

## Debt by Lien

as of June 30, 2018

	Original Principal Amount [1]	Outstanding as of June 30, 2018	Total Future Debt [2]
<b>Sewage Disposal System Revenue Bonds</b>			
<b>Senior Lien Bonds (revenue and SRF)</b>			
Sewage Disposal System Revenue Bonds (Senior), Series 1997B SRF	\$ 5,430,174	\$ 330,000	\$ 330,000
Sewage Disposal System Revenue Refunding Bonds, Series 1998A	67,615,000	18,485,000	18,485,000
Sewage Disposal System Revenue Refunding Bonds, Series 1998B	67,520,000	18,260,000	18,260,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-1	21,475,000	2,650,000	2,650,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-2	46,000,000	13,735,000	13,735,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-3	31,030,000	5,700,000	5,700,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-4	40,655,000	7,465,000	7,465,000
Sewage Disposal System Revenue Bonds, Series 1999A	33,510,118	17,250,000	17,250,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C-1	154,870,000	41,515,000	41,515,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C-2	122,905,000	107,425,000	107,425,000
Sewage Disposal System Senior Lien Revenue & Revenue Refunding Bonds, Series 2003A	599,380,000	415,000	415,000
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	524,925,000	524,925,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014C-1	123,220,000	123,220,000	123,220,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014C-2	27,470,000	27,470,000	27,470,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-3	446,170,000	446,170,000	446,170,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-5	95,165,000	34,430,000	34,430,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-6	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>1,879,035,000</u>	<u>1,879,035,000</u>
<b>Second Lien Bonds</b>			
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 2014C-7	76,715,000	76,715,000	76,715,000
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>1,306,845,000</u>	<u>752,160,000</u>	<u>752,160,000</u>

continued...

# GREAT LAKES WATER AUTHORITY

Schedule 6

UNAUDITED

## Debt by Lien

as of June 30, 2018

	Original Principal Amount [1]	Outstanding as of June 30, 2018	Total Future Debt [2]
<b>Sewage Disposal System Revenue Bonds (concluded)</b>			
<b>Junior Lien Bonds (SRF)</b>			
Sewage Disposal System Revenue Bonds, Series 2000 SRF-1	\$ 44,197,995	\$ 11,947,995	\$ 11,947,995
Sewage Disposal System Revenue Bonds, Series 2000 SRF-2	64,401,066	19,141,066	19,141,066
Sewage Disposal System Revenue Bonds, Series 2001 SRF-1	82,200,000	33,535,000	33,535,000
Sewage Disposal System Revenue Bonds, Series 2001 SRF-2	59,850,000	24,420,000	24,420,000
Sewage Disposal System Revenue Bonds, Series 2002 SRF-1	18,985,000	5,660,000	5,660,000
Sewage Disposal System Revenue Bonds, Series 2002 SRF-2	1,545,369	460,369	460,369
Sewage Disposal System Revenue Bonds, Series 2002 SRF-3	31,549,466	11,864,466	11,864,466
Sewage Disposal System Revenue Bonds, Series 2003 SRF-1	48,520,000	22,350,000	22,350,000
Sewage Disposal System Revenue Bonds, Series 2003 SRF-2	25,055,370	10,150,370	10,150,370
Sewage Disposal System Revenue Bonds, Series 2004 SRF-1	2,910,000	1,160,000	1,160,000
Sewage Disposal System Revenue Bonds, Series 2004 SRF-2	18,353,459	7,298,459	7,298,459
Sewage Disposal System Revenue Bonds, Series 2004 SRF-3	12,722,575	5,042,575	5,042,575
Sewage Disposal System Revenue Bonds, Series 2007 SRF-1	167,540,598	106,940,598	106,940,598
Sewage Disposal System Revenue Bonds, Series 2009 SRF-1	13,970,062	8,910,062	8,910,062
Sewage Disposal System Revenue Bonds, Series 2010 SRF-1	4,214,763	2,925,763	2,925,763
Sewage Disposal System Revenue Bonds, Series 2012 SRF-1	14,950,000	13,150,000	13,150,000
Sewage Disposal System Revenue Bonds, Series 2015A SRF	79,500,000	73,200,000	73,200,000
Sewage Disposal System Revenue Bonds, Series 2015B SRF	27,175,304	24,565,304	24,565,304
Sewage Disposal System Revenue Bonds, Series 2015D SRF	19,485,000	13,781,478	17,945,000
Sewage Disposal System Revenue Bonds, Series 2016 SAW-1	10,000,000	10,000,000	10,000,000
Sewage Disposal System Revenue Bonds, Series 2016 SRF-1	19,305,000	9,051,147	19,305,000
Sewage Disposal System Revenue Bonds, Series 2016 SRF-2	51,310,000	19,153,758	51,310,000
Sewage Disposal System Revenue Bonds, Series 2017 SRF-1	38,450,000	11,089,130	38,450,000
	<u>856,191,027</u>	<u>445,797,540</u>	<u>519,732,027</u>
<b>Total sewage disposal system revenue bonds</b>	<u><u>\$ 5,596,651,319</u></u>	<u><u>\$ 3,076,992,540</u></u>	<u><u>\$ 3,150,927,027</u></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, 2018 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, 2018

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						
2019 [2]	\$ 2,270	\$ 63,957	\$ 66,227	\$ 515	\$ 31,045	\$ 31,560
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	28,104	47,379
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	42,332	129,022	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	<u>\$ 1,616,740</u>	<u>\$ 1,112,249</u>	<u>\$ 2,728,989</u>	<u>\$ 668,085</u>	<u>\$ 516,432</u>	<u>\$ 1,184,517</u>

Schedule 7  
UNAUDITED

Junior Lien Bonds (in \$1,000s)			Total (in \$1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2018	Additional Future Junior Lien Debt Service on Undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
\$ 1,775	\$ 565	\$ 2,340	\$ 100,127	\$ 244	\$ 100,371
1,810	530	2,340	169,316	387	169,703
1,855	490	2,345	175,316	389	175,705
1,895	449	2,344	179,260	390	179,650
1,940	406	2,346	175,468	391	175,859
1,985	363	2,348	179,402	386	179,788
2,025	319	2,344	179,357	387	179,744
2,065	274	2,339	179,236	388	179,624
2,098	228	2,326	179,127	389	179,516
510	198	708	177,393	389	177,782
516	186	702	177,341	389	177,730
410	174	584	177,134	389	177,523
425	164	589	176,964	390	177,354
430	153	583	176,831	389	177,220
445	142	587	176,823	389	177,212
455	131	586	176,695	389	177,084
465	120	585	176,371	389	176,760
480	108	588	144,475	388	144,863
490	96	586	164,531	387	164,918
500	84	584	80,672	387	81,059
515	72	587	84,805	391	85,196
530	59	589	84,728	389	85,117
540	45	585	84,642	388	85,030
555	32	587	83,295	387	83,682
565	18	583	57,561	390	57,951
157	4	161	57,085	811	57,896
-	-	-	56,864	976	57,840
-	-	-	56,800	973	57,773
-	-	-	56,733	971	57,704
-	-	-	-	978	978
-	-	-	-	319	319
<u>\$ 25,436</u>	<u>\$ 5,410</u>	<u>\$ 30,846</u>	<u>\$ 3,944,352</u>	<u>\$ 14,599</u>	<u>\$ 3,958,951</u>

# GREAT LAKES WATER AUTHORITY

## Schedule of Debt Service Requirements

as of June 30, 2018

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						
2019 [2]	\$ 18,550	\$ 69,373	\$ 87,923	\$ -	\$ 31,001	\$ 31,001
2020	60,620	85,743	146,363	6,075	37,696	43,771
2021	61,935	83,052	144,987	8,335	37,335	45,670
2022	50,395	80,625	131,020	17,515	36,663	54,178
2023	65,440	77,919	143,359	11,905	35,885	47,790
2024	74,955	74,397	149,352	3,215	35,485	38,700
2025	75,790	70,505	146,295	16,035	34,971	51,006
2026	74,635	66,540	141,175	16,995	34,087	51,082
2027	92,895	62,373	155,268	21,040	33,075	54,115
2028	97,065	58,266	155,331	25,795	31,840	57,635
2029	100,895	54,028	154,923	26,640	30,462	57,102
2030	105,475	49,485	154,960	19,860	29,230	49,090
2031	109,890	45,094	154,984	32,550	27,883	60,433
2032	113,795	40,939	154,734	34,175	26,215	60,390
2033	117,875	36,295	154,170	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	25,273	26,723	168,680	13,075	181,755
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	5,444	34,079	-	-	-
2043	30,065	3,977	34,042	-	-	-
2044	31,570	2,436	34,006	-	-	-
2045	32,935	823	33,758	-	-	-
Total	\$ 1,879,035	\$ 1,131,257	\$ 3,010,292	\$ 752,160	\$ 547,942	\$ 1,300,102

[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, 2018, are not included in the debt service requirement amounts above as they were paid June 25, 2018.

Source: Great Lakes Water Authority Financial Services Area

Schedule 7  
UNAUDITED

Junior Lien Bonds (in \$1,000s)			Total (in \$1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2018	Additional Future Junior Lien Debt Service on Undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
\$ 37,390	\$ 9,815	\$ 47,205	\$ 166,129	\$ 1,874	\$ 168,003
41,460	8,961	50,421	240,555	1,848	242,403
43,310	7,985	51,295	241,952	1,848	243,800
44,540	6,971	51,511	236,709	1,848	238,557
45,534	5,932	51,466	242,615	1,848	244,463
38,430	4,953	43,383	231,435	1,848	233,283
39,306	4,070	43,376	240,677	1,848	242,525
25,515	3,306	28,821	221,078	1,849	222,927
21,434	2,802	24,236	233,619	3,350	236,969
20,719	2,349	23,068	236,034	4,498	240,532
19,126	1,911	21,037	233,062	6,528	239,590
18,921	1,514	20,435	224,485	7,123	231,608
8,581	1,204	9,785	225,202	7,124	232,326
8,525	988	9,513	224,637	7,122	231,759
8,157	781	8,938	209,831	7,702	217,533
7,795	583	8,378	211,773	8,267	220,040
7,995	387	8,382	217,213	8,264	225,477
7,225	198	7,423	215,901	8,262	224,163
595	38	633	208,845	7,021	215,866
610	23	633	130,098	7,026	137,124
630	8	638	129,954	5,781	135,735
-	-	-	129,164	-	129,164
-	-	-	34,117	-	34,117
-	-	-	34,079	-	34,079
-	-	-	34,042	-	34,042
-	-	-	34,006	-	34,006
-	-	-	33,758	-	33,758
<u>\$ 445,798</u>	<u>\$ 64,779</u>	<u>\$ 510,577</u>	<u>\$ 4,820,971</u>	<u>\$ 102,879</u>	<u>\$ 4,923,850</u>

# GREAT LAKES WATER AUTHORITY

Schedule 8

UNAUDITED

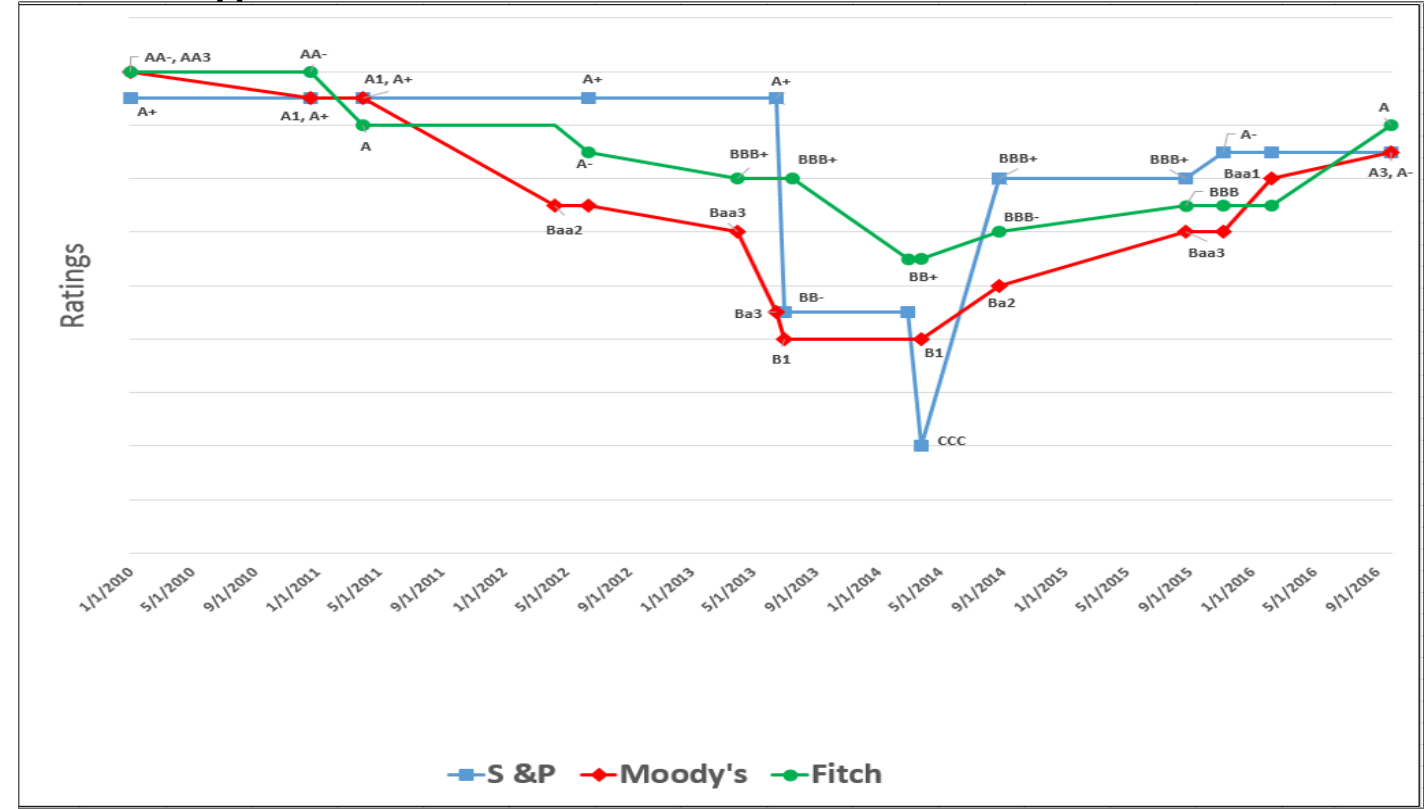
## Current Debt Ratings as of June 30, 2018

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]



[1] September 30, 2016 ratings remain unchanged as of June 30, 2018.  
See Subsequent Event Refunding footnote for additional information on upgraded debt ratings after June 30, 2018.  
Source: Great Lakes Water Authority Financial Services Area

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# GREAT LAKES WATER AUTHORITY

Schedule 10

UNAUDITED

## 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
<b>Water fund</b>						
2018	3,800,000	3.7%	\$ 51,493 (4)	\$ 172,549,890	\$ 45.41	0.09%
2017	3,800,000	4.4%	50,863	175,010,012	46.06	0.09%
2016 *	3,800,000	5.3%	48,692	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	8.2%	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%
<b>Sewage disposal fund</b>						
2018	2,800,000	3.7%	\$ 51,493 (4)	\$ 232,491,813	\$ 83.03	0.16%
2017	2,800,000	4.4%	50,863	234,554,814	83.77	0.16%
2016 *	2,800,000	5.3%	48,692	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	8.2%	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%

(1) Source: Estimated based on data from Southeast Michigan Council of Governments (SEMCOG) and census.gov.

(2) Source: Bureau of Labor Statistics Detroit-Warren-Dearborn MSA Annual Average (For 2018 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 July 1st debt payment.

\*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 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

	2009*	2010*	2011*	2012*
Operating revenues				
Flint [1]	\$ 17,421,571	\$ 17,421,663	\$ 17,103,752	\$ 20,919,987
Genesee County Drain Commission [1]	-	-	-	-
Southeast Oakland County Water Authority	9,285,621	9,285,621	10,293,814	12,111,306
Troy	7,445,795	7,550,028	7,295,491	-
Sterling Heights	8,578,659	8,696,601	8,113,053	9,882,899
Farmington Hills	7,547,579	7,547,585	7,775,635	8,503,722
Warren	-	-	7,532,208	9,121,108
Livonia	7,033,848	7,033,853	7,804,684	8,806,767
Shelby Township	7,403,055	7,403,056	8,175,322	9,966,936
Novi	6,913,500	6,782,362	7,063,698	8,340,815
Macomb Township	-	-	-	-
Rochester Hills	8,644,531	8,553,457	9,047,860	10,324,388
North Oakland County Water Authority	-	-	-	-
West Bloomfield Township	-	-	-	7,973,620
Canton Township	6,876,444	7,142,729	-	-
Ypsilanti Community Utilities Authority	-	-	-	-
<b>Total</b>	<b>\$ 87,150,603</b>	<b>\$ 87,416,955</b>	<b>\$ 90,205,517</b>	<b>\$ 105,951,548</b>
Operating revenues - DWSD	\$ 274,095,463	\$ 285,470,426	\$ 316,002,201	\$ 336,129,945
Operating revenues - GLWA	-	-	-	-
<b>Total operating revenues</b>	<b>\$ 274,095,463</b>	<b>\$ 285,470,426</b>	<b>\$ 316,002,201</b>	<b>\$ 336,129,945</b>
<b>% of total operating revenues</b>	<b>31.80%</b>	<b>30.62%</b>	<b>28.55%</b>	<b>31.52%</b>

[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 2009-2015 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

2013*	2014*	2015*	2016*	2017	2018
\$ 23,308,800	\$ 23,871,366	\$ 15,804,309	\$ -	\$ 13,256,330	\$ 12,235,483
-	-	-	17,231,935	18,493,530	-
19,541,038	19,467,746	19,779,978	22,846,983	22,434,129	23,118,160
9,311,146	9,715,613	9,761,438	12,365,922	13,939,815	13,842,135
12,089,582	12,015,093	12,650,819	14,678,915	15,480,008	15,571,146
10,575,173	9,769,372	9,797,153	-	-	-
9,945,794	9,060,112	9,297,285	-	-	-
10,338,724	9,728,576	10,325,750	12,809,124	13,483,657	13,669,376
10,824,461	10,770,614	11,035,002	12,689,582	13,462,808	13,554,398
-	-	-	11,869,865	-	-
-	-	-	10,103,536	10,945,117	11,167,739
9,529,341	9,600,373	9,432,554	-	-	-
-	-	-	22,585,698	22,913,261	23,365,866
9,655,154	-	-	-	-	-
-	9,400,322	9,692,530	12,319,875	13,872,584	13,334,615
-	-	-	-	-	11,038,134
<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>	<u>\$ 150,897,052</u>
\$ 355,527,761	\$ 349,369,362	\$ 364,278,054	\$ 167,665,532	\$ -	\$ -
-	-	-	217,759,272	351,749,944	338,312,144
<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>	<u>\$ 338,312,144</u>
<u>35.19%</u>	<u>35.32%</u>	<u>32.28%</u>	<u>38.79%</u>	<u>45.00%</u>	<u>44.60%</u>

## GREAT LAKES WATER AUTHORITY

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

	2009*	2010*	2011*	2012*
Operating revenues				
Oakland Macomb Interceptor Drainage District	\$ 57,753,543	\$ 52,780,322	\$ 51,216,403	\$ 59,379,605
Wayne County - Rouge Valley	40,843,614	35,175,971	41,807,733	47,309,391
Oakland County-George W Kuhn Drainage District	33,965,834	27,820,025	35,810,320	39,620,971
Evergreen Farmington	26,875,478	22,080,501	24,951,389	28,097,941
NE Wayne County	18,023,991	14,760,986	19,146,923	20,532,777
Dearborn	13,572,269	12,752,026	14,441,467	15,884,591
Highland Park	4,438,562	3,965,206	4,490,709	4,840,249
Hamtramck	2,689,250	4,386,331	3,249,930	3,437,744
Grosse Pointe Farms	1,370,953	1,605,103	1,857,469	1,922,441
Grosse Pointe Park	1,206,275	976,896	1,151,516	1,413,363
Total	<u>\$ 200,739,770</u>	<u>\$ 176,303,366</u>	<u>\$ 198,123,859</u>	<u>\$ 222,439,074</u>
Operating revenues - DWSD	\$ 390,126,398	\$ 365,537,390	\$ 410,719,075	\$ 437,654,891
Operating revenues - GLWA	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total operating revenues	<u>\$ 390,126,398</u>	<u>\$ 365,537,390</u>	<u>\$ 410,719,075</u>	<u>\$ 437,654,891</u>
% of total operating revenues	<u>51.46%</u>	<u>48.23%</u>	<u>48.24%</u>	<u>50.83%</u>

\*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 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

2013*	2014*	2015*	2016*	2017	2018
\$ 62,302,424	\$ 71,972,397	\$ 74,853,600	\$ 69,206,904	\$ 69,627,600	\$ 72,816,000
44,972,847	51,181,360	50,930,400	51,784,039	55,486,800	55,022,400
38,148,325	41,658,188	42,046,800	42,804,155	45,682,800	45,751,200
27,556,982	29,198,838	29,686,800	30,177,613	32,179,200	33,733,200
19,293,968	20,406,419	22,585,200	22,993,819	24,120,000	24,637,200
15,292,901	16,406,661	18,190,800	18,368,762	19,603,200	19,628,400
5,007,724	6,887,428	5,569,200	5,616,167	5,818,800	5,642,400
3,586,927	3,941,094	4,054,800	3,936,205	4,086,000	3,958,800
2,462,068	2,502,113	2,449,200	2,486,773	2,667,600	2,696,400
1,273,953	1,244,951	1,465,200	1,492,206	1,626,000	1,740,000
<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>	<u>\$ 265,626,000</u>
\$ 440,863,260	\$ 475,770,844	\$ 505,671,614	\$ 282,415,566	\$ -	\$ -
-	-	-	230,464,969	505,807,082	473,582,559
<u>\$ 440,863,260</u>	<u>\$ 475,770,844</u>	<u>\$ 505,671,614</u>	<u>\$ 512,880,535</u>	<u>\$ 505,807,082</u>	<u>\$ 473,582,559</u>
<u>49.88%</u>	<u>51.58%</u>	<u>49.80%</u>	<u>48.52%</u>	<u>51.58%</u>	<u>56.09%</u>

**Schedule of Wholesale Water 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	\$ 116,400	\$ 6.87	Madison Heights	\$ 101,300	\$ 5.75
Almont, Village of	10,900	9.72	Mayfield Township	1,700	23.53
Ash Township	37,300	7.41	Melvindale	33,300	5.96
Belleville	15,500	8.64	New Haven, Village of	17,500	9.86
Berlin Township	35,900	9.90	North Oakland County Water Authority	1,165,900	10.02
Brownstown Township	170,900	9.87	Northville, City	37,500	9.35
Bruce Township	8,600	66.55	Northville Township	304,200	18.31
Canton Township	650,900	15.52	Novi	444,700	12.99
Center Line	23,700	5.82	Oak Park	66,600	5.32
Chesterfield Township	191,500	9.37	Oakland County Drain Commission	3,200	2.96
Clinton Township	392,600	7.77	Plymouth, City	50,800	9.69
Commerce Township	247,400	20.24	Plymouth Township	214,100	10.08
Dearborn	473,100	6.11	Redford Township	170,500	7.90
Dearborn Heights	190,500	7.19	River Rouge	34,800	5.25
Eastpointe	80,900	5.68	Riverview	45,800	8.20
Ecorse	71,400	3.82	Rockwood	14,900	11.21
Farmington	49,000	8.27	Romeo	12,500	16.62
Farmington Hills	446,900	9.76	Romulus	184,700	7.54
Ferndale	49,100	5.79	Roseville	132,700	5.33
Flat Rock	59,800	7.48	Royal Oak Township	11,200	7.54
Flint [1]	693,200	9.35	Shelby Township	678,900	13.60
Fraser	65,200	8.20	Southeastern Oakland County Water Authority	1,145,000	7.10
Garden City	82,300	7.34	South Rockwood	5,100	7.90
Genesee County Drain Commission [2]	603,300	9.23	Southgate	108,700	7.04
Gibraltar	23,400	10.83	St. Clair County-Burtchville Township	14,600	14.45
Grosse Ile Township	63,900	12.37	St. Clair County-Greenwood	19,900	13.95
Grosse Pointe Park	71,400	9.34	St. Clair Shores	155,400	6.00
Grosse Pointe Shores	31,000	12.57	Sterling Heights	797,300	10.35
Grosse Pointe Woods	73,100	8.13	Sumpter Township	32,100	8.82
Hamtramck	34,100	4.63	Sylvan Lake	11,800	14.02
Harper Woods	43,600	6.09	Taylor	242,200	6.88
Harrison Township	71,700	6.20	Trenton	106,300	9.43
Hazel Park	35,000	5.45	Troy	673,300	11.80
Highland Park [3]	62,600	4.56	Utica	29,600	9.75
Huron Township	70,700	9.24	Van Buren Township	145,100	9.03
Imlay City	49,600	10.54	Walled Lake	45,600	11.83
Imlay Township	700	68.63	Warren	506,900	5.93
Inkster	92,000	7.53	Washington Township	105,800	12.00
Keego Harbor	15,200	11.67	Wayne	138,700	11.71
Lapeer	69,200	9.85	West Bloomfield Township	482,500	14.65
Lenox Township	14,600	6.71	Westland	301,800	7.61
Lincoln Park	110,900	6.22	Wixom	121,500	14.08
Livonia	682,200	11.06	Woodhaven	102,400	13.17
Macomb Township	534,600	13.75	Ypsilanti Community Utilities Authority	542,900	8.78

Annual Detroit Wholesale Revenue Requirement \$15,130,600 - Effective July 1, 2017

\*Wholesale charges went into effect July 1, 2016

[1] Flint charges effective 12/1/17 Fixed monthly charge \$545,000, Commodity charge \$7.39, Pass-thru GCDC charge \$67,917.40

[2] Genesee County Drain Commission service changed 12/16/17 to emergency service only, Commodity charge \$17.00

[3] Highland Park charges effective 9/1/17 Fixed monthly charge \$64,300, Commodity charge \$4.68

Source: Great Lakes Water Authority Financial Services Area



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

	Total
Oakland Macomb Interceptor District (OMID)	\$ 6,068,000
Rouge Valley	4,585,200
Oakland County - George W. Kuhn (GWK)	3,812,600
Evergreen Farmington	2,811,100
Northeast Wayne County	2,053,100
Dearborn	1,635,700
Highland Park	470,200
Hamtramck	329,900
Grosse Pointe Farms	224,700
Grosse Pointe Park	145,000
Melvindale	122,300
Farmington	94,900
Center Line	82,200
Grosse Pointe	75,800
Allen Park	64,300
Redford Township	21,200
Harper Woods	19,300
Wayne County #3	3,800

Annual Detroit Wholesale Revenue Requirement \$178,969,200 - Effective July 1, 2017

\*Wholesale charges went into effect July 1, 2017

Source: Great Lakes Water Authority Financial Services Area

**Industrial Waste Control Charges and Pollutant Surcharges**

Effective July 1, 2017

	Charge per Month
<b>Industrial waste control charges</b>	
Meter size - inches:	
5/8	\$ 5.68
3/4	8.52
1	14.20
1 1/2	31.24
2	45.44
3	82.36
4	113.60
6	170.40
8	284.00
10	397.60
12	454.40
14	568.00
16	681.60
18	795.20
20	908.80
24	1,022.40
30	1,136.00
36	1,249.60
48	1,363.20
<b>Pollutant surcharges</b>	
Biochemical Oxygen Demand (BOD) for concentrations > 275 mg/l	\$ 0.487
Total Suspended Solids (TSS) for concentrations > 350 mg/l	\$ 0.494
Phosphorus (P) for concentrations > 12 mg/l	\$ 7.282
Fats, Oil and Grease (FOG) for concentrations > 100 mg/l	\$ 0.469
Septage Disposal Fee \$ per 500 gallons of disposal	\$ 47.00

Source: Great Lakes Water Authority Financial Services Area

**Largest Employers**

Current Year and 5 years Ago

Employer	Fixed Monthly Type of Business	Fiscal Year 2018		Fiscal Year 2013	
		Full-time Employees	Rank	Full-time Employees	Rank
Ford Motor Co.	Automobile manufacturer	48,000	1	43,977	1
General Motors Co.	Automobile manufacturer	37,400	2	26,843	4
FCA US LLC/Chrysler Group LLC	Automobile manufacturer	35,399	3	29,006	3
University of Michigan	Public university and health system	34,067	4	29,551	2
Beaumont Health	Health care system	28,012	5	13,134	9
Henry Ford Health System	Health care system	23,724	6	17,831	6
U.S. Government	Federal government	18,817	7	18,600	5
Rock Ventures	Umbrella entity managing a portfolio of companies in investment and real estate	17,819	8	n/a	n/a
Detroit Medical Center	Health care system	n/a	n/a	13,458	8
Trinity Health	Health care system	15,899	9	14,062	7
Ascension Michigan/St. John Providence Health System	Health care system	11,893	10	12,002	10

Source: Crain's Detroit Business, Largest Southeast Michigan Employers - Ranked by full-time employees as of July 2018 and July 2013.

### 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]		
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%
2018	23,228,600	14,391,768	2,876,255	17,268,023	5,960,577	25.7%

[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 2009-2015 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
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
2018		235,600	119,400	19,500	138,900

\*GLWA assumed operations on January 1, 2016. The information in this table from 2009-2015 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. A fixed charge billing methodology was implemented in 2015. Volumes reflect measured and monitored wastewater flow.

[2] Reported water sales to retail customers

Source: Great Lakes Water Authority Financial Services Area and DWSD

# GREAT LAKES WATER AUTHORITY

Schedule 18  
UNAUDITED

## Pledges of Revenue and Debt Service Coverage - Water Fund as of June 30, 2018

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 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, 2018 were reported by two entities because of the lease agreement between the City of Detroit and Great Lakes Water Authority which became effective on January 1, 2016. The pledged 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 the Great Lakes Water Authority. A summary of the pledged revenue and the applicable debt as of June 30, 2018 is as follows:

	Water Fund			
	Budget [3]	Actual [4]	Variance	% Variance
Term of pledged commitment	Through 2047			
Calculation of Pledged Revenue as defined in Master Bond Ordinance				
GLWA revenue pledged-excludes local charges				
Suburban Wholesale Customers [1]	\$ 310,019,800	\$ 323,117,344	\$ 13,097,544	4%
Detroit Customers				
Wholesale Service Charge Revenue [1]	15,130,600	15,130,600	-	0%
Local Service Revenues	73,860,600	80,542,437	6,681,837	9%
Total Detroit Customers	88,991,200	95,673,037	6,681,837	8%
Total Service Charge Revenue	399,011,000	418,790,381	19,779,381	5%
Other Operating Revenue-GLWA	-	64,200	64,200	100%
Other Operating Revenue-DWSD	4,750,000	3,441,349	(1,308,651)	-28%
Earnings on investments net of construction fund investment earnings	2,968,900	4,489,397	1,520,497	51%
Total Revenue	406,729,900	426,785,327	20,055,427	5%
Cash Transfers				
Operations and Maintenance Fund Regional System	127,610,600	127,621,400	10,800	0%
Operations and Maintenance Fund Local System	39,331,700	39,341,300	9,600	0%
Total Cash Transfers to Operations and Maintenance Funds	166,942,300	166,962,700	20,400	0%
Pledged revenue for the year ending June 30, 2018	\$ 239,787,600	\$ 259,822,627	\$ 20,035,027	8%
Principal and interest funding requirement for the year ending June 30, 2018 [2]:				
Senior Lien Bonds	\$ 127,687,500	\$ 127,687,420	\$ (80)	0%
Second Lien Bonds	42,852,900	42,852,813	(87)	0%
Total Senior and Second Lien Bonds	170,540,400	170,540,233	(167)	0%
Junior Lien Bonds	2,410,700	2,009,658	(401,042)	-17%
Total All Bonds	\$ 172,951,100	\$ 172,549,891	\$ (401,209)	0%
Rate Covenant Debt Service Coverage [2]				
Senior Lien Bonds	1.88	2.03	0.15	8%
Senior and Second Lien Bonds	1.41	1.52	0.11	8%
All Bonds, Including SRF Junior Lien	1.39	1.51	0.12	9%
Approximate amount in restricted cash investments related to various bond indentures at June 30, 2018		\$ 142,631,408		

[1] Total GLWA Regional System Wholesale Revenue

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

[3] The purpose of this information is to show a combined reference of the regional system revenue requirements as approved by the GLWA and the local revenue requirements adopted and amended by DWSD included here for review of budget-to-actual performance in alignment with the Master Bond Ordinance. The DWSD budget reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.

[4] At the time of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

Source: Great Lakes Water Authority Financial Services Area

# GREAT LAKES WATER AUTHORITY

Schedule 18  
UNAUDITED

## Pledges of Revenue and Debt Service Coverage - Sewage Disposal Fund as of June 30, 2018

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 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, 2018 were reported by two entities because of the lease agreement between the City of Detroit and Great Lakes Water Authority which became effective on January 1, 2016. The pledged 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 the Great Lakes Water Authority. A summary of the pledged revenue and the applicable debt as of June 30, 2018 is as follows:

	Sewage Disposal Fund			
	Budget [3]	Actual [4]	Variance	% Variance
Term of pledged commitment	Through 2045			
Calculation of Pledged Revenue as defined in Master Bond Ordinance				
GLWA revenue pledged-excludes local charges				
Suburban Wholesale Customers [1]	\$ 267,033,800	\$ 268,978,831	\$ 1,945,031	1%
Industrial waste charges	14,457,700	14,334,979	(122,721)	-1%
Pollutant surcharges	5,099,000	6,908,404	1,809,404	35%
Subtotal - Regional System Suburban Wholesale Customers	286,590,500	290,222,214	3,631,714	1%
Detroit Customers				
Wholesale Service Charge Revenue [1]	178,969,200	178,969,200	-	0%
Local Service Revenues	77,922,900	81,612,282	3,689,382	5%
Total Detroit Customers	256,892,100	260,581,482	3,689,382	1%
Total Service Charge Revenue	543,482,600	550,803,696	7,321,096	1%
Other Operating Revenue-GLWA	-	4,391,145	4,391,145	100%
Other Operating Revenue-DWSD	5,000,000	5,089,230	89,230	2%
Earnings on investments net of construction fund investment earnings	2,751,000	4,022,582	1,271,582	46%
Total Revenue	551,233,600	564,306,653	13,073,053	2%
Cash Transfers				
Operations and Maintenance Fund Regional System	201,903,400	201,889,000	(14,400)	0%
Operations and Maintenance Fund Local System	63,258,000	63,362,192	104,192	0%
Total Cash Transfers to Operations and Maintenance Funds	265,161,400	265,251,192	89,792	0%
Pledged revenue for the year ending June 30, 2018	\$ 286,072,200	\$ 299,055,461	\$ 12,983,261	5%
Principal and interest funding requirement for the year ending June 30, 2018 [2]:				
Senior Lien Bonds	\$ 142,376,800	\$ 141,718,836	(657,964)	0%
Second Lien Bonds	43,990,100	43,990,100	-	0%
Total Senior and Second Lien Bonds	186,366,900	185,708,936	(657,964)	0%
Junior Lien Bonds	48,641,100	46,782,877	(1,858,223)	-4%
Total All Bonds	\$ 235,008,000	\$ 232,491,813	\$ (2,516,187)	-1%
Rate Covenant Debt Service Coverage [2]				
Senior Lien Bonds	2.01	2.11	0.10	5%
Senior and Second Lien Bonds	1.53	1.61	0.08	5%
All Bonds, Including SRF Junior Lien	1.22	1.29	0.07	6%
Approximate amount in restricted cash investments related to various bond indentures at June 30, 2018		\$ 99,654,215		

[1] Total GLWA Regional System Wholesale Revenue

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

[3] The purpose of this information is to show a combined reference of the regional system revenue requirements as approved by the GLWA and the local revenue requirements adopted and amended by DWSD included here for review of budget-to-actual performance in alignment with the Master Bond Ordinance. The DWSD budget reflects budget presented in the Series 2018 Bond Official Statement. Adjustments are attributable to reallocation of certain non-operating revenue requirements.

[4] At the time of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

Source: Great Lakes Water Authority Financial Services Area

# GREAT LAKES WATER AUTHORITY

Schedule 18

UNAUDITED

## Pledges of Revenue and Debt Service Coverage

Last Three Years [1]

	2018 [3]	2017 [4]	2016 [1]
<b>Water fund</b>			
Pledged revenue	<u>\$ 259,822,627</u>	<u>\$ 272,268,873</u>	<u>\$ 270,117,396</u>
Principal and interest funding requirement [2]:			
Senior and second lien bonds			
Senior lien bonds	\$ 127,687,420	\$ 134,234,660	\$ 128,177,999
Second lien bonds	42,852,813	38,990,023	41,178,843
Total senior and second lien bonds	170,540,233	173,224,683	169,356,842
Junior lien bonds	2,009,658	1,785,328	1,781,683
Total all bonds	<u>\$ 172,549,891</u>	<u>\$ 175,010,011</u>	<u>\$ 171,138,525</u>
Rate covenant debt service coverage [2]			
Senior lien bonds	2.03	2.03	2.11
Senior and second lien bonds	1.52	1.57	1.59
All bonds, including SRF junior lien	1.51	1.56	1.58
<b>Sewage disposal fund</b>			
Pledged revenue	<u>\$ 299,055,461</u>	<u>\$ 326,300,994</u>	<u>\$ 326,048,837</u>
Principal and interest funding requirement [2]:			
Senior and second lien bonds			
Senior lien bonds	\$ 141,718,836	\$ 140,854,010	\$ 140,191,016
Second lien bonds	43,990,100	47,918,639	48,944,924
Total senior and second lien bonds	185,708,936	188,772,649	189,135,940
Junior lien bonds	46,782,877	45,782,165	39,434,631
Total all bonds	<u>\$ 232,491,813</u>	<u>\$ 234,554,814</u>	<u>\$ 228,570,571</u>
Rate covenant debt service coverage [2]			
Senior lien bonds	2.11	2.32	2.33
Senior and second lien bonds	1.61	1.73	1.72
All bonds, including SRF junior lien	1.29	1.39	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 calculations.

[3] At the time of the issuance of the GLWA CAFR, DWSD's audited financial report had not been released. The local system amounts above reflect DWSD's management representation of preliminary financial results for the year ended June 30, 2018.

[4] Pledged revenue was updated for change in what items to include in DWSD revenue. The miscellaneous operating income was removed and the revenue was reduced for bad debt expense reported under operating expenses by DWSD.

Source: Great Lakes Water Authority Financial Services Area



**Additional Summary Statistics**  
Last Three Years\*

	2018	2017	2016
<b>Capital Asset Statistics - Water</b>			
Water Treatment Plants	5	5	5
Intake Facilities	3	3	3
Booster Pumping Stations	19	19	19
Water Storage Reservoirs	32	32	32
Miles of Transmission Lines	803	803	803
<b>Capital Asset Statistics - Sewer</b>			
Water Resource Recovery Facility	1	1	1
Major Interceptors	3	3	3
Combined Sewer Overflow Facilities:			
Retention Treatment Basins	5	5	5
Flow-through Type Facilities	3	3	3
Miles of Trunk Sewers and Interceptors	181	181	181
<b>GLWA Employees</b>	968	881	782

\*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

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**GLWA**

*Great Lakes Water Authority*

**Financial Services**

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