



Audit Committee

Friday, July 20, 2018 at 8:00 a.m.

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

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
 - A. June 15, 2018 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
7. NEW BUSINESS
 - A. Proposed Resolution Regarding Approval of Series Ordinance (Page 8)
Authorizing Issuance and Sale of Water Supply System Revenue Refunding Bonds
an Amount Not to Exceed \$225,000,000 (Ordinance 2018-02)
 - B. Resolution Regarding Approval of Series Ordinance Authorizing (Page 33)
Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding
Bonds an Amount Not to Exceed \$325,000,000 (Ordinance 2018-03)
 - C. 2018 Bond Transaction Update (verbal)
 - D. Cash Analysis – Long-term Planning
 - E. Financial Reporting Schedule
 - F. Wastewater Charges Outreach Committee Update (verbal)
 - G. Proposed Amendments to the Great Lakes Water Authority (Page 61)
Investment Policy
 - H. Proposed Audit Fee Change Order for the FY 2017 Audit
8. REPORTS
 - A. Quarterly Investment Report as of March 31, 2018 (Page 82)
 - B. Master Bond Ordinance Monthly Cash Transfers through (Page 111)
June 1, 2018
 - C. Monthly Revenue & Collections Report for May 2018 (Page 116)
 - D. Trust Receipts & Disbursements Report for May 2018 (Page 140)
9. CFO Update
10. LOOK AHEAD

Next Audit Committee Meeting – August 17, 2018 at 8 am (Regular Meeting)
11. INFORMATION
12. OTHER MATTERS
13. ADJOURNMENT

Highlighted items are in Binder 1.
Items not highlighted will be
distributed in a separate binder.



Great Lakes Water Authority

AGENDA ITEM #4A

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

Meeting Minutes - Draft

Audit Committee

Friday, June 15, 2018

8:00 AM

Water Board Building 5th Floor

1. Call To Order

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

2. Quorum Call

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

3. Approval of Agenda

Chairman Baker requested a Motion to approve the Agenda.

Motion By: Gary Brown

Support By: Robert Daddow

Action: Approved

The motion carried by a unanimous vote.

4. Approval of Minutes

[2018-798](#) Approval of Minutes May 22, 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [May 22 2018 Audit Committee Meeting Minutes.Draft](#)

Chairman Baker requested a Motion to approve the May 22, 2018 Audit Committee Meeting Minutes.

Motion By: Robert Daddow

Support By: Gary Brown

Action: Approved

The motion carried by a unanimous vote.

5. Public Comment

There were no public comments.

6. Old Business

A. [2018-799](#) Proposed Underwriter Selection for the for the 2018 Financing Program

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Underwriter Selection Memo 6.15.2018](#)
[Underwriter Selection Attachments 6.15.2018 AB](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Recommended for Approval to the Board of Directors

Agenda of June 20, 2018

The motion carried by a unanimous vote.

7D. [2018-804](#) Proposed Resolution Regarding Approval of Series Ordinance Authorizing Issuance and Sale of Sewage Disposal System Revenue Bonds an Amount Not to Exceed \$45,000,000 (Ordinance 2018-01)

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Audit Committee Communication- Sewer Series Ordinance](#)
[BLOOMFIELD-#2096264-1-Resolution Approving 2018 SRF Series Ordinance](#)
[BLOOMFIELD-#2096114-1-Series Ordinance 2018 SRF](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Recommended for Approval to the Board of Directors

Agenda of June 20, 2018

The motion carried by a unanimous vote.

8H. [2018-775](#) Status Update - 2018 Contract Alignment Process and Wholesale Water Contract Reopeners Status

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Audit Committee Communication- Contract Reopeners- FINAL as of 6.15.2018](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

B. [2018-801](#) Proposed FY 2016 Shared Services True-up

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Proposed FY 2016 Shared Services True-Up](#)
[GLWA Resolution 2018 - Approval of Shared Services and Transition Costs True Up 6.13.18](#)
[Shared Services and Transition Costs True-Up Agreement 6.13.18](#)
[FY2016 Settlement Memo 6.13.2018](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Received and Filed

Recommended for Approval to the Board of Directors

Agenda of June 20, 2018

The motion carried by a unanimous vote.

7. New Business**A.** [2018-800](#) FY 2018 Fourth Quarter Budget Update

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Cover Memo FY 2018 Budget Amendments and Bud to Act thru 5.31.2018](#)
[FY 2018 Operations & Maintenance Budget Update binder](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

Director Daddow supported the Motion to Receive and File, with the proviso the document was received this morning.

B. [2018-802](#) PFM Investment Contract Extension

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [GLWA Audit Committee Memo PFM Contract Extension June 2018](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Received and Filed

The motion carried by a unanimous vote.

C. [2018-803](#) Credit Card Use Policy

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [GLWA Audit Committee Memo_PCard Policy Resolution June 2018](#)

[Audit Committee - Policy Resolution - Procurement Card](#)

[Audit Committee - PCard Policy Comparison to Credit Card](#)

[Transactions Act](#)

[Audit Committee - V1.0 Procurement Card Policy](#)

[Audit Committee - V1.0 Procurement Card Procedure](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Recommended for Approval to the Board of Directors

Agenda of July 25, 2018

The motion carried by a unanimous vote.

8. Reports**A.** [2018-806](#) Quarterly Investment Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [GLWA Audit Committee Memo Investment Synopsis June 2018](#)

[March 2018 Investment Report Charts 6.15.2018pw](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

B. [2018-807](#) Master Bond Ordinance Monthly Cash Transfers: Cash Transfers through
May 1, 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [GLWA Audit Committee Memo DWSD & GLWA Cash Transfers June 2018](#)

[Audit Committee - Monthly Transfers to DWSD June 2018](#)

[Audit Committee - Monthly Transfers to GLWA June 2018](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

7E. [2018-805](#) Proposed Procurement Policy Amendment for Compliance with the Code of Federal Regulations (CFR)

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Audit Committee Memo Fed Guidelines - Procurement 6.15.2018](#)
 [GLWA Procurement Policy Amended for CFR 6.14.2018](#)
 [FY17 GLWA Procurement Standard Deferral Form](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Recommended for Approval to the Board of Directors

Agenda of June 20, 2018

The motion carried by a unanimous vote.

C. [2018-808](#) Quarterly Construction Work-in-Progress Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Construction Work-in-Progress 3.31.2018](#)
 [Dashboard Construction Work-in-Progress - FY 2018 Q3 ASpw](#)
 [FY 2018 Q3 CWIP Final](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

D. [2018-810](#) Quarterly Financial Reporting & Accounting Group Continuous Improvement Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Continuous Improvement Cover Memo](#)
 8D2 FRA FY18 Continuous Improvement Report Q4

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

E. [2018-817](#) Monthly Financial Report for April 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Monthly Financial Report as of 4.30.2018](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

F. [2018-818](#) Monthly Revenue & Collections Report for April 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Monthly Revenue and Collections Report 06.15.2018](#)

[AR Aging W S IWC PS 05.31.18](#)

Motion By: Gary Brown,

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

G. [2018-816](#) Trust Receipt & Disbursement Report for Activity through April 30, 2018

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [Trust Receipts and Disbursements Report through April 30 2018_v2](#)

Motion By: Gary Brown

Support By: Robert Daddow

Action: Received and Filed

The motion carried by a unanimous vote.

9. CFO Update**A. [2018-823](#) CFO Update**

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [CFO Update 6.13.2018](#)

Motion By: Robert Daddow

Support By: Gary Brown

Action: Received and Filed

The motion carried by a unanimous vote.

10. Look Ahead

The next Audit Committee Meeting is scheduled for July 20, 2018 at 8:00 a.m.

11. Information

None

12. Other Matters

None

13. Adjournment

Chairman Baker requested a Motion to Adjourn.

Motion By: Gary Brown

Support By: Brian Baker

Action: Approved

The motion carried by a unanimous vote.

There being no further business, the meeting was adjourned at 10:25 a.m.



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Proposed Resolution Regarding Approval of Series Ordinance Authorizing Issuance and Sale of Water Supply System Revenue Refunding Bonds an Amount Not to Exceed \$225,000,000 (Ordinance 2018-02)

Background: In order for the Great Lakes Water Authority (“GLWA”) to proceed with the refunding of various outstanding water supply system bonds for the purpose of achieving annual debt service savings, the GLWA Board must approve a resolution approving the Series Ordinance. There is no new money as part of this water refunding bond issue.

The Series Ordinance sets forth the guidelines for the Refunding Bonds and authorizes the Chief Executive Officer or the Chief Financial Officer to execute the final terms of the Bonds, paying issuance costs and signing of the Bond Purchase Agreement, within the parameters set forth in the Series Ordinance. The final par amount of the Refunding Bonds will be determined at the time of pricing and is based on current bond market pricing levels, issuance costs, and the par amount of the bonds to be refunded as determined by the savings level achieved. *While the approval of the resolution gives GLWA the authorization to issue refunding bonds, GLWA does not have to proceed with the refunding if market conditions become less favorable when it comes time to price the bonds.*

Key Provisions:

- Not to Exceed Par Amount: \$225 million
- Maximum Coupon Rate: 5.25%
- Minimum Purchase Price: 99% of principal amount of bonds
- Maximum Underwriter Discount: 0.40% of principal amount of bonds
- Present Value Savings: Equal to or greater than 5.00% of principal amount of bonds to be refunded

Additional Provisions: Similar to the 2016 water and sewer bond ordinances approved by the GLWA Board, Ordinance No. 2018-02 also contains the “springing amendment” provision in Section 21- *Amendments to Ordinance*. As noted on page 20, this section gives GLWA the ability to reduce or eliminate the bond reserve requirement for the senior lien bonds when at least 2 of the 3 national rating agencies rate the senior lien bonds in the AA category, provided that the reduction in the reserve requirement would not negatively affect the outstanding ratings. The amendments will become effective upon the deemed consent of at least 51% of the holders of the outstanding senior lien bonds. GLWA will add this springing amendment to each future series ordinance to obtain the 51% consent level. The currently level of water consents achieved is 32.9% for senior lien bonds and 57.8% for second lien bonds, before the issuance of the bonds herein.

Budget Impact: None at this time.

Proposed Action: Audit Committee recommends that the Great Lakes Water Authority Board approve the resolution for the Approval of Series Ordinance Authorizing Issuance and Sale of Water Supply System Revenue Refunding Bonds an Amount Not to Exceed \$225,000,000 as presented, at its regular meeting on August 8, 2018.

Great Lakes Water Authority

Resolution 2018-

**RE: Approval of Series Ordinance Authorizing Issuance and Sale of Water Supply System
Revenue Refunding Bonds in an Amount not to Exceed \$225,000,000
Ordinance 2018-02**

By Board Member: _____

Whereas There has been presented to the Board of Directors of the Great Lakes Water Authority (the “Authority”) an ordinance entitled “Series Ordinance Authorizing the Issuance and Sale of Water Supply System Revenue Refunding Bonds in an Amount not to Exceed \$225,000,000” (the “2018 Water Series Ordinance”), which ordinance is a Series Ordinance as defined and described in Master Bond Ordinance No. 2015-01 adopted by the Board of Directors on October 7, 2015, as amended on December 9, 2015, January 27, 2016 and August 10, 2016 (as amended, the “Master Water Bond Ordinance”).

Whereas The Articles of Incorporation of the Authority provide that at least 5 of the 6 members of the Authority Board must vote to approve the 2018 Water Series Ordinance.

Now, Therefore Be It:

Resolved That the 2018 Water Series Ordinance, in the form presented to this meeting, is approved and adopted, and the Chairperson and the Secretary are authorized to authenticate the 2018 Water Series Ordinance in the form approved; **And Be it Further**

Resolved That an affirmative vote of at least 5 members of the Authority Board is necessary for the passage of this Resolution.

Adopted by the Great Lakes Water Authority Board on: _____, 2018

GREAT LAKES WATER AUTHORITY
ORDINANCE NO. 2018-02

**SERIES ORDINANCE AUTHORIZING ISSUANCE AND SALE OF
WATER SUPPLY SYSTEM REVENUE REFUNDING BONDS
IN A PRINCIPAL AMOUNT NOT TO EXCEED \$225,000,000**

WHEREAS, pursuant to Resolution No. 2015-10-02 adopted by the Board of Directors of the Great Lakes Water Authority (the “Authority”) on October 7, 2015, the Authority Board approved and adopted Master Bond Ordinance No. 2015-01 (as subsequently amended through the date hereof, the “Ordinance”), which authorizes the issuance by the Authority of Water Supply System Revenue Bonds; and

WHEREAS, the Ordinance authorizes the issuance of such Water Supply System Revenue Bonds in one or more Series pursuant to a Series Ordinance authorizing the issuance and sale of such Series; and

WHEREAS, the Authority Board has determined that it is necessary to authorize at this time one or more Series of Bonds to provide moneys to refund a portion of the Outstanding DWSD Water Bonds (the “Bonds To Be Refunded”) and cause the Bonds To Be Refunded to be defeased in accordance with the Ordinance.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE GREAT LAKES WATER AUTHORITY AS FOLLOWS:

Section 1. Authority for this Series Ordinance. This Series Ordinance (the “2018 Series Ordinance”) is adopted pursuant to Section 1102(1) of the Ordinance.

Section 2. Definitions. Except as otherwise provided in this 2018 Series Ordinance, all terms which are defined in Section 101 of the Ordinance shall have the same meanings, respectively, in this 2018 Series Ordinance as such terms are given in the Ordinance. In addition, the following terms shall have the following meanings unless the context shall clearly indicate some other meaning:

(a) “2018 Refunding Bonds” means the Bonds authorized by Section 3 of this 2018 Series Ordinance.”

(b) “2018 Reserve Requirement” means the sum of the 2018 Senior Lien Reserve Requirement and the 2018 Second Lien Reserve Requirement.

(c) “2018 Second Lien Refunding Bonds” means those 2018 Refunding Bonds, if any, issued as Second Lien Bonds as provided in this 2018 Series Ordinance.

(d) “2018 Second Lien Reserve Requirement” means such amount, if any, as is determined in the Sale Order to be the amount necessary to make the amount on deposit in the Second Lien Bond Reserve Account at least equal to the Reserve Requirement for the Second Lien Bond Reserve Account immediately upon the issuance of the 2018 Second Lien Refunding Bonds

after taking into consideration such provision as is made for the Reserve Requirement from proceeds of the 2018 Second Lien Refunding Bonds and other funds and Credit Facilities on deposit or to be deposited in the Second Lien Bond Reserve Account.

(e) “2018 Senior Lien Refunding Bonds” means those 2018 Refunding Bonds, if any, issued as Senior Lien Bonds as provided in this 2018 Series Ordinance.

(f) “2018 Senior Lien Reserve Requirement” means such amount, if any, as is determined in the Sale Order to be the amount necessary to make the amount on deposit in the Senior Lien Bond Reserve Account at least equal to the Reserve Requirement for the Senior Lien Bond Reserve Account immediately upon the issuance of the 2018 Senior Lien Refunding Bonds after taking into consideration such provision as is made for the Reserve Requirement from proceeds of the 2018 Senior Lien Refunding Bonds and other funds and Credit Facilities on deposit or to be deposited in the Senior Lien Bond Reserve Account.

(g) “Authorized Denomination” any denomination as determined by an Authorized Officer in the Sale Order.

(h) “Authorized Officer” means either the Chief Executive Officer or the Chief Financial Officer.

(i) “Continuing Disclosure Undertaking” means the continuing disclosure undertaking or undertakings with respect to the 2018 Refunding Bonds to be entered into by the Authority pursuant to the Rule.

(j) “Escrow Agreement” shall have the meaning set forth in Section 10 of this 2018 Series Ordinance.

(k) “Escrow Deposit” means cash or Government Obligations, or a combination of cash and Government Obligations, at least sufficient to discharge the lien of the Pledged Assets securing the Bonds To Be Refunded in accordance with Section 1001 of the Ordinance.

(l) “Fitch” means Fitch Ratings, Inc., and any successor rating agency.

(m) “Interest Payment Date” means except as otherwise determined in the Sale Order each January 1 and July 1, or such other dates and commencing as set forth in the Sale Order.

(n) “Maturity Date” means such dates of maturity of the 2018 Refunding Bonds as determined in the Sale Order.

(o) “Moody’s” means Moody’s Investors Service, Inc., and any successor rating agency.

(p) “Official Statement” means the final disclosure document with respect to the 2018 Refunding Bonds.

(q) “Person” means any natural person, association, corporation, trust, partnership, joint venture, joint-stock company, municipal corporation, public body or other entity, however organized.

(r) “Preliminary Official Statement” means the preliminary disclosure document with respect to the 2018 Refunding Bonds.

(s) “Purchase Agreement” means the bond purchase agreement between the Authority and the Underwriter providing for the sale of the 2018 Refunding Bonds.

(t) “Refunding Costs” means the costs of refunding the Bonds To Be Refunded, including, to the extent authorized in the Sale Order, the amount of the Escrow Deposit, and funding the 2018 Reserve Requirement and Issuance Costs relating to the 2018 Refunding Bonds.

(u) “Regular Record Date” means the fifteenth day of the calendar month immediately preceding an Interest Payment Date.

(v) “Rule” means Rule 15c2-12 promulgated by the United States Securities and Exchange Commission under the Securities and Exchange Act of 1934, as amended.

(w) “S&P” means S&P Global Ratings, and any successor rating agency.

(x) “Sale Order” means any one or more Sale Orders of an Authorized Officer authorizing acts consistent with the Ordinance and this 2018 Series Ordinance necessary and appropriate to complete the sale, execution and delivery of the 2018 Refunding Bonds and to complete the other transactions contemplated herein.

(y) “Securities Depository” means (i) The Depository Trust Company and its successors and assigns, if any, or (ii) any other securities depository which agrees to follow the procedures required to be followed by a securities depository in connection with the 2018 Refunding Bonds and which is selected by the Authority as provided in Section 6.

(z) “Taxable 2018 Refunding Bonds” means any 2018 Refunding Bonds other than Tax-Exempt 2018 Refunding Bonds.

(aa) “Tax-Exempt 2018 Refunding Bonds” means any 2018 Refunding Bonds that are Tax-Exempt Bonds.

(bb) “Underwriter” means Citigroup Global Markets Inc., on behalf of itself and such underwriters as may be named in the Purchase Agreement.

Section 3. Authorization of 2018 Refunding Bonds.

(a) Authorization of Borrowing. The Authority may borrow an aggregate principal amount not in excess of \$225,000,000, as is finally determined in the Sale Order, and issue 2018 Refunding Bonds at one or more times and in one or more Series, all to evidence such borrowing pursuant to Act 233, Act 94 and the Ordinance, as 2018 Senior Lien Refunding Bonds and/or 2018 Second Lien Refunding Bonds, all as finally determined in the Sale Order.

(b) Purpose of 2018 Refunding Bonds. The 2018 Refunding Bonds shall be issued as Additional Bonds for the purpose of refunding the Bonds To Be Refunded and paying, reimbursing and/or funding Refunding Costs.

(c) Limitation on Issuance of 2018 Refunding Bonds. No 2018 Refunding Bonds shall be issued unless:

- (1) The proceeds thereof (exclusive of accrued interest), together with other moneys available to the Authority under the Ordinance, are sufficient to provide the Escrow Deposit after payment of the 2018 Reserve Requirement and Issuance Costs relating to the 2018 Refunding Bonds set forth in the Sale Order.
- (2) Concurrently with or prior to the delivery of the 2018 Refunding Bonds, an Authorized Officer gives notice to the Trustee to call for redemption at the applicable redemption price all of the Bonds To Be Refunded on the dates set forth in the Escrow Agreement. In such notice, an Authorized Officer may direct that the notice of redemption to be given by the Trustee to the Holders of the Bonds To Be Refunded pursuant to Section 303 of the Ordinance shall be given prior to the delivery of the 2018 Refunding Bonds and that such notice of redemption be conditioned upon the delivery of the 2018 Refunding Bonds and the funding of the Escrow Deposit. As provided in Section 303 of the Ordinance, if such conditions in the notice of redemption are not satisfied on or before the date fixed for redemption, then the notice of redemption shall be canceled and of no further force or effect.

(d) Priority of Lien. The 2018 Refunding Bonds shall be issued as Senior Lien Bonds and/or Second Lien Bonds, as set forth in the Sale Order.

(e) Separate Series. The 2018 Refunding Bonds are issuable at one or more times and as one or more separate Series of Bonds in such amounts as determined in the Sale Order.

(f) Taxable and Tax-Exempt 2018 Refunding Bonds. The 2018 Refunding Bonds may be issued as Taxable 2018 Refunding Bonds or Tax-Exempt 2018 Refunding Bonds, or as separate Series of both, as determined in the Sale Order.

(g) Source of Payment and Security. The 2018 Refunding Bonds shall be payable and secured as provided in Section 5.

(h) Applicability of Ordinance. Except as otherwise provided in this 2018 Series Ordinance or the Sale Order, all of the provisions of the Ordinance shall apply to the 2018 Refunding Bonds as if set forth in full in this 2018 Series Ordinance, the purpose of this 2018 Series Ordinance being to supplement the Ordinance to authorize the issuance of 2018 Refunding Bonds for the purposes set forth herein.

Section 4. 2018 Refunding Bond Details.

(a) Designation.

- (1) The 2018 Refunding Bonds shall bear the designations Water Supply System Revenue Refunding [Senior Lien] [Second Lien] Bonds, Series 2018A [B/C] and shall include the Series designation and such other designations, including, without limitation, designations for multiple Series or subseries, as determined by an Authorized Officer as shall be set forth in the Sale Order and not inconsistent with the Ordinance or this 2018 Series Ordinance.
- (2) If the 2018 Refunding Bonds are not issued in 2018, an Authorized Officer is authorized in his or her discretion to re-designate the year and Series designation of the 2018 Refunding Bonds and the various funds and accounts established hereunder to correspond with the year of issuance of the 2018 Refunding Bonds. Furthermore, an Authorized Officer is authorized to establish designations within the various funds and accounts established hereunder if necessary in order to differentiate such funds and accounts from other similarly named funds and accounts related to other Bonds.

(b) Numbering. 2018 Refunding Bonds shall be numbered in such manner as shall be determined in the Sale Order.

(c) Principal. 2018 Refunding Bonds shall be issued in the form of Serial Bonds or Term Bonds, or any combination of Serial Bonds and Term Bonds, in any Authorized Denomination, and the principal thereof shall mature on July 1, or such other date as set forth in a Sale Order, in such years and amounts, and shall be or not be subject to redemption prior to maturity, all as shall be determined in the Sale Order subject to the following limitations:

- (1) No 2018 Refunding Bonds shall mature later than 40 years after the date of issuance thereof.
- (2) 2018 Refunding Bonds shall only be issued with principal and interest installments permitted by the Ordinance, including Section 207 thereof.

(d) Interest. 2018 Refunding Bonds or portions thereof shall bear interest at such fixed rate or rates as determined in the Sale Order not in excess of the maximum rate permitted by law. Interest on 2018 Refunding Bonds shall be payable on each Interest Payment Date.

(e) Payment of Principal and Interest. The principal of, premium, if any, and interest on the 2018 Refunding Bonds shall be payable in lawful money of the United States. The principal of and premium, if any, on the 2018 Refunding Bonds are payable upon the surrender thereof at the corporate trust office of the Trustee and the interest is payable by check or draft drawn on the Trustee and mailed to the registered owners as of the immediately preceding Regular Record Date at their address shown on the registration books of the Authority maintained by the Trustee.

(f) Dating. The 2018 Refunding Bonds shall be dated such date or dates as determined in the Sale Order.

(g) Reserve Requirement. The 2018 Reserve Requirement, if any, with respect to each Series of the 2018 Refunding Bonds shall be satisfied by a deposit into the appropriate Bond Reserve Account of a portion of the proceeds of such Series of 2018 Refunding Bonds, funds already on deposit in the appropriate Bond Reserve Account or the provision of a Credit Facility in the same amount and with a credit rating at the time of issuance of such Series of 2018 Refunding Bonds not less than the credit rating of such Series of 2018 Refunding Bonds, or any combination of the foregoing. The amounts, if any, required to be deposited in the Senior Lien Bond Reserve Account and the Second Lien Bond Reserve Account to cause the amounts on deposit therein to be at least equal to the Reserve Requirement for the Senior Lien Bonds and the Reserve Requirement for the Second Lien Bonds, respectively, shall be set forth in the Sale Order.

(h) Exchange. The registered owner of any 2018 Refunding Bond may exchange such 2018 Refunding Bond for a new 2018 Refunding Bond or Bonds of the same Series, interest rate, maturity and Priority of Lien in an equal aggregate principal amount in one or more of the Authorized Denominations by surrendering such 2018 Refunding Bond to be exchanged at the designated office of the Trustee together with an assignment duly executed by the registered owner thereof or his attorney or legal representative in such form as shall be satisfactory to the Trustee. As provided in Section 206 of the Ordinance, the Trustee shall be responsible for the registration, transfer and exchange of 2018 Refunding Bonds and shall indicate its acceptance of such duties by a document filed with an Authorized Officer concurrently with the delivery of the 2018 Refunding Bonds.

(i) Execution and Delivery of 2018 Refunding Bonds. The 2018 Refunding Bonds shall be executed in the name of the Authority by manual or facsimile signature of the Chief Executive Officer of the Authority and countersigned by the manual or facsimile signature of the Secretary of the Authority Board, and shall have the Authority's seal, or facsimile thereof, affixed or printed thereon. The Chief Financial Officer is authorized to deliver the 2018 Refunding Bonds to the Underwriter upon receiving the purchase price therefor in lawful money of the United States.

(j) Form of 2018 Refunding Bonds. The 2018 Refunding Bonds shall be in substantially the following form, subject to such changes, additions or deletions as determined by an Authorized Officer within the parameters of this 2018 Series Ordinance:

R-__

**UNITED STATES OF AMERICA
STATE OF MICHIGAN
COUNTIES OF MACOMB, OAKLAND AND WAYNE
GREAT LAKES WATER AUTHORITY**

**WATER SUPPLY SYSTEM REVENUE REFUNDING
[SENIOR LIEN] [SECOND LIEN] BOND, SERIES 2018__**

REGISTERED OWNER:

PRINCIPAL AMOUNT: \$_____

INTEREST RATE: _____%

ORIGINAL ISSUE DATE:

The Great Lakes Water Authority, Counties of Macomb, Oakland and Wayne, State of Michigan (the “Issuer”), upon authorization from the Board of Directors of the Issuer (the “Board”), has issued this Bond. The Issuer, for value received, promises to pay, but only from the Pledged Assets (as defined below), to the Registered Owner named above, or registered assigns, the Principal Amount stated above in lawful money of the United States of America. Interest on this Bond shall accrue from the Original Issue Date set forth above at the Interest Rate per annum set forth above, and shall be payable on _____ 1, 20__ and semiannually on each July 1 and January 1 thereafter (each an “Interest Payment Date”) in lawful money of the United States of America.

Principal of this Bond is payable upon presentation and surrender at the designated office of U.S. Bank National Association, as Trustee under the Bond Ordinance (as defined below) or such other trustee as the Issuer may hereafter designate by notice mailed to the registered owner not less than 60 days prior to any Interest Payment Date (the “Trustee”).

Interest on this Bond is payable to the registered owner of record as of the close of business on the 15th day of the month immediately preceding any Interest Payment Date as shown on the registration books kept by the Trustee by check or draft mailed by the Trustee to the registered owner at the registered address. Interest on this Bond shall be computed on the basis of a 360-day year comprised of twelve 30-day months.

This Bond is one of a series of bonds designated “Water Supply System Revenue Refunding [Senior Lien] [Second Lien] Bonds, Series 2018__” and is issued pursuant to the provisions of (i) Act 233, Public Acts of Michigan, 1955, as amended (“Act 233”), and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”), (ii) Master Bond Ordinance No. 2015-01 adopted by the Board on October 7, 2015, as amended (the “Bond Ordinance”), (iii) the Series

Ordinance Authorizing Issuance and Sale of Water Supply System Revenue Refunding Bonds in a Principal Amount not to Exceed \$_____, adopted by the Board on _____, 2018 (the “Series Ordinance”), and (vi) a Sale Order of an Authorized Officer of the Issuer dated _____, 2018 (the “Sale Order,” and, collectively with the Bond Ordinance and the Series Ordinance, the “Ordinance”). This Bond is issued for the purposes set forth in the Series Ordinance and the Sale Order.

For the prompt payment of the principal of and interest on this Bond, and other bonds issued by the Issuer pursuant to the Bond Ordinance, the Issuer has irrevocably pledged the revenues of the Water System (as defined in the Bond Ordinance), after provision is made for reasonable and necessary expenses of operation, maintenance and administration of the Water System (the “Net Revenues”), and a statutory lien on the Net Revenues and Pledged Assets (as defined in the Bond Ordinance) (the “Pledged Assets”) is hereby recognized and acknowledged. Such lien is a [first] [second] lien[, subject to obligations heretofore and hereafter issued or incurred under the Bond Ordinance secured by a first lien on the Pledged Assets]. This Bond is of equal standing on a parity with all other obligations heretofore and hereafter issued or incurred under the Bond Ordinance and secured by a [first] [second] lien on the Pledged Assets.

For a complete statement of the revenues from which and the conditions under which this Bond is payable, a statement of the conditions under which Additional Bonds (as defined in the Bond Ordinance) of senior or equal standing and Additional Bonds of junior standing may hereafter be issued and the general covenants and provisions pursuant to which this Bond is issued, reference is made to the Bond Ordinance.

This Bond is subject to redemption prior to maturity to the extent, and as provided in, the Sale Order.

THIS BOND IS ISSUED UNDER ACT 233 AND ACT 94. IT IS A SELF-LIQUIDATING BOND AND IS NOT A GENERAL OBLIGATION OF THE ISSUER AND DOES NOT CONSTITUTE AN INDEBTEDNESS OF THE ISSUER WITHIN ANY CONSTITUTIONAL OR STATUTORY LIMITATION, BUT IS PAYABLE, BOTH AS TO PRINCIPAL AND INTEREST SOLELY FROM THE PLEDGED ASSETS OF THE WATER SYSTEM. THE PAYMENT OF THE PRINCIPAL OF AND INTEREST ON THIS BOND ARE SECURED BY A STATUTORY LIEN ON THE PLEDGED ASSETS AS DESCRIBED HEREIN.

The Issuer has covenanted and agreed, and hereby covenants and agrees, to fix and maintain, or cause to be fixed and maintained, at all times while any bonds payable from the Pledged Assets of the Water System shall be outstanding, such rates for service furnished by the Water System as shall be sufficient to provide for payment of the interest upon and the principal of this Bond and all other Bonds (as defined in the Bond Ordinance) assumed or issued and to be issued under the Bond Ordinance as and when the same shall become due and payable, to create and maintain a bond redemption fund therefor, including a bond reserve, to provide for the payment of expenses of administration and operation and such expenses for maintenance of the Water System as are necessary to preserve the same in good repair and working order, and to provide for such other expenditures and funds for the Water System, all as are required by the Bond Ordinance.

This Bond is transferable only upon the books of the Issuer kept for that purpose at the office of the Trustee by the registered owner hereof in person, or by his attorney duly authorized in writing, upon the surrender of this Bond together with a written instrument of transfer satisfactory to the Trustee duly executed by the registered owner or his attorney duly authorized in writing, and thereupon a new registered bond or bonds of the same type, in the same aggregate principal amount and of the same maturity shall be issued to the transferee in exchange therefor as provided in the Ordinance and upon the payment of the charges, if any, therein prescribed.

It is hereby certified and recited that all acts, conditions and things required by law precedent to and in the issuance of this Bond have been done and performed by regular and due time and form as required by law.

This Bond is not valid or obligatory for any purpose until the Trustee's Certificate of Authentication hereon has been executed by the Trustee.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Great Lakes Water Authority, Counties of Macomb, Oakland and Wayne, State of Michigan, has caused this Bond to be signed in its name by the facsimile signatures of its Chief Executive Officer and its Secretary of the Board, and its corporate seal to be printed, impressed or otherwise reproduced hereon, all as of the Original Issue Date.

GREAT LAKES WATER AUTHORITY

By: _____
Chief Executive Officer

Countersigned:

By: _____
Secretary, Board of Directors

[Seal]

CERTIFICATE OF AUTHENTICATION

This Bond is authenticated one of the bonds designated by the Issuer as “Water Supply System Revenue Refunding [Senior Lien] [Second Lien] Bonds, Series 2018__”.

U.S. Bank National Association,
Trustee

By:_____

Date of Authentication: _____, 2018

ASSIGNMENT

For value received, the undersigned sells, assigns and transfers unto _____ this Bond and all rights hereunder and hereby irrevocably appoints _____ attorney to transfer this Bond on the books kept for registration thereof with full power of substitution in the premises.

Dated: _____

Signature

NOTICE: The signature to this assignment must correspond with the name as it appears on the face of this Bond in every particular.

END OF BOND FORM

Section 5. Payment of 2018 Refunding Bonds; Confirmation of Statutory Lien.

(a) The 2018 Refunding Bonds and the interest thereon shall be payable solely from the Pledged Assets.

(b) To secure payment of the 2018 Refunding Bonds, the statutory lien upon the whole of the Pledged Assets established by Act 94 and the pledge created in Section 501 of the Ordinance is hereby confirmed in favor of the 2018 Refunding Bonds as follows:

- (1) Such lien in favor of the 2018 Senior Lien Refunding Bonds shall be a first lien of equal standing and Priority of Lien with all issued, to be issued and outstanding Senior Lien Bonds.
- (2) Such lien in favor of the 2018 Second Lien Refunding Bonds shall be a second lien of equal standing and Priority of Lien with all issued, to be issued and outstanding Second Lien Bonds.

Section 6. Concerning the Securities Depository.

(a) As used herein:

“Beneficial Owner” means any Person who indirectly owns 2018 Refunding Bonds pursuant to the indirect ownership system maintained by the Securities Depository and its Participants, commonly known as the “Book-Entry Only System.”

“Participant” means any Person whose ownership of 2018 Refunding Bonds is shown on books of the Securities Depository.

(b) Initially, one fully-registered bond for each maturity of each Series of 2018 Refunding Bonds, in the aggregate principal amount of such maturity, shall be issued in the name of Cede & Co., as nominee of the Securities Depository, for the benefit of the Participants in the Book-Entry Only System. While the 2018 Refunding Bonds are registered in the name of a Securities Depository or its nominee, neither the Authority nor the Trustee shall have any responsibility or obligation to any Participant or to any Beneficial Owner with respect to any matter, including the following:

- (1) the accuracy of the records of the Securities Depository, its nominee or any Participant with respect to any ownership interest in 2018 Refunding Bonds,
- (2) the delivery to any Participant, Beneficial Owner or any other Person other than the Securities Depository of any notice with respect to any 2018 Refunding Bonds, including any notice of redemption, or
- (3) the payment to any Participant, Beneficial Owner or any other Person, other than the Securities Depository of any amount with respect to the principal (and premium, if any) of or interest on any 2018 Refunding Bonds.

(c) The Trustee shall pay all principal (and premium, if any) of and interest on the 2018 Refunding Bonds only to or upon the order of the Securities Depository, and all such payments shall be valid and effective fully to satisfy and discharge the Authority's obligations with respect to the principal (and premium, if any) of, and interest on such 2018 Refunding Bonds to the extent of the sum or sums so paid.

(d) If (1) the Authority receives a written notice from the Securities Depository to the effect the Securities Depository is unable or unwilling to discharge its responsibilities or (2) the Authority determines that it is in the best interests of the Beneficial Owners of 2018 Refunding Bonds that they be able to obtain 2018 Bonds in certificated form, then, in either event, the Authority shall notify the Trustee and, in the case of clause, (2), the Securities Depository.

(e) Upon discontinuance of the use of the Book-Entry Only System maintained by the Securities Depository pursuant to subsection (d) above and upon receipt of notice from the Securities Depository containing sufficient information, the Authority shall execute and the Trustee shall authenticate and deliver 2018 Refunding Bonds in certificated form to Beneficial Owners in exchange for the beneficial interests of such Beneficial Owners in corresponding principal amounts and in any Authorized Denominations.

(f) Notwithstanding any other provision of this 2018 Series Ordinance to the contrary, so long as any 2018 Refunding Bond is registered in the name of the Securities Depository or its nominee:

- (1) all payments with respect to the principal, premium, if any, and interest on such 2018 Refunding Bond and all notices of redemption, tender and otherwise with respect to such 2018 Refunding Bond shall be made and given, respectively, to the Securities Depository as provided in the blanket issuer letter of representations between the Authority and the Securities Depository;
- (2) if less than all of the 2018 Refunding Bonds of the same type of any maturity are to be redeemed, then the particular 2018 Refunding Bonds or portions of 2018 Refunding Bonds of such type and maturity to be redeemed shall be selected by the Securities Depository in any such manner as the Securities Depository may determine;
- (3) all payments with respect to principal of the 2018 Refunding Bonds and premium, if any and interest on the 2018 Refunding Bonds shall be made in such manner as shall be prescribed by the Securities Depository; and
- (4) if a 2018 Refunding Bond is redeemed or tendered in part, then all amounts payable in respect of such redemption or tender shall be paid without presentation and surrender of such 2018 Refunding Bond pursuant to the procedures of the Securities Depository.

Section 7. Credit Facility.

(a) An Authorized Officer is authorized to negotiate and obtain a Credit Facility with respect to the 2018 Refunding Bonds, if the Authorized Officer determines that it is in the best interest of the Authority. An Authorized Officer is further authorized to renegotiate the terms of any outstanding Credit Facility, if the Authorized Officer determines that it is in the best interest of the Authority.

(b) An Authorized Officer is authorized to pay the cost of any such Credit Facility from the proceeds of the 2018 Refunding Bonds or any other funds of the Water System legally available therefor.

(c) An Authorized Officer is authorized to make such covenants and agreements of the Authority as shall be necessary or appropriate in any agreement with the Credit Entity providing such Credit Facility.

Section 8. Funds and Accounts; Flow of Funds. Except as otherwise provided in this 2018 Series Ordinance, all of the provisions relative to funds and accounts, their maintenance, the flow of funds and other details relative thereto, shall remain as specifically set forth in the Ordinance.

Section 9. Disposition of Proceeds.

(a) 2018 Senior Lien Refunding Bonds.

- (1) Disposition of Accrued Interest: From the proceeds of the sale of the 2018 Senior Lien Refunding Bonds there shall be immediately deposited in the Senior Lien Bond and Interest Redemption Fund an amount equal to any accrued interest received on the delivery of the 2018 Senior Lien Refunding Bonds, and the Authority may take credit for the amount so deposited against the amount required to be deposited in the Senior Lien Bond and Interest Redemption Fund for payment of the next maturing interest payment on the 2018 Senior Lien Refunding Bonds.
- (2) Senior Lien Bond Reserve Account Deposit. If required as provided in Section 4(g) of this 2018 Series Ordinance, from the proceeds of the 2018 Senior Lien Refunding Bonds, there shall next be applied an amount as set forth in the Sale Order to be deposited to the Senior Lien Bond Reserve Account at least equal to the 2018 Senior Lien Reserve Requirement after taking into account any Credit Facility or Credit Facilities to be acquired with the proceeds of the 2018 Senior Lien Refunding Bonds or any other funds legally available therefor.
- (3) Issuance Costs: As provided in the Sale Order, a portion of the proceeds from the sale of the 2018 Senior Lien Refunding Bonds shall be applied to the payment of Issuance Costs upon submission of proper documentation to an Authorized Officer.

- (4) Escrow Deposit: As provided in the Sale Order, the balance of the proceeds from the sale of the 2018 Senior Lien Refunding Bonds shall be used to acquire Government Obligations, which together with any remaining balance of such proceeds in the form of cash, shall constitute all or part of the Escrow Deposit to be held in the Escrow Fund.
- (b) 2018 Second Lien Refunding Bonds.
 - (1) Disposition of Accrued Interest: From the proceeds of the sale of the 2018 Second Lien Refunding Bonds there shall be immediately deposited in the Second Lien Bond and Interest Redemption Fund an amount equal to any accrued interest received on the delivery of the 2018 Second Lien Refunding Bonds, and the Authority may take credit for the amount so deposited against the amount required to be deposited in the Second Lien Bond and Interest Redemption Fund for payment of the next maturing interest payment on the 2018 Second Lien Refunding Bonds.
 - (2) Second Lien Bond Reserve Account Deposit. If required as provided in Section 4(g) of this 2018 Series Ordinance, from the proceeds of the 2018 Second Lien Refunding Bonds, there shall next be applied an amount as set forth in the Sale Order to be deposited to the Second Lien Bond Reserve Account at least equal to the 2018 Second Lien Reserve Requirement after taking into account any Credit Facility or Credit Facilities to be acquired with the proceeds of the 2018 Second Lien Refunding Bonds or any other funds legally available therefor.
 - (3) Issuance Costs: As provided in the Sale Order, a portion of the proceeds from the sale of the 2018 Second Lien Refunding Bonds shall be applied to the payment of Issuance Costs upon submission of proper documentation to an Authorized Officer.
 - (4) Escrow Deposit: As provided in the Sale Order, the balance of the proceeds from the sale of the 2018 Second Lien Refunding Bonds shall be used to acquire Government Obligations, which together with any remaining balance of such proceeds in the form of cash, shall constitute all or part of the Escrow Deposit to be held in the Escrow Fund.

Section 10. Escrow Fund; Escrow Agreement.

- (a) Establishment of Escrow Fund. The Escrow Deposit shall be held in or credited to an account designated as the “Great Lakes Water Authority Water Supply System Revenue Bonds Series 2018 Refunding Bonds Escrow Fund” (the “Escrow Fund”) pursuant to an escrow agreement (the “Escrow Agreement”).

(b) Escrow Agreement.

- (1) An Authorized Officer is authorized to enter into the Escrow Agreement on behalf of the Authority with U.S. Bank National Association as “Escrow Trustee.”
- (2) The Escrow Agreement:
 - a) shall be in the form and substance customary for refunding escrow agreements;
 - b) may permit any balance after paying the principal (and premium, if any) and interest on the Bonds To Be Refunded to be applied to any lawful purpose of the Water System if such use will not, in the opinion of Bond Counsel, impair the exclusion of interest on the Tax-Exempt 2018 Refunding Bonds from gross income for federal income tax purposes; and
 - c) shall otherwise be in the best interests of the Authority as determined by an Authorized Officer, as conclusively established by his or her execution of the Escrow Agreement.

Section 11. Tax Covenant.

(a) The Authority hereby covenants and represents with the registered owners of the Tax-Exempt 2018 Refunding Bonds that so long as any of the Tax-Exempt 2018 Refunding Bonds remain outstanding and unpaid as to either principal or interest, the Authority shall, to the extent permitted by law, take all actions within its control to maintain and will refrain from taking any action which would impair the exclusion of the interest on the Tax-Exempt 2018 Refunding Bonds from gross income for federal income tax purposes under the Code.

(b) The actions referred to in subsection (a) above include, but are not limited to, actions relating to any required rebate of arbitrage earnings and the expenditure and investment of proceeds of Tax-Exempt 2018 Refunding Bonds and moneys deemed to be proceeds of Tax-Exempt 2018 Refunding Bonds, and to prevent the Tax-Exempt 2018 Refunding Bonds from being or becoming “private activity bonds” as that term is used in the Code.

Section 12. Preliminary and Final Official Statements.

(a) An Authorized Officer shall assist in the preparation of the Preliminary Official Statement and is authorized to deem the portions of Preliminary Official Statement relating to the 2018 Refunding Bonds and the Authority “final” for purposes of the Rule.

(b) The Preliminary Official Statement with such changes and additions as an Authorized Officer shall approve shall constitute the final Official Statement, and an Authorized Officer is authorized to execute the final Official Statement on behalf of the Authority approved by him or her with such changes as the Authorized Officer may authorize.

(c) Such final Preliminary Official Statement and final Official Statement and other offering materials satisfactory to an Authorized Officer are authorized to be distributed by the Underwriter in conjunction with the offering and sale of the 2018 Refunding Bonds.

Section 13. Continuing Disclosure. Unless otherwise set forth in the Sale Order because of an exemption from the Rule, the 2018 Refunding Bonds shall be subject to the Rule, and an Authorized Officer is authorized to execute and deliver the Continuing Disclosure Undertaking in form and substance customary for continuing disclosure undertakings entered into pursuant to the Rule.

Section 14. Sale of 2018 Refunding Bonds; Purchase Agreement.

(a) The 2018 Refunding Bonds shall be sold by negotiated sale to the Underwriter pursuant to a Purchase Agreement or Agreements in customary form with such changes thereto as an Authorized Officer shall determine are in the best interests of the Authority, within the parameters established by this 2018 Series Ordinance. Such determination shall be conclusively established by the Authorized Officer's execution of the Purchase Agreement or Agreements.

(b) The Authority Board hereby determines that the sale of the 2018 Refunding Bonds by negotiated sale as described in subsection (a) is in the best interests of the Authority and will allow the 2018 Refunding Bonds to be sold in the most efficient manner so as to result in the lowest possible borrowing costs to the Authority.

(c) An Authorized Officer is authorized to accept, on behalf of the Authority, an offer from the Underwriter to purchase the 2018 Refunding Bonds subject to the following limitations:

- (1) The interest rate coupon with respect to the 2018 Refunding Bonds shall not exceed 5.25%.
- (2) The purchase price of the 2018 Refunding Bonds shall not be less than 99% of the principal amount thereof.
- (3) The Underwriter's discount with respect to the 2018 Refunding Bonds or the compensation to be paid to the Underwriter shall not exceed 0.40% of the principal amount of the 2018 Refunding Bonds.
- (4) The present value of the savings (net of Issuance Costs) to be realized by the issuance of the 2018 Refunding Bonds shall be equal to or greater than 5% of the principal amount of the Bonds To Be Refunded.

(d) An Authorized Officer is authorized to determine if the Purchase Agreement shall provide for liquidated damages and if so, the amount thereof, and if the purchaser of the 2018 Refunding Bonds is required to provide a good faith check and if so, the amount thereof.

Section 15. Delegation of Authority to and Authorization of Actions of Authorized Officers.

(a) An Authorized Officer shall make all determinations herein provided to be made in the Sale Order and shall make all such determinations in accordance with the best interests of the Authority within the parameters of this 2018 Series Ordinance.

(b) In addition to determinations authorized elsewhere in this 2018 Series Ordinance, an Authorized Officer shall determine the Bonds To Be Refunded (from the Outstanding DWSD Water Bonds) and aggregate principal amount of 2018 Refunding Bonds to be issued, but not in excess of the aggregate principal amount authorized by this 2018 Series Ordinance. An Authorized Officer shall also determine and establish, in accordance with this 2018 Series Ordinance, the maturities of the 2018 Refunding Bonds, whether such maturities shall be serial or term maturities and the Mandatory Redemption Requirements for any term maturities, and the redemption provisions for the 2018 Refunding Bonds.

(c) An Authorized Officer is authorized to file applications and to pay the related fees, if any, to the Michigan Department of Treasury at his or her discretion under Act 34 for one or more orders of approval to issue all or a portion of the 2018 Refunding Bonds, and such waivers or other Treasury approvals as necessary to implement the sale, delivery and security for the 2018 Refunding Bonds as authorized herein, and as required by the Michigan Department of Treasury or Act 34.

(d) An Authorized Officer shall determine in the Sale Order that the requirements set forth in Section 207 of the Ordinance with respect to the issuance of the 2018 Refunding Bonds as Additional Bonds have been satisfied.

(e) An Authorized Officer is hereby authorized and directed to do and perform any and all other acts and things with respect to the 2018 Refunding Bonds which are necessary or appropriate to carry into effect, consistent with the Ordinance and this 2018 Series Ordinance, the authorizations therein and herein contained including without limitation the securing of ratings by bond rating agencies, and the incurring of reasonable fees costs and expenses incidental to the foregoing, for and on behalf of the Authority.

Section 16. Ratification. All determinations and decisions of an Authorized Officer heretofore taken with respect to the issuance and sale of the 2018 Refunding Bonds as permitted or required by the Ordinance or law are hereby ratified, confirmed and approved.

Section 17. Additional Authorization. The Chief Executive Officer, the Chief Financial Officer, the Chief Administrative and Compliance Officer and the General Counsel of the Authority, any such officials acting in an interim or acting capacity to such officers, their deputies and staff, or any of them, are hereby authorized to execute and deliver such certificates, letters of representation, documents, instruments, opinions and other papers as may be deemed necessary or appropriate to complete the sale, execution and delivery of the 2018 Refunding Bonds and otherwise give effect to the transactions contemplated by this 2018 Series Ordinance, as determined by such officials executing and delivering the foregoing items.

Section 18. 2018 Series Ordinance a Contract. The provisions of this 2018 Series Ordinance shall constitute a contract between the Authority and each registered owner of an outstanding 2018 Refunding Bond.

Section 19. Professional Services.

(a) Dickinson Wright PLLC is hereby appointed as Bond Counsel for the 2018 Refunding Bonds, notwithstanding the periodic representation by Dickinson Wright PLLC in unrelated matters of other parties and potential parties to the issuance of the 2018 Refunding Bonds.

(b) PFM Financial Advisors LLC is hereby appointed as Financial Advisor for the 2018 Refunding Bonds, notwithstanding the periodic representation by PFM Financial Advisors LLC in unrelated matters of other parties and potential parties to the issuance of the 2018 Refunding Bonds.

(c) The fees and expenses of Dickinson Wright PLLC and PFM Financial Advisors LLC shall be payable as an Issuance Cost from the proceeds of the 2018 Refunding Bonds or other available funds.

(d) An Authorized Officer is authorized to engage other consultants, including, without limitation, verification agents or other parties as she deems necessary or appropriate in connection with the sale, issuance and delivery of the 2018 Refunding Bonds and to pay the fees and expenses thereof from the proceeds of the 2018 Refunding Bonds or other available funds.

Section 20. Severability; Headings; and Conflict. If any section, paragraph, clause or provision of this 2018 Series Ordinance shall be held invalid, the invalidity of such section, paragraph, clause or provision shall not affect any of the other provisions of this 2018 Series Ordinance. The section and paragraph headings in this 2018 Series Ordinance are furnished for convenience of reference only and shall not be considered to be part of this 2018 Series Ordinance.

Section 21. Amendments to Ordinance.

(a) Pursuant to Section 1103 of the Ordinance, the Ordinance is amended as follows:

(1) The definition of “Reserve Requirement” in Section 101 of the Ordinance is hereby amended by adding the following to the end of that definition:

“Notwithstanding the foregoing, (i) in the case of Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, upon satisfaction of the conditions set forth in Section 506(e) of this Ordinance, the Reserve Requirement for all Outstanding Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, regardless of when issued, at the election of the Authority set forth in a written notice to the Trustee, may be reduced or eliminated, and if reduced, the reduced Reserve Requirement in no event to be in excess of the maximum permitted by the Code, and (ii) in the case of Second Lien Bonds secured by the Second Lien Bond Reserve Account, upon the satisfaction of the conditions set forth in Section 506(f) of this Ordinance, the Reserve Requirement for all Outstanding Second Lien Bonds secured by the Second Lien Bond Reserve Account, regardless of when issued, at the election of the Authority set forth in a written notice to

the Trustee, may be reduced or eliminated, and if reduced, the reduced Reserve Requirement in no event to be in excess of the maximum permitted by the Code.”

- (2) A new subsection (e) of Section 506 is added to the Ordinance to read as follows:

“(e) The Authority may elect to reduce or eliminate the Reserve Requirement for all Outstanding Senior Lien Bonds secured by the Senior Lien Bond Reserve Account in accordance with the last sentence of the definition of Reserve Requirement in Section 101 at such time as the Authority shall have provided evidence to the Trustee that the Senior Lien Bonds are rated at least Aa3, AA- or AA- by at least two of Moody’s, S&P, and Fitch, respectively, and that neither of such ratings will be reduced solely as a result of the change in the Reserve Requirement for such Senior Lien Bonds. Such election shall be set forth in a written notice to the Trustee and shall be effective on the date of delivery of such notice to the Trustee. Following such election by the Authority, notwithstanding any other provision of this Ordinance, amounts on deposit in the Senior Lien Bond Reserve Account in excess of the Reserve Requirement for the Outstanding Senior Lien Bonds secured by the Senior Lien Bond Reserve Account shall be transferred by the Trustee into the Senior Lien Debt Service Account, the Receiving Fund and/or the Surplus Fund, as directed by the Authority.”

- (3) A new subsection (f) of Section 506 is added to the Ordinance to read as follows:

“(f) The Authority may elect to reduce or eliminate the Reserve Requirement for all Outstanding Second Lien Bonds secured by the Second Lien Bond Reserve Account in accordance with the last sentence of the definition of Reserve Requirement in Section 101 at such time as the Authority shall have provided evidence to the Trustee that the Senior Lien Bonds are rated at least Aa3, AA- or AA- by at least two of Moody’s, S&P, and Fitch, respectively, and that neither of such ratings will be reduced solely as a result of the change in the Reserve Requirement for such Second Lien Bonds. Such election shall be set forth in a written notice to the Trustee and shall be effective on the date of delivery of such notice to the Trustee. Following such election by the Authority, notwithstanding any other provision of this Ordinance, amounts on deposit in the Second Lien Bond Reserve Account in excess of the Reserve Requirement for the Outstanding Second Lien Bonds secured by the Second Lien Bond Reserve Account shall be transferred by the Trustee into the Second Lien Debt Service Account, the Receiving Fund and/or the Surplus Fund, as directed by the Authority.”

(b) Pursuant to Section 1103 of the Ordinance, the amendments set forth in this Section 21 shall become effective only upon, (1) in the case of Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, the consent or deemed consent (by purchasing such Senior Lien Bonds where the offering document with respect to such Bonds contains a description of the amendments in paragraphs (1) and (2) of subsection (a) of this Section 21) of the Holders of at least 51% of such Outstanding Senior Lien Bonds, and (2) in the case of Second Lien Bonds secured by the Second Lien Bond Reserve Account, the consent or deemed consent (by purchasing such Second Lien Bonds where the offering document with respect to such Bonds contains a description of the amendments in paragraphs (1) and (3) of subsection (a) of this Section 21) of the Holders of at least 51% of such Outstanding Second Lien Bonds.

Section 22. Publication and Recordation. This 2018 Series Ordinance shall be published in full in the Detroit Legal News, a newspaper of general circulation within the geographic boundaries of the Authority qualified under State law to publish legal notices, promptly after its adoption, and shall be maintained in the official records of the Authority and such recording authenticated by the signatures of the Chairperson and Secretary of the Authority Board.

Section 23. Repeal. All ordinances, resolutions, indentures or orders, or parts thereof, in conflict with the provisions of this 2018 Series Ordinance are, to the extent of such conflict, repealed.

Section 24. Effective Date. This 2018 Series Ordinance shall be effective upon adoption.

Adopted and signed on the ____ day of _____, 2018.

GREAT LAKES WATER AUTHORITY

Signed _____
Chairperson

Signed _____
Secretary

BLOOMFIELD 63818-15 2097163v3



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Resolution Regarding Approval of Series Ordinance Authorizing Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding Bonds an Amount Not to Exceed \$325,000,000 (Ordinance 2018-03)

Background: In order for the Great Lakes Water Authority (“GLWA”) to proceed with issuance of new sewage disposal system bonds and the refunding of various outstanding water bonds for the purpose of achieving annual debt service savings, the GLWA Board must approve a resolution approving the Series Ordinance.

The Series Ordinance sets forth the guidelines for the New Money and Refunding Bonds and authorizes the Chief Executive Officer or the Chief Financial Officer to execute the final terms of the Bonds, paying issuance costs and signing of the Bond Purchase Agreement, within the parameters set forth in the Series Ordinance.

New Money Portion- The authorized amount for the New Money Bonds in Section 3, page 4 is for an aggregate principal amount not to exceed \$100,000,000. As you will recall, the Board authorized a Notice of Intent at its March 8, 2017 meeting which set the borrowing limit for GLWA sewage disposal system bonds at \$275 million. This is the third series of sewer bonds from that Notice of Intent. Previous authorizations include an amount not to exceed \$45,000,000 for the Detroit River Interceptor project and the Central Offload Facility project, which are scheduled to close in September 2018 as well as the Rouge River Outfall disinfection project in the amount of \$38,450,000 which closed in June 2017.

Refunding Portion- The authorized amount for the Refunding Bonds in Section 3, page 4 is for an aggregate principal amount of not to exceed \$225,000,000. The final par amount of the Refunding Bonds will be determined at the time of pricing and is based on current bond market pricing levels, issuance costs and the par amount of the bonds to be refunded as determined by the savings level achieved. *While the approval of the resolution gives GLWA the authorization to issue refunding bonds, GLWA does not have to proceed with the refunding if market conditions become less favorable when it comes time to price the bonds.*

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Key Provisions:

- Not to Exceed Par Amount: \$225 million
- Maximum Coupon Rate: 5.25%
- Minimum Purchase Price: 99% of principal amount of bonds
- Maximum Underwriter Discount: 0.40% of principal amount of bonds
- Present Value Savings: Equal to or greater than 5.00% of principal amount of bonds to be refunded

Additional Provisions: Similar to the 2016 water and sewer bond ordinances approved by the GLWA Board, Ordinance No. 2018-03 also contains the “springing amendment” provision in Section 21- *Amendments to Ordinance*. As noted on page 20, this section gives GLWA the ability to reduce or eliminate the bond reserve requirement for the senior lien bonds when at least two of the three national rating agencies rate the senior lien bonds in the AA category, provided that the reduction in the reserve requirement would not negatively affect the outstanding ratings. The amendments will become effective upon the deemed consent of at least 51% of the holders of the outstanding senior lien bonds. GLWA will add this springing amendment to each future series ordinance to obtain the 51% consent level. The currently level of sewer consents achieved is 6.7% for senior lien bonds and 39.2% for second lien bonds, before the issuance of the bonds herein.

Budget Impact: None at this time.

Proposed Action: Audit Committee recommends that the Great Lakes Water Authority Board approve the resolution Approval of Series Ordinance Authorizing Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding Bonds an Amount Not to Exceed \$325,000,000 as presented, at its regular meeting on August 8, 2018.

Great Lakes Water Authority

Resolution 2018-

**RE: Approval of Series Ordinance Authorizing Issuance and Sale of Sewage Disposal
System Revenue and Revenue Refunding Bonds in an Amount not to Exceed \$325,000,000
Ordinance 2018-03**

By Board Member: _____

Whereas There has been presented to the Board of Directors of the Great Lakes Water Authority (the “Authority”) an ordinance entitled “Series Ordinance Authorizing the Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding Bonds in an Amount not to Exceed \$325,000,000” (the “2018 Sewer Series Ordinance”), which ordinance is a Series Ordinance as defined and described in Master Bond Ordinance No. 2015-02 adopted by the Board of Directors on October 7, 2015, as amended on December 9, 2015, January 27, 2016 and August 10, 2016 (as amended, the “Master Sewer Bond Ordinance”).

Whereas The Articles of Incorporation of the Authority provide that at least 5 of the 6 members of the Authority Board must vote to approve the 2018 Sewer Series Ordinance.

Now, Therefore Be It:

Resolved That the 2018 Sewer Series Ordinance, in the form presented to this meeting, is approved and adopted, and the Chairperson and the Secretary are authorized to authenticate the 2018 Sewer Series Ordinance in the form approved; **And Be it Further**

Resolved That an affirmative vote of at least 5 members of the Authority Board is necessary for the passage of this Resolution.

Adopted by the Great Lakes Water Authority Board on: _____, 2018

GREAT LAKES WATER AUTHORITY
ORDINANCE NO. 2018-03

**SERIES ORDINANCE AUTHORIZING ISSUANCE AND SALE OF
SEWAGE DISPOSAL SYSTEM REVENUE AND REVENUE REFUNDING
BONDS IN A PRINCIPAL AMOUNT NOT TO EXCEED \$325,000,000**

WHEREAS, pursuant to Resolution No. 2015-10-03 adopted by the Board of Directors of the Great Lakes Water Authority (the “Authority”) on October 7, 2015, the Authority Board approved and adopted Master Bond Ordinance No. 2015-02 (as subsequently amended through the date hereof, the “Ordinance”), which authorizes the issuance by the Authority of Sewage Disposal System Revenue Bonds; and

WHEREAS, the Ordinance authorizes the issuance of such Sewage Disposal System Revenue Bonds in one or more Series pursuant to a Series Ordinance authorizing the issuance and sale of such Series; and

WHEREAS, the Authority Board has determined that it is necessary to authorize at this time one or more Series of Bonds to provide moneys (i) to refund a portion of the Outstanding DWSD Sewer Bonds (the “Bonds To Be Refunded”) and cause the Bonds To Be Refunded to be defeased in accordance with the Ordinance and (ii) to pay all or part of the costs of the hereinafter described improvements, enlargements, extensions and repairs to the Local Sewer System.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE GREAT LAKES WATER AUTHORITY AS FOLLOWS:

Section 1. Authority for this Series Ordinance. This Series Ordinance (the “2018 Series Ordinance”) is adopted pursuant to Section 1102(1) of the Ordinance.

Section 2. Definitions. Except as otherwise provided in this 2018 Series Ordinance, all terms which are defined in Section 101 of the Ordinance shall have the same meanings, respectively, in this 2018 Series Ordinance as such terms are given in the Ordinance. In addition, the following terms shall have the following meanings unless the context shall clearly indicate some other meaning:

(a) “2018 Bonds” means, collectively, the 2018 New Money Bonds and the 2018 Refunding Bonds authorized by Section 3 of this 2018 Series Ordinance.

(b) “2018 New Money Bonds” means those 2018 Bonds issued for the purpose of paying, reimbursing and/or refinancing Project Costs.

(c) “2018 Project” means improvements, enlargements, extensions and repairs to the Local Sewer System identified in the Detroit Capital Improvement Program, all as more fully described in the Sale Order.

(d) “2018 Refunding Bonds” means those 2018 Bonds issued for the purpose of refunding the Bonds To Be Refunded and paying Refunding Costs.

(e) “2018 Reserve Requirement” means the sum of the 2018 Senior Lien Reserve Requirement and the 2018 Second Lien Reserve Requirement.

(f) “2018 Second Lien Bonds” means collectively, the 2018 Second Lien New Money Bonds and the 2018 Second Lien Refunding Bonds.

(g) “2018 Second Lien New Money Bonds” means those 2018 New Money Bonds, if any, issued as Second Lien Bonds as provided in this 2018 Series Ordinance.

(h) “2018 Second Lien Refunding Bonds” means those 2018 Refunding Bonds, if any, issued as Second Lien Bonds as provided in this 2018 Series Ordinance.

(i) “2018 Second Lien Reserve Requirement” means such amount, if any, as is determined in the Sale Order to be the amount necessary to make the amount on deposit in the Second Lien Bond Reserve Account at least equal to the Reserve Requirement for the Second Lien Bond Reserve Account immediately upon the issuance of the 2018 Second Lien Bonds after taking into consideration such provision as is made for the Reserve Requirement from proceeds of the 2018 Second Lien Bonds and other funds and Credit Facilities on deposit or to be deposited in the Second Lien Bond Reserve Account.

(j) “2018 Senior Lien Bonds” means collectively, the 2018 Senior Lien New Money Bonds and the 2018 Senior Lien Refunding Bonds.

(k) “2018 Senior Lien New Money Bonds” means those 2018 New Money Bonds, if any, issued as Senior Lien Bonds as provided in this 2018 Series Ordinance.

(l) “2018 Senior Lien Refunding Bonds” means those 2018 Refunding Bonds, if any, issued as Senior Lien Bonds as provided in this 2018 Series Ordinance.

(m) “2018 Senior Lien Reserve Requirement” means such amount, if any, as is determined in the Sale Order to be the amount necessary to make the amount on deposit in the Senior Lien Bond Reserve Account at least equal to the Reserve Requirement for the Senior Lien Bond Reserve Account immediately upon the issuance of the 2018 Senior Lien Bonds after taking into consideration such provision as is made for the Reserve Requirement from proceeds of the 2018 Senior Lien Bonds and other funds and Credit Facilities on deposit or to be deposited in the Senior Lien Bond Reserve Account.

(n) “Authorized Denomination” any denomination as determined by an Authorized Officer in the Sale Order.

(o) “Authorized Officer” means either the Chief Executive Officer or the Chief Financial Officer.

(p) “City Authorized Officer” means any officer of DWSD-R designated in a resolution adopted by the Board of Water Commissioners of DWSD-R as authorized to take actions on behalf of the City as described in this 2018 Series Ordinance.

(q) “Continuing Disclosure Undertaking” means the continuing disclosure undertaking or undertakings with respect to the 2018 Bonds to be entered into by the Authority pursuant to the Rule.

(r) “Escrow Agreement” shall have the meaning set forth in Section 12 of this 2018 Series Ordinance.

(s) “Escrow Deposit” means cash or Government Obligations, or a combination of cash and Government Obligations, at least sufficient to discharge the lien of the Pledged Assets securing the Bonds To Be Refunded in accordance with Section 1001 of the Ordinance.

(t) “Fitch” means Fitch Ratings, Inc., and any successor rating agency.

(u) “Interest Payment Date” means except as otherwise determined in the Sale Order each January 1 and July 1, or such other dates and commencing as set forth in the Sale Order.

(v) “Maturity Date” means such dates of maturity of the 2018 Bonds as determined in the Sale Order.

(w) “Moody’s” means Moody’s Investors Service, Inc., and any successor rating agency.

(x) “Official Statement” means the final disclosure document with respect to the 2018 Bonds.

(y) “Person” means any natural person, association, corporation, trust, partnership, joint venture, joint-stock company, municipal corporation, public body or other entity, however organized.

(z) “Preliminary Official Statement” means the preliminary disclosure document with respect to the 2018 Bonds.

(aa) “Project Costs” means the costs of acquiring, constructing, equipping, installing and financing the 2018 Project, including Issuance Costs relating to the 2018 New Money Bonds.

(bb) “Purchase Agreement” means the bond purchase agreement between the Authority and the Underwriter providing for the sale of the 2018 Bonds.

(cc) “Refunding Costs” means the costs of refunding the Bonds To Be Refunded, including, to the extent authorized in the Sale Order, the amount of the Escrow Deposit, and funding the 2018 Reserve Requirement and Issuance Costs relating to the 2018 Refunding Bonds.

(dd) “Regular Record Date” means the fifteenth day of the calendar month immediately preceding an Interest Payment Date.

(ee) “Rule” means Rule 15c2-12 promulgated by the United States Securities and Exchange Commission under the Securities and Exchange Act of 1934, as amended.

(ff) “S&P” means S&P Global Ratings, and any successor rating agency.

(gg) “Sale Order” means any one or more Sale Orders of an Authorized Officer authorizing acts consistent with the Ordinance and this 2018 Series Ordinance necessary and appropriate to complete the sale, execution and delivery of the 2018 Bonds and to complete the other transactions contemplated herein.

(hh) “Securities Depository” means (i) The Depository Trust Company and its successors and assigns, if any, or (ii) any other securities depository which agrees to follow the procedures required to be followed by a securities depository in connection with the 2018 Refunding Bonds and which is selected by the Authority as provided in Section 6.

(ii) “Taxable 2018 Bonds” means any 2018 Bonds other than Tax-Exempt 2018 Refunding Bonds.

(jj) “Tax-Exempt 2018 Bonds” means any 2018 Bonds that are Tax-Exempt Bonds.

(kk) “Underwriter” means Citigroup Global Markets Inc., on behalf of itself and such underwriters as may be named in the Purchase Agreement.

Section 3. Authorization of 2018 Bonds.

(a) Authorization of Borrowing.

(1) The Authority may borrow (A) an aggregate principal amount not in excess of \$225,000,000, in the case of 2018 Refunding Bonds, and (B) an aggregate principal amount not in excess of \$100,000,000, in the case of 2018 New Money Bonds, all as is finally determined in the Sale Order, and issue 2018 Bonds at one or more times and in one or more Series, all to evidence such borrowing pursuant to Act 233, Act 94 and the Ordinance, as 2018 Senior Lien Bonds and/or 2018 Second Lien Bonds, all as finally determined in the Sale Order.

(2) The amount of the 2018 New Money Bonds authorized in (1) above shall include the amount of the net original issue premium, if any.

(b) Purpose of 2018 Bonds. The 2018 Bonds shall be issued as Additional Bonds for the purpose of (1) in the case of 2018 Refunding Bonds, refunding the Bonds To Be Refunded and paying Refunding Costs and (2) in the case of 2018 New Money Bonds, paying, reimbursing and/or refinancing Project Costs, and may in each case include amounts necessary to satisfy the 2018 Reserve Requirement and paying the costs of a Credit Facility.

(c) Limitation on Issuance of 2018 Refunding Bonds. No 2018 Refunding Bonds shall be issued unless:

(1) The proceeds thereof (exclusive of accrued interest), together with other moneys available to the Authority under the Ordinance, are sufficient to provide the Escrow Deposit after payment of the 2018 Reserve Requirement

and Issuance Costs relating to the 2018 Refunding Bonds set forth in the Sale Order.

- (2) Concurrently with or prior to the delivery of the 2018 Refunding Bonds, an Authorized Officer gives notice to the Trustee to call for redemption at the applicable redemption price all of the Bonds To Be Refunded on the dates set forth in the Escrow Agreement. In such notice, an Authorized Officer may direct that the notice of redemption to be given by the Trustee to the Holders of the Bonds To Be Refunded pursuant to Section 303 of the Ordinance shall be given prior to the delivery of the 2018 Refunding Bonds and that such notice of redemption be conditioned upon the delivery of the 2018 Refunding Bonds and the funding of the Escrow Deposit. As provided in Section 303 of the Ordinance, if such conditions in the notice of redemption are not satisfied on or before the date fixed for redemption, then the notice of redemption shall be canceled and of no further force or effect.

(d) Insufficient Proceeds. To the extent that proceeds of the 2018 New Money Bonds are insufficient to pay Project Costs, the insufficiency shall be paid from the proceeds of future Additional Bonds, if any, and/or moneys of the Local Sewer System on hand and legally available therefor, as determined by the Board of Water Commissioners of DWSD-R and, in the case of the issuance of any Additional Bonds, with the concurrence of the Authority Board.

(e) Priority of Lien. The 2018 Bonds shall be issued as Senior Lien Bonds and/or Second Lien Bonds, as set forth in the Sale Order.

(f) Separate Series. The 2018 Bonds are issuable at one or more times and as one or more separate Series of Bonds in such amounts as determined in the Sale Order. The 2018 Refunding Bonds and the 2018 New Money Bonds shall not be included in the same Series and shall be issued as separate Series.

(g) Taxable and Tax-Exempt 2018 Bonds. The 2018 Bonds may be issued as Taxable 2018 Bonds or Tax-Exempt 2018 Bonds, or as separate Series of both, as determined in the Sale Order.

(h) Source of Payment and Security. The Refunding Bonds shall be payable and secured as provided in Section 5.

(i) Applicability of Ordinance. Except as otherwise provided in this 2018 Series Ordinance or the Sale Order, all of the provisions of the Ordinance shall apply to the 2018 Bonds as if set forth in full in this 2018 Series Ordinance, the purpose of this 2018 Series Ordinance being to supplement the Ordinance to authorize the issuance of 2018 Bonds for the purposes set forth herein.

Section 4. 2018 Bond Details.

(a) Designation.

- (1) The 2018 Bonds shall bear the designations Sewage Disposal System [Revenue] [Revenue Refunding] [Senior Lien] [Second Lien] Bonds, Series 2018[A/B/C] and shall include the Series designation and such other designations, including, without limitation, designations for multiple Series or subseries, as determined by an Authorized Officer as shall be set forth in the Sale Order and not inconsistent with the Ordinance or this 2018 Series Ordinance.
- (2) If the 2018 Bonds are not issued in 2018, an Authorized Officer is authorized in his or her discretion to re-designate the year and Series designation of the 2018 Bonds and the various funds and accounts established hereunder to correspond with the year of issuance of the 2018 Bonds. Furthermore, an Authorized Officer is authorized to establish designations within the various funds and accounts established hereunder if necessary in order to differentiate such funds and accounts from other similarly named funds and accounts related to other Bonds.

(b) Numbering. 2018 Bonds shall be numbered in such manner as shall be determined in the Sale Order.

(c) Principal. 2018 Bonds shall be issued in the form of Serial Bonds or Term Bonds, or any combination of Serial Bonds and Term Bonds, in any Authorized Denomination, and the principal thereof shall mature on July 1, or such other date as set forth in a Sale Order, in such years and amounts, and shall be or not be subject to redemption prior to maturity, all as shall be determined in the Sale Order subject to the following limitations:

- (1) No 2018 Bonds shall mature later than 40 years after the date of issuance thereof.
- (2) 2018 Bonds shall only be issued with principal and interest installments permitted by the Ordinance, including Section 207 thereof.

(d) Interest. 2018 Bonds or portions thereof shall bear interest at such fixed rate or rates as determined in the Sale Order not in excess of the maximum rate permitted by law. Interest on 2018 Bonds shall be payable on each Interest Payment Date.

(e) Payment of Principal and Interest. The principal of, premium, if any, and interest on the 2018 Bonds shall be payable in lawful money of the United States. The principal of and premium, if any, on the 2018 Bonds are payable upon the surrender thereof at the corporate trust office of the Trustee and the interest is payable by check or draft drawn on the Trustee and mailed to the registered owners as of the immediately preceding Regular Record Date at their address shown on the registration books of the Authority maintained by the Trustee.

(f) Dating. The 2018 Bonds shall be dated such date or dates as determined in the Sale Order.

(g) Reserve Requirement. The 2018 Reserve Requirement, if any, with respect to each Series of the 2018 Bonds shall be satisfied by a deposit into the appropriate Bond Reserve Account of a portion of the proceeds of such Series of 2018 Bonds, funds already on deposit in the appropriate Bond Reserve Account or the provision of a Credit Facility in the same amount and with a credit rating at the time of issuance of such Series of 2018 Bonds not less than the credit rating of such Series of 2018 Bonds, or any combination of the foregoing. The amounts, if any, required to be deposited in the Senior Lien Bond Reserve Account and the Second Lien Bond Reserve Account to cause the amounts on deposit therein to be at least equal to the Reserve Requirement for the Senior Lien Bonds and the Reserve Requirement for the Second Lien Bonds, respectively, shall be set forth in the Sale Order.

(h) Exchange. The registered owner of any 2018 Bond may exchange such 2018 Bond for a new 2018 Bond or Bonds of the same Series, interest rate, maturity and Priority of Lien in an equal aggregate principal amount in one or more of the Authorized Denominations by surrendering such 2018 Bond to be exchanged at the designated office of the Trustee together with an assignment duly executed by the registered owner thereof or his attorney or legal representative in such form as shall be satisfactory to the Trustee. As provided in Section 206 of the Ordinance, the Trustee shall be responsible for the registration, transfer and exchange of 2018 Bonds and shall indicate its acceptance of such duties by a document filed with an Authorized Officer concurrently with the delivery of the 2018 Bonds.

(i) Execution and Delivery of 2018 Bonds. The 2018 Bonds shall be executed in the name of the Authority by manual or facsimile signature of the Chief Executive Officer of the Authority and countersigned by the manual or facsimile signature of the Secretary of the Authority Board, and shall have the Authority's seal, or facsimile thereof, affixed or printed thereon. The Chief Financial Officer is authorized to deliver the 2018 Bonds to the Underwriter upon receiving the purchase price therefor in lawful money of the United States.

(j) Form of 2018 Bonds. The 2018 Bonds shall be in substantially the following form, subject to such changes, additions or deletions as determined by an Authorized Officer within the parameters of this 2018 Series Ordinance:

R-__

**UNITED STATES OF AMERICA
STATE OF MICHIGAN
COUNTIES OF MACOMB, OAKLAND AND WAYNE
GREAT LAKES WATER AUTHORITY**

**SEWAGE DISPOSAL SYSTEM [REVENUE] [REVENUE REFUNDING]
[SENIOR LIEN] [SECOND LIEN] BOND, SERIES 2018__**

REGISTERED OWNER:

PRINCIPAL AMOUNT: \$_____

INTEREST RATE: _____%

ORIGINAL ISSUE DATE:

The Great Lakes Water Authority, Counties of Macomb, Oakland and Wayne, State of Michigan (the “Issuer”), upon authorization from the Board of Directors of the Issuer (the “Board”), has issued this Bond. The Issuer, for value received, promises to pay, but only from the Pledged Assets (as defined below), to the Registered Owner named above, or registered assigns, the Principal Amount stated above in lawful money of the United States of America. Interest on this Bond shall accrue from the Original Issue Date set forth above at the Interest Rate per annum set forth above, and shall be payable on _____ 1, 20__ and semiannually on each July 1 and January 1 thereafter (each an “Interest Payment Date”) in lawful money of the United States of America.

Principal of this Bond is payable upon presentation and surrender at the designated office of U.S. Bank National Association, as Trustee under the Bond Ordinance (as defined below) or such other trustee as the Issuer may hereafter designate by notice mailed to the registered owner not less than 60 days prior to any Interest Payment Date (the “Trustee”).

Interest on this Bond is payable to the registered owner of record as of the close of business on the 15th day of the month immediately preceding any Interest Payment Date as shown on the registration books kept by the Trustee by check or draft mailed by the Trustee to the registered owner at the registered address. Interest on this Bond shall be computed on the basis of a 360-day year comprised of twelve 30-day months.

This Bond is one of a series of bonds designated “Sewage Disposal System Revenue [and Revenue Refunding] [Senior Lien] [Second Lien] Bonds, Series 2018__” and is issued pursuant to the provisions of (i) Act 233, Public Acts of Michigan, 1955, as amended (“Act 233”), and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”), (ii) Master Bond Ordinance No. 2015-02 adopted by the Board on October 7, 2015, as amended (the “Bond Ordinance”), (iii) the Series

Ordinance Authorizing Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding Bonds in a Principal Amount not to Exceed \$_____, adopted by the Board on _____, 2018 (the “Series Ordinance”), and (vi) a Sale Order of an Authorized Officer of the Issuer dated _____, 2018 (the “Sale Order,” and, collectively with the Bond Ordinance and the Series Ordinance, the “Ordinance”). This Bond is issued for the purposes set forth in the Series Ordinance and the Sale Order.

For the prompt payment of the principal of and interest on this Bond, and other bonds issued by the Issuer pursuant to the Bond Ordinance, the Issuer has irrevocably pledged the revenues of the Sewer System (as defined in the Bond Ordinance), after provision is made for reasonable and necessary expenses of operation, maintenance and administration of the Sewer System (the “Net Revenues”), and a statutory lien on the Net Revenues and Pledged Assets (as defined in the Bond Ordinance) (the “Pledged Assets”) is hereby recognized and acknowledged. Such lien is a [first] [second] lien[, subject to obligations heretofore and hereafter issued or incurred under the Bond Ordinance secured by a first lien on the Pledged Assets]. This Bond is of equal standing on a parity with all other obligations heretofore and hereafter issued or incurred under the Bond Ordinance and secured by a [first] [second] lien on the Pledged Assets.

For a complete statement of the revenues from which and the conditions under which this Bond is payable, a statement of the conditions under which Additional Bonds (as defined in the Bond Ordinance) of senior or equal standing and Additional Bonds of junior standing may hereafter be issued and the general covenants and provisions pursuant to which this Bond is issued, reference is made to the Bond Ordinance.

This Bond is subject to redemption prior to maturity to the extent, and as provided in, the Sale Order.

THIS BOND IS ISSUED UNDER ACT 233 AND ACT 94. IT IS A SELF-LIQUIDATING BOND AND IS NOT A GENERAL OBLIGATION OF THE ISSUER AND DOES NOT CONSTITUTE AN INDEBTEDNESS OF THE ISSUER WITHIN ANY CONSTITUTIONAL OR STATUTORY LIMITATION, BUT IS PAYABLE, BOTH AS TO PRINCIPAL AND INTEREST SOLELY FROM THE PLEDGED ASSETS OF THE SEWER SYSTEM. THE PAYMENT OF THE PRINCIPAL OF AND INTEREST ON THIS BOND ARE SECURED BY A STATUTORY LIEN ON THE PLEDGED ASSETS AS DESCRIBED HEREIN.

The Issuer has covenanted and agreed, and hereby covenants and agrees, to fix and maintain, or cause to be fixed and maintained, at all times while any bonds payable from the Pledged Assets of the Sewer System shall be outstanding, such rates for service furnished by the Sewer System as shall be sufficient to provide for payment of the interest upon and the principal of this Bond and all other Bonds (as defined in the Bond Ordinance) assumed or issued and to be issued under the Bond Ordinance as and when the same shall become due and payable, to create and maintain a bond redemption fund therefor, including a bond reserve, to provide for the payment of expenses of administration and operation and such expenses for maintenance of the Sewer System as are necessary to preserve the same in good repair and working order, and to provide for such other expenditures and funds for the Sewer System, all as are required by the Bond Ordinance.

This Bond is transferable only upon the books of the Issuer kept for that purpose at the office of the Trustee by the registered owner hereof in person, or by his attorney duly authorized in writing, upon the surrender of this Bond together with a written instrument of transfer satisfactory to the Trustee duly executed by the registered owner or his attorney duly authorized in writing, and thereupon a new registered bond or bonds of the same type, in the same aggregate principal amount and of the same maturity shall be issued to the transferee in exchange therefor as provided in the Ordinance and upon the payment of the charges, if any, therein prescribed.

It is hereby certified and recited that all acts, conditions and things required by law precedent to and in the issuance of this Bond have been done and performed by regular and due time and form as required by law.

This Bond is not valid or obligatory for any purpose until the Trustee's Certificate of Authentication hereon has been executed by the Trustee.

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IN WITNESS WHEREOF, the Great Lakes Water Authority, Counties of Macomb, Oakland and Wayne, State of Michigan, has caused this Bond to be signed in its name by the facsimile signatures of its Chief Executive Officer and its Secretary of the Board, and its corporate seal to be printed, impressed or otherwise reproduced hereon, all as of the Original Issue Date.

GREAT LAKES WATER AUTHORITY

By: _____
Chief Executive Officer

Countersigned:

By: _____
Secretary, Board of Directors

[Seal]

CERTIFICATE OF AUTHENTICATION

This Bond is authenticated one of the bonds designated by the Issuer as “Sewage Disposal System [Revenue] [Revenue Refunding] [Senior Lien] [Second Lien] Bonds, Series 2018__”.

U.S. Bank National Association,
Trustee

By:_____

Date of Authentication: _____, 2018

ASSIGNMENT

For value received, the undersigned sells, assigns and transfers unto _____ this Bond and all rights hereunder and hereby irrevocably appoints _____ attorney to transfer this Bond on the books kept for registration thereof with full power of substitution in the premises.

Dated: _____

Signature

NOTICE: The signature to this assignment must correspond with the name as it appears on the face of this Bond in every particular.

END OF BOND FORM

Section 5. Payment of 2018 Bonds; Confirmation of Statutory Lien.

(a) The 2018 Bonds and the interest thereon shall be payable solely from the Pledged Assets.

(b) To secure payment of the 2018 Bonds, the statutory lien upon the whole of the Pledged Assets established by Act 94 and the pledge created in Section 501 of the Ordinance is hereby confirmed in favor of the 2018 Bonds as follows:

- (1) Such lien in favor of the 2018 Senior Lien Bonds shall be a first lien of equal standing and Priority of Lien with all issued, to be issued and outstanding Senior Lien Bonds.
- (2) Such lien in favor of the 2018 Second Lien Bonds shall be a second lien of equal standing and Priority of Lien with all issued, to be issued and outstanding Second Lien Bonds.

Section 6. Concerning the Securities Depository.

(a) As used herein:

“Beneficial Owner” means any Person who indirectly owns 2018 Bonds pursuant to the indirect ownership system maintained by the Securities Depository and its Participants, commonly known as the “Book-Entry Only System.”

“Participant” means any Person whose ownership of 2018 Bonds is shown on books of the Securities Depository.

(b) Initially, one fully-registered bond for each maturity of each Series of 2018 Bonds, in the aggregate principal amount of such maturity, shall be issued in the name of Cede & Co., as nominee of the Securities Depository, for the benefit of the Participants in the Book-Entry Only System. While the 2018 Bonds are registered in the name of a Securities Depository or its nominee, neither the Authority nor the Trustee shall have any responsibility or obligation to any Participant or to any Beneficial Owner with respect to any matter, including the following:

- (1) the accuracy of the records of the Securities Depository, its nominee or any Participant with respect to any ownership interest in 2018 Bonds,
- (2) the delivery to any Participant, Beneficial Owner or any other Person other than the Securities Depository of any notice with respect to any 2018 Bonds, including any notice of redemption, or
- (3) the payment to any Participant, Beneficial Owner or any other Person, other than the Securities Depository of any amount with respect to the principal (and premium, if any) of or interest on any 2018 Bonds.

(c) The Trustee shall pay all principal (and premium, if any) of and interest on the 2018 Bonds only to or upon the order of the Securities Depository, and all such payments shall be valid

and effective fully to satisfy and discharge the Authority's obligations with respect to the principal (and premium, if any) of, and interest on such 2018 Bonds to the extent of the sum or sums so paid.

(d) If (1) the Authority receives a written notice from the Securities Depository to the effect the Securities Depository is unable or unwilling to discharge its responsibilities or (2) the Authority determines that it is in the best interests of the Beneficial Owners of 2018 Bonds that they be able to obtain 2018 Bonds in certificated form, then, in either event, the Authority shall notify the Trustee and, in the case of clause, (2), the Securities Depository.

(e) Upon discontinuance of the use of the Book-Entry Only System maintained by the Securities Depository pursuant to subsection (d) above and upon receipt of notice from the Securities Depository containing sufficient information, the Authority shall execute and the Trustee shall authenticate and deliver 2018 Bonds in certificated form to Beneficial Owners in exchange for the beneficial interests of such Beneficial Owners in corresponding principal amounts and in any Authorized Denominations.

(f) Notwithstanding any other provision of this 2018 Series Ordinance to the contrary, so long as any 2018 Bond is registered in the name of the Securities Depository or its nominee:

- (1) all payments with respect to the principal, premium, if any, and interest on such 2018 Bond and all notices of redemption, tender and otherwise with respect to such 2018 Bond shall be made and given, respectively, to the Securities Depository as provided in the blanket issuer letter of representations between the Authority and the Securities Depository;
- (2) if less than all of the 2018 Bonds of the same type of any maturity are to be redeemed, then the particular 2018 Bonds or portions of 2018 Bonds of such type and maturity to be redeemed shall be selected by the Securities Depository in any such manner as the Securities Depository may determine;
- (3) all payments with respect to principal of the 2018 Bonds and premium, if any and interest on the 2018 Bonds shall be made in such manner as shall be prescribed by the Securities Depository; and
- (4) if a 2018 Bond is redeemed or tendered in part, then all amounts payable in respect of such redemption or tender shall be paid without presentation and surrender of such 2018 Bond pursuant to the procedures of the Securities Depository.

Section 7. Credit Facility.

(a) An Authorized Officer is authorized to negotiate and obtain a Credit Facility with respect to the 2018 Bonds, if the Authorized Officer determines that it is in the best interest of the Authority. An Authorized Officer is further authorized to renegotiate the terms of any outstanding Credit Facility, if the Authorized Officer determines that it is in the best interest of the Authority.

(b) An Authorized Officer is authorized to pay the cost of any such Credit Facility from the proceeds of the 2018 Bonds or any other funds legally available therefor.

(c) An Authorized Officer is authorized to make such covenants and agreements of the Authority as shall be necessary or appropriate in any agreement with the Credit Entity providing such Credit Facility.

Section 8. Funds and Accounts; Flow of Funds. Except as otherwise provided in this 2018 Series Ordinance, all of the provisions relative to funds and accounts, their maintenance, the flow of funds and other details relative thereto, shall remain as specifically set forth in the Ordinance.

Section 9. Disposition of Proceeds.

(a) 2018 Senior Lien New Money Bonds.

- (1) Disposition of Accrued Interest and Capitalized Interest. From the proceeds of the sale of the 2018 Senior Lien New Money Bonds there shall be immediately deposited in the Senior Lien Debt Service Account, an amount equal to any accrued interest received on the delivery of the 2018 Senior Lien New Money Bonds and, to the extent provided in the Sale Order, any capitalized interest on the 2018 Senior Lien New Money Bonds, and the Authority may take credit for the amount so deposited against the amount required to be deposited in the Senior Lien Debt Service Account for payment of the next maturing interest payment on the 2018 Senior Lien New Money Bonds.
- (2) Senior Lien Bond Reserve Account Deposit. If required as provided in Section 4(g) of this 2018 Series Ordinance, from the proceeds of the 2018 Senior Lien New Money Bonds, there shall next be applied an amount as set forth in the Sale Order to be deposited to the Senior Lien Bond Reserve Account at least equal to the 2018 Senior Lien Reserve Requirement after taking into account any Credit Facility or Credit Facilities to be acquired with the proceeds of the 2018 Senior Lien New Money Bonds or any other funds legally available therefor.
- (3) Construction Fund. The balance of the proceeds of the 2018 Senior Lien New Money Bonds shall be deposited in the Detroit Local Construction Account of the Construction Fund and used to pay Project Costs as provided in Section 10.

(b) 2018 Second Lien New Money Bonds.

- (1) Disposition of Accrued Interest and Capitalized Interest. From the proceeds of the sale of the 2018 Second Lien New Money Bonds there shall be immediately deposited in the Second Lien Debt Service Account, an amount equal to any accrued interest received on the delivery of the 2018 Second Lien New Money Bonds and, to the extent provided in the Sale

Order, any capitalized interest on the 2018 Second Lien New Money Bonds, and the Authority may take credit for the amount so deposited against the amount required to be deposited in the Second Lien Debt Service Account for payment of the next maturing interest payment on the 2018 Second Lien New Money Bonds.

- (2) Second Lien Bond Reserve Account Deposit. If required as provided in Section 4(g) of this 2018 Series Ordinance, from the proceeds of the 2018 Second Lien New Money Bonds, there shall next be applied an amount as set forth in the Sale Order to be deposited to the Second Lien Bond Reserve Account at least equal to the 2018 Second Lien Reserve Requirement after taking into account any Credit Facility or Credit Facilities to be acquired with the proceeds of the 2018 Second Lien New Money Bonds or any other funds legally available therefor.
 - (3) Construction Fund. The balance of the proceeds of the 2018 Second Lien New Money Bonds shall be deposited in the Detroit Local Construction Account of the Construction Fund and used to pay Project Costs as provided in Section 10.
- (c) 2018 Senior Lien Refunding Bonds.
 - (1) Disposition of Accrued Interest: From the proceeds of the sale of the 2018 Senior Lien Refunding Bonds there shall be immediately deposited in the Senior Lien Bond and Interest Redemption Fund an amount equal to any accrued interest received on the delivery of the 2018 Senior Lien Refunding Bonds, and the Authority may take credit for the amount so deposited against the amount required to be deposited in the Senior Lien Bond and Interest Redemption Fund for payment of the next maturing interest payment on the 2018 Senior Lien Refunding Bonds.
 - (2) Senior Lien Bond Reserve Account Deposit. If required as provided in Section 4(g) of this 2018 Series Ordinance, from the proceeds of the 2018 Senior Lien Refunding Bonds, there shall next be applied an amount as set forth in the Sale Order to be deposited to the Senior Lien Bond Reserve Account at least equal to the 2018 Senior Lien Reserve Requirement after taking into account any Credit Facility or Credit Facilities to be acquired with the proceeds of the 2018 Senior Lien Refunding Bonds or any other funds legally available therefor.
 - (3) Issuance Costs: As provided in the Sale Order, a portion of the proceeds from the sale of the 2018 Senior Lien Refunding Bonds shall be applied to the payment of Issuance Costs upon submission of proper documentation to an Authorized Officer.
 - (4) Escrow Deposit: As provided in the Sale Order, the balance of the proceeds from the sale of the 2018 Senior Lien Refunding Bonds shall be used to

acquire Government Obligations, which together with any remaining balance of such proceeds in the form of cash, shall constitute all or part of the Escrow Deposit to be held in the Escrow Fund.

(d) 2018 Second Lien Refunding Bonds.

- (1) Disposition of Accrued Interest: From the proceeds of the sale of the 2018 Second Lien Refunding Bonds there shall be immediately deposited in the Second Lien Bond and Interest Redemption Fund an amount equal to any accrued interest received on the delivery of the 2018 Second Lien Bonds, and the Authority may take credit for the amount so deposited against the amount required to be deposited in the Second Lien Bond and Interest Redemption Fund for payment of the next maturing interest payment on the 2018 Second Lien Refunding Bonds.
- (2) Second Lien Bond Reserve Account Deposit. If required as provided in Section 4(g) of this 2018 Series Ordinance, from the proceeds of the 2018 Second Lien Refunding Bonds, there shall next be applied an amount as set forth in the Sale Order to be deposited to the Second Lien Bond Reserve Account at least equal to the 2018 Second Lien Reserve Requirement after taking into account any Credit Facility or Credit Facilities to be acquired with the proceeds of the 2018 Second Lien Refunding Bonds or any other funds legally available therefor.
- (3) Issuance Costs: As provided in the Sale Order, a portion of the proceeds from the sale of the 2018 Second Lien Refunding Bonds shall be applied to the payment of Issuance Costs upon submission of proper documentation to an Authorized Officer.
- (4) Escrow Deposit: As provided in the Sale Order, the balance of the proceeds from the sale of the 2018 Second Lien Refunding Bonds shall be used to acquire Government Obligations, which together with any remaining balance of such proceeds in the form of cash, shall constitute all or part of the Escrow Deposit to be held in the Escrow Fund.

Section 10. Construction Fund. A subaccount of the Detroit Local Construction Account of the Construction Fund established by the Ordinance shall be established for the 2018 New Money Bonds and designated the “Local Construction Fund, Series 2018,” and shall be established and maintained as a separate depository account with a Custodian as designated by a City Authorized Officer.

(a) Moneys in the Local Construction Fund, Series 2018 shall be applied solely to payment of Project Costs (or to the reimbursement of Project Costs paid by the Authority or the City from other funds prior to the issuance of the 2018 New Money Bonds).

- (1) Payments or reimbursement for Project Costs for construction, either on account or otherwise, shall not be made unless the registered engineer in charge of such work shall file with a City Authorized Officer a signed

statement to the effect that the work has been completed in accordance with the plans and specifications therefor, that it was done pursuant to and in accordance with the contract therefor, that such work is satisfactory and that such work has not been previously paid for.

- (2) Payment or reimbursement for Project Costs consisting of Issuance Costs and engineering, legal and financial costs shall be made upon submission of appropriate documentation to a City Authorized Officer.

Section 11. Escrow Fund; Escrow Agreement.

(a) Establishment of Escrow Fund. The Escrow Deposit shall be held in or credited to an account designated as the “Great Lakes Water Authority Sewage Disposal System Revenue Bonds Series 2018 Refunding Bonds Escrow Fund” (the “Escrow Fund”) pursuant to an escrow agreement (the “Escrow Agreement”).

(b) Escrow Agreement.

- (1) An Authorized Officer is authorized to enter into the Escrow Agreement on behalf of the Authority with U.S. Bank National Association as “Escrow Trustee.”
- (2) The Escrow Agreement:
 - a) shall be in the form and substance customary for refunding escrow agreements;
 - b) may permit any balance after paying the principal (and premium, if any) and interest on the Bonds To Be Refunded to be applied to any lawful purpose of the Sewer System if such use will not, in the opinion of Bond Counsel, impair the exclusion of interest on the 2018 Refunding Bonds that are Tax-Exempt 2018 Bonds from gross income for federal income tax purposes; and
 - c) shall otherwise be in the best interests of the Authority as determined by an Authorized Officer, as conclusively established by his or her execution of the Escrow Agreement.

Section 12. Tax Covenant.

(a) The Authority hereby covenants and represents with the registered owners of the Tax-Exempt 2018 Bonds that so long as any of the Tax-Exempt 2018 Bonds remain outstanding and unpaid as to either principal or interest, the Authority shall, to the extent permitted by law, take all actions within its control to maintain and, in the case of the proceeds of the 2018 New Money Bonds to be deposited in the Local Construction Fund, Series 2018, cause the City to take all actions within its control to maintain, and will refrain from taking any action which would impair and, in the case of the proceeds of the New Money Bonds to be deposited in the Local Construction Fund, Series 2018, cause the City to refrain from taking any action which would

impair, the exclusion of the interest on the Tax-Exempt 2018 Bonds from gross income for federal income tax purposes under the Code.

(b) The actions referred to in subsection (a) above include, but are not limited to, actions relating to any required rebate of arbitrage earnings and the expenditure and investment of proceeds of Tax-Exempt 2018 Bonds and moneys deemed to be proceeds of Tax-Exempt 2018 Bonds, and to prevent the Tax-Exempt 2018 Bonds from being or becoming “private activity bonds” as that term is used in the Code.

Section 13. Preliminary and Final Official Statements.

(a) An Authorized Officer shall assist in the preparation of the Preliminary Official Statement and is authorized to deem the portions of Preliminary Official Statement relating to the 2018 Bonds and the Authority “final” for purposes of the Rule.

(b) The Preliminary Official Statement with such changes and additions as an Authorized Officer shall approve shall constitute the final Official Statement, and an Authorized Officer is authorized to execute the final Official Statement on behalf of the Authority approved by him or her with such changes as the Authorized Officer may authorize.

(c) Such final Preliminary Official Statement and final Official Statement and other offering materials satisfactory to an Authorized Officer are authorized to be distributed by the Underwriter in conjunction with the offering and sale of the 2018 Bonds.

Section 14. Continuing Disclosure. Unless otherwise set forth in the Sale Order because of an exemption from the Rule, the 2018 Bonds shall be subject to the Rule, and an Authorized Officer is authorized to execute and deliver the Continuing Disclosure Undertaking in form and substance customary for continuing disclosure undertakings entered into pursuant to the Rule.

Section 15. Sale of 2018 Bonds; Purchase Agreement.

(a) The 2018 Bonds shall be sold by negotiated sale to the Underwriter pursuant to a Purchase Agreement or Agreements in customary form with such changes thereto as an Authorized Officer shall determine are in the best interests of the Authority, within the parameters established by this 2018 Series Ordinance, and in the case of the 2018 New Money Bonds, in consultation with DWSD-R. Such determination shall be conclusively established by the Authorized Officer’s execution of the Purchase Agreement or Agreements.

(b) The Authority Board hereby determines that the sale of the 2018 Bonds by negotiated sale as described in subsection (a) is in the best interests of the Authority and will allow the 2018 Bonds to be sold in the most efficient manner so as to result in the lowest possible borrowing costs to the Authority.

(c) An Authorized Officer is authorized to accept, on behalf of the Authority, an offer from the Underwriter to purchase the 2018 Bonds subject to the following limitations:

- (1) The interest rate coupon with respect to the 2018 Bonds shall not exceed 5.25%.

- (2) The purchase price of the 2018 Bonds shall not be less than 99% of the principal amount thereof.
- (3) The Underwriter's discount with respect to the 2018 Bonds or the compensation to be paid to the Underwriter shall not exceed 0.40% of the principal amount of the 2018 Bonds.
- (4) The present value of the savings (net of Issuance Costs) to be realized by the issuance of the 2018 Refunding Bonds shall be equal to or greater than 5% of the principal amount of the Bonds To Be Refunded.

(d) An Authorized Officer is authorized to determine if the Purchase Agreement shall provide for liquidated damages and if so, the amount thereof, and if the purchaser of the 2018 Bonds is required to provide a good faith check and if so, the amount thereof.

(e) An Authorized Officer shall confirm in the Sale Order that there was no petition meeting the requirements of Section 33 of Act 94 that was filed with the Secretary of the Authority Board within 45 days of the date of publication of the notice of intent to issue bonds with respect to the 2018 New Money Bonds as required by Section 33 of Act 94.

Section 16. Delegation of Authority to and Authorization of Actions of Authorized Officers.

(a) An Authorized Officer shall make all determinations herein provided to be made in the Sale Order and shall make all such determinations in accordance with the best interests of the Authority within the parameters of this 2018 Series Ordinance, and in the case of determinations with respect to that portion of the 2018 New Money Bonds being issued to finance improvements to the Local Sewer System, in consultation with DWSD-R.

(b) In addition to determinations authorized elsewhere in this 2018 Series Ordinance, an Authorized Officer shall determine the Bonds To Be Refunded (from the Outstanding DWSD Sewer Bonds) and aggregate principal amount of 2018 Refunding Bonds to be issued, but not in excess of the aggregate principal amount authorized by this 2018 Series Ordinance. An Authorized Officer shall also determine and establish, in accordance with this 2018 Series Ordinance, the maturities of the 2018 Refunding Bonds, whether such maturities shall be serial or term maturities and the Mandatory Redemption Requirements for any term maturities, and the redemption provisions for the 2018 Refunding Bonds.

(c) In addition to determinations authorized elsewhere in this 2018 Series Ordinance, an Authorized Officer shall determine the aggregate principal amount of 2018 New Money Bonds to be issued, but not in excess of the aggregate principal amount authorized by this 2018 Series Ordinance, on the basis of his or her evaluation of the maximum amount of 2018 New Money Bonds which can be sold, given anticipated interest rates and the revenue coverage requirements with respect to the 2018 New Money Bonds and for any other reasons the Authorized Officer deems appropriate.

- (1) Such determination shall also include the type or types of 2018 New Money Bonds to be issued, whether to issue the 2018 New Money Bonds as Senior

Lien Bonds or Second Lien Bonds and if in one or more Series, and the redemption provisions for the 2018 New Money Bonds.

- (2) An Authorized Officer shall also determine and establish, in accordance with this 2018 Series Ordinance, the maturities of the 2018 New Money Bonds, whether such maturities shall be serial or term maturities and the Mandatory Redemption Requirements for any term maturities.

(d) An Authorized Officer is authorized to file applications and to pay the related fees, if any, to the Michigan Department of Treasury at his or her discretion under Act 34 for one or more orders of approval to issue all or a portion of the 2018 Bonds, and such waivers or other Treasury approvals as necessary to implement the sale, delivery and security for the 2018 Bonds as authorized herein, and as required by the Michigan Department of Treasury or Act 34.

(e) An Authorized Officer shall determine in the Sale Order that the requirements set forth in Section 207 of the Ordinance with respect to the issuance of the 2018 Bonds as Additional Bonds have been satisfied.

(f) An Authorized Officer is hereby authorized and directed to do and perform any and all other acts and things with respect to the 2018 Bonds which are necessary or appropriate to carry into effect, consistent with the Ordinance and this 2018 Series Ordinance, the authorizations therein and herein contained including without limitation the securing of ratings by bond rating agencies, and the incurring of reasonable fees costs and expenses incidental to the foregoing, for and on behalf of the Authority.

Section 17. [Reserved.]

Section 18. Ratification. All determinations and decisions of an Authorized Officer heretofore taken with respect to the issuance and sale of the 2018 Bonds as permitted or required by the Ordinance or law are hereby ratified, confirmed and approved.

Section 19. Additional Authorization. The Chief Executive Officer, the Chief Financial Officer, the Chief Administrative and Compliance Officer and the General Counsel of the Authority, any such officials acting in an interim or acting capacity to such officers, their deputies and staff, or any of them, are hereby authorized to execute and deliver such certificates, letters of representation, documents, instruments, opinions and other papers as may be deemed necessary or appropriate to complete the sale, execution and delivery of the 2018 Bonds and otherwise give effect to the transactions contemplated by this 2018 Series Ordinance, as determined by such officials executing and delivering the foregoing items.

Section 20. 2018 Series Ordinance a Contract. The provisions of this 2018 Series Ordinance shall constitute a contract between the Authority and each registered owner of an outstanding 2018 Bond.

Section 21. Professional Services.

(a) Dickinson Wright PLLC is hereby appointed as Bond Counsel for the 2018 Bonds, notwithstanding the periodic representation by Dickinson Wright PLLC in unrelated matters of other parties and potential parties to the issuance of the 2018 Bonds.

(b) PFM Financial Advisors LLC is hereby appointed as Financial Advisor for the 2018 Bonds, notwithstanding the periodic representation by PFM Financial Advisors LLC in unrelated matters of other parties and potential parties to the issuance of the 2018 Bonds.

(c) The fees and expenses of Dickinson Wright PLLC and PFM Financial Advisors LLC shall be payable as an Issuance Cost from the proceeds of the 2018 Bonds or other available funds.

(d) An Authorized Officer is authorized to engage other consultants, including, without limitation, verification agents or other parties as she deems necessary or appropriate in connection with the sale, issuance and delivery of the 2018 Bonds and to pay the fees and expenses thereof from the proceeds of the 2018 Bonds or other available funds.

Section 22. Severability; Headings; and Conflict. If any section, paragraph, clause or provision of this 2018 Series Ordinance shall be held invalid, the invalidity of such section, paragraph, clause or provision shall not affect any of the other provisions of this 2018 Series Ordinance. The section and paragraph headings in this 2018 Series Ordinance are furnished for convenience of reference only and shall not be considered to be part of this 2018 Series Ordinance.

Section 23. Amendments to Ordinance.

(a) Pursuant to Section 1103 of the Ordinance, the Ordinance is amended as follows:

(1) The definition of “Reserve Requirement” in Section 101 of the Ordinance is hereby amended by adding the following to the end of that definition:

“Notwithstanding the foregoing, (i) in the case of Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, upon satisfaction of the conditions set forth in Section 506(e) of this Ordinance, the Reserve Requirement for all Outstanding Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, regardless of when issued, at the election of the Authority set forth in a written notice to the Trustee, may be reduced or eliminated, and if reduced, the reduced Reserve Requirement in no event to be in excess of the maximum permitted by the Code, and (ii) in the case of Second Lien Bonds secured by the Second Lien Bond Reserve Account, upon the satisfaction of the conditions set forth in Section 506(f) of this Ordinance, the Reserve Requirement for all Outstanding Second Lien Bonds secured by the Second Lien Bond Reserve Account, regardless of when issued, at the election of the Authority set forth in a written notice to the Trustee, may be reduced or eliminated, and if reduced, the reduced Reserve Requirement in no event to be in excess of the maximum permitted by the Code.”

(2) A new subsection (e) of Section 506 is added to the Ordinance to read as follows:

“(e) The Authority may elect to reduce or eliminate the Reserve Requirement for all Outstanding Senior Lien Bonds secured by the Senior Lien Bond Reserve Account in accordance with the last sentence of the definition of Reserve Requirement in Section 101 at such time as the Authority shall have provided evidence to the Trustee that the Senior Lien Bonds are rated at least Aa3, AA- or AA- by at least two of Moody’s, S&P, and Fitch, respectively, and that neither of such ratings will be reduced solely as a result of the change in the Reserve Requirement for such Senior Lien Bonds. Such election shall be set forth in a written notice to the Trustee and shall be effective on the date of delivery of such notice to the Trustee. Following such election by the Authority, notwithstanding any other provision of this Ordinance, amounts on deposit in the Senior Lien Bond Reserve Account in excess of the Reserve Requirement for the Outstanding Senior Lien Bonds secured by the Senior Lien Bond Reserve Account shall be transferred by the Trustee into the Senior Lien Debt Service Account, the Receiving Fund and/or the Surplus Fund, as directed by the Authority.”

- (3) A new subsection (f) of Section 506 is added to the Ordinance to read as follows:

“(f) The Authority may elect to reduce or eliminate the Reserve Requirement for all Outstanding Second Lien Bonds secured by the Second Lien Bond Reserve Account in accordance with the last sentence of the definition of Reserve Requirement in Section 101 at such time as the Authority shall have provided evidence to the Trustee that the Senior Lien Bonds are rated at least Aa3, AA- or AA- by at least two of Moody’s, S&P, and Fitch, respectively, and that neither of such ratings will be reduced solely as a result of the change in the Reserve Requirement for such Second Lien Bonds. Such election shall be set forth in a written notice to the Trustee and shall be effective on the date of delivery of such notice to the Trustee. Following such election by the Authority, notwithstanding any other provision of this Ordinance, amounts on deposit in the Second Lien Bond Reserve Account in excess of the Reserve Requirement for the Outstanding Second Lien Bonds secured by the Second Lien Bond Reserve Account shall be transferred by the Trustee into the Second Lien Debt Service Account, the Receiving Fund and/or the Surplus Fund, as directed by the Authority.”

(b) Pursuant to Section 1103 of the Ordinance, the amendments set forth in this Section 23 shall become effective only upon, (1) in the case of Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, the consent or deemed consent (by purchasing such Senior Lien Bonds where the offering document with respect to such Bonds contains a description of the amendments in paragraphs (1) and (2) of subsection (a) of this Section 23) of the Holders of at least 51% of such Outstanding Senior Lien Bonds, and (2) in the case of Second Lien Bonds secured by the Second Lien Bond Reserve Account, the consent or deemed consent (by purchasing such Second Lien Bonds where the offering document with respect to such Bonds contains a description of the amendments in paragraphs (1) and (3) of subsection (a) of this Section 23) of the Holders of at least 51% of such Outstanding Second Lien Bonds.

Section 24. Publication and Recordation. This 2018 Series Ordinance shall be published in full in the Detroit Legal News, a newspaper of general circulation within the geographic boundaries of the Authority qualified under State law to publish legal notices, promptly after its adoption, and shall be maintained in the official records of the Authority and such recording authenticated by the signatures of the Chairperson and Secretary of the Authority Board.

Section 25. Repeal. All ordinances, resolutions, indentures or orders, or parts thereof, in conflict with the provisions of this 2018 Series Ordinance are, to the extent of such conflict, repealed.

Section 26. Effective Date. This 2018 Series Ordinance shall be effective upon adoption.

Adopted and signed on the ____ day of _____, 2018.

GREAT LAKES WATER AUTHORITY

Signed _____
Chairperson

Signed _____
Secretary

BLOOMFIELD 63818-16 2097159v3



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Deirdre Henry, Treasury Manager

Re: Proposed Amendments to the Great Lakes Water Authority Investment Policy

Background: The current Investment Policy was approved by the Great Lakes Water Authority (GLWA) Board on September 14, 2016. A periodic review of the policy is required to ensure the policies governing the management of the portfolio continue to be relevant and are implemented and monitored as stated.

Analysis: The PFM Asset Management (PFM) team was asked to review the GLWA Investment policy. Based on their review and subsequent internal discussions, below are the following recommended changes.

1. Amend Section 3 to specifically state that GLWA may use a qualified investment advisor as a money manager.
2. Section 7(C) has been amended to add language defining the parameters under which GLWA can sell a security.
3. Section 10(E) has been amended to further define restrictions related to the purchase of bankers' acceptances.
4. Section 10(J) was added to minimize concentration risk by placing limits and restrictions on different types of investment securities.

Attached is a memo from PFM along with a mark-up copy of the investment policy reflecting the proposed changes.

Proposed Action: Recommend approval of the proposed amendments by the GLWA Board of Directors.



July 10, 2018

Memorandum

To: Deirdre Henry, Treasury Manager
Great Lakes Water Authority

From: Brian Quinn, Managing Director
PFM Asset Management LLC

Re: Review of the Great Lakes Water Authority's Investment Policy Statement

PFM Asset Management LLC ("PFM") appreciates this opportunity to review the investment policy of the Great Lakes Water Authority (the "Authority" or "GLWA"). Our objective in presenting this memorandum to the Authority is to identify significant changes that the Authority can undertake to enhance its investment policy and its portfolio management strategy. The comments below are based on a comparison of your investment policy to current state investing regulations (Michigan Public Act 20 of 1943 Investment of Surplus Funds of Political Subdivisions, as amended) and our experience with similar governmental investment policies throughout the state of Michigan and throughout the country.

Based upon our review, PFM feels that the Authority's investment policy is consistent with the governing Michigan regulations but has a few areas for improvement. Below is an outline of the material revisions that PFM feels that the Great Lakes Water Authority can make to enhance its investment policy and investment management program:

Subject Matter	Description of PFM's Suggestion
Money Manager	The Authority could add a stipulation to the investment policy that contains added language that specifically states that GLWA can hire a qualified outside investment advisor as a money manager provided that said advisor meets standard industry qualifications and is registered with the SEC under the Investment Advisers Act of 1940.
Selling of Securities	The investment policy could incorporate language from GFOA standards that allows for the sale of investments for specific purposes within the overall investment strategy.
Bankers' Acceptances	The investment policy could state that bankers' acceptances carry a top tier short-term rating (A-1/P-1 or better) and mature not more than 180 days after the date of purchase.
Safety Guidelines	To enhance its safety, the Authority could possibly formally stipulate in its investment policy that the purchase of certificates of deposit, commercial paper, bankers' acceptances, repurchase agreements, and municipal bonds be restricted to its own or its qualified investment advisor's approved issuer list in which there is an establishment of a formal credit review process when purchasing these particular types of investments.



Subject Matter	Description of PFM's Suggestion
Asset Allocation	We recommend that the Authority place an overall limit on certificates of deposit, commercial paper, bankers' acceptances, municipal bonds, and repo and limit the percentage of the portfolio to be invested in these types of securities to say a maximum of 50% for each security type.
Issuer Limitations	To strengthen diversification, the Authority should incorporate a limit to the amount of exposure to any one certificate of deposit, municipal bond, bankers' acceptance, commercial paper, and repurchase agreement issuer to 5% of the overall portfolio as this would further enhance the risk management for these types of investments.

While the above changes will help to improve the overall internal controls with regards to the Great Lakes Water Authority's investments, please note that no undue risk is being taken.

As a national investment advisor to governmental entities, we benefit from being exposed to numerous investment policies. It is our opinion that the best policies are simple, not too restrictive, and are congruent with the prevailing regulatory guidelines. Further, good policy is meant to withstand the test of time (with the exception of changes in regulations) and does not unduly restrict the investment manager from making sound investment decisions.



INVESTMENT POLICY

SECTION 1 – PURPOSE

The purpose of this Investment Policy Statement is to establish a clear understanding of the philosophy and the investment objectives for Financial Assets (the Assets) (defined under section, “Scope”) of the Great Lakes Water Authority (the GLWA). This document will further describe the standards that will be utilized by the GLWA’s Board in monitoring investment performance of the Assets, as well as, serve as a guideline for the GLWA’s Finance Officers, any investment manager retained by the GLWA, or financial institution(s) utilized by the GLWA in its routine financial activities.

The investment purpose of the GLWA is to endeavor to accumulate a pool of assets sufficient to build capital for future use with the corresponding obligations to support near-term and long-term needs of the GLWA. The Assets are to be invested consistent with the policies of the GLWA’s Board and this policy document, as amended from time to time and in accordance with Michigan Public Act 20 of 1943 Investment of Surplus Funds of Political Subdivisions (the Act).

SECTION 2 – GLWA CHIEF FINANCIAL OFFICER

The Great Lakes Water Authority Board hereby delegates to the Chief Financial Officer/Treasurer (the CFO), and such delegates as the CFO may designate from time-to-time, primary responsibility for recommending investment policies and strategies, trustees, investment managers and/or advisors, and other fiduciaries, and monitoring the performance of the Financial Services Group’s Managers, including but not limited to the Treasury Manager and Finance Director, advisors and other fiduciaries of the GLWA. This delegation includes the authority to open and close investment and depository accounts at authorized financial institutions and broker/dealers as noted in Section 9 and are authorized investments as noted in Section 10. This delegation is not intended to conflict with the Great Lakes Water Authority Board’s ultimate authority and responsibility for the Financial Assets of the GLWA. The Great Lakes Water Authority Board may at its discretion set policy and practices for periodic reporting of the results of investment performance, review of market conditions, and other such information as it may require.

This Investment Policy Statement and the policies and guidance herein are not intended to substitute or conflict with routine treasury reporting duties and practices of the Financial Services Group and the Chief Financial Officer as managed for the Great Lakes Water Authority.

SECTION 3 – DELEGATION OF AUTHORITY

The Chief Financial Officer delegates management responsibility for the day to day or routine activities of the investment program to the Treasury Manager, under the supervision of the Chief Financial Officer. The Treasury Manager shall be responsible for all transactions undertaken and shall establish a system of controls to regulate the activities of subordinate officials, and their procedures in the absence of the Treasury Manager with the approval of the Chief Financial Officer.

The Treasury Manager shall establish written investment policy procedures for the operation of the investment program consistent with this Investment Policy Statement. No person may engage in an investment transaction except as provided under the terms of this policy and the procedures established by the Treasury Manager.

With the CFO's approval, the Treasury Manager may delegate investment transactions to a qualified investment advisor to become the GLWA's money manager provided that said advisor meets standard industry qualifications.

Commented [A1]: Added language to formally allow for an outside investment manager.

SECTION 4 – SCOPE

This Investment Policy Statement applies to the Financial Assets, all transactions and investment decisions and practices for which the Treasury Manager has authority and oversight. Such assets shall include funds classified in the audited financial statements of the GLWA as Current Assets and Long-Term Assets.

This policy does not cover investment activities of pension fund or deferred compensation programs.

SECTION 5 – THE PRUDENT INVESTOR STANDARD

The Assets are to be invested and managed with judgment and care; under circumstances then prevailing; which persons of prudence, discretion and intelligence exercise in the management of their own affairs, not for speculation, but for investment, considering the probable safety of their capital as well as the probable income to be derived.

The standard of prudence to be used by the GLWA's Treasury Manager will be the "prudent person" and / or "prudent investor" standard and shall be applied in the context of managing the overall portfolio of assets. The Treasury Manager acting in accordance with written procedures and this investment policy and exercising due diligence shall be relieved of personal responsibility for an individual security's credit risk or market price changes, provided deviations from expectations are reported in a timely fashion and appropriate action is taken to control adverse developments.

SECTION 6 – ETHICS

Officers and employees involved in the investment process shall refrain from personal business activity that would conflict with the proper execution and management of the investment program, or that could impair their ability to make impartial decisions. Employees and investment officials shall disclose any material interests in financial institutions with which they conduct business. They shall further disclose any personal financial/investment positions that could be related to the performance of the investment portfolio. Employees and officers shall refrain from undertaking personal investment transactions with the same individual with which business is conducted on behalf of GLWA.

SECTION 7 – INVESTMENT OBJECTIVES

The investment policies of the GLWA will be carried out by means of investment strategies that reflect continuous evaluation of changing investment environments, judgment regarding the allocation of the GLWA's assets among different kinds of investment opportunities, identification of appropriate investment vehicles, and the making of specific investment decisions.

The objective of the investments will be to provide for the GLWA's continued operations on a reasonably consistent basis and to achieve income and growth of principal without undue exposure to risk. Therefore, the primary focus will be preservation of principal, income generation and capital appreciation a secondary consideration together with the current spending requirements and short and intermediate term capital requirements of GLWA. The Assets of GLWA will be managed in accordance with the following objectives, in priority order:

A. Safety – Safety of principal is the foremost objective of the GLWA's investment program.

Investments shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. The objective will be to mitigate risk.

1. Credit Risk – The GLWA will minimize credit risk, the risk of loss due to the failure of the security issuer or backer, by:
 - i. Limiting investments to the safest types of securities, and
 - ii. Pre-qualifying the financial institutions, broker/dealers, and intermediaries with which the GLWA will do business, and
 - iii. Diversifying the portfolio so that the potential losses on individual securities will be minimized.

2. Interest Rate Risk - The GLWA will minimize the risk that market value of the securities in the portfolio will fall due to changes in the general interest rates, by:

- i. Matching investments with anticipated short and long-term cash flow requirements, and
- ii. Minimizing the need to liquidate securities prior to maturity, and
- iii. Monitoring the maturity dates of individual securities and the weighted average maturity of the investment portfolio to ensure duration is commensurate with the cash flow characteristics of the GLWA.

3. Custodial credit risk – The GLWA will minimize custodial risk by:

- i. Using only financial institutions and brokers meeting pre-established criteria and
- ii. Holding all securities in the name of Great Lakes Water Authority.

B. Liquidity – The investment portfolio of the GLWA will remain sufficiently liquid to enable the GLWA to meet all operating requirements that may be reasonably anticipated. Investment maturities for operating funds shall be scheduled to coincide with projected cash flow needs, taking into account large routine expenditures (such as payroll and debt service), as well as considering sizable blocks of anticipated revenue (water and sewerage fee collections).

C. Return on Investments – The investment portfolio of the GLWA shall be designed and managed with the objective of attaining a benchmark rate of return throughout the budgetary and economic cycles, commensurate with GLWA's investment risk constraints, operating cash flow and long-term capital needs. Portfolio performance will be measured against appropriate U.S. Treasury benchmarks as noted in Section 14.

Securities shall generally be held until maturity with the following exceptions:

- A security with declining credit may be sold early to minimize loss of principal;
- Selling a security and reinvesting the proceeds that would improve the quality, yield, or target duration in the portfolio may be undertaken;
- Unanticipated liquidity needs of the portfolio require that the security be sold.

Commented [A2]: Updated language from GFOA standards that allows for sales for specific purposes within the overall investment strategy.

D. Diversification - It is the policy of the GLWA to maintain a diversified investment portfolio. Assets held in a common fund or concentration account and other investment funds will be diversified to reduce the risk of loss resulting from over concentration of assets in a specific maturity, individual financial institution(s) or a specific class of securities. Diversification strategies will be determined and revised by the Treasury Manager, from time to time to meet diversification objectives while seeking to attain market rates of return or the benchmark index standards, set out herein.

It is also understood that temporary deviations from this objective may be necessary from time to time in order to accommodate certain financial goals and obligations.

SECTION 8 – MAXIMUM MATURITIES

To the extent possible, investments should match anticipated short term and long-term cash flow requirements. The weighted average maturity of the portfolio should not exceed five years. Unless matched to a particular cash flow need, funds will not be directly invested in securities that exceed five years maximum maturity period. Any longer duration investments must be matched to a particular cash flow and must fall within the weighted average maturity guidelines for the portfolio.

SECTION 9 – AUTHORIZED FINANCIAL INSTITUTIONS AND BROKER/DEALERS

- A. The Treasury Manager shall maintain a listing of financial institutions and broker/dealers authorized to provide investment services. The Treasury Manager will actively monitor and will conduct a quarterly evaluation of each financial institution and broker/dealer for credit worthiness to determine whether it should be on the “Qualified Institutions” listing. In addition, the Treasury Manager shall also maintain a record of investment policy certifications as shown at Addendum B from financial institutions and broker/dealers with which it conducts business.
 - i. For broker/dealers, the evaluation will include review of audited financial statements, audited financial statements, proof of Financial Industry Regulatory Authority (FINRA) registration, proof of approval to do business in Michigan, evidence of adequate insurance coverage, review of bank ratings by at least two independent sources, and certification of having read, understood, and agreeing to comply with the GLWA investment policy. The authorized listing of financial institutions, and / or broker/dealers shall be approved periodically by the Great Lakes Water Authority Audit Committee or as may be amended.
 - ii. For financial institutions, the evaluation will include review of audited financial statements, proof of Michigan registration, evidence of adequate insurance coverage, and review of bank ratings by at least two independent sources.
- B. Any designated investment advisors assisting the GLWA in the management of its overall portfolio may utilize their own approved list of broker/dealers to buy and sell investments in accordance with this policy. The advisor’s list must be submitted to the Treasury Manager on a quarterly basis in advance of utilization of those broker/dealers.
- C. Whenever possible, all investment decisions should be made using a competitive bid process. A competitive bid can be executed through a bidding process involving at least three separate broker/dealers or financial institutions or through the use of a nationally recognized trading platform. If a competitive quote is not available, the Treasury Manager will document why the competitive bid process was not used and the process used to make the investment decision.

SECTION 10 – AUTHORIZED INVESTMENTS

In accordance with Michigan Public Act 20 of 1943, as it is currently written and as it automatically incorporates future amendments to the Act, and consistent with GLWA's bond indentures, State authorizing bond statutes and ordinances, the surplus funds of GLWA will be invested as follows:

- A. Bonds, securities, and other obligations of the United States or an agency or instrumentality of the United States.
- B. Certificates of deposit, savings accounts, deposit accounts, or depository receipts of a bank or a savings and loan association which is a member of the Federal Deposit Insurance Corporation or a credit union which is insured by the National Credit Union Administration. The bank, savings and loan association or credit union must be eligible to be a depository of surplus funds belonging to the State.
- C. Commercial paper rated at the time of purchase within the highest classifications established by not less than two standard rating services and which matures not more than 270 days after the date of purchase.
- D. United States government or federal agency obligation repurchase agreements.

Repurchase agreements shall be negotiated only with dealers or financial institutions with which GLWA has negotiated a Master Repurchase Agreement. Repurchase Agreements must be signed with the bank or dealer and must contain provisions similar to those outlined in the Public Security Association's (or successor Association) model Master Repurchase Agreement.

- E. Bankers' acceptances of United States banks.

Bankers' acceptances shall not mature more than 180 days after the date of purchase and must be rated at the time of purchase in the highest classification by at least two nationally recognized rating services.

- F. Obligations of the state of Michigan or any of its political subdivisions that at the time of purchase are rated no lower than a single-A rating category and by not less than one (1) rating agency, see Addendum A.
- G. Mutual funds registered under the investment company act of 1940, title I of Michigan chapter 686, 54 Stat. 789, 15 U.S.C. 80a-1 to 80a-3 and 80a-4 to 80a-64, with authority to purchase only investment vehicles that are legal for direct investment by a public corporation. Included in this authorization are mutual funds that have net asset values (NAV) that fluctuate or can fluctuate on a periodic basis. A mutual fund is not disqualified as a permissible investment solely by reason of either of the following:

Commented [A3]: To further define the restrictions of purchases of bankers' acceptances (similar to the verbiage used for commercial paper).

1. The purchase of securities on a when-issued or delayed delivery basis;
 2. The ability to lend portfolio securities as long as the mutual fund receives collateral at all times equal to at least 100% of the value of the securities loaned;
 3. The limited ability to borrow and pledge a like portion of the portfolio's assets for temporary or emergency purposes; and,
 4. Investment pools organized under the surplus funds investment pool act, 1982 PA 367, 129.111 to 129.118.
- H. Obligations described in (A) through (G) if purchased through an inter-local agreement under the urban cooperation act of 1967, 1967(Ex Sess) P.A. 7, MCL 124.501 to 124.512. For purposes of this section, the objectives listed in Section 7 shall be altered in that the return on investment shall be of primary concern, followed by safety of capital and liquidity.

Although permitted under state law, collateralization will not be required on all investments with the exception of repurchase or reverse repurchase agreements. Repurchase and reverse repurchase agreements must be collateralized at not less than 102% of the market value of principal and accrued interest. All other investments will be looked at on a case-by-case basis taking into account liquidity, safety and yield.

- I. Investment Pools - Any investment into a pooled type account can only be made after the Treasury Manager has completed a thorough investigation. After the initial investment has been approved, the Treasury Manager must continue to monitor the account, at least annually, by reviewing the account's suitability as an investment vehicle. When reviewing the pooled account, the Treasury Manager shall take into account the following:
1. Detailed description of eligible investments made by the pool or fund;
 2. A written statement of the investment policy and the pool or fund objectives;
 3. A description of interest calculations and how interest is distributed;
 4. An explanation on how the fund will handle gains and losses within the fund;
 5. A description on how the funds will be safeguarded, and how often the underlying securities will be marked-to-market;
 6. Audited Financial Statements;
 7. An explanation of who will be able to invest in the fund, how often investments can be made, and what size limitations, if any, will be in effect for the fund;
 8. A schedule for receiving statements and portfolio listings;
 9. A fee schedule, explaining how and when the fees will be assessed;

10. Whether the fund will be able to receive bond proceeds, and whether they will accept bond proceeds; and,
11. Whether the pool or fund utilizes any type of reserves or a retained earnings account; and, if so, whether it affects the interest earnings of the participants.

J. Investment Diversification and Constraints

The purchase of certificates of deposit, commercial paper, banker's acceptances, municipal bonds, and repurchase agreements shall be restricted to the GLWA's or the investment advisor's own approved issuer list in which there is an establishment of a formal credit review process when purchasing these types of investments.

The percentage of the overall portfolio to be invested in certificates of deposit, commercial paper, bankers' acceptances, municipal bonds, or repurchase agreements shall be limited to a maximum of 50% for each security type.

The GLWA will also minimize the risk in placing a large portion of the portfolio with a single security issuer by limiting the exposure to 5% of the total portfolio at the time of purchase. This requirement does not apply to investments issued by the U.S. government or its agencies or instrumentalities, investments in money mutual funds, and investments in local government investment pools.

Commented [A4]: This language helps to minimize concentration risk by placing limits and restrictions on credit-type instruments.

SECTION 11 – MUTUAL / COLLECTIVE INVESTMENT FUNDS

The Treasury Manager is authorized to invest in mutual / collective investment funds (for purposes of investing in bonds, money market instruments, and other securities) after investigation of the prospectus and the following:

- A. The investment policy and objectives of the fund
- B. A description of Authorized Investment securities
- C. A description of interest calculation and distribution of income or dividends
- D. A description of how funds are safeguarded and securities priced
- E. Audited Financial Statements
- F. A description of any limitations on the size and frequency of deposits or withdrawals
- G. A fee schedule, break points, including assessments of such
- H. Frequency and delivery of statements and portfolio of securities in the fund

After the initial investment has been approved, the Treasury Manager must continue to monitor the account, at least annually, by reviewing the account's suitability as an investment vehicle.

SECTION 12 – SAFE KEEPING AND CUSTODY

All securities purchased by the GLWA under this section will be properly designated as an asset of the GLWA and shall be conducted on a delivery versus payment (DVP) basis. Certificates of Deposit purchased from financial institutions or brokers shall be held in a safe keeping account and evidenced by safe keeping receipt. Securities purchased from broker – dealers will be held in the name of the Great Lakes Water Authority by a third-party custodian in a safe keeping account designated by the GLWA Treasury Manager and evidenced by safekeeping receipts.

For purposes of this Policy, third party custodians shall be defined as a separate financial institution or a separate and distinct division or department of the same institution whose function is safe keeping and / or trust services. No withdrawal of such securities, in whole or in part, shall be made from safe keeping except by the GLWA Finance Officers as authorized herein, or by its designee.

The GLWA will execute third party custodial agreement(s) with its bank(s) and depository institution(s). Such agreements will include letters of authority from the GLWA, details as to responsibilities of each party, notification of securities purchases, sales, delivery, repurchase agreements, wire transfers, safe keeping and transaction costs, procedures in case of wire failure or other unforeseen mishaps including the liability of each party.

SECTION 13 – INTERNAL CONTROLS & PRACTICES

The Treasury Manager shall maintain a system of internal controls and practices which shall be designed, in addition to conforming to generally accepted accounting principles, to minimize losses of funds arising from fraud, employee error, misrepresentation by third parties, unanticipated changes in financial markets, or imprudent actions by employees and officers of GLWA.

SECTION 14 – REPORTING

The Treasury Manager shall generate a quarterly investment report that provides a clear picture of the status of the current investment portfolio. Each quarterly report will indicate any areas of policy concern and suggested or planned revisions of investment strategies. The report shall include:

- A. Discussion of investment strategy
- B. A summary of investments by type
- C. A summary of available funds and percentage invested
- D. A summary of interest income and average invested balances by financial asset classifications
- E. An analysis of investments by maturity dates
- F. A detailed report of all investments by type including fund, investment amount, rate, purchase date and maturity date and market price
- G. Reporting of portfolio as compared to the average U.S. Treasury Bills or U.S. Treasury Notes that most closely commensurate with the average life of the portfolio.

SECTION 15 -INVESTMENT POLICY ADOPTION

The GLWA's Investment Policy shall be adopted by resolution of the Great Lakes Water Authority Board. The Policy shall be reviewed periodically by the Great Lakes Water Authority Audit Committee. Any modifications made to the Investment Policy must be approved by the Great Lakes Water Authority Board.

Addendum A - Investment Grade Classifications

Long-Term Ratings

	<u>Standard & Poor's</u>	<u>Moody's Investors Service</u>	<u>Fitch Investors Service</u>	<u>Capacity to repay debt</u>
	AAA	Aaa	AAA	Extremely strong capacity
	AA+	Aa1	AA+	Very strong capacity
	AA	Aa2	AA	
	AA-	Aa3	AA-	
Investment Grade Debt	A+	A1	A+	Strong capacity; some susceptibility to adverse economic circumstances or effects
	A	A2	A	
	A-	A3	A-	
	BBB+	Baa1	BBB+	Adequate capacity; however <i>more likely</i> to be weakened due to adverse economic circumstances or effects
	BBB	Baa2	BBB	
	BBB-	Baa3	BBB-	
Non-Investment Grade or Speculative	BB+	Ba1	BB+	Vulnerable to default; faces <i>major</i> ongoing uncertainties or exposure
	BB	Ba2	BB	
	BB-	Ba3	BB-	

Short Term Note Ratings

<u>S & P</u>	<u>Moody's</u> (Moody's investment grade)
SP-1+	MIG-1
SP-1	-
SP-2	MIG-2
SP-3	MIG-3

Commercial Paper Ratings

An Issuer's ability to honor its' short-term obligations

<u>S&P</u>	<u>Moody's</u> (Prime)
A1	P1
A2	P2
A3	P3

Addendum B
Investment Policy
CERTIFICATION

I, hereby certify that I have received a copy of the Investment Policy of the Great Lakes Water Authority "GLWA". I have read and fully understand the State of Michigan Public Act 20 of Public Acts of 1943, as amended. I have personally read the Investment Policy and agree to have all personnel involved with investing GLWA proceeds to comply with the terms of the Investment Policy, and Public Act 20, regarding the investment of GLWA funds. Any investment not conforming to GLWA Investment Policy will be disclosed promptly. We also pledge to exercise due diligence in informing GLWA in writing of all foreseeable risks associated with financial transactions conducted with the Great Lakes Water Authority.

Sign Name: _____

Print Name: _____

Title: _____

Institution: _____

Address: _____

City/State/Zip: _____

Date: _____

INVESTMENT POLICY – GREAT LAKES AUTHORITY
BOARD APPROVAL DATE: October 22, 2015
(See Attachment Page – Great Lakes Water Authority Investment Policy)
(See Attachment Public Act 20 of 1943")

Addendum C

Glossary of Terms

Average Life

An estimate of the number of terms to maturity, taking the possibility of early payments into account. Average life is calculated using the weighted average time to the receipt of all future cash flows.

Agency Bond

A bond issued by a government sponsored enterprise (GSE) or agency. These bonds are not fully guaranteed in the same way as U.S. Treasury and municipal bonds. Examples include Fannie Mae, (FNMA) Federal National Mortgage Association; Freddie Mac (FHLMC) Federal Home Loan Mortgage Corporation, Sallie Mae Student Loan Marketing Association; Ginnie Mae (GNMA) Government National Mortgage Association.

Asked

The price at which securities are offered.

Banker's Acceptance (BA)

A draft or bill of exchange accepted by a bank or trust company. The accepting institution guarantees payment of the bill, as well as the issuer. Acceptances are traded at a discount from face value on the secondary market. Banker's acceptances are very similar to T-bills and are often used in money market funds.

Benchmark

A comparative base for measuring the performance of risk tolerance of the investment portfolio. A benchmark should represent a close correlation to the level of risk and the average duration of the portfolio's investments.

Bid

The price offered by a buyer of securities. (When you are selling securities, you ask for a bid.)

Bond

A debt investment in which an investor loans money to an entity (corporate or governmental) that borrows the funds for a defined period of time at a fixed interest rate. Bonds are used by companies, municipalities, states and U.S. and foreign governments to finance a variety of projects and activities.

Broker

A Broker brings buyers and sellers together for a commission

Certificate of Deposit

A time deposit with a specific maturity evidenced by a Certificate. Large denomination CDs are typically negotiable.

Collateral

Securities, evidence of deposit or other property, which a borrower pledges to secure repayment of a loan. Also refers to securities pledged by a bank to secure deposits.

Collective Investment Fund

A fund that is operated by a trust company or a bank and handles a pooled group of trust accounts. Collective investment funds combine the assets of various individuals and organizations to create a larger, well-diversified portfolio.

Commercial Paper

An unsecured, short-term debt instrument issued by a corporation, typically for the financing of accounts receivable, inventories and meeting short-term liabilities. Maturities on commercial paper rarely range any longer than 270 days. The debt is usually issued at a discount, reflecting prevailing market interest rates.

Commercial paper is not usually backed by any form of collateral, so only firms with high-quality debt ratings will easily find buyers without having to offer a substantial discount (higher cost) for the debt issue.

A major benefit of commercial paper is that it does not need to be registered with the Securities and Exchange Commission (SEC) as long as it matures before nine months (270 days), making it a very cost effective means of financing. The proceeds from this type of financing can only be used on current assets (inventories) and are not allowed to be used on fixed assets, such as a new plant, without SEC involvement.

Coupon

The annual rate of interest that a bond's issuer promises to pay the bondholder on the bond's face value. Also a certificate attached to a bond evidencing interest due on a payment.

Dealer

A dealer, as opposed to a broker, acts as a principal in all transactions, buying and selling for their own account.

Discount

The difference between the cost price of a security and its maturity when quoted at lower than face value. A security selling below original offering price shortly after sale also is considered to be at a discount.

Discount securities

Non-interest bearing money market instruments that are issued at a discount and redeemed at maturity for full face value, e.g. US Treasury Bills.

Diversification

Dividing investment funds among a variety of securities offering independent returns.

Delivery versus Payment – DVP

A securities industry procedure in which the buyer's payment for securities is due at the time of delivery. Security delivery and payment are simultaneous. Also known as delivery against payment, delivery against cash, or from the sell side.

Federal Deposit Insurance Corporation (FDIC)

A federal agency that insure bank deposits, currently up to \$250,000 per deposit account. (If a depositor wants an FDIC insured account, the desired bank must be a participant in the FDIC program. Banks that are participants of the FDIC are required to display an official sign at each teller window or station where deposits are regularly received. The maximum dollar amount that is insured in a qualified account is \$250,000 per bank. In other words, it is possible for a depositor to deposit \$1 million in four different banks and each account will be fully insured.) (The different accounts that can be FDIC insured are NOW, checking, savings, Certificate of Deposits (CD) and money market deposit accounts.)

Federal Funds Rate

The rate of interest at which Fed Funds are traded. The Federal Reserve through open-market operations currently pegs this rate.

Federal Open Market Committee

The branch of the Federal Reserve Board that determines the direction of monetary policy. The FOMC is composed of the board of governors, which has seven members, and five reserve bank presidents. The president of the Federal Reserve Bank of New York serves continuously, while the presidents of the other reserve banks rotate their service of one-year terms.

Federal Reserve System

The central bank of the United States created by Congress and consisting of a seven member Board of Governors in Washington, D.C., twelve regional banks in major cities around the country.

Financial Institution

A state or nationally chartered bank or a state or federally chartered savings and loan association, savings bank, or credit union whose deposits are insured by an agency of the United State government that maintains a principal office or branch office located in this state under the laws of this state of the United States.

Government-Sponsored Enterprise - GSE

Privately held corporations with public purposes created by the U.S. Congress to reduce the cost of capital for certain borrowing sectors of the economy. Members of these sectors include students, farmers and homeowners. GSEs carry the implicit backing of the U.S. Government, but they are not direct obligations of the U.S. Government. For this reason, these securities will offer a yield premium over Treasuries. Examples of GSEs include: Federal Home Loan Bank, Federal Home Loan Mortgage Corporation (Freddie Mac), Federal Farm Credit Bank and the Resolution Funding Corporation.

Investment Grade

A rating that indicates that a municipal or corporate bond has a relatively low risk of default. Bond rating firms, such as Moody's, use different designations consisting of upper- and lower- case letters 'A' and 'B' to identify a bond's credit quality rating. 'AAA' and 'AA' (high credit quality) and 'A' and 'BBB' (medium credit quality) are considered investment grade. Credit ratings for bonds below these designations ('BB', 'B', 'CCC', etc.) are considered low credit quality, and are commonly referred to as "junk bonds".

Liquidity

1. The degree to which an asset or security can be bought or sold in the market without affecting the asset's price. Liquidity is characterized by a high level of trading activity. Assets that can be easily bought or sold are known as liquid assets. 2.) The ability to convert an asset to cash quickly, also known as, "marketability".

Market Value

The price at which a security is trading and could presumably be purchased or sold.

Master Trust

A collection of funds from individual investors that are pooled together in order to obtain wholesale prices and rates unavailable for regular investors.

Master Repurchase Agreement

A written contract covering all future transactions between the parties to a repurchase – reverse repurchase agreements that establishes each party's rights in the transactions. A master agreement will often specify, among other things, the right of the buyer-lender to liquidate the underlying securities in the event of default by the seller-borrower.

Maturity

The date upon which the principal or stated value of an investment becomes due and payable.

Money Market

A segment of the financial market in which financial instruments with high liquidity and very short maturities are traded. The money market is used by participants as a means for borrowing and lending in the short term, from several days to just under a year. Money market securities consist of negotiable certificates of deposit (CDs), bankers' acceptances, U.S. Treasury bills, commercial paper, municipal notes, federal funds and repurchase agreements (repos).

Municipal Bond

A debt security issued by a state, municipality or county to finance its capital expenditures. Municipal bonds are exempt from federal taxes and from most state and local taxes, especially if you live in the state in which the bond is issued. At times taxable municipal bonds are issued to finance a project or activity that does not provide a major benefit to the public. In such cases, the federal government will not permit the tax-exemption that is a prominent feature of most municipal bonds.

Mutual Fund

An investment vehicle that is made up of a pool of funds collected from many investors for the purpose of investing in securities such as, bonds, money market instruments and similar assets. Mutual funds are operated by money managers, who invest the fund's capital and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus.

Each shareholder participates proportionally in the gain or loss of the fund. Mutual fund units, or shares, are issued and can typically be purchased or redeemed as needed at the fund's current net asset value (NAV) per share.

Offer

The price asked by a seller of securities. (When you are buying securities, you ask for an offer.)

Open Market Operations

Purchases and sales of government and certain other securities in the open market by the New York Federal Reserve Bank, as directed by the FOMC in order to influence the volume of money and credit in the economy. Purchases inject reserves into the bank system and stimulate growth of money and credit; sales have the opposite effect. Open market operations are the Federal Reserve's most important and most flexible monetary policy tool.

Portfolio

Collection of securities held by an investor.

Rate of return

The gain or loss on an investment over a specified period, expressed as a percentage increase over the initial investment cost. Gains on investments are considered to be any income received from the security plus realized capital gains.

Repurchase Agreement - Repo

A form of short-term borrowing for dealers in government securities. The dealer sells the government securities to investors, usually on an overnight basis, and buys them back the following day. For the party selling the security (and agreeing to repurchase it in the future) it is a repo; for the party on the other end of the transaction, (buying the security and agreeing to sell in the future) it is a reverse repurchase agreement.

Securities & Exchange Commission (SEC)

An agency created by Congress to protect investors in securities transactions by administering securities legislation.

SEC Rule 15C3-1

Requirement that member firms as well as nonmember broker-dealers in securities maintain a maximum ratio of indebtedness to liquid capital of 15 to 1; also called the net capital ratio.

Structured Notes

Notes issued by Government Sponsored Enterprises (FHLB, FNMA, SLMA, etc.) and corporations, which have imbedded options (e.g. call features, step-up coupons, floating rate coupons, derivative-based returns) into their debt structure.

Total Return

When measuring performance, the actual rate of return of an investment or a pool of investments over a given evaluation period. Total return includes interest, capital gains, dividends and distributions realized over a given period of time.

Total return accounts for two categories of return: income and capital appreciation. Income includes interest paid by fixed-income investments, distributions or dividends. Capital appreciation represents the change in the market price of an asset.

Treasury Bills

A non-interest bearing deposit security issued by the U.S. Treasury to finance national debt. Most bills are issued to mature in three months, six months or one-year.

Treasury Bonds

Long-term coupon bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having final maturities of more than ten years.

Treasury Notes

Medium-term coupon bearing U.S. Treasury securities issued as direct obligations of the U.S. Government and having initial maturities from two to ten years.

Yield

The rate of annual income return on an investment, expressed as a percentage. 1.) Income yield is obtained by dividing the current dollar income by the current market price for the security. 2.) Net yield or Yield to Maturity is the current income yield minus any premium above par plus any discount from par in purchase price, with the adjustment spread over the period from the date of purchase to the date of maturity of the bond.



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Deirdre Henry, Treasury Manager

Re: Quarterly Investment Report through March 31, 2018 (Unaudited)

Background: As stated in Section 14 of the Great Lakes Water Authority (GLWA) Investment Policy, quarterly reporting shall be presented to provide a clear picture of the status of the current GLWA investment portfolio. The attached report, prepared and presented by PFM Asset Management LLC, summarizes portfolio information through March 31, 2018 (unaudited).

Analysis: The Quarterly Investment Report through December 31, 2017 is in compliance with the requirements of Public Act 20 of 1948, as amended and the GLWA Investment Policy. GLWA is actively investing its funds in a diversified portfolio which includes bank deposits, money market funds, a local government investment pool, U.S. Treasuries, Federal Agencies, and commercial paper. All securities in the portfolio are in compliance with the GLWA investment policy. Key metrics are provided below with additional commentary in the attached report.

- Yield to Market at Cost compared to market index:
 - As of March 31, 2018: 1.72% vs 1.61% (3-Month Treasury Index)
 - As of December 31, 2017: 1.36% vs 1.25% (3-Month Treasury Index)
- Portfolio Allocation in Cash/Money Market Securities
 - As of March 31, 2018: 54%
 - As of December 31, 2017: 60%

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

Proposed Action: Receive and file report.

Great Lakes Water Authority

Investment Performance Report – March 2018



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- Account Purpose
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- Investment Income

VI. Appendix

- Portfolio Holdings
- Economic Update

**Great Lakes Water Authority
Executive Summary**

PORTFOLIO RECAP

- **Safety** – The aggregate portfolio is diversified amongst cash, bank deposits, U.S. Treasuries, Federal Agencies, commercial paper, SEC-registered money market funds, and a local government investment pool. The overall credit profile of the pool is strong with over 98% of the assets invested in bank deposits or securities that are rated within the two highest short and long-term rating classifications as established by Standard & Poor's.
- **Liquidity** – The portfolio's has slightly reduced its weighting to overnight funds from December, with about 54% of the total assets maturing overnight.
- **Return** – The overall yield increased to 1.72% as of March 31, 2018 versus 1.36% at December 31, 2017. The Authority has earned \$8,907,945 in investment income fiscal year-to-date on a book value basis. Based on the current interest rate environment, the investment income earned for the prior quarter, and assuming that the Authority maintains the same investable balances for the remainder of the fiscal year, we are projecting that the Authority will earn approximately \$11.8 million in investment income for fiscal year 2018.
- **Compliance** – The aggregate portfolio is in compliance with the Authority's investment policy and Michigan Public Act 20.

AVAILABLE FUNDS

Type	Financial Institution	Book Value	Market Value	YTM @ Market (as of 3/31/18)
Deposit Account	Comerica	\$14,942	\$14,942	0.25%
Deposit Account - Retainage	First Independence	\$16,291,558	\$16,291,558	0.05%
Deposit Account – Flint Security Deposit	Chase	\$3,752,384	\$3,752,384	0.05%
Deposit Account	Chase	\$25,405,360	\$25,405,360	0.49%
Trust Money Market Fund	U.S. Bank	\$432,792,148	\$432,792,148	1.50%
Money Market Fund	JP Morgan	\$62,013,156	\$62,013,156	1.43%
Local Government Investment Pool	GovMIC	\$67,584,854	\$67,584,854	1.59%
Managed Funds	PFM	\$520,834,398	\$518,660,920	2.08%
<u>TOTAL</u>		<u>\$1,128,688,800</u>	<u>\$1,126,515,321</u>	<u>1.72%</u>

The accounts at Comerica Bank get an earnings credit to offset bank fees. The funds and earnings in the Retainage account are held on behalf of the contractors and do not belong to GLWA. The funds and earnings in the Flint Security Deposit account are held on behalf of the City of Flint and do not belong to GLWA. Note that market values move inversely to interest rates, and the recent rise in yields has led to the overall market value being less than the book value. In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of 3/31/2018.

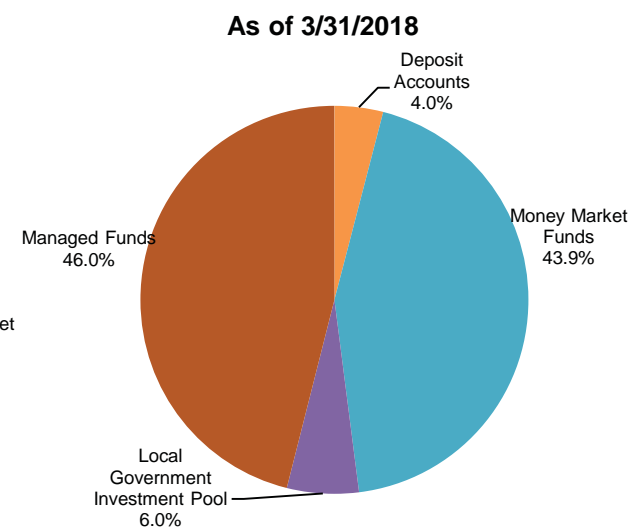
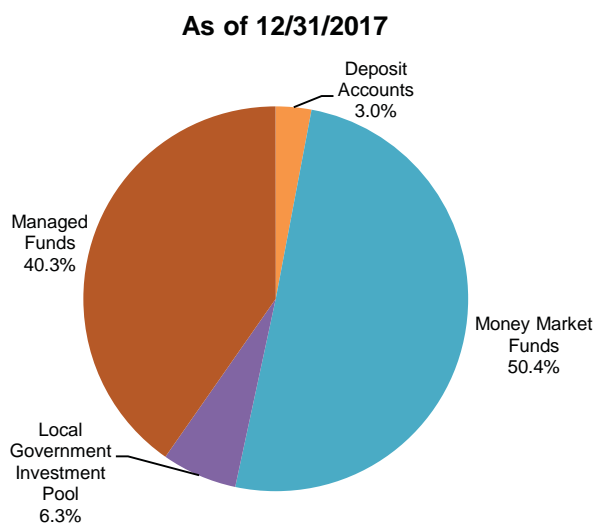
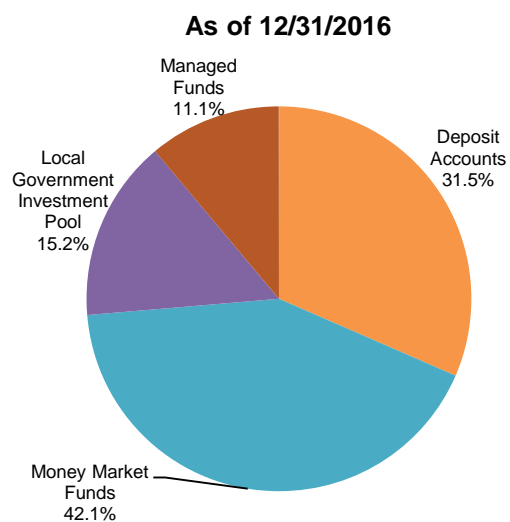
**Great Lakes Water Authority
Investment Strategy**

GLWA INVESTMENT STRATEGY

- The portfolio is in compliance with the Authority's investment policy
- To date, the Authority has continued to invest its funds in a mixture of short and intermediate-term investments to ensure sufficient liquidity
- The aggregate portfolio was yielding 1.72% at the end of March*
 - This compares to the 1.61% yield of the Bank of America / Merrill Lynch 3-Month U.S. Treasury Bill Index as of 3/31/2018, which is a comparable market indicator
- The Authority continues to implement a disciplined investment plan to provide improved safety and diversification and putting every dollar to work
- For the fourth quarter of FY 2018, the Authority has already taken initial steps to invest intermediate and longer-term funds based on refined cash flows (specifically for the Water and Sewer Extraordinary Repair & Replacement Funds, the Improvement & Extension Funds, and the Budget Stabilization Funds)
- The Authority will continue to work with its investment manager to refine its cash flows and identify strategies to maximize future investment income while meeting the objectives of safety and liquidity
- Assuming that the Authority maintains the same investable balances for FY 2018 and FY 2019 and the interest rate environment remains in a similar range, we conservatively expect to earn approximately \$11.8 million in interest income in FY 2018 and over \$14.0 million in FY 2019

* Current market yield as of March 31, 2018.

**Great Lakes Water Authority
Portfolio Mix**



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

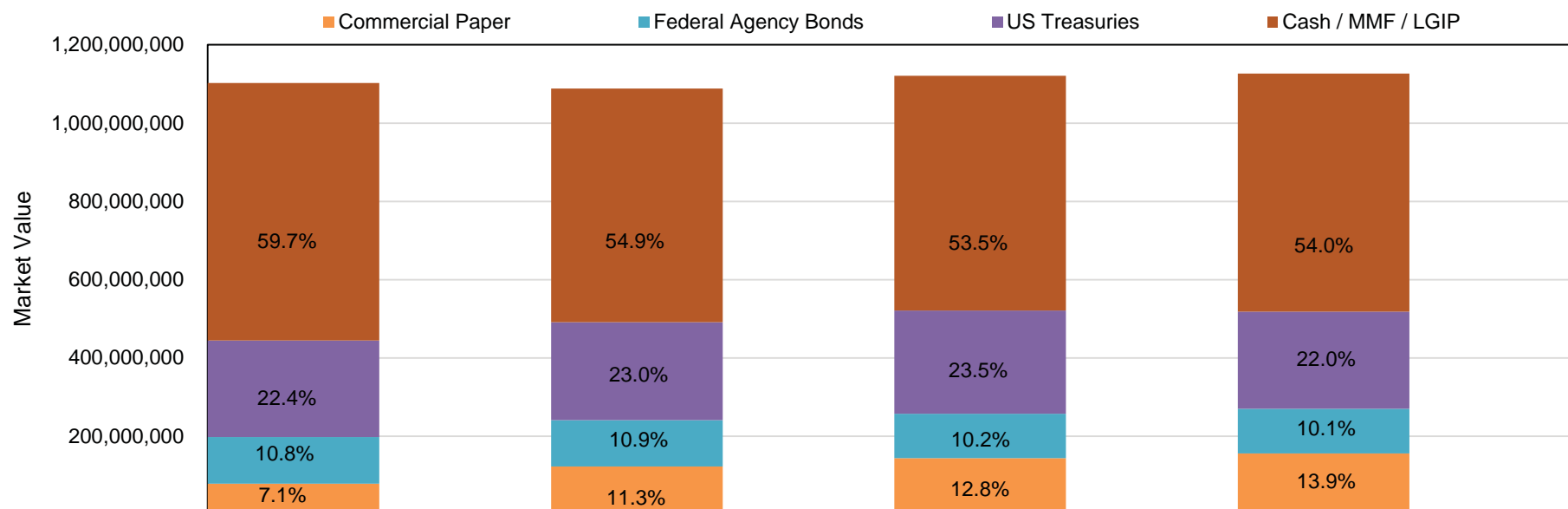
ECONOMIC HIGHLIGHTS UPDATE

- The markets have seen strong readings on the labor market, consumer and business confidence, and record corporate profits
- Geopolitical concerns (e.g., North Korea, tariffs, and Russia) were seemingly pushed to the sidelines as interest rates have risen to new cycle highs and equity prices rebounded from the volatile market conditions of earlier this year
- The Federal Reserve has indicated that it plans to increase interest rates two more times in 2018 to keep the economy from overheating

PORTFOLIO RECAP SUMMARY

- The combination of two more expected Fed rate hikes in 2018, with the potential for additional increases following in 2019, supports the view that interest rates will trend higher over the near term; as a result, the Authority continues to reap the rewards of current monetary policy tightening and higher overnight target rates
- With regards to the fixed-income sectors that the majority of the Authority's debt funds and bond proceeds are invested in, yields on high-quality commercial paper are attractive, especially in three to six-month maturities, while Treasury Notes maturing inside of one year continue to fully compensate the Authority for multiple further hikes this year
- Concerning the Authority's portfolios, with yields beginning to resume their climb, shorter maturity securities will be favored in anticipation of continued interest rate increases by the Fed
- Portfolios will be managed in the near term to both mitigate interest rate risk and to position them for increased future earnings from higher reinvestment rates
- The Fed's actions going forward should lead to higher investment income for the Authority in the next fiscal year

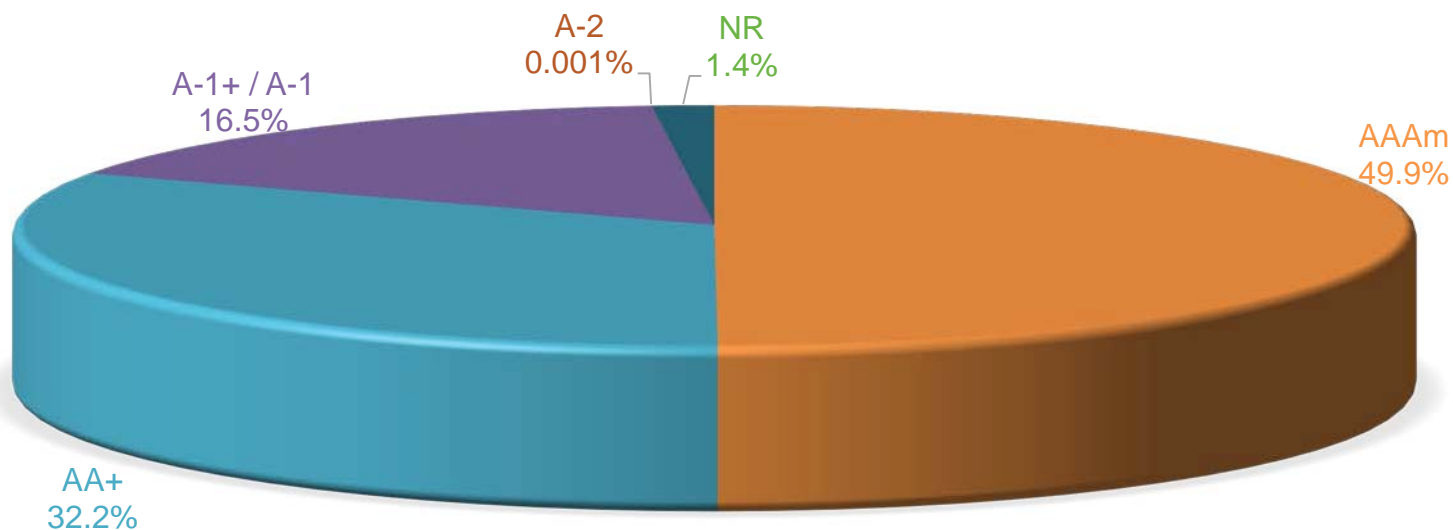
**Great Lakes Water Authority
Investments – By Security Type**



Security Type	December		January		February		March	
	Market Value	Asset Allocation	Market Value	Asset Allocation	Market Value	Asset Allocation	Market Value	Asset Allocation
Commercial Paper	78,757,023	7.1%	122,563,721	11.3%	143,908,915	12.8%	156,395,705	13.9%
Federal Agencies	119,048,302	10.8%	118,886,615	10.9%	113,813,169	10.2%	113,884,953	10.1%
U.S. Treasuries	246,495,268	22.4%	249,853,492	23.0%	263,254,686	23.5%	248,380,261	22.0%
Cash / MMF / LGIP	657,965,993	59.7%	597,142,111	54.9%	599,882,611	53.5%	607,854,402	54.0%
Total	1,102,266,586	100.0%	1,088,445,939	100.0%	1,120,859,382	100.0%	1,126,515,321	100.0%

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.

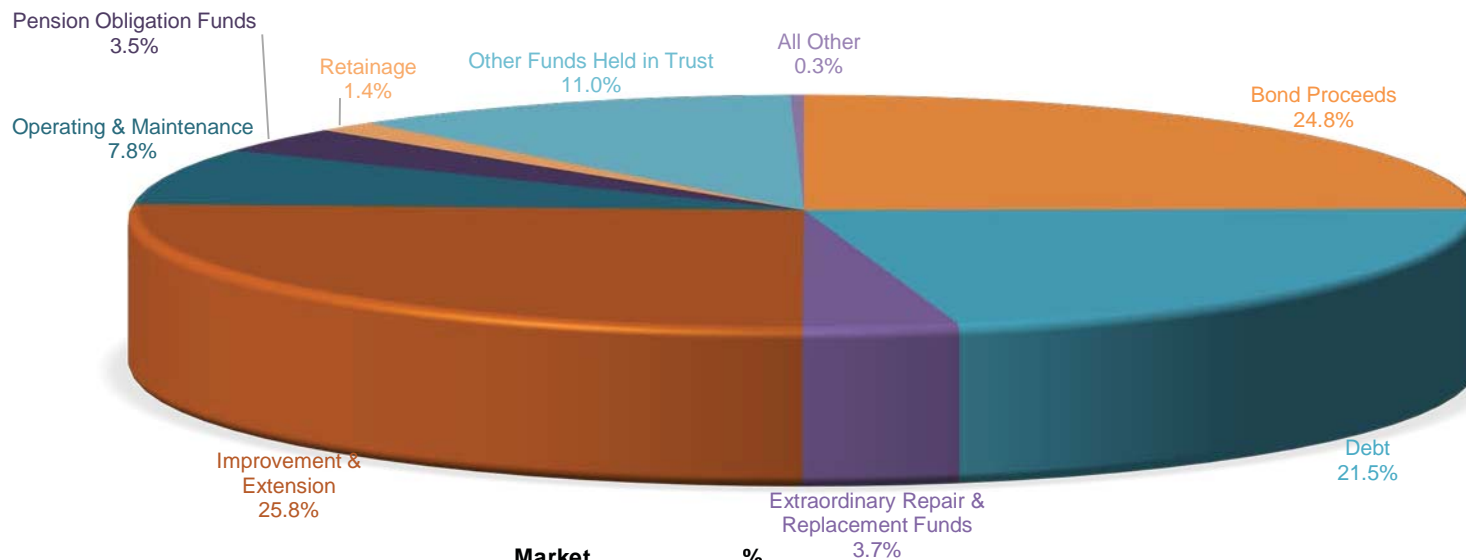
**Great Lakes Water Authority
Investments – By Credit Quality
As of March 31, 2018**



Credit Quality	Market Value	Asset Allocation
Ratings		
AAAm	562,390,158	49.9%
AA+	362,265,214	32.2%
A-1 + / A-1	185,553,449	16.5%
A-2	14,942	0.001%
NR	16,291,558	1.4%
Totals	1,126,515,321	100.0%

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.

**Great Lakes Water Authority
Investment Analysis – By Account Purpose
As of March 31, 2018**



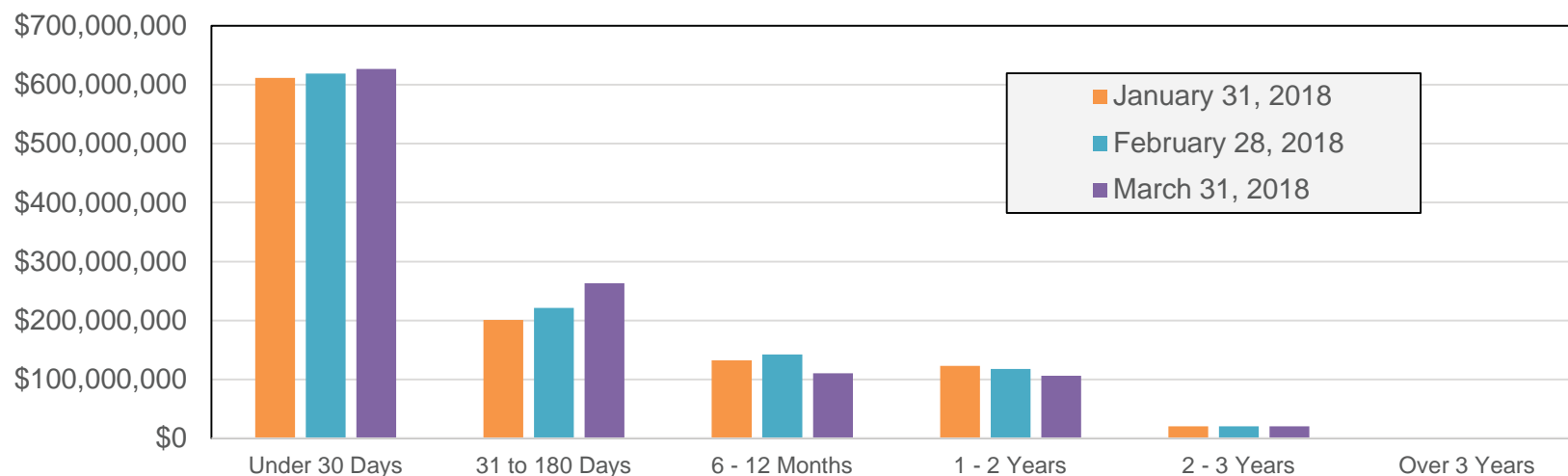
Account Purpose	Market Value	% Allocation
Bond Proceeds	\$ 279,482,855	24.8%
Debt	\$ 242,248,771	21.5%
Extraordinary Repair & Replacement Funds	\$ 42,036,683	3.7%
Improvement & Extension	\$ 290,594,234	25.8%
Operating & Maintenance	\$ 87,887,061	7.8%
Pension Obligation Funds	\$ 39,798,384	3.5%
Retainage	\$ 16,291,558	1.4%
Other Funds Held in Trust	\$ 124,423,392	11.0%
All Other	\$ 3,752,384	0.3%
Total	\$ 1,126,515,321	100.0%

Other Funds Held in Trust		Market Value	% Allocation
Budget Stabilization Funds	\$	11,047,264	8.9%
Receiving Funds	\$	105,973,412	85.2%
WRAP Funds	\$	7,402,717	5.9%
Total	\$	124,423,392	100.0%

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018. "All Other" funds includes funds in the Flint Security Deposit account that are held on behalf of the City of Flint and do not belong to GLWA.

Great Lakes Water Authority Investment Analysis – By Maturity

Maturity Distribution	January 31, 2018		February 28, 2018		March 31, 2018	
		%		%		%
Under 30 Days	\$ 611,526,229	56.2%	\$ 619,194,241	55.2%	\$ 626,678,092	55.6%
31 to 180 Days	201,063,704	18.5%	221,167,020	19.7%	262,954,452	23.3%
6 - 12 Months	132,523,733	12.2%	142,354,891	12.7%	110,351,255	9.8%
1 - 2 Years	122,795,185	11.3%	117,653,343	10.5%	106,023,741	9.4%
2 - 3 Years	20,537,089	1.9%	20,489,888	1.8%	20,507,781	1.8%
Over 3 Years	-	0.0%	-	0.0%	-	0.0%
Totals	\$ 1,088,445,939	100.0%	\$ 1,120,859,382	100.0%	\$ 1,126,515,321	100.0%



In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.



**Great Lakes Water Authority
Investment Accounts – Yield at Cost & Market
As of March 31, 2018**

	As of March 31, 2018		As of December 31, 2017	
	YTM @ Cost	YTM @ Market	YTM @ Cost	YTM @ Market
Bank Deposits				
Comerica	0.25%	0.25%	0.25%	0.25%
First Independence	0.05%	0.05%	0.05%	0.05%
Flint Deposit Account	0.05%	0.05%	0.00%	0.00%
JP Morgan Chase	0.49%	0.49%	0.37%	0.37%
Sub-Total Bank Deposits	0.30%	0.30%	0.22%	0.22%
Money Market Funds / LGIPs				
GovMIC	1.59%	1.59%	1.25%	1.25%
U.S. Bank - First American MMF	1.50%	1.50%	1.15%	1.15%
JP Morgan Securities - Blackrock MMF	1.43%	1.43%	1.08%	1.08%
Sub-Total MMF / LGIPs	1.50%	1.50%	1.15%	1.15%
Investment Portfolios				
Sewage - Construction Bond 5421	0.00%	0.00%	1.35%	1.58%
Sewage SR Debt Serv 5403	1.71%	1.71%	2.15%	1.70%
Sewage SR Res 5400	1.31%	2.14%	1.31%	1.83%
Sew 2nd Debt Serv 5403	1.83%	2.20%	1.55%	1.76%
Sewage 2nd Res 5481	1.30%	2.15%	1.29%	1.84%
Sew SRF Debt Serv 5410	1.82%	2.23%	1.45%	1.64%
Sewage R & R	1.39%	1.82%	1.32%	1.52%
Sewer Pension Obligation	1.31%	1.75%	1.27%	1.47%
Sewer Bond Fund	1.37%	2.07%	1.37%	1.78%
Sewer O&M Pension Sub Account	1.39%	1.75%	1.31%	1.47%
Water SR Debt Ser 5503	1.73%	2.18%	1.54%	1.73%
Water SR Reserve 5500	1.13%	2.01%	1.13%	1.73%
Water 2nd Debt Serv 5503	1.80%	2.19%	1.55%	1.72%
Water 2nd Res 5581	2.15%	2.19%	1.35%	1.86%
Water SRF Debt Serv 5575	1.83%	2.23%	1.52%	1.67%
Water R & R	1.39%	1.82%	1.32%	1.52%
Water Pension Obligation	1.32%	1.75%	1.28%	1.47%
Water Bond Fund	1.39%	2.09%	1.37%	1.79%
Water O&M Pension Sub Account	1.39%	1.75%	1.31%	1.47%
Sub-Total Investment Portfolios	1.48%	2.08%	1.36%	1.73%
<u>Grand Total</u>	<u>1.45%</u>	<u>1.72%</u>	<u>1.21%</u>	<u>1.36%</u>
Short-Term Index				
BoA / ML 3-Month Treasury Index		1.61%		1.25%

The accounts at Comerica Bank get an earnings credit to offset bank fees. The earnings in the accounts at First Independence Bank is credited to the contractors and not the Authority. The funds in the Flint Security Deposit account are held on behalf of the City of Flint and the earnings do not belong to GLWA. The Bank of America / Merrill Lynch 3-Month Treasury Bill is an unmanaged index tracking the on-the-run Treasury Bill. The index is produced and maintained by Bank of America / Merrill Lynch & Co. YTM @ Cost is the expected return, based on the original cost, the annual interest receipts, maturity value and the time period from purchase date to maturity, stated as a percentage, on an annualized basis. YTM @ Market is the rate of return, based on the current market value, the annual interest receipts, maturity value and time period remaining until maturity, stated as a percentage, on an annualized basis.

**Great Lakes Water Authority
 Demonstration of Yield to Maturity vs. Duration
 As of March 31, 2018**

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

As of March 31, 2018				
	<i>Market Value</i>	<i>YTM @ Market</i>	<i>Effective Duration</i>	<i>Weighted Average Maturity</i>
GLWA				
Great Lakes Water Authority	\$1,126,515,321	1.72%	0.29 Years	107 Days
Short/Intermediate-Term Indices				
S&P Rated Government Investment Pool Index		1.54%	0.10 Years	37 Days
BoA / ML 3-Month Treasury Index		1.61%	0.14 Years	90 Days
BoA / ML 6-Month Treasury Index		1.89%	0.39 Years	180 Days
BoA / ML 1-Year Treasury Index		2.11%	0.90 Years	365 Days
BoA / ML 1-3 Year Treasury Index		2.27%	1.80 Years	657 Days
BoA / ML 1-5 Year Treasury Index		2.36%	2.59 Years	945 Days
Peer Analysis (Water Entities / Utilities)				
Alameda County Water District, CA	\$105,124,967	2.48%	2.42 Years	922 Days
Coachella Valley Water District, CA	\$455,596,862	2.37%	1.74 Years	712 Days
District of Columbia Water & Sewer Authority, DC	\$282,520,694	2.03%	0.65 Years	243 Days
DuPage Water Commission, IL	\$138,403,562	2.36%	2.11 Years	903 Days
Fairfax County Water Authority, VA	\$221,703,533	2.31%	1.81 Years	686 Days
San Bernardino Valley Municipal Water District, CA	\$299,666,429	2.40%	1.75 Years	660 Days
Truckee Meadows Water Authority, NV	\$124,515,741	2.18%	1.14 Years	433 Days

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

Great Lakes Water Authority
 Investment Income (by Book Value)
 As of March 31, 2018

INVESTMENT INCOME BY MONTH

Month	Interest Earned During Period	Realized Gain / Loss	Investment Income
July 2017	\$637,658.61	\$0.00	\$637,658.61
August 2017	\$940,941.92	\$0.00	\$940,941.92
September 2017	\$884,798.87	\$0.00	\$884,798.87
October 2017	\$917,018.83	\$0.00	\$917,018.83
November 2017	\$979,111.10	\$0.00	\$979,111.10
December 2017	\$1,174,533.01	\$0.00	\$1,174,533.01
January 2018	\$1,058,271.07	\$0.00	\$1,058,271.07
February 2018	\$1,111,055.20	\$0.00	\$1,111,055.20
March 2018	\$1,205,317.00	(\$761.09)*	\$1,204,555.91
<u>FY 2018 Y-T-D</u>	<u>\$8,908,705.61</u>	<u>(\$761.09)</u>	<u>\$8,907,944.52</u>

* The Authority generally does not realize losses on its investments. However, on March 9, 2018, PFM purchased a 6-month commercial paper investment, thinking that the amount could be fully invested to the October 1st payment date. Upon reviewing the Sewage SRF Debt Service account with the Authority in mid-March, it was determined that the amount necessary for the April 1st payment was different from what PFM had previously calculated. Therefore, a portion of the commercial paper investment was sold to ensure that the required liquid funds were available on the April 1st payment date.

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

Appendix I: Portfolio Holdings



**Great Lakes Water Authority
Portfolio Holdings
As of March 31, 2018**

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
Short-Term Bank Deposits / MMF / LGIP									
COMERICA BANK		\$ 14,942	4/1/2018	3/31/2018	0.25%	\$ 14,942	1	\$ -	\$ 14,942
FIRST INDEPENDENCE BANK		16,291,558	4/1/2018	3/31/2018	0.05%	16,291,558	1	-	16,291,558
FLINT DEPOSIT ACCOUNT		3,752,384	4/1/2018	3/31/2018	0.05%	3,752,384	1	-	3,752,384
JP MORGAN CHASE		25,405,360	4/1/2018	3/31/2018	0.49%	25,405,360	1	-	25,405,360
GovMIC		67,584,854	4/1/2018	3/31/2018	1.59%	67,584,854	1	-	67,584,854
U.S. BANK - FIRST AMERICAN MMF		432,792,148	4/1/2018	3/31/2018	1.50%	432,792,148	1	-	432,792,148
JP MORGAN SECURITIES - BLACKROCK MMF		62,013,156	4/1/2018	3/31/2018	1.43%	62,013,156	1	-	62,013,156
Federal Agencies									
FHLB 0 6/20/2018	313385YH3	\$ 3,520,000	6/20/2018	7/19/2017	1.24%	\$ 3,480,247	81	\$ -	\$ 3,506,729.60
FHLB 0 6/20/2018	313385YH3	703,000	6/20/2018	7/19/2017	1.24%	695,061	81	-	700,350
FHLB 0 6/20/2018	313385YH3	493,000	6/20/2018	7/19/2017	1.24%	487,432	81	-	491,141
FHLB 0 6/20/2018	313385YH3	2,974,000	6/20/2018	7/19/2017	1.24%	2,940,414	81	-	2,962,788
FHLB 0.875 6/29/2018	3130A8BD4	3,025,000	6/29/2018	10/31/2016	0.88%	3,024,577	90	6,764	3,018,103
FNMA 1.15 10/30/2018-14	3136G1KL2	10,000,000	10/30/2018	4/30/2013	1.36%	9,889,200	213	47,917	9,948,500
FNMA 1.375 1/28/2019	3135G0H63	5,200,000	1/28/2019	7/26/2017	1.39%	5,198,908	303	12,513	5,170,360
FNMA 1.375 1/28/2019	3135G0H63	6,695,000	1/28/2019	8/31/2017	1.31%	6,700,758	303	16,110	6,656,839
FNMA 1 2/26/2019	3135G0J53	5,205,000	2/26/2019	7/26/2017	1.39%	5,173,666	332	5,060	5,150,452
FNMA 1 2/26/2019	3135G0J53	6,690,000	2/26/2019	8/31/2017	1.33%	6,657,821	332	6,504	6,619,889
FHLB 1.5 3/8/2019	3133782M2	6,595,000	3/8/2019	8/31/2017	1.34%	6,611,026	342	6,320	6,555,694
FHLB 1.375 3/18/2019	3130AAXX1	5,175,000	3/18/2019	7/26/2017	1.38%	5,174,431	352	2,570	5,135,360
FHLB 1.375 5/28/2019	3130ABF92	5,260,000	5/28/2019	7/26/2017	1.40%	5,257,423	423	24,711	5,211,608
FHLB 1.375 5/28/2019	3130ABF92	5,245,000	5/28/2019	8/31/2017	1.34%	5,248,409	423	24,641	5,196,746
FHLB 1.625 6/14/2019	313379EE5	7,050,000	6/14/2019	9/1/2017	1.38%	7,080,033	440	34,051	7,003,611
FHLMC 0.875 7/19/2019	3137EAE81	5,230,000	7/19/2019	7/26/2017	1.41%	5,176,079	475	9,153	5,140,201
FHLMC 0.875 7/19/2019	3137EAE81	6,720,000	7/19/2019	8/31/2017	1.36%	6,659,386	475	11,760	6,604,618
FHLMC 1.375 8/15/2019	3137EAEH8	5,215,000	8/15/2019	7/26/2017	1.45%	5,206,917	502	9,162	5,154,297
FNMA 1 8/28/2019	3135G0P49	6,715,000	8/28/2019	8/31/2017	1.39%	6,664,100	515	6,155	6,603,598
FNMA 1.75 9/12/2019	3135G0ZG1	4,705,000	9/12/2019	7/26/2017	1.45%	4,734,171	530	4,346	4,671,500
FHLB 1 9/26/2019	3130A9EP2	7,550,000	9/26/2019	8/31/2017	1.39%	7,490,053	544	1,049	7,413,194
FHLMC 1.25 10/2/2019	3137EADM8	5,045,000	10/2/2019	12/28/2017	1.93%	4,985,469	550	31,356	4,969,375

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.



**Great Lakes Water Authority
Portfolio Holdings
As of March 31, 2018**

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
Commercial Paper									
Bank of Tokyo 0 4/20/2018	06538CDL2	\$ 4,100,000	4/20/2018	7/26/2017	1.55%	\$ 4,053,606	20	\$ -	\$ 4,095,080.00
JPMorgan Securities 0 4/20/2018	46640QDL2	4,100,000	4/20/2018	7/26/2017	1.54%	4,053,911	20	-	4,095,080
Bank of Tokyo 0 4/20/2018	06538CDL2	5,300,000	4/20/2018	7/26/2017	1.55%	5,240,028	20	-	5,293,640
JPMorgan Securities 0 4/20/2018	46640QDL2	5,300,000	4/20/2018	7/26/2017	1.54%	5,240,422	20	-	5,293,640
ING US Funding 0 5/2/2018	4497W1E28	3,468,000	5/2/2018	8/10/2017	1.54%	3,429,452	32	-	3,462,347
ING US Funding 0 5/2/2018	4497W1E28	692,000	5/2/2018	8/10/2017	1.54%	684,308	32	-	690,872
ING US Funding 0 5/2/2018	4497W1E28	2,922,000	5/2/2018	8/10/2017	1.54%	2,889,521	32	-	2,917,237
Credit Agricole 0 5/29/2018	22533UEV1	4,030,000	5/29/2018	12/28/2017	1.78%	4,000,053	59	-	4,016,701
Bank of Montreal 0 6/4/2018	06366HF44	3,295,000	6/4/2018	9/8/2017	1.51%	3,258,719	65	-	3,282,776
Bank of Montreal 0 6/4/2018	06366HF44	639,000	6/4/2018	9/8/2017	1.51%	631,964	65	-	636,629
Bank of Montreal 0 6/4/2018	06366HF44	2,933,000	6/4/2018	9/7/2017	1.51%	2,900,705	65	-	2,922,119
Bank of Montreal 0 6/4/2018	06366HF44	982,000	6/4/2018	9/7/2017	1.51%	971,187	65	-	978,357
Bank of Montreal 0 6/22/2018	06366HFN2	1,158,000	6/22/2018	3/6/2018	2.12%	1,150,682	83	-	1,152,476
Bank of Montreal 0 6/22/2018	06366HFN2	3,145,000	6/22/2018	3/6/2018	2.12%	3,125,124	83	-	3,129,998
Bank of Tokyo 0 6/22/2018	06538CFN6	742,000	6/22/2018	10/4/2017	1.63%	733,447	83	-	738,461
Bank of Tokyo 0 6/22/2018	06538CFN6	2,519,000	6/22/2018	1/9/2018	1.83%	2,498,229	83	-	2,506,984
Bank of Tokyo 0 6/22/2018	06538CFN6	2,029,000	6/22/2018	10/4/2017	1.63%	2,005,611	83	-	2,019,322
BNP Paribas 0 6/22/2018	09659CFN3	3,465,000	6/22/2018	11/7/2017	1.63%	3,430,042	83	-	3,448,472
BNP Paribas 0 6/22/2018	09659CFN3	692,000	6/22/2018	11/7/2017	1.63%	685,018	83	-	688,699
Cooperative Rabobank 0 6/22/2018	21687BFN6	2,190,000	6/22/2018	3/8/2018	2.01%	2,177,103	83	-	2,179,554
Credit Agricole 0 6/22/2018	22533UFN8	4,091,000	6/22/2018	1/9/2018	1.83%	4,057,267	83	-	4,071,486
Credit Agricole 0 6/22/2018	22533UFN8	1,160,000	6/22/2018	1/9/2018	1.83%	1,150,435	83	-	1,154,467
Dexia Credit Local 0 6/22/2018	25214PEA7	3,103,000	6/22/2018	2/5/2018	1.75%	3,082,453	83	-	3,088,199
Dexia Credit Local 0 6/22/2018	25214PEA7	1,147,000	6/22/2018	2/5/2018	1.75%	1,139,405	83	-	1,141,529
JPMorgan Securities 0 6/22/2018	46640QFN6	1,627,000	6/22/2018	10/5/2017	1.62%	1,608,434	83	-	1,619,239
JPMorgan Securities 0 6/22/2018	46640QFN6	1,250,000	6/22/2018	3/6/2018	2.09%	1,242,200	83	-	1,244,038
JPMorgan Securities 0 6/22/2018	46640QFN6	3,473,000	6/22/2018	12/21/2017	1.92%	3,439,810	83	-	3,456,434
JPMorgan Securities 0 6/22/2018	46640QFN6	691,000	6/22/2018	12/21/2017	1.92%	684,396	83	-	687,704
Toyota Motor Credit 0 6/22/2018	89233HFN9	1,600,000	6/22/2018	2/5/2018	1.83%	1,588,918	83	-	1,592,368
Bank of Montreal 0 6/22/2018	06366HFN2	1,656,000	6/22/2018	3/6/2018	2.12%	1,645,534	83	-	1,648,101
Bank of Montreal 0 6/22/2018	06366HFN2	3,141,000	6/22/2018	3/6/2018	2.12%	3,121,149	83	-	3,126,017
Bank of Tokyo 0 6/22/2018	06538CFN6	479,000	6/22/2018	10/4/2017	1.63%	473,478	83	-	476,715
Bank of Tokyo 0 6/22/2018	06538CFN6	1,750,000	6/22/2018	10/4/2017	1.63%	1,729,827	83	-	1,741,653
Bank of Tokyo 0 6/22/2018	06538CFN6	2,010,000	6/22/2018	1/9/2018	1.83%	1,993,426	83	-	2,000,412
BNP Paribas 0 6/22/2018	09659CFN3	492,000	6/22/2018	11/7/2017	1.63%	487,036	83	-	489,653
BNP Paribas 0 6/22/2018	09659CFN3	2,930,000	6/22/2018	11/7/2017	1.63%	2,900,440	83	-	2,916,024

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.



**Great Lakes Water Authority
Portfolio Holdings
As of March 31, 2018**

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
Commercial Paper									
Credit Agricole 0 6/22/2018	22533UFN8	4,090,000	6/22/2018	1/9/2018	1.83%	4,056,276	83	-	4,070,491
Credit Agricole 0 6/22/2018	22533UFN8	1,659,000	6/22/2018	1/9/2018	1.83%	1,645,321	83	-	1,651,087
Dexia Credit Local 0 6/22/2018	25214PEA7	3,100,000	6/22/2018	2/5/2018	1.75%	3,079,473	83	-	3,085,213
Dexia Credit Local 0 6/22/2018	25214PEA7	1,650,000	6/22/2018	2/5/2018	1.75%	1,639,074	83	-	1,642,130
JPMorgan Securities 0 6/22/2018	46640QFN6	1,250,000	6/22/2018	3/6/2018	2.09%	1,242,200	83	-	1,244,038
JPMorgan Securities 0 6/22/2018	46640QFN6	2,928,000	6/22/2018	12/21/2017	1.92%	2,900,018	83	-	2,914,033
JPMorgan Securities 0 6/22/2018	46640QFN6	489,000	6/22/2018	12/21/2017	1.92%	484,327	83	-	486,667
JPMorgan Securities 0 6/22/2018	46640QFN6	1,178,000	6/22/2018	10/5/2017	1.62%	1,164,558	83	-	1,172,381
Toyota Motor Credit 0 6/22/2018	89233HFN9	1,600,000	6/22/2018	2/5/2018	1.83%	1,588,918	83	-	1,592,368
BNP Paribas 0 6/29/2018	09659CFV5	2,319,000	6/29/2018	1/9/2018	1.78%	2,299,613	90	-	2,306,988
Cooperative Centrale 0 6/29/2018	21687BFV8	2,417,000	6/29/2018	2/5/2018	1.84%	2,399,308	90	-	2,404,480
Cooperative Centrale 0 6/29/2018	21687BFV8	4,049,000	6/29/2018	2/5/2018	1.84%	4,019,361	90	-	4,028,026
General Electric 0 6/29/2018	36960MFV0	1,767,000	6/29/2018	1/9/2018	1.81%	1,751,976	90	-	1,757,847
General Electric 0 6/29/2018	36960MFV0	2,437,000	6/29/2018	1/9/2018	1.81%	2,416,279	90	-	2,424,376
JPMorgan Securities 0 6/29/2018	46640QFV8	196,000	6/29/2018	11/7/2017	1.64%	193,962	90	-	194,985
Lloyds Bank PLC 0 6/29/2018	53943SFV4	2,775,000	6/29/2018	3/7/2018	2.08%	2,756,810	90	-	2,760,626
Lloyds Bank PLC 0 6/29/2018	53943SFV4	2,411,000	6/29/2018	3/7/2018	2.08%	2,395,196	90	-	2,398,511
BNP Paribas 0 6/29/2018	09659CFV5	2,505,000	6/29/2018	1/9/2018	1.78%	2,484,058	90	-	2,492,024
Cooperative Centrale 0 6/29/2018	21687BFV8	4,634,000	6/29/2018	2/2/2018	1.84%	4,600,079	90	-	4,609,996
Cooperative Centrale 0 6/29/2018	21687BFV8	2,010,000	6/29/2018	2/2/2018	1.84%	1,995,287	90	-	1,999,588
General Electric 0 6/29/2018	36960MFV0	2,029,000	6/29/2018	1/9/2018	1.81%	2,011,748	90	-	2,018,490
General Electric 0 6/29/2018	36960MFV0	1,767,000	6/29/2018	1/9/2018	1.81%	1,751,976	90	-	1,757,847
JPMorgan Securities 0 6/29/2018	46640QFV8	849,000	6/29/2018	11/7/2017	1.64%	840,170	90	-	844,602
JPMorgan Securities 0 6/29/2018	46640QFV8	377,000	6/29/2018	11/10/2018	1.86%	373,724	90	-	375,047
Lloyds Bank PLC 0 6/29/2018	53943SFV4	2,807,000	6/29/2018	3/7/2018	2.08%	2,788,600	90	-	2,792,460
Lloyds Bank PLC 0 6/29/2018	53943SFV4	2,007,000	6/29/2018	3/7/2018	2.08%	1,993,844	90	-	1,996,604
Toyota Motor Credit 0 7/31/2018	89233HGV6	5,050,000	7/31/2018	1/2/2018	1.79%	4,997,859	122	-	5,009,600
Bank of Tokyo 0 9/17/2018	06538CJH5	123,000	9/17/2018	12/21/2017	1.97%	121,238	170	-	121,611
Bank of Tokyo 0 9/17/2018	06538CJH5	3,029,000	9/17/2018	12/21/2017	1.97%	2,985,610	170	-	2,994,803
GE Capital 0 9/25/2018	36164KJR3	121,000	9/25/2018	1/9/2018	1.89%	119,381	178	-	119,569
JPMorgan Securities 0 9/25/2018	46640QJR3	123,000	9/25/2018	2/2/2018	2.05%	121,378	178	-	121,545
Toyota Motor Credit 0 9/25/2018	89233HJR6	122,000	9/25/2018	3/9/2018	2.25%	120,495	178	-	120,557
Cooperative Rabobank 0 9/25/2018	21687BJR3	1,583,000	9/25/2018	3/9/2018	2.23%	1,564,039	178	-	1,564,273
GE Capital 0 9/25/2018	36164KJR3	3,026,000	9/25/2018	1/9/2018	1.89%	2,985,507	178	-	2,990,202
JPMorgan Securities 0 9/25/2018	46640QJR3	3,026,000	9/25/2018	2/2/2018	2.05%	2,986,099	178	-	2,990,202
Toyota Motor Credit 0 9/25/2018	89233HJR6	1,356,000	9/25/2018	3/9/2018	2.25%	1,339,276	178	-	1,339,959

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**Great Lakes Water Authority
Portfolio Holdings
As of March 31, 2018**

DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
U.S. Treasuries									
T-Note 1.125 6/15/2018	912828XF2-1	\$ 4,750,000	6/15/2018	8/9/2017	1.23%	\$ 4,745,732	76	\$ 15,561	\$ 4,743,730.00
T-Note 1.125 6/15/2018	912828XF2-1	47,000	6/15/2018	12/21/2017	1.47%	46,923	76	154	46,938
T-Note 1.125 6/15/2018	912828XF2-1	4,159,000	6/15/2018	8/8/2017	1.22%	4,155,588	76	13,625	4,153,510
T-Note 1.125 6/15/2018	912828XF2-1	1,115,000	6/15/2018	12/4/2017	1.45%	1,113,084	76	3,653	1,113,528
T-Note 1.125 6/15/2018	912828XF2-1	889,000	6/15/2018	10/3/2017	1.25%	888,201	76	2,912	887,827
T-Note 1.125 6/15/2018	912828XF2-1	890,000	6/15/2018	9/7/2017	1.20%	889,513	76	2,916	888,825
T-Note 1.125 6/15/2018	912828XF2-1	892,000	6/15/2018	1/4/2018	1.49%	890,571	76	2,922	890,823
T-Note 1.125 6/15/2018	912828XF2-1	891,000	6/15/2018	2/1/2018	1.50%	889,782	76	2,919	889,824
T-Note 1.125 6/15/2018	912828XF2-1	1,286,000	6/15/2018	11/10/2017	1.38%	1,284,091	76	4,213	1,284,302
T-Note 1.125 6/15/2018	912828XF2-1	6,250,000	6/15/2018	8/9/2017	1.23%	6,244,385	76	20,476	6,241,750
T-Note 1.125 6/15/2018	912828XF2-1	1,224,000	6/15/2018	2/1/2018	1.50%	1,222,327	76	4,010	1,222,384
T-Note 1.125 6/15/2018	912828XF2-1	1,223,000	6/15/2018	9/7/2017	1.20%	1,222,331	76	4,007	1,221,386
T-Note 1.125 6/15/2018	912828XF2-1	1,220,000	6/15/2018	10/3/2017	1.25%	1,218,904	76	3,997	1,218,390
T-Note 1.125 6/15/2018	912828XF2-1	1,378,000	6/15/2018	12/4/2017	1.45%	1,375,632	76	4,514	1,376,181
T-Note 1.125 6/15/2018	912828XF2-1	6,623,000	6/15/2018	8/8/2017	1.22%	6,617,567	76	21,698	6,614,258
T-Note 1.125 6/15/2018	912828XF2-2	503,000	6/15/2018	12/4/2017	1.45%	502,135	76	1,648	502,336
T-Note 1.125 6/15/2018	912828XF2-2	518,000	6/15/2018	10/4/2017	1.28%	517,454	76	1,697	517,316
T-Note 1.125 6/15/2018	912828XF2-2	513,000	6/15/2018	11/10/2017	1.39%	512,198	76	1,681	512,323
T-Note 1.125 6/15/2018	912828XF2-2	504,000	6/15/2018	2/2/2018	1.52%	503,272	76	1,651	503,335
T-Note 1.125 6/15/2018	912828XF2-2	504,000	6/15/2018	1/4/2018	1.49%	503,193	76	1,651	503,335
T-Note 1.125 6/15/2018	912828XF2-2	504,000	6/15/2018	3/6/2018	1.67%	503,232	76	1,651	503,335
T-Note 1.125 6/15/2018	912828XF2-2	17,000	6/15/2018	12/21/2017	1.47%	16,972	76	56	16,978
T-Note 1.125 6/15/2018	912828XF2-2	1,496,000	6/15/2018	9/15/2017	1.24%	1,494,714	76	4,901	1,494,025
T-Note 1.125 6/15/2018	912828XF2-2	1,880,000	6/15/2018	11/10/2017	1.38%	1,877,209	76	6,159	1,877,518
T-Note 1.125 6/15/2018	912828XF2-2	1,225,000	6/15/2018	1/4/2018	1.49%	1,223,038	76	4,013	1,223,383
T-Note 1.125 6/15/2018	912828XF2-2	70,000	6/15/2018	12/21/2017	1.47%	69,885	76	229	69,908
T-Note 1.125 6/15/2018	912828XF2-2	885,000	6/15/2018	11/10/2017	1.39%	883,617	76	2,899	883,832
T-Note 1.125 6/15/2018	912828XF2-2	899,000	6/15/2018	12/4/2017	1.45%	897,455	76	2,945	897,813
T-Note 1.125 6/15/2018	912828XF2-2	902,000	6/15/2018	2/2/2018	1.52%	900,696	76	2,955	900,809
T-Note 1.125 6/15/2018	912828XF2-2	903,000	6/15/2018	1/4/2018	1.49%	901,554	76	2,958	901,808
T-Note 1.125 6/15/2018	912828XF2-2	915,000	6/15/2018	10/4/2017	1.28%	914,035	76	2,998	913,792
T-Note 1.125 6/15/2018	912828XF2-2	902,000	6/15/2018	3/6/2018	1.67%	900,626	76	2,955	900,809
T-Note 1.125 6/15/2018	912828XF2-2	2,724,000	6/15/2018	9/15/2017	1.24%	2,721,659	76	8,924	2,720,404
T-Note 1.125 6/15/2018	912828XF2-2	30,000	6/15/2018	12/21/2017	1.47%	29,951	76	98	29,960
T-Bill 0 6/21/2018	912796MF3	1,868,000	6/21/2018	2/5/2018	1.52%	1,857,461	82	-	1,860,976
T-Bill 0 6/21/2018	912796MF3	1,394,000	6/21/2018	2/5/2018	1.52%	1,386,135	82	-	1,388,759
T-Note 2.375 6/30/2018	912828QT0	42,000	6/30/2018	8/10/2017	1.24%	42,420	91	248	42,057
T-Note 2.375 6/30/2018	912828QT0	820,000	6/30/2018	8/10/2017	1.24%	828,200	91	4,842	821,115
T-Note 0.625 6/30/2018	912828R93	745,000	6/30/2018	7/10/2017	1.11%	741,479	91	1,158	742,832
T-Note 0.625 6/30/2018	912828R93	2,705,000	6/30/2018	2/27/2017	0.98%	2,692,215	91	4,203	2,697,128
T-Note 0.625 6/30/2018	912828R93	57,000	6/30/2018	11/17/2017	1.46%	56,708	91	89	56,834
T-Note 1.375 6/30/2018	912828VK3	89,000	6/30/2018	12/21/2017	1.52%	88,930	91	304	88,904
T-Note 1.375 6/30/2018	912828VK3	88,000	6/30/2018	10/4/2017	1.30%	88,048	91	301	87,905

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.



**Great Lakes Water Authority
Portfolio Holdings
As of March 31, 2018**

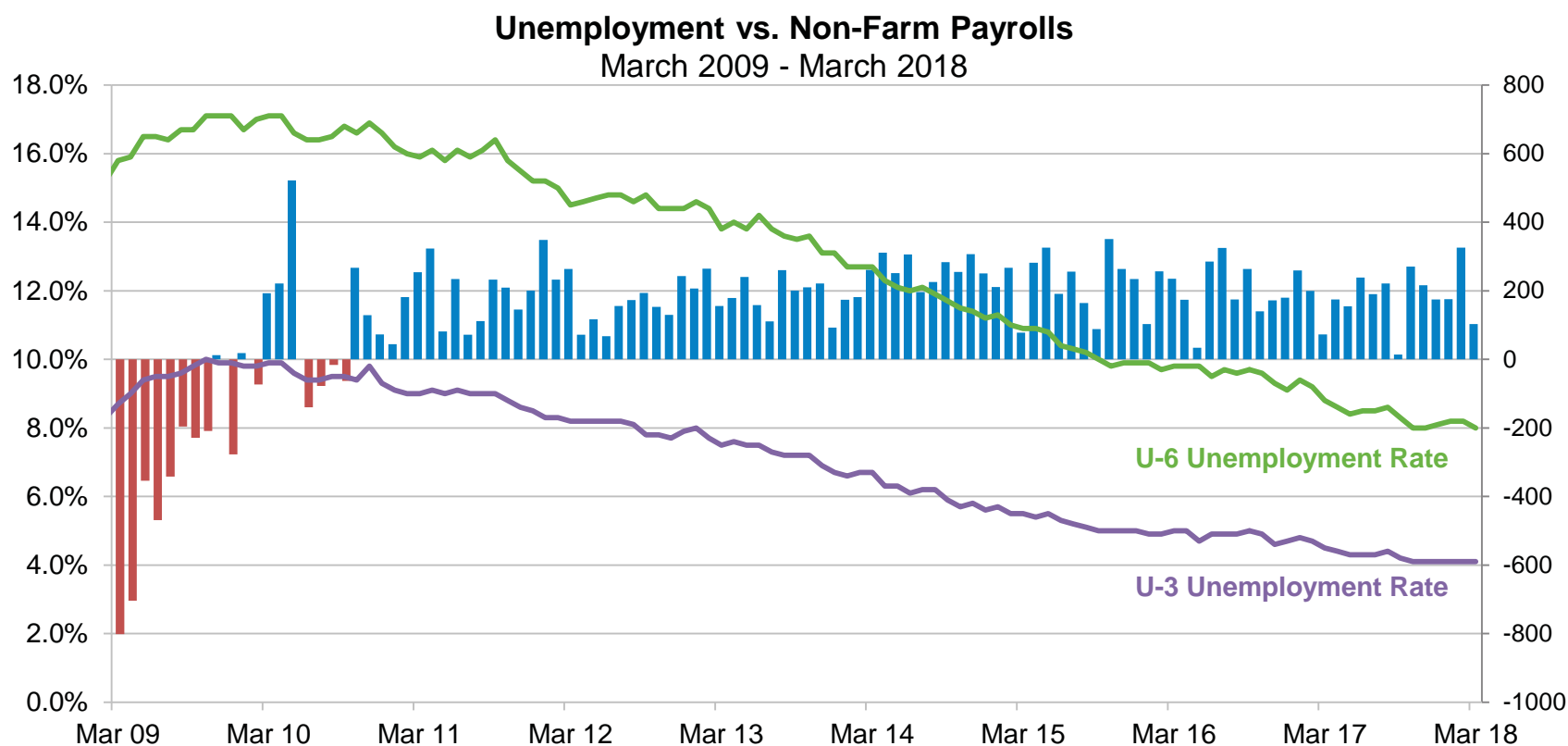
DESCRIPTION	CUSIP	PAR AMOUNT	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	DAYS TO MATURITY	ACCRUED INTEREST	TOTAL VALUE
U.S. Treasuries									
T-Note 1.375 6/30/2018	912828VK3	10,000	6/30/2018	10/4/2017	1.30%	10,005	91	34	9,989
T-Note 1.375 6/30/2018	912828VK3	188,000	6/30/2018	12/21/2017	1.52%	187,853	91	643	187,797
T-Note 1.375 6/30/2018	912828VK3	780,000	6/30/2018	9/7/2017	1.22%	780,975	91	2,666	779,158
T-Note 1.375 6/30/2018	912828VK3	881,000	6/30/2018	10/4/2017	1.30%	881,482	91	3,012	880,049
T-Note 1.375 6/30/2018	912828VK3	854,000	6/30/2018	12/21/2017	1.52%	853,333	91	2,919	853,078
T-Note 1.375 6/30/2018	912828VK3-1	1,265,000	6/30/2018	3/7/2018	1.75%	1,263,468	91	4,324	1,263,634
T-Note 1.375 6/30/2018	912828VK3-1	36,000	6/30/2018	7/19/2017	1.23%	36,049	91	123	35,961
T-Note 1.375 6/30/2018	912828VK3-1	838,000	6/30/2018	7/19/2017	1.23%	839,146	91	2,865	837,095
T-Note 1.375 6/30/2018	912828VK3-1	3,486,000	6/30/2018	3/7/2018	1.75%	3,481,779	91	11,917	3,482,235
T-Note 1.375 6/30/2018	912828VK3-2	7,510,000	6/30/2018	7/26/2017	1.23%	7,519,974	91	25,673	7,501,889
T-Note 1.375 6/30/2018	912828VK3-2	7,960,000	6/30/2018	7/26/2017	1.23%	7,970,572	91	27,211	7,951,403
T-Note 0.75 8/31/2018	912828C3	5,190,000	8/31/2018	7/26/2017	1.27%	5,160,806	153	3,279	5,165,659
T-Note 0.75 8/31/2018	912828C3	6,650,000	8/31/2018	7/26/2017	1.27%	6,612,594	153	4,201	6,618,812
T-Note 1 9/15/2018	912828L40	7,018,000	9/15/2018	11/8/2017	1.50%	6,988,393	168	3,051	6,990,349
T-Note 1 9/15/2018	912828L40	121,000	9/15/2018	10/4/2017	1.36%	120,594	168	53	120,523
T-Note 1 9/15/2018	912828L40	122,000	9/15/2018	11/7/2017	1.49%	121,490	168	53	121,519
T-Note 1 9/15/2018	912828L40	9,525,000	9/15/2018	11/8/2017	1.50%	9,484,816	168	4,141	9,487,472
T-Note 1 9/15/2018	912828L40	2,993,000	9/15/2018	10/4/2017	1.36%	2,982,945	168	1,301	2,981,208
T-Note 1 9/15/2018	912828L40	2,994,000	9/15/2018	11/7/2017	1.49%	2,981,486	168	1,302	2,982,204
T-Note 1.375 9/30/2018	912828RH5	10,220,000	9/30/2018	10/26/2016	0.87%	10,317,809	183	-	10,192,099
T-Note 1.375 9/30/2018	912828RH5	7,805,000	9/30/2018	10/26/2016	0.87%	7,879,696	183	-	7,783,692
T-Note 0.75 9/30/2018	912828T42	5,160,000	9/30/2018	7/26/2017	1.28%	5,128,355	183	-	5,129,969
T-Note 0.75 9/30/2018	912828T42	6,605,000	9/30/2018	7/26/2017	1.28%	6,564,493	183	-	6,566,559
T-Note 0.75 10/31/2018	912828T83	5,215,000	10/31/2018	7/26/2017	1.31%	5,178,536	214	16,315	5,178,339
T-Note 0.75 10/31/2018	912828T83	2,400,000	10/31/2018	7/26/2017	1.31%	2,383,219	214	7,508	2,383,128
T-Note 0.75 10/31/2018	912828T83	4,275,000	10/31/2018	8/31/2017	1.26%	4,249,784	214	13,374	4,244,947
T-Note 1.375 11/30/2018	912828RT9	10,400,000	11/30/2018	7/26/2017	1.32%	10,407,313	244	47,536	10,355,280
T-Note 1 11/30/2018	912828U40	13,370,000	11/30/2018	8/31/2017	1.26%	13,326,652	244	44,444	13,280,154
T-Note 1.25 4/30/2019	912828S18	5,225,000	4/30/2019	7/26/2017	1.37%	5,214,183	395	27,244	5,174,370
T-Note 1.25 4/30/2019	912828S18	6,680,000	4/30/2019	8/31/2017	1.31%	6,673,216	395	34,830	6,615,271
T-Note 1.25 5/31/2019	912828XS4	5,180,000	5/31/2019	7/26/2017	1.37%	5,168,669	426	21,524	5,125,144
T-Note 1.625 6/30/2019	912828WS5	146,000	6/30/2019	7/21/2017	1.35%	146,776	456	590	145,001
T-Note 1.625 6/30/2019	912828WS5	1,625,000	6/30/2019	2/27/2017	1.27%	1,638,267	456	6,565	1,613,885
T-Note 1.625 6/30/2019	912828WS5	4,475,000	6/30/2019	2/10/2017	1.32%	4,506,989	456	18,079	4,444,391
T-Note 1.625 6/30/2019	912828WS5	2,450,000	6/30/2019	2/27/2017	1.27%	2,470,002	456	9,898	2,433,242
T-Note 1.25 6/30/2019	912828XV7	6,463,000	6/30/2019	2/28/2018	2.17%	6,385,242	456	20,085	6,388,288
T-Note 1.25 6/30/2019	912828XV7	159,000	6/30/2019	2/28/2018	2.17%	157,087	456	494	157,162
T-Note 1.25 6/30/2019	912828XV7	5,800,000	6/30/2019	10/11/2017	1.49%	5,776,664	456	18,025	5,732,952
T-Note 1.25 6/30/2019	912828XV7	10,150,000	6/30/2019	10/11/2017	1.49%	10,109,162	456	31,544	10,032,666
T-Note 1.25 6/30/2019	912828XV7	195,000	6/30/2019	2/28/2018	2.17%	192,654	456	606	192,746
T-Note 1.625 6/30/2020	912828XH8	9,705,000	6/30/2020	10/11/2017	1.61%	9,709,928	822	39,209	9,554,864
T-Note 1.625 6/30/2020	912828XH8	4,565,000	6/30/2020	2/27/2017	1.54%	4,578,374	822	18,443	4,494,379
T-Note 1.625 6/30/2020	912828XH8	6,560,000	6/30/2020	10/11/2017	1.61%	6,563,331	822	26,503	6,458,517

In addition to the totals listed above, there also exists surety bonds in the amount of \$331,914,579 as of March 31, 2018.

Appendix II: Economic Update

U.S. Labor Market

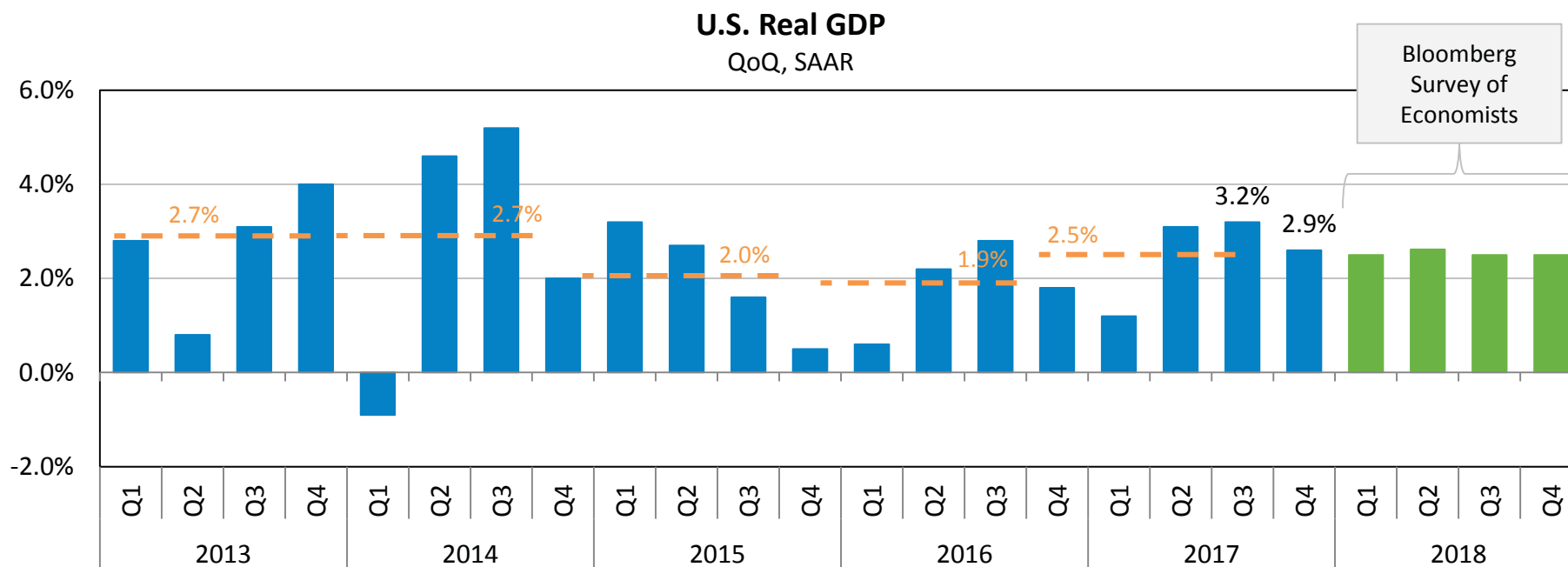
- In March, the United States labor market added 103,000 jobs, well below the 185,000 expectation
- The unemployment rate was unchanged at 4.1%, continuing the recent trend of lows for U.S. unemployment



Source: Bloomberg

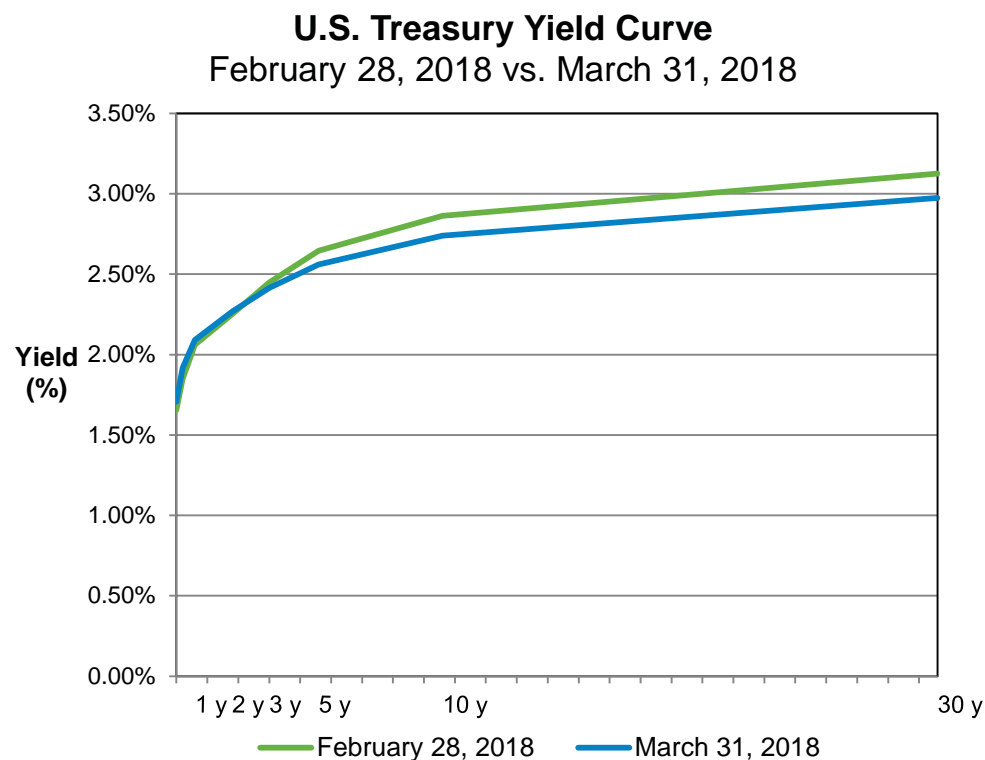
Economic Growth Slowed in Fourth Quarter 2017

- U.S. Gross domestic product (“GDP”) grew at an annualized rate of 2.9% in the fourth quarter of 2017, as the pace of expansion slowed from faster than 3.2% growth in the third quarter; for the year, growth has averaged 2.5%, fastest pace since 2014
- Strong growth in consumer spending and business investment continued to fuel economic activity over the quarter, while significant declines in inventories and net exports were a drag on reported GDP in the fourth quarter



Source: Bloomberg, as of the fourth quarter of 2017. SAAR is seasonally adjusted annualized rate. Orange denotes rolling four-quarter averages.

U.S. Treasury Yields

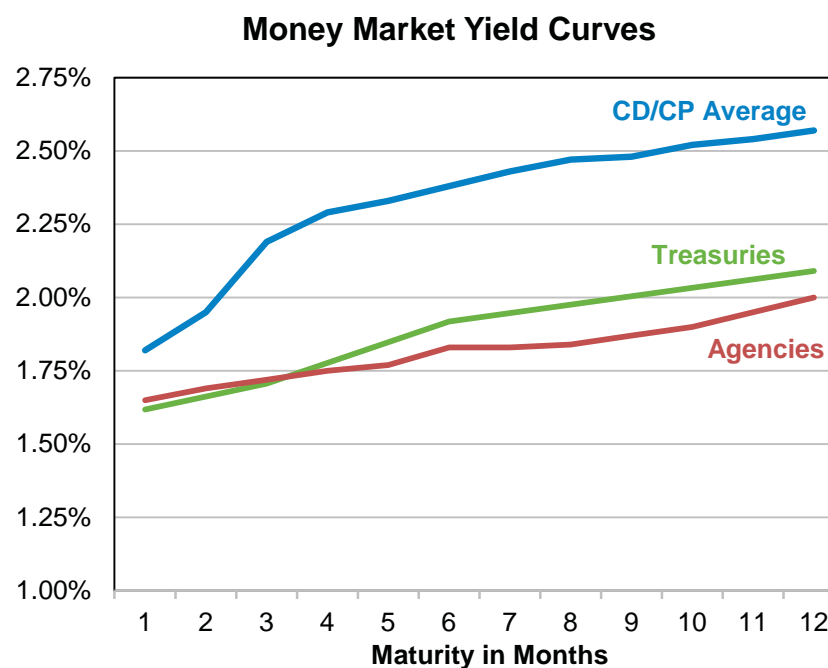
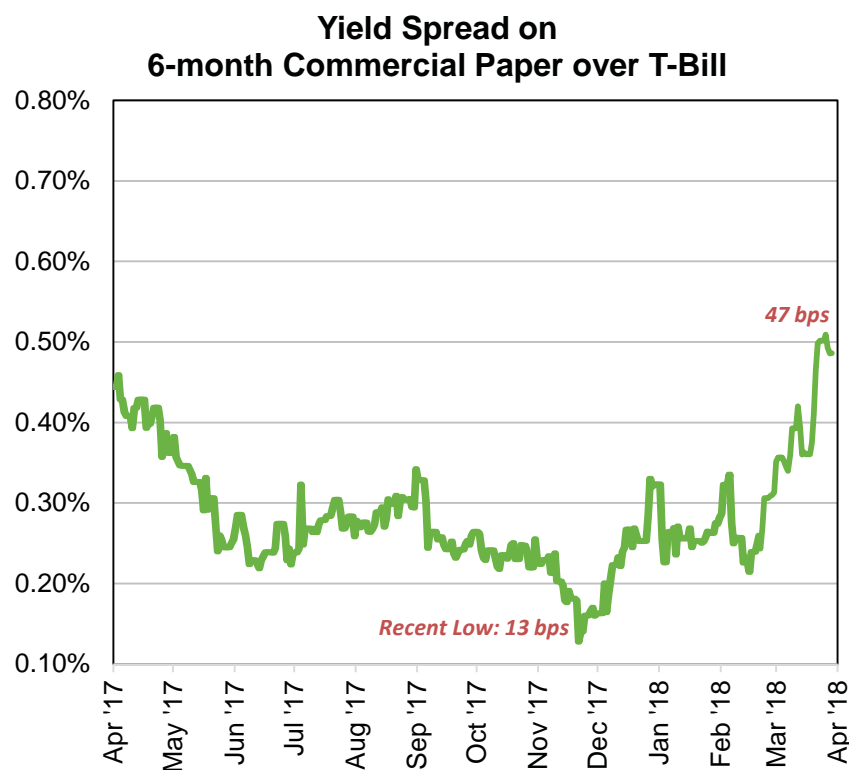


	2/28/2018	3/31/2018	Change
3 month	1.66%	1.71%	0.05%
6 month	1.85%	1.92%	0.07%
1 year	2.06%	2.09%	0.03%
2 year	2.25%	2.27%	0.02%
3 year	2.45%	2.41%	-0.04%
5 year	2.65%	2.56%	-0.09%
10 year	2.86%	2.74%	-0.12%
30 year	3.13%	2.97%	-0.16%

Source: Bloomberg

Current Short-Term Credit Environment

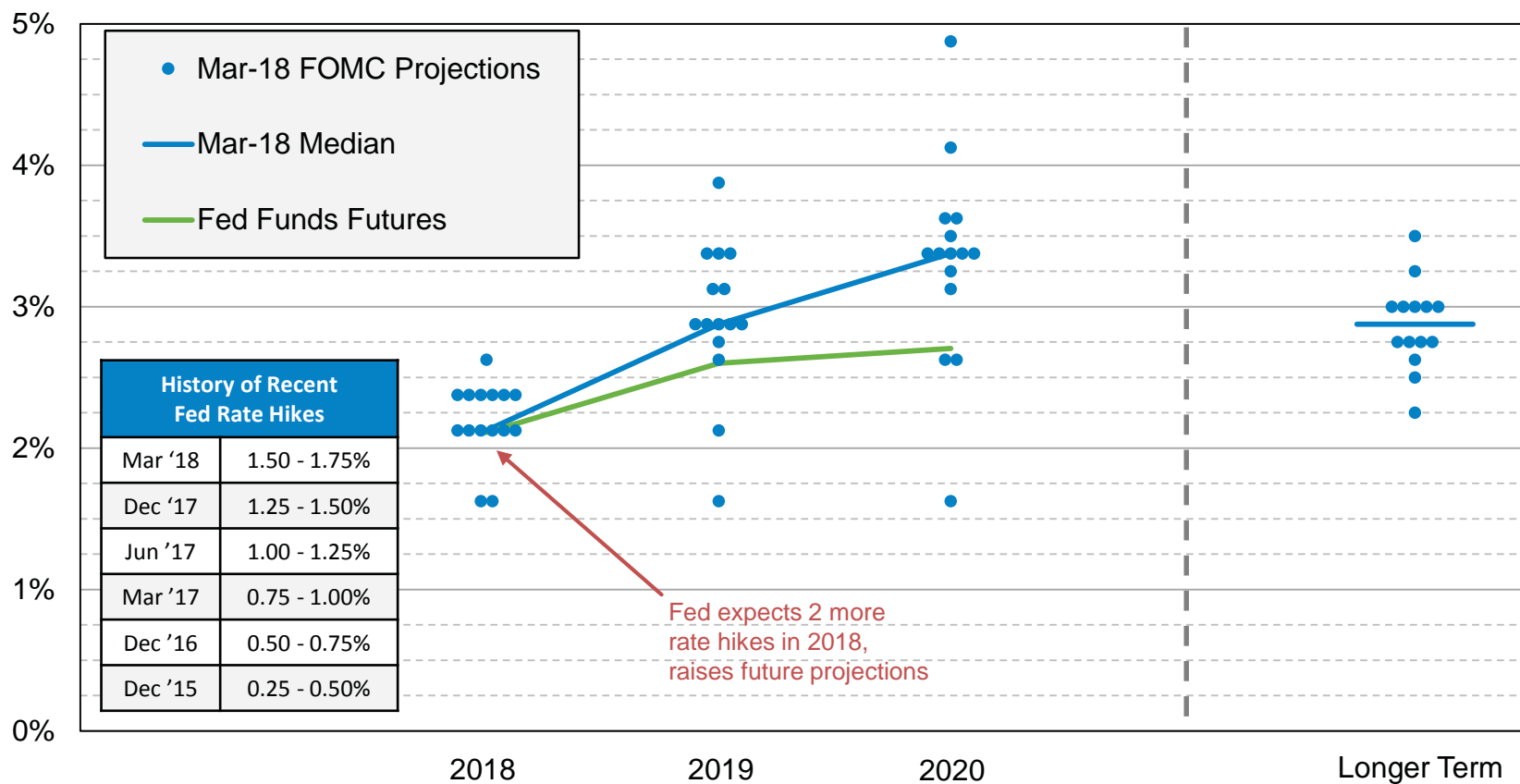
- Commercial paper and CDs remain attractive alternatives to short-term Treasuries, Agencies, bank deposits, and government money market funds



Source: Bloomberg, PFMAM Trading Desk, as of 4/02/2018. Not a specific recommendation. Six-month CP yield spread based on A1/P1 rated CP index.

FOMC “Dot Plot” March 2018

Fed Participants’ Assessments of ‘Appropriate’ Monetary Policy



Source: Federal Reserve and Bloomberg. Individual dots represent each Fed members' judgement of the midpoint of the appropriate target range for the Federal Funds rate at each year-end. Fed funds futures as of 3/21/2018.

**Great Lakes Water Authority
Market Overview and Outlook****FIXED INCOME MARKET – ECONOMIC HIGHLIGHTS**

- The laundry list of positive economic data is long and remains a key driver of economic growth, consumer confidence, and business optimism
 - GDP posted an upward revision to fourth quarter 2017 GDP to 2.9%
 - Estimates for 2018 GDP call for growth in the range of 2.7% to 2.8%
 - Job growth continued to be strong, averaging over 200,000 new jobs per month in the first quarter of 2018
 - The unemployment rate remained at 4.1%, a 17-year low
 - Productivity hit a 2-year high
 - Manufacturing reached a 3-year high
 - Consumer confidence rebounded after a dampened fourth quarter of 2017 and now sits at a 14-year high
 - Inflation, while below the Fed's target of 2.0%, inched higher by most measures
- New Fed Chair Jerome Powell made his first public address at February's semi-annual monetary policy report to Congress. His maiden testimony hinted at a continuance of gradual rate hikes, while acknowledging that "the economic outlook remains strong" and the expectation for inflation to increase and closely approach the FOMC's 2.0% objective remains intact
- The Fed remained true to its stated course, raising short-term rates by 0.25% in March, and interest rates continued their ascent over the quarter. As a result, we strategically positioned portfolios with a defensive duration bias relative to benchmarks to help insulate market values in the well-choreographed interest rate environment. However, with rates at or near multi-year highs, there were also opportunities to capture higher yields selectively in some parts of the yield curve when rebalancing portfolios.

**Great Lakes Water Authority
Market Overview and Outlook****FIXED INCOME MARKET – ECONOMIC HIGHLIGHTS**

- The combined effects of less predictable U.S. politics and policy (e.g., tariffs, trade wars, Facebook, global relations, budget deficits, etc.) created a market environment of heightened volatility. The “risk off” sentiment triggered wider credit spreads.
 - Federal Agency yield spreads remained very narrow throughout the quarter. New issue Agencies continued to be our preferred – in some cases only – outlet to add exposure at relatively attractive yields. Generally, the Agency sector added modest positive excess returns in the first quarter of 2018 (returns in excess of similar duration Treasuries) across much of the yield curve, benefitting portfolio performance.
 - After yield spreads in the commercial paper sector reached another new post-recession low in January, we shifted our generally constructive view of the CP sector to a slightly more defensive posture by holding current positions (and letting them drift shorter over time) rather than adding to allocations. In the latter half of the quarter, the story shifted abruptly as market volatility pushed credit spreads markedly wider through quarter-end. As a result, we began to add credit exposure more aggressively
- The economic themes that carried over into 2018 remain: healthy job production, consistent GDP growth, positive corporate guidance, and heightened consumer confidence. However, where complacency had characterized the global markets quarter after quarter, volatility roared back in the first quarter of 2018. While rising volatility increases some market risks, it can also create investment opportunities.
- The outlook for some of the major investment-grade fixed-income sectors are as follows:
 - Federal Agency securities remain expensive, as spreads are in the low single digits across much of the yield curve; however, by quarter-end, specific Agency maturities (2 and 5-year) cheapened modestly, representing an opportunity to potentially increase allocations.
 - The short-term credit curve (under one year) steepened noticeably heading into the March Fed meeting and remained elevated through quarter-end. With 6-month prime commercial paper spreads at 50 to 60 basis points over comparable Treasury securities, the sector appears very attractive and compensates investors for at least two more Fed rate hikes in 2018.

Disclosure

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



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Deirdre Henry, Treasury Manager

Re: Master Bond Ordinance Monthly Cash Transfers through June 1, 2018

Background: The Master Bond Ordinances for the water and sewer systems prescribe monthly distributions of cash receipts to Detroit Water & Sewerage Department (DWSD) and Great Lakes Water Authority (GLWA) operating, debt service, and other trust accounts.

Analysis: The attached documents summarize the monthly cash transfers to DWSD and GLWA as stipulated by the Master Bond Ordinances for the period January 2016 through July 2018.

Proposed Action: Receive and file report.

Great Lakes Water Authority
Funds Transferred to DWSD per Master Bond Ordinance
Through July 2, 2018

DWSD Water				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Water
January 2016	\$ 3,740,800	\$ 2,486,700	\$ 11,767,600	\$ 17,995,100
February 2016	3,740,800	355,200	1,681,100	5,777,100
February 2016	3,740,800	-	-	3,740,800
March 2016	3,740,800	355,200	1,681,100	5,777,100
April 2016	3,740,800	355,200	1,681,100	5,777,100
May 2016	3,740,800	355,200	1,681,100	5,777,100
June 2016	3,740,800	355,200	1,681,100	5,777,100
Total FY 2016	\$ 26,185,600	\$ 4,262,700	\$ 20,173,100	\$ 50,621,400
FY 2017				
July 2016	\$ 2,799,700	\$ 355,200	\$ 1,875,000	\$ 5,029,900
August 2016	2,799,700	355,200	1,875,000	5,029,900
September 2016	2,799,700	355,200	1,875,000	5,029,900
October 2016	2,799,700	355,200	1,875,000	5,029,900
November 2016	2,799,700	355,200	1,875,000	5,029,900
December 2016	2,799,700	355,200	1,875,000	5,029,900
January 2017	2,799,700	355,200	1,875,000	5,029,900
February 2017	2,799,700	355,200	1,875,000	5,029,900
March 2017	2,799,700	355,200	1,875,000	5,029,900
April 2017	2,799,700	355,200	1,875,000	5,029,900
May 2017	2,799,700	355,200	1,875,000	5,029,900
June 2017	2,799,700	355,200	1,875,000	5,029,900
Total FY 2017	\$ 33,596,400	\$ 4,262,400	\$ 22,500,000	\$ 60,358,800
FY 2018				
July 2017	\$ 2,799,700	\$ 356,000	\$ 1,875,000	\$ 5,030,700
August 2017	2,921,642	356,000	1,875,000	5,152,642 ¹⁾
August 2017	121,942	-	-	121,942 ²⁾
September 2017	2,921,642	356,000	1,875,000	5,152,642
October 2017	2,921,642	356,000	1,875,000	5,152,642
November 2017	2,921,642	356,000	1,875,000	5,152,642
December 2017	2,921,642	356,000	1,875,000	5,152,642
January 2018	2,921,642	356,000	1,875,000	5,152,642
February 2018	2,921,642	356,000	1,875,000	5,152,642
March 2018	2,921,642	356,000	1,875,000	5,152,642
April 2018	2,921,642	356,000	1,875,000	5,152,642
May 2018	2,921,642	356,000	1,875,000	5,152,642
June 2018	2,921,642	356,000	-	3,277,642 ³⁾
Total FY 2018	\$ 35,059,704	\$ 4,272,000	\$ 20,625,000	\$ 59,956,704
FY 2019				
July 2018	\$ 2,957,025	\$ 356,000	\$ 1,545,900	\$ 4,858,925
August 2018				-
September 2018				-
October 2018				-
November 2018				-
December 2018				-
January 2019				-
February 2019				-
March 2019				-
April 2019				-
May 2019				-
June 2019				-
Total FY 2019	\$ 2,957,025	\$ 356,000	\$ 1,545,900	\$ 4,858,925
Grand Total Water Transfers	\$ 97,798,729	\$ 13,153,100	\$ 64,844,000	\$ 175,795,829

Note 1: Per Section 3.5 of the Lease, the Lease Payment may be used for:

- (a) bond principal and interest for Local System Improvements,
- (b) bond principal and interest for the City's share of common-to-all System Improvements, and
- (c) Local System improvements paid from the lease payment deposited to the Improvement & Extension (I&E) Fund.

Note 2: For FY 2016, \$22,318,500 million of the lease payment was directed by the City of Detroit to offset a portion of its FY 2016 water and sewer debt service in lieu of a cash transfer.

¹⁾ O&M transfer updated to reflect DWSD FY18 budget

³⁾ Additional O&M transfer to bring July 2017 to updated budget levels

³⁾ Adjustment in DWSD FY18 budget resulted in \$0 transfer for I&E.

Great Lakes Water Authority
Funds Transferred to DWSD per Master Bond Ordinance
Through July 2, 2018

DWSD Sewer				
	Operations & Maintenance	Pension	Lease Payment (I&E Fund)	Total Sewer
January 2016	\$ 2,824,900	\$ 1,669,300	\$ 4,380,000	\$ 8,874,200
February 2016	2,824,900	238,500	625,700	3,689,100
February 2016	2,824,900	-	-	2,824,900
March 2016	2,824,900	238,500	625,700	3,689,100
April 2016	2,824,900	238,500	625,700	3,689,100
May 2016	2,824,900	238,500	625,700	3,689,100
June 2016	2,824,900	238,500	625,700	3,689,100
Total FY 2016	\$ 19,774,300	\$ 2,861,800	\$ 7,508,500	\$ 30,144,600
FY 2017				
July 2016	\$ 3,461,300	\$ 238,500	\$ 2,291,700	\$ 5,991,500
August 2016	3,461,300	238,500	2,291,700	5,991,500
September 2016	3,461,300	238,500	2,291,700	5,991,500
October 2016	3,461,300	238,500	2,291,700	5,991,500
November 2016	3,461,300	238,500	2,291,700	5,991,500
December 2016	3,461,300	238,500	2,291,700	5,991,500
January 2017	3,461,300	238,500	2,291,700	5,991,500
February 2017	3,461,300	238,500	2,291,700	5,991,500
March 2017	3,461,300	238,500	2,291,700	5,991,500
April 2017	3,461,300	238,500	2,291,700	5,991,500
May 2017	3,461,300	238,500	2,291,700	5,991,500
June 2017	3,461,300	238,500	2,291,300	5,991,100
Total FY 2017	\$ 41,535,600	\$ 2,862,000	\$ 27,500,000	\$ 71,897,600
FY 2018				
July 2017	\$ 3,461,300	\$ 238,000	\$ 2,291,667	\$ 5,990,967
August 2017	5,043,166	238,000	2,291,667	7,572,833 ¹⁾
August 2017	1,581,866	-	-	1,581,866 ²⁾
September 2017	5,043,166	238,000	2,291,667	7,572,833
October 2017	5,043,166	238,000	2,291,667	7,572,833
November 2017	5,043,166	238,000	2,291,667	7,572,833
December 2017	5,043,166	238,000	2,291,667	7,572,833
January 2018	5,043,166	238,000	2,291,667	7,572,833
February 2018	5,043,166	238,000	2,291,667	7,572,833
March 2018	5,043,166	238,000	-	5,281,166 ³⁾
April 2018	5,043,166	238,000	-	5,281,166 ³⁾
May 2018	5,043,166	238,000	-	5,281,166 ³⁾
June 2018	5,043,166	238,000	-	5,281,166 ³⁾
Total FY 2018	\$ 60,517,992	\$ 2,856,000	\$ 18,333,336	\$ 81,707,328
FY 2019				
July 2018	\$ 5,676,792	\$ 238,000	\$ 1,886,333	\$ 7,801,125
August 2018	-	-	-	-
September 2018	-	-	-	-
October 2018	-	-	-	-
November 2018	-	-	-	-
December 2018	-	-	-	-
January 2019	-	-	-	-
February 2019	-	-	-	-
March 2019	-	-	-	-
April 2019	-	-	-	-
May 2019	-	-	-	-
June 2019	-	-	-	-
Total FY 2019	\$ 5,676,792	\$ 238,000	\$ 1,886,333	\$ 7,801,125
Grand Total Sewer Transfers	\$ 127,504,684	\$ 8,817,800	\$ 55,228,169	\$ 191,550,653

Note 1: Per Section 3.5 of the Lease, the Lease Payment may be used for:

- (a) bond principal and interest for Local System Improvements,
- (b) bond principal and interest for the City's share of common-to-all System Improvements, and
- (c) Local System improvements paid from the lease payment deposited to the Improvement & Extension (I&E) Fund.

Note 2: For FY 2016, \$22,318,500 million of the lease payment was directed by the City of Detroit to offset a portion of its FY 2016 water and sewer debt service in lieu of a cash transfer.

¹⁾ O&M transfer updated to reflect DWSD FY18 budget

³⁾ Additional O&M transfer to bring July 2017 to updated budget levels

³⁾ Adjustment in DWSD FY18 budget resulted in \$0 transfer for I&E.

Great Lakes Water Authority
Funds Transferred to Accounts Held by GLWA per Master Bond Ordinance
Through July 2, 2018

WATER							
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP	Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Water
Total FY 2016	\$71,052,000	\$6,037,100	\$10,297,200	\$1,983,300	\$2,326,900	\$606,000	\$92,302,500
Total FY 2017	\$111,879,600	\$6,037,200	\$10,297,200	\$2,077,200	\$360,000	\$0	\$130,651,200
FY 2018							
July 2017	\$10,130,217	\$504,000	\$891,308	\$179,950	-	-	\$11,705,475
August 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
September 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
October 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
November 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
December 2017	10,130,217	504,000	891,308	179,950	-	-	11,705,475
January 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
February 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
March 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
April 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
May 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
June 2018	10,130,217	504,000	891,308	179,950	-	-	11,705,475
Total FY 2018	\$121,562,604	\$6,048,000	\$10,695,696	\$2,159,400	\$0	\$0	\$140,465,700
FY 2019							
July 2018	\$ 10,393,475	\$504,000	\$891,308	\$171,683	-	-	\$11,960,466
August 2018							-
September 2018							-
October 2018							-
November 2018							-
December 2018							-
January 2019							-
February 2019							-
March 2019							-
April 2019							-
May 2019							-
June 2019							-
Total FY 2019	\$10,393,475	\$504,000	\$891,308	\$171,683	\$0	\$0	\$11,960,466
Total Water Since Jan 1 2016	\$314,887,679	\$18,626,300	\$32,181,404	\$6,391,583	\$2,686,900	\$606,000	\$375,379,866

Great Lakes Water Authority
Funds Transferred to Accounts Held by GLWA per Master Bond Ordinance
Through July 2, 2018

SEWER

	<u>Operations & Maintenance</u>	<u>Pension Sub Account</u>	<u>Pension Obligation</u>	<u>WRAP</u>	<u>Budget Stabilization</u> <small>(For Benefit of DWSD)</small>	<u>Extraordinary Repair & Replacement (ER&R)</u>	<u>Total Water</u>
Total FY 2016	\$100,865,600	\$10,838,400	\$14,025,800	\$2,523,400	\$5,591,700	\$779,600	\$134,624,500
Total FY 2017	\$175,858,800	\$10,838,400	\$14,026,800	\$2,654,400	\$2,654,400	\$0	\$206,032,800
FY 2018							
July 2017	\$15,923,283	\$902,000	\$1,223,958	\$230,067	-	-	\$18,279,308
August 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
September 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
October 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
November 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
December 2017	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
January 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
February 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
March 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
April 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
May 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
June 2018	15,923,283	902,000	1,223,958	230,067	-	-	18,279,308
Total FY 2018	\$191,079,396	\$10,824,000	\$14,687,496	\$2,760,804	\$0	\$0	\$219,351,696
FY 2019							
July 2018	\$ 16,093,500	\$902,000	\$1,223,958	\$238,483	-	-	\$18,457,941
August 2018							-
September 2018							-
October 2018							-
November 2018							-
December 2018							-
January 2019							-
February 2019							-
March 2019							-
April 2019							-
May 2019							-
June 2019							-
Total FY 2019	\$16,093,500	\$902,000	\$1,223,958	\$238,483	\$0	\$0	\$18,457,941
Total Sewer Since Jan 1 2016	\$483,897,296	\$33,402,800	\$43,964,054	\$8,177,087	\$8,246,100	\$779,600	\$578,466,937



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Monthly Revenue & Collections Report for May 2018

The *Monthly Revenue & Collections Report* includes the following.

1. FY 2018 Retail and Wholesale Sewer Revenue
2. FY 2018 Retail and Wholesale Water Revenue
3. City of Highland Park Billings and Collections
4. City of Flint Billings and Collections
5. Water & Sewer System Wholesale Accounts Receivable Aging Report

Note: Wholesale customer revenues are billed by the Great Lakes Water Authority (GLWA). Pursuant to the terms of the lease agreement between the City of Detroit and the Great Lakes Water Authority, the Detroit Water & Sewerage Department (DWSD) serves as GLWA's agent for billing activities for the City of Detroit retail customer class. All revenues collected by both GLWA and DWSD are deposited in a trust account in accordance with the GLWA Master Bond Ordinance.

1. FY 2018 Retail and Wholesale Sewer Revenue Report

Table 1 summarizes the unaudited FY 2018 billed revenues through May 31, 2018 and do not reflect collections of those revenues. It should also be noted that the revenues are shown in the month that the billed flow was accrued and not the following month when the bills are usually sent out to customers.

Table 1 – Combined DWSD and GLWA Wholesale FY 2018 Sewer Revenue

RETAIL SEWER CUSTOMERS						
Month	FY 2018 - Budget		FY 2018 - Actual		Variance	
	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
July	260,000	24,615,100	244,512	24,624,820	(15,488)	9,720
August	260,600	24,754,400	239,911	24,348,011	(20,689)	(406,389)
September	222,800	22,752,800	228,122	23,517,204	5,322	764,404
October	205,500	22,717,800	224,159	23,573,505	18,659	855,705
November	189,900	21,987,300	188,312	22,084,385	(1,588)	97,085
December	204,400	22,774,800	190,811	21,937,291	(13,589)	(837,509)
January	195,300	22,296,100	213,373	22,944,848	18,073	648,748
February	198,300	23,060,600	193,452	21,926,685	(4,848)	(1,133,915)
March	203,000	23,026,900	196,148	22,043,574	(6,852)	(983,326)
April	189,300	22,215,900	213,393	21,824,269	24,093	(391,631)
May	219,400	23,798,700	237,626	24,270,513	18,226	471,813
June	251,500	24,635,500	-	-	-	-
Total	2,600,000	278,635,900	2,369,820	253,095,105	21,320	(905,295)
<i>Subtotals ytd</i>	2,348,500	254,000,400	2,369,820	253,095,105	21,320	(905,295)
<i>Achievement of Budget</i>			100.91%	99.64%		

WHOLESALE SEWER CUSTOMERS						
Month	FY 2018 - Budget		FY 2018 - Actual		Variance	
	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
July	N/A	22,619,300	N/A	22,619,300	N/A	-
August	N/A	22,619,300	N/A	22,619,300	N/A	-
September	N/A	22,619,300	N/A	22,619,300	N/A	-
October	N/A	22,619,300	N/A	22,619,300	N/A	-
November	N/A	22,619,300	N/A	22,619,300	N/A	-
December	N/A	22,619,300	N/A	22,619,300	N/A	-
January	N/A	22,619,300	N/A	22,619,300	N/A	-
February	N/A	22,619,300	N/A	22,619,300	N/A	-
March	N/A	22,619,300	N/A	22,619,300	N/A	-
April	N/A	22,619,300	N/A	22,619,300	N/A	-
May	N/A	22,619,300	N/A	22,619,300	N/A	-
June	N/A	22,619,300	N/A	0	N/A	-
Total		271,431,600		248,812,300		0
<i>Subtotals ytd</i>		248,812,300		248,812,300		0
<i>Achievement of Budget</i>			100.00%			

TOTAL - ALL CUSTOMERS						
Month	FY 2018 - Budget		FY 2018 - Actual		Variance	
	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>	<u>Volume</u>	<u>Revenue</u>
	<i>Mcf</i>	\$	<i>Mcf</i>	\$	<i>Mcf</i>	\$
July	260,000	47,234,400	244,512	47,244,120	(15,488)	9,720
August	260,600	47,373,700	239,911	46,967,311	(20,689)	(406,389)
September	222,800	45,372,100	228,122	46,136,504	5,322	764,404
October	205,500	45,337,100	224,159	46,192,805	18,659	855,705
November	189,900	44,606,600	188,312	44,703,685	(1,588)	97,085
December	204,400	45,394,100	190,811	44,556,591	(13,589)	(837,509)
January	195,300	44,915,400	213,373	45,564,148	18,073	648,748
February	198,300	45,679,900	193,452	44,545,985	(4,848)	(1,133,915)
March	203,000	45,646,200	196,148	44,662,874	(6,852)	(983,326)
April	189,300	44,835,200	213,393	44,443,569	24,093	(391,631)
May	219,400	46,418,000	237,626	46,889,813	18,226	471,813
June	251,500	47,254,800	-	-	-	-
Total	2,600,000	550,067,500	2,369,820	501,907,405	21,320	(905,295)
<i>Subtotals ytd</i>	2,348,500	502,812,700	2,369,820	501,907,405	21,320	(905,295)
<i>Achievement of Budget</i>			100.91%	99.82%		

DWSD Retail Billings: **Table 1** shows the FY 2018 sewer usage and billed revenue which are provided by DWSD staff. As of May 31, 2018, the DWSD usage was at 100.91% of the budget and billed revenue was at 99.64% of budget..

GLWA Wholesale Customer Billings: **Table 1** shows the FY 2018 sewer billed revenue. As a result of the sewer rate simplification which provides a more stable revenue stream, the wholesale sewer customers are billed a fixed monthly fee. The results of this effort can be seen as the billed revenue is at 100.00% of budget through May 31, 2018.

Total System Billings: **Table 1** shows the FY 2018 combined DWSD and GLWA Wholesale sewer billed usage and billed revenue. Based on the combined, the GLWA Sewer System had billed revenues of 99.82% of budget based upon the most current information available as of this report.

2. FY 2018 Retail and Wholesale Water Revenue Report

Table 2 summarizes the unaudited FY 2018 wholesale customer water revenues billed by GLWA and the retail water revenues billed by DWSD. Please note these are billed revenues and do not reflect collections of those revenues. It should also be noted that the revenues are shown in the month that the billed flow was accrued and not the following month when the bills are usually sent out.

Table 2 – Combined DWSD and GLWA Wholesale FY 2018 Water Revenue Report

RETAIL WATER CUSTOMERS								
Month	FY 2018 - Budget			FY 2018 - Actual			Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue	Unit Revenue	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
July	295,700	9,332,300	31.56	274,267	8,813,936	32.14	(21,433)	(518,364)
August	303,100	9,517,000	31.40	269,802	8,631,595	31.99	(33,298)	(885,405)
September	248,900	8,393,900	33.72	259,341	8,463,041	32.63	10,441	69,141
October	236,100	7,947,500	33.66	247,700	8,187,943	33.06	11,600	240,443
November	218,400	7,585,100	34.73	208,783	7,276,521	34.85	(9,617)	(308,579)
December	238,500	8,008,200	33.58	213,026	7,333,094	34.42	(25,474)	(675,106)
January	224,700	7,673,100	34.15	235,142	7,873,651	33.48	10,442	200,551
February	224,700	7,813,100	34.77	235,436	7,879,874	33.47	10,736	66,774
March	235,700	7,944,800	33.71	216,866	7,410,681	34.17	(18,834)	(534,119)
April	217,700	7,529,200	34.59	215,643	7,525,093	34.90	(2,057)	(4,107)
May	256,700	8,946,300	34.85	241,641	8,050,604	33.32	(15,059)	(895,696)
June	284,800	9,089,900	31.92	-	-	-	-	-
Total	2,985,000	99,780,400	33.43	2,617,648	87,446,032	33.41	(82,552)	(3,244,468)
Subtotals ytd	2,700,200	90,690,500	33.59	2,617,648	87,446,032	33.41	(82,552)	(3,244,468)
Achievement of Budget				96.94%	96.42%			
WHOLESALE WATER CUSTOMERS*								
Month	FY 2018 - Budget			FY 2018 - Actual			Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue	Unit Revenue	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
July	1,712,100	31,705,800	18.52	1,721,500	32,819,241	19.06	9,400	1,113,441
August	1,615,000	30,914,600	19.14	1,573,478	31,520,853	20.03	(41,522)	606,253
September	1,420,900	28,619,700	20.14	1,421,715	29,686,522	20.88	815	1,066,822
October	1,064,900	25,002,100	23.48	1,158,883	26,949,856	23.26	93,983	1,947,756
November	892,000	23,038,000	25.83	958,686	25,146,717	26.23	66,686	2,108,717
December	946,600	23,392,700	24.71	1,024,164	24,434,241	23.86	77,564	1,041,541
January	972,400	23,676,000	24.35	1,067,591	24,810,289	23.24	95,191	1,134,289
February	893,000	23,017,200	25.78	894,635	23,326,980	26.07	1,635	309,780
March	988,100	23,781,500	24.07	1,017,632	24,299,625	23.88	29,532	518,125
April	997,900	23,859,300	23.91	958,319	23,588,340	24.61	(39,581)	(270,960)
May	1,155,100	25,576,800	22.14	1,133,774	25,419,719	22.42	(21,326)	(157,081)
June	1,472,900	28,727,800	19.50	-	-	-	-	-
Total	14,130,900	311,311,500	22.03	12,930,378	292,002,383	22.58	272,378	9,418,683
Subtotals ytd	12,658,000	282,583,700	22.32	12,930,378	292,002,383	22.58	272,378	9,418,683
Achievement of Budget				102.15%	103.33%			
* Includes Revenues and Usage from the City of Flint.								
TOTAL - ALL CUSTOMERS								
Month	FY 2018 - Budget			FY 2018 - Actual			Variance	
	Volume	Revenue	Unit Revenue	Volume	Revenue	Unit Revenue	Volume	Revenue
	Mcf	\$	\$/Mcf	Mcf	\$	\$/Mcf	Mcf	\$
July	2,007,800	41,038,100	20.44	1,995,768	41,633,177	20.86	(12,032)	595,077
August	1,918,100	40,431,600	21.08	1,843,280	40,152,447	21.78	(74,820)	(279,153)
September	1,669,800	37,013,600	22.17	1,681,056	38,149,562	22.69	11,256	1,135,962
October	1,301,000	32,949,600	25.33	1,406,583	35,137,799	24.98	105,583	2,188,199
November	1,110,400	30,623,100	27.58	1,167,469	32,423,237	27.77	57,069	1,800,137
December	1,185,100	31,400,900	26.50	1,237,190	31,767,335	25.68	52,090	366,435
January	1,197,100	31,349,100	26.19	1,302,733	32,683,940	25.09	105,633	1,334,840
February	1,117,700	30,830,300	27.58	1,130,072	31,206,854	27.61	12,372	376,554
March	1,223,800	31,726,300	25.92	1,234,498	31,710,306	25.69	10,698	(15,994)
April	1,215,600	31,388,500	25.82	1,173,962	31,113,432	26.50	(41,638)	(275,068)
May	1,411,800	34,523,100	24.45	1,375,415	33,470,323	24.33	(36,385)	(1,052,777)
June	1,757,700	37,817,700	21.52	-	-	-	-	-
Total	17,115,900	411,091,900	24.02	15,548,025	379,448,414	24.40	189,825	6,174,214
Subtotals ytd	15,358,200	373,274,200	24.30	15,548,025	379,448,414	24.40	189,825	6,174,214
Achievement of Budget				101.24%	101.65%			

* Figures are stated as "Service Months"; i.e. July figures represent bills issued in August, etc.

DWSD Retail Billings: **Table 2** shows the FY 2018 water billed usage and billed revenue which are provided by the DWSD staff. As of May 31, 2018, the DWSD usage was at 96.94% of budget and billed revenue was at 96.42% of budget.

GLWA Wholesale Customer Billings: **Table 2** shows the FY 2018 water billed usage and billed revenues. Starting FY 2016, wholesale water charges were re-structured to create a more stable revenue stream by using a historical rolling average to project customer volumes and allocating 60% of the customer revenue requirement to the monthly fixed charge. As of May 31, 2018, the billed usage was at 102.15% of budget and billed revenue at 103.33% of budget. As noted in **Table 2**, revenues and usage from the City of Flint *are* included as they were assumed in the FY 2018 Budget.

Total System Billings: **Table 2** shows the FY 2018 combined DWSD and GLWA Wholesale water billed usage and billed revenue. Based on the combined Retail and Wholesale Water billings, the GLWA Water System had billed usage of 101.24% of budget and billed revenues of 101.65% of budget based upon the most current information available as of this report.

3. City of Highland Park Billings and Collections

As of June 30, 2018, Highland Park had a delinquent balance of \$38.8 million, including \$31.1 million for wastewater treatment services, \$1.6 million for industrial waste control services, and \$6.1 million for water supply services. **Table 3** provides a summary of the billing and collection history for Highland Park from June 30, 2012 to June 30, 2018 in the table below. Please note the numbers below reflect the month the invoice was sent and not the month the service was provided.

No payments were received by the City of Highland Park during June 2018.

Table 3 - City of Highland Park Billings and Collections

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

4. Water & Sewer System Wholesale Accounts Receivable Aging Report

Table 4 is a summary of the total, current and non-current receivables by category as of June 30, 2018. **Table 5** is the same summary *without* the past due balances for the City of Highland Park. The detailed accounts receivable aging is attached to this report. This report reflects the wholesale receivables only and do not include DWSD. (Note: percentages vary from 100% due to rounding.)

Table 4 - Wholesale Accounts Receivable Aging Report

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 38,272,740.03	\$ 32,367,130.95	\$ 103,859.36	\$ 101,450.08	\$ 5,700,299.64
Sewer	\$ 46,133,626.82	\$ 15,506,499.50	\$ 470,200.00	\$ 470,200.00	\$ 29,686,727.32
IWC	\$ 3,207,069.82	\$ 1,072,949.21	\$ -	\$ 65,240.48	\$ 2,068,880.13
Pollutant Surcharge	\$ 1,094,448.22	\$ 665,279.80	\$ 135,454.77	\$ 38,803.21	\$ 254,910.44
Total	\$ 88,707,884.89	\$ 49,611,859.46	\$ 709,514.13	\$ 675,693.77	\$ 37,710,817.53
	<u>100.00%</u>	<u>55.93%</u>	<u>0.80%</u>	<u>0.76%</u>	<u>42.51%</u>

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

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 32,160,492.07	\$ 32,160,033.48	\$ 458.59	\$ -	\$ -
Sewer	\$ 15,036,299.50	\$ 15,036,299.50	\$ -	\$ -	\$ -
IWC	\$ 1,583,047.29	\$ 1,059,666.53	\$ -	\$ 58,643.16	\$ 464,737.60
Pollutant Surcharge	\$ 1,094,448.22	\$ 665,279.80	\$ 135,454.77	\$ 38,803.21	\$ 254,910.44
Total	\$ 49,874,287.08	\$ 48,921,279.31	\$ 135,913.36	\$ 97,446.37	\$ 719,648.04
	<u>100.00%</u>	<u>98.09%</u>	<u>0.27%</u>	<u>0.195%</u>	<u>1.44%</u>

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$192,198.02	\$192,198.02	\$0.00	\$0.00	\$0.00
ASH TOWNSHIP	\$65,562.48	\$65,562.48	\$0.00	\$0.00	\$0.00
BELLEVILLE	\$26,051.17	\$26,051.17	\$0.00	\$0.00	\$0.00
BERLIN TOWNSHIP	\$59,216.48	\$59,216.48	\$0.00	\$0.00	\$0.00
BROWNSTOWN TOWNSHIP	\$284,554.04	\$284,554.04	\$0.00	\$0.00	\$0.00
BRUCE TOWNSHIP	\$30,875.32	\$30,875.32	\$0.00	\$0.00	\$0.00
BURTCHVILLE TOWNSHIP	\$26,046.58	\$26,046.58	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$1,023,075.22	\$1,023,075.22	\$0.00	\$0.00	\$0.00
CENTER LINE	\$39,219.22	\$39,219.22	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$327,572.67	\$327,572.67	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$664,551.30	\$664,551.30	\$0.00	\$0.00	\$0.00
COMMERCE TOWNSHIP	\$418,793.18	\$418,793.18	\$0.00	\$0.00	\$0.00
DEARBORN	\$1,349,318.85	\$1,349,318.85	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$312,058.04	\$312,058.04	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$265,041.27	\$265,041.27	\$0.00	\$0.00	\$0.00
ECORSE	\$122,778.07	\$122,778.07	\$0.00	\$0.00	\$0.00
FARMINGTON	\$80,297.75	\$80,297.75	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$723,893.86	\$723,893.86	\$0.00	\$0.00	\$0.00
FERNDAL	\$167,278.22	\$167,278.22	\$0.00	\$0.00	\$0.00
FLAT ROCK	\$101,577.02	\$101,577.02	\$0.00	\$0.00	\$0.00
FLINT	\$165,770.16	\$165,770.16	\$0.00	\$0.00	\$0.00
FRASER	\$108,322.15	\$108,322.15	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$139,848.54	\$139,848.54	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
GENESEE COUNTY DRAIN COMM	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GIBRALTAR	\$38,873.90	\$38,873.90	\$0.00	\$0.00	\$0.00
GREENWOOD TOWNSHIP	\$38,533.65	\$38,533.65	\$0.00	\$0.00	\$0.00
GROSSE ILE TOWNSHIP	\$106,125.19	\$106,125.19	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$224,808.93	\$224,350.34	\$458.59	\$0.00	\$0.00
GROSSE POINTE SHORES	\$56,633.41	\$56,633.41	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$124,638.14	\$124,638.14	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$58,654.92	\$58,654.92	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$70,434.98	\$70,434.98	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$125,457.56	\$125,457.56	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$116,254.16	\$116,254.16	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$6,112,247.96	\$207,097.47	\$103,400.77	\$101,450.08	\$5,700,299.64
HURON TOWNSHIP	\$118,683.88	\$118,683.88	\$0.00	\$0.00	\$0.00
IMLAY CITY	\$97,545.67	\$97,545.67	\$0.00	\$0.00	\$0.00
IMLAY TOWNSHIP	\$2,069.37	\$2,069.37	\$0.00	\$0.00	\$0.00
INKSTER	\$152,914.34	\$152,914.34	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$25,017.97	\$25,017.97	\$0.00	\$0.00	\$0.00
LAPEER	\$114,806.97	\$114,806.97	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$47,639.11	\$47,639.11	\$0.00	\$0.00	\$0.00
LINCOLN PARK	\$193,385.44	\$193,385.44	\$0.00	\$0.00	\$0.00
LIVONIA	\$1,122,095.85	\$1,122,095.85	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$918,862.78	\$918,862.78	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MADISON HEIGHTS	\$158,317.37	\$158,317.37	\$0.00	\$0.00	\$0.00
MAYFIELD TOWNSHIP	\$4,325.01	\$4,325.01	\$0.00	\$0.00	\$0.00
MELVINDALE	\$54,933.48	\$54,933.48	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$45,738.11	\$45,738.11	\$0.00	\$0.00	\$0.00
NOCWA	\$3,714,264.16	\$3,714,264.16	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$60,363.56	\$60,363.56	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$498,497.52	\$498,497.52	\$0.00	\$0.00	\$0.00
NOVI	\$754,637.14	\$754,637.14	\$0.00	\$0.00	\$0.00
OAK PARK	\$114,614.48	\$114,614.48	\$0.00	\$0.00	\$0.00
OAKLAND CO DR COM	\$8,131.63	\$8,131.63	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$86,290.59	\$86,290.59	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$345,127.35	\$345,127.35	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$282,619.06	\$282,619.06	\$0.00	\$0.00	\$0.00
RIVER ROUGE	\$53,855.68	\$53,855.68	\$0.00	\$0.00	\$0.00
RIVERVIEW	\$155,462.32	\$155,462.32	\$0.00	\$0.00	\$0.00
ROCKWOOD	\$24,883.63	\$24,883.63	\$0.00	\$0.00	\$0.00
ROMEO	\$21,024.06	\$21,024.06	\$0.00	\$0.00	\$0.00
ROMULUS	\$619,269.63	\$619,269.63	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$431,811.90	\$431,811.90	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$18,570.05	\$18,570.05	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$1,125,176.27	\$1,125,176.27	\$0.00	\$0.00	\$0.00
SOCWA	\$3,669,052.06	\$3,669,052.06	\$0.00	\$0.00	\$0.00
SOUTH ROCKWOOD	\$8,525.44	\$8,525.44	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHGATE	\$180,302.99	\$180,302.99	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$246,666.68	\$246,666.68	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$1,328,401.63	\$1,328,401.63	\$0.00	\$0.00	\$0.00
SUMPTER TOWNSHIP	\$57,948.96	\$57,948.96	\$0.00	\$0.00	\$0.00
SYLVAN LAKE	\$37,291.45	\$37,291.45	\$0.00	\$0.00	\$0.00
TAYLOR	\$410,043.74	\$410,043.74	\$0.00	\$0.00	\$0.00
TRENTON	\$171,517.06	\$171,517.06	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$1,130,925.69	\$1,130,925.69	\$0.00	\$0.00	\$0.00
UTICA	\$52,185.41	\$52,185.41	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$269,365.68	\$269,365.68	\$0.00	\$0.00	\$0.00
VILLAGE OF ALMONT	\$18,633.00	\$18,633.00	\$0.00	\$0.00	\$0.00
WALLED LAKE	\$79,264.01	\$79,264.01	\$0.00	\$0.00	\$0.00
WARREN	\$817,956.71	\$817,956.71	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$180,717.30	\$180,717.30	\$0.00	\$0.00	\$0.00
WAYNE	\$223,614.73	\$223,614.73	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,544,836.99	\$1,544,836.99	\$0.00	\$0.00	\$0.00
WESTLAND	\$542,142.88	\$542,142.88	\$0.00	\$0.00	\$0.00
WIXOM	\$210,312.17	\$210,312.17	\$0.00	\$0.00	\$0.00
WOODHAVEN	\$166,819.40	\$166,819.40	\$0.00	\$0.00	\$0.00
YCUA	\$1,788,719.26	\$1,788,719.26	\$0.00	\$0.00	\$0.00
TOTAL WATER ACCOUNTS	\$38,272,740.03	\$32,367,130.95	\$103,859.36	\$101,450.08	\$5,700,299.64

GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$64,300.00	\$64,300.00	\$0.00	\$0.00	\$0.00
CENTER LINE	\$82,199.50	\$82,199.50	\$0.00	\$0.00	\$0.00
DEARBORN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EVERGREEN-FARMINGTON	\$2,811,100.00	\$2,811,100.00	\$0.00	\$0.00	\$0.00
FARMINGTON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$145,000.00	\$145,000.00	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$31,097,327.32	\$470,200.00	\$470,200.00	\$470,200.00	\$29,686,727.32
MELVINDALE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
OAKLAND COUNTY GWK DD	\$3,812,600.00	\$3,812,600.00	\$0.00	\$0.00	\$0.00
OMID	\$6,068,000.00	\$6,068,000.00	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROUGE VALLEY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY N.E.	\$2,053,100.00	\$2,053,100.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY-AREA #3	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL SEWER ACCOUNTS	\$46,133,626.82	\$15,506,499.50	\$470,200.00	\$470,200.00	\$29,686,727.32

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$2,575.88	\$2,575.88	\$0.00	\$0.00	\$0.00
AUBURN HILLS (C-O)	\$30,654.96	\$30,654.96	\$0.00	\$0.00	\$0.00
AUBURN HILLS (E-F)	\$599.24	\$599.24	\$0.00	\$0.00	\$0.00
BERKLEY	\$4,632.04	\$4,632.04	\$0.00	\$0.00	\$0.00
BEVERLY HILLS	\$1,596.08	\$1,596.08	\$0.00	\$0.00	\$0.00
BINGHAM FARMS	\$1,704.00	\$1,704.00	\$0.00	\$0.00	\$0.00
BIRMINGHAM (E-F)	\$3,734.60	\$3,734.60	\$0.00	\$0.00	\$0.00
BIRMINGHAM (SEOC)	\$17,829.52	\$17,792.60	\$0.00	\$36.92	\$0.00
BLOOMFIELD HILLS	\$2,459.44	\$2,459.44	\$0.00	\$0.00	\$0.00
BLOOMFIELD TOWNSHIP	\$10,641.48	\$10,641.48	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$334,943.92	\$60,923.68	\$0.00	\$30,461.84	\$243,558.40
CENTER LINE	\$5,884.48	\$5,884.48	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$19,408.56	\$19,408.56	\$0.00	\$0.00	\$0.00
CITY OF FARMINGTON (E-F)	\$445.88	\$445.88	\$0.00	\$0.00	\$0.00
CITY OF ROCHESTER	\$5,949.80	\$5,949.80	\$0.00	\$0.00	\$0.00
CLARKSTON	\$491.32	\$491.32	\$0.00	\$0.00	\$0.00
CLAWSON	\$4,413.36	\$4,413.36	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$40,495.56	\$40,495.56	\$0.00	\$0.00	\$0.00
DEARBORN	\$58,631.80	\$58,631.80	\$0.00	\$0.00	\$0.00
DEARBORN HEIGHTS	\$15,367.24	\$15,367.24	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$170.40	\$170.40	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$20,311.68	\$20,311.68	\$0.00	\$0.00	\$0.00
FARMINGTON	\$5,289.93	\$5,289.93	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
FARMINGTON HILLS	\$37,899.80	\$37,899.80	\$0.00	\$0.00	\$0.00
FERNDALE	\$14,228.40	\$14,228.40	\$0.00	\$0.00	\$0.00
FRASER	\$7,923.60	\$7,923.60	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$9,829.24	\$9,829.24	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$3,337.00	\$3,337.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$1,888.60	\$1,888.60	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$4,421.88	\$4,421.88	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$6,668.32	\$6,668.32	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$3,018.92	\$3,018.92	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$5,012.60	\$5,012.60	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$5,305.12	\$5,305.12	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$1,624,022.53	\$13,282.68	\$0.00	\$6,597.32	\$1,604,142.53
HUNTINGTON WOODS	\$914.48	\$914.48	\$0.00	\$0.00	\$0.00
INDEPENDENCE	\$7,645.28	\$7,645.28	\$0.00	\$0.00	\$0.00
INKSTER	\$8,883.52	\$8,883.52	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$1,090.56	\$1,090.56	\$0.00	\$0.00	\$0.00
LAKE ORION	\$1,283.68	\$1,283.68	\$0.00	\$0.00	\$0.00
LATHRUP	\$2,246.44	\$2,246.44	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$2,059.00	\$1,562.00	\$0.00	\$497.00	\$0.00
LIVONIA	\$63,854.56	\$63,854.56	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MACOMB TWP	\$329.44	\$329.44	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MELVINDALE	\$5,799.28	\$5,799.28	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$976.96	\$976.96	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$2,916.68	\$2,916.68	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$80,380.52	\$14,614.64	\$0.00	\$7,307.32	\$58,458.56
NOVI	\$27,573.56	\$27,573.56	\$0.00	\$0.00	\$0.00
OAK PARK	\$11,078.84	\$11,078.84	\$0.00	\$0.00	\$0.00
OAKLAND TOWNSHIP	\$735.56	\$735.56	\$0.00	\$0.00	\$0.00
ORCHARD LAKE VILLAGE	\$590.72	\$590.72	\$0.00	\$0.00	\$0.00
ORION TOWNSHIP (C-O)	\$8,997.12	\$8,997.12	\$0.00	\$0.00	\$0.00
OXFORD TOWNSHIP	\$1,536.44	\$1,536.44	\$0.00	\$0.00	\$0.00
OXFORD VILLAGE	\$2,010.72	\$2,010.72	\$0.00	\$0.00	\$0.00
PLEASANT RIDGE	\$352.16	\$352.16	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$223,740.88	\$40,680.16	\$0.00	\$20,340.08	\$162,720.64
REDFORD TOWNSHIP	\$19,403.92	\$19,403.92	\$0.00	\$0.00	\$0.00
ROCHESTER HILLS	\$29,195.20	\$29,195.20	\$0.00	\$0.00	\$0.00
ROMULUS	\$1,479.64	\$1,479.64	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$22,660.36	\$22,660.36	\$0.00	\$0.00	\$0.00
ROYAL OAK	\$21,779.96	\$21,779.96	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$1,405.80	\$1,405.80	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$19,096.16	\$19,096.16	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SOUTHFIELD (E-F)	\$44,962.88	\$44,962.88	\$0.00	\$0.00	\$0.00
SOUTHFIELD (SEOC)	\$6,035.00	\$6,035.00	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$19,402.88	\$19,402.88	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$49,816.44	\$49,816.44	\$0.00	\$0.00	\$0.00
TROY (E-F)	\$613.44	\$613.44	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$117,879.88	\$117,879.88	\$0.00	\$0.00	\$0.00
UTICA	\$4,694.52	\$4,694.52	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$3,266.00	\$3,266.00	\$0.00	\$0.00	\$0.00
VILLAGE OF FRANKLIN	\$105.08	\$105.08	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$2,206.68	\$2,206.68	\$0.00	\$0.00	\$0.00
WATERFORD TOWNSHIP	\$19,806.16	\$19,806.16	\$0.00	\$0.00	\$0.00
WAYNE	\$8,017.32	\$8,017.32	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,508.04	\$1,508.04	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (E-F)	\$10,062.12	\$10,062.12	\$0.00	\$0.00	\$0.00
WESTLAND	\$36,888.76	\$36,888.76	\$0.00	\$0.00	\$0.00
TOTAL IWC ACCOUNTS	\$3,207,069.82	\$1,072,949.21	\$0.00	\$65,240.48	\$2,068,880.13

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
A & R PACKING CO., LLC	\$5,563.47	\$5,563.47	\$0.00	\$0.00	\$0.00
AACTRON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACADEMY PACKING CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ACME RUSTPROOF	\$89.40	\$89.40	\$0.00	\$0.00	\$0.00
ADVANCED RESOURCE RECOVERY	\$720.17	\$720.17	\$0.00	\$0.00	\$0.00
AEVITAS SPECIALITY SERVICES	\$33,804.98	\$21,132.25	\$6,027.26	\$6,645.47	\$0.00
ALEXANDER & HORNUNG	\$7,853.40	\$0.00	\$7,853.40	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$26,434.64	\$0.00	\$26,434.64	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$1,574.11	\$0.00	\$1,574.11	\$0.00	\$0.00
ALGAL SCIENTIFIC CORPORATION	\$13,543.41	\$2,783.26	\$1,269.88	\$1,308.17	\$8,182.10
ALL CHEM CORP, LLC.	\$ (129.33)	\$0.00	\$ (129.33)	\$0.00	\$0.00
ALPHA STAMPING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AMERICAN WASTE TECH INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ATWATER BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ATWATER BREWERY	\$2,316.72	\$2,316.72	\$0.00	\$0.00	\$0.00
AUTOMOTIVE FINISH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AXLE BREWING COMPANY, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BAFFIN BREWING COMPANY	\$528.31	\$0.00	\$223.08	\$0.00	\$305.23
BARON INDUSTRIES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BARTZ BAKERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BASTONE BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BATCH BREWING COMPANY	\$ (713.70)	\$0.00	\$0.00	\$0.00	\$ (713.70)
BAYS MICHIGAN CORPORATION	\$360.56	\$360.56	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
BEIRUT BAKERY, INC.	\$65.41	\$65.41	\$0.00	\$0.00	\$0.00
BETTER MADE SNACK FOOD	\$18,980.32	\$18,980.32	\$0.00	\$0.00	\$0.00
BLACK LOTUS BREWING CO.	\$29.22	\$0.00	\$29.22	\$0.00	\$0.00
BOZEK'S MARKET	\$67.69	\$67.69	\$0.00	\$0.00	\$0.00
BREW DETROIT	\$5,010.51	\$5,010.51	\$0.00	\$0.00	\$0.00
BROADWAY MKT CORNED BEEF	\$ (137.94)	\$0.00	\$0.00	\$0.00	\$ (137.94)
BROOKS BREWING, LLC.	\$22.57	\$0.00	\$22.57	\$0.00	\$0.00
CANTON BREW WORKS	\$138.01	\$0.00	\$77.25	\$0.00	\$60.76
CAPITAL REPRODUCTIONS	\$1.50	\$0.00	\$1.50	\$0.00	\$0.00
CF BURGER CREAMERY	\$16,185.44	\$16,185.44	\$0.00	\$0.00	\$0.00
CHILANGO'S BAKERY	\$1,978.74	\$49.46	\$22.34	\$38.29	\$1,868.65
CINTAS CORP. - MACOMB TWP.	\$57,316.33	\$0.00	\$57,316.33	\$0.00	\$0.00
CINTAS CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CITY LAUNDRY, INC.	\$6.15	\$6.15	\$0.00	\$0.00	\$0.00
CLASSIC CONTAINER CORP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COCA-COLA REFRESHMENTS USA,	\$2,174.77	\$2,174.77	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$6,089.60	\$6,089.60	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$791.80	\$791.80	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$2,356.32	\$2,356.32	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$221.25	\$221.25	\$0.00	\$0.00	\$0.00
COUNTRY FRESH DAIRY CO.	\$48,305.37	\$48,305.37	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
CROSS CHEMICAL COMPANY, INC.	\$ (344.54)	\$0.00	\$0.00	\$ (344.54)	\$0.00
DARLING INGREDIENTS, INC.	\$11,597.88	\$11,597.88	\$0.00	\$0.00	\$0.00
DAVE'S SAUSAGE FACTORY 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN BREWING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN SAUSAGE CO., INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT BEER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT LINEN SERVICE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT SAUSAGES CO INC	\$98.70	\$33.84	\$19.74	\$14.10	\$31.02
DETRONIC INDUSTRIES, INC.	\$111.99	\$111.99	\$0.00	\$0.00	\$0.00
DIFCO LABORATORIES, INC.	\$18,768.08	\$18,768.08	\$0.00	\$0.00	\$0.00
DIVERSIFIED CHEM TECH. INC.	\$157.30	\$157.30	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$913.09	\$913.09	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,516.79	\$1,516.79	\$0.00	\$0.00	\$0.00
E.W. GROBBEL'S SONS, INC.	\$3,080.13	\$3,080.13	\$0.00	\$0.00	\$0.00
ENVIROSOLIDS, L.L.C.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$9,058.29	\$9,058.29	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$21,855.21	\$21,855.21	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$ (1,239.07)	\$0.00	\$ (1,239.07)	\$0.00	\$0.00
EQ DETROIT, INC.	\$ (4,596.56)	\$0.00	\$ (4,596.56)	\$0.00	\$0.00
EQ RESOURCES RECOVERY, INC.	\$3,036.69	\$3,036.69	\$0.00	\$0.00	\$0.00
ETON ST BREWERY- GRIFFIN CLF	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
EXTRUDE HONE CORPORATION	\$300.88	\$300.88	\$0.00	\$0.00	\$0.00
EXTRUDEHODE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FARMINGTON BREWING COMPANY	\$ (73.03)	\$0.00	\$ (73.03)	\$0.00	\$0.00
FAYGO BEVERAGES, INC.	\$291,517.87	\$62,744.99	\$30,190.85	\$26,749.33	\$171,832.70
FORD NEW MODEL PROGRAM	\$1,553.86	\$1,553.86	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$1,910.49	\$1,910.49	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$8,055.57	\$8,055.57	\$0.00	\$0.00	\$0.00
GENERAL LINEN SUPPLY CO.	\$69,120.98	\$11,859.07	\$6,370.33	\$5,821.25	\$45,070.33
GLOBAL TITANIUM, INC.	\$2,113.58	\$2,113.58	\$0.00	\$0.00	\$0.00
GLOBAL TITANIUM, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$139.72	\$139.72	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$349.04	\$137.02	\$0.00	\$0.00	\$212.02
GREAT BARABOO BREWING CO.	\$ (2,452.90)	\$0.00	\$0.00	\$0.00	\$ (2,452.90)
HACIENDA MEXICAN FOODS	\$5,088.79	\$1,285.04	\$629.86	\$604.56	\$2,569.33
HENKEL CORPORATION	\$391.25	\$0.00	\$125.35	\$131.43	\$134.47
HOME STYLE FOOD INC.	\$4,872.10	\$4,872.10	\$0.00	\$0.00	\$0.00
HOOD CLEANERS	\$210.36	\$0.00	\$0.00	\$1.96	\$208.40
HOUGHTON INTERNATIONAL INC.	\$451.34	\$451.34	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$135.40	\$135.40	\$0.00	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$3,873.98	\$3,873.98	\$0.00	\$0.00	\$0.00
HUNTINGTON CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
INDUSTRIAL METAL COATING	\$974.41	\$974.41	\$0.00	\$0.00	\$0.00
ISLAMIC SLAUGHTER HOUSE	\$959.39	\$959.39	\$0.00	\$0.00	\$0.00
ITALIAN BUTTER BREAD STICKS	\$9.57	\$9.57	\$0.00	\$0.00	\$0.00
J & G FOOD PRODUCTS, INC.	\$64.87	\$64.87	\$0.00	\$0.00	\$0.00
KAR NUT PRODUCTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
KOWALSKI SAUSAGES, CO.	\$770.58	\$770.58	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$1,242.87	\$1,242.87	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$202.45	\$202.45	\$0.00	\$0.00	\$0.00
LEAR CORPORATION DBA EAGLE C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LIBERTY STREET PROD. BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LILY'S SEAFOOD GRILL & BREWE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MACDERMID, INC.	\$4,455.59	\$4,455.59	\$0.00	\$0.00	\$0.00
MCNICHOLS POLISHING & ANODIZ	\$29.81	\$29.81	\$0.00	\$0.00	\$0.00
MELLO MEATS INC, - KUBISCH S	\$84.62	\$84.62	\$0.00	\$0.00	\$0.00
METROPOLITAN BAKERY	\$502.55	\$502.55	\$0.00	\$0.00	\$0.00
MIBA HYDRAMECHANICA CORP.	\$410.11	\$410.11	\$0.00	\$0.00	\$0.00
MICHIGAN DAIRY	\$96,876.23	\$96,876.23	\$0.00	\$0.00	\$0.00
MICHIGAN PROD. MACHINING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MICHIGAN SOY PRODUCTS CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MIDWEST WIRE PRODUCTS, INC.	\$ (2.94)	\$0.00	\$0.00	\$0.00	\$ (2.94)
MILANO BAKERY	\$1,538.11	\$1,538.11	\$0.00	\$0.00	\$0.00
MILTON CHILI CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MINNIE MARIE BAKERS, INC	\$4,124.71	\$4,124.71	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MISTER UNIFORM & MAT RENTALS	\$560.98	\$58.37	\$32.81	\$43.17	\$426.63
MOTOR CITY BREWING WORKS	\$663.80	\$0.00	\$0.00	\$0.00	\$663.80
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NATIONAL CHILI COMPANY	\$2,750.07	\$2,750.07	\$0.00	\$0.00	\$0.00
NORTH CENTER BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHERN LAKES SEAFOOD & MEAT	\$57.56	\$57.56	\$0.00	\$0.00	\$0.00
OAKWOOD BAKERY	\$161.90	\$161.90	\$0.00	\$0.00	\$0.00
PELLERITO FOODS INC.	\$1,604.67	\$1,604.67	\$0.00	\$0.00	\$0.00
PEPSI COLA, INC.	\$37,462.39	\$37,462.39	\$0.00	\$0.00	\$0.00
PERSONAL UNIFORM SERVICE, INC.	\$64.08	\$64.08	\$0.00	\$0.00	\$0.00
PETRO ENVIRON TECH, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PINE TREE ACRES, INC.	\$45,143.75	\$45,143.75	\$0.00	\$0.00	\$0.00
PLATING SPEC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
POWER VAC OF MICHIGAN, INC.	\$69.67	\$69.67	\$0.00	\$0.00	\$0.00
PREMIER PLATING, LLC	\$2,824.07	\$0.00	\$1,277.76	\$1,222.51	\$323.80
PRODUCTION SPRING, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
QUALA SERVICES, LLC	\$300.87	\$300.87	\$0.00	\$0.00	\$0.00
RAY'S ICE CREAM CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RED SPOT PAINT #409139	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RIVER ROUGE BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROAK BREWING CO. LLC	\$1,973.20	\$0.00	\$678.43	\$0.00	\$1,294.77

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ROCHESTER MILLS BEER COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCHESTER MILLS BREWERY	\$1,198.52	\$0.00	\$1,198.52	\$0.00	\$0.00
RTT	\$23,143.92	\$0.00	\$0.00	\$399.25	\$22,744.67
SEAFARE FOODS, INC.	\$182.77	\$182.77	\$0.00	\$0.00	\$0.00
SHERWOOD BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPRAYTEK, INC.	\$4,045.77	\$39.84	\$23.90	\$30.18	\$3,951.85
SWEETHEART BAKERY, INC.	\$488.30	\$158.44	\$93.63	\$84.99	\$151.24
THE CROWN GROUP-LIVONIA PLAN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
THE ROYAL OAK BREWERY	\$ (1,813.37)	\$0.00	\$0.00	\$0.00	\$ (1,813.37)
TOM LAUNDRY CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TRAFFIC JAM & SNUG	\$ (0.48)	\$0.00	\$0.00	\$0.00	\$ (0.48)
TURRI'S ITALIAN FOODS	\$34,916.12	\$34,916.12	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
U-METCO, INC.	\$2,724.04	\$2,724.04	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$81,741.49	\$81,741.49	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNIQUE LINEN SERVICES, INC.	\$75.07	\$75.07	\$0.00	\$0.00	\$0.00
UNITED FISH DISTRIBUTORS	\$10.10	\$10.10	\$0.00	\$0.00	\$0.00
UNITED LINEN SERVICE, LLC.	\$580.46	\$580.46	\$0.00	\$0.00	\$0.00
UNITED MEAT & DELI	\$239.76	\$239.76	\$0.00	\$0.00	\$0.00
US ECOLOGY MICHIGAN	\$ (3,946.91)	\$0.00	\$0.00	\$ (3,946.91)	\$0.00
USHER OIL SERVICES	\$7,775.59	\$7,775.59	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS	\$15,231.39	\$15,231.39	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 6/30/2018

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
VERNDALE PRODUCTS, INC.	\$7,121.38	\$7,121.38	\$0.00	\$0.00	\$0.00
VERNOR FOOD PRODUCTS	\$64.69	\$64.69	\$0.00	\$0.00	\$0.00
WIGLEY'S MEAT PROCESS	\$741.83	\$741.83	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$956.20	\$956.20	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$166.41	\$166.41	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO	\$6,761.49	\$6,761.49	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO.	\$2,882.69	\$2,882.69	\$0.00	\$0.00	\$0.00
WOODWARD AVENUE BREWERS	\$158.59	\$158.59	\$0.00	\$0.00	\$0.00
TOTAL POLLUTANT SURCHARGE ACCOUNTS	\$1,094,448.22	\$665,279.80	\$135,454.77	\$38,803.21	\$254,910.44



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Kim Garland, Public Finance Management Professional

Re: Trust Receipt & Disbursement Report for Activity through May 31, 2018

Background: The trusts established pursuant to the Master Bond Ordinance (MBO) outline a flow of funds that governs the priority of the application of cash receipts from both the regional wholesale (i.e. Great Lakes Water Authority or GLWA) and local retail (i.e. Detroit Water & Sewerage Department) activities which are further separated by the water system and the sewage disposal system.¹

The purpose of this report is to provide an ongoing status of the net cash flow of both organizations (GLWA and DWSD) to fund their allocated share of Master Bond Ordinance requirements in accordance with the leases for the regional systems. This report begins with the operational effective date of the GLWA on January 1, 2016.

Analysis: The attached tables summarize activity along three lines: Local System Activity, Regional System Activity, and Combined Activity accompanied by a series of charts that further breakdown this activity by fund, inflows, and outflows.

Although the collection rate between water and sewer vary slightly each month, there is overall consistency in cash receipts between the regional and local systems. The local sewage disposal (sewer) system shortfall continues to be tempered through use of the sewer lease payment to offset allocated debt obligations. Overall, the combined systems report a modest gain in the surplus of receipts over Operations & Maintenance and Master Bond Ordinance obligations for the period. Discussions continue regarding plans to address the local sewer system shortfall.

Proposed Action: Receive and file report.

¹ The Master Bond Ordinance is online at <http://www.glwater.org/board/organizational-documents/> (see "compiled" documents dated August 10, 2016. A graphic depiction of the MBO Flow of Funds is at <http://www.glwater.org/wp-content/uploads/2015/11/Master-Bond-Ordinance-Flow-of-Funds-Graphic-version10-10-16.pdf>).

Great Lakes Water Authority
Combined System Trust Receipts & Disbursements - Budget to Actual
January 1, 2016 thru May 31, 2018

Month	Combined Systems Cash Receipts			Lease Consideration - Debt Contribution			Combined Systems O&M and MBO Disbursements		
	Water	Sewer	Total	Water	Sewer	Total	Water	Sewer	Total
YE 6/30/2016	167,829,164	190,590,157	358,419,321	1,163,500	9,995,800	11,159,300	187,167,809	244,787,133	431,954,942
YE 6/30/2017	451,152,102	565,794,250	1,016,946,351	-	-	-	365,157,116	509,934,213	875,091,329
Jul-17	36,585,263	42,898,678	79,483,941	0	0	0	31,210,257	44,994,696	76,204,953
Aug-17	34,933,378	48,101,886	83,035,264	0	0	0	30,276,500	43,675,966	73,952,466
Sep-17	35,859,078	43,968,452	79,827,530	0	0	0	31,039,943	45,104,687	76,144,630
Oct-17	48,057,330	47,313,510	95,370,840	0	0	0	31,234,808	44,966,141	76,200,949
Nov-17	35,495,279	43,561,872	79,057,150	0	0	0	31,580,843	45,802,554	77,383,397
Dec-17	30,601,911	44,937,130	75,539,041	0	0	0	31,171,398	45,063,147	76,234,545
Jan-18	40,295,215	42,059,936	82,355,151	0	0	0	31,165,749	45,122,411	76,288,160
Feb-18	28,041,937	49,202,791	77,244,728	0	0	0	31,104,517	45,072,072	76,176,589
Mar-18	36,262,439	40,323,306	76,585,745	0	2,291,667	2,291,667	31,129,074	45,094,802	76,223,876
Apr-18	28,035,129	45,574,350	73,609,479	0	2,291,667	2,291,667	31,146,275	45,180,461	76,326,736
May-18	39,744,822	35,379,400	75,124,222	0	2,291,667	2,291,667	31,181,015	45,203,935	76,384,950
YTD 5/31/2018	393,911,780	483,321,311	877,233,091	-	6,875,001	6,875,001	342,240,379	495,280,872	837,521,251
	\$ 1,012,893,045	\$ 1,239,705,717	\$ 2,252,598,763	\$ 1,163,500	\$ 16,870,801	\$ 18,034,301	\$ 894,565,305	\$ 1,250,002,218	\$ 2,144,567,523

Month	Difference (shortfall)/surplus			Budgeted Requirements (Reference)		
	Water	Sewer	Total	Water	Sewer	Total
YE 6/30/2016	(18,175,146)	(44,201,176)	(62,376,322)	201,415,900	256,042,100	457,458,000
YE 6/30/2017	85,994,986	55,860,037	141,855,022	405,345,500	544,613,400	949,958,900
Jul-17	5,375,006	(2,096,018)	3,278,988	33,894,158	45,892,383	79,786,542
Aug-17	4,656,878	4,425,920	9,082,798	33,894,158	45,892,383	79,786,542
Sep-17	4,819,135	(1,136,235)	3,682,900	33,894,158	45,892,383	79,786,542
Oct-17	16,822,522	2,347,369	19,169,891	33,894,158	45,892,383	79,786,542
Nov-17	3,914,435	(2,240,682)	1,673,753	33,894,158	45,892,383	79,786,542
Dec-17	(569,487)	(126,017)	(695,504)	33,894,158	45,892,383	79,786,542
Jan-18	9,129,466	(3,062,475)	6,066,991	33,894,158	45,892,383	79,786,542
Feb-18	(3,062,580)	4,130,719	1,068,139	33,894,158	45,892,383	79,786,542
Mar-18	5,133,365	(2,479,829)	2,653,536	33,894,158	45,892,383	79,786,542
Apr-18	(3,111,146)	2,685,556	(425,590)	33,894,158	45,892,383	79,786,542
May-18	8,563,807	(7,532,869)	1,030,939	33,894,158	45,892,383	79,786,542
YTD 5/31/2018	51,671,401	(5,084,560)	46,586,841	372,835,742	504,816,217	877,651,958
	\$ 119,491,241	\$ 6,574,300	\$ 126,065,541	\$ 979,597,142	\$ 1,305,471,717	\$ 2,285,068,858

Great Lakes Water Authority
Local System Trust Receipts & Disbursements - Budget to Actual
January 1, 2016 thru May 31, 2018

Month	Retail System Cash Receipts			Lease Consideration - Debt Contribution			Revenue Requirements due to GLWA		
	Water	Sewer	Total	Water	Sewer	Total	Water	Sewer	Total
YE 6/30/2016	26,201,881	65,256,734	91,458,615	1,163,500	9,995,800	11,159,300	6,833,500	96,981,750	103,815,250
YE 6/30/2017	114,210,305	285,398,467	399,608,772	-	-	-	15,490,300	188,809,372	204,299,672
Jul-17	8,358,980	18,584,448	26,943,428	0	0	0	1,260,883	15,150,489	16,411,372
Aug-17	9,512,385	24,266,091	33,778,476	0	0	0	1,260,883	15,148,550	16,409,433
Sep-17	8,952,012	21,323,940	30,275,952	0	0	0	1,260,883	15,148,770	16,409,653
Oct-17	9,531,471	23,791,664	33,323,135	0	0	0	1,260,883	15,151,126	16,412,009
Nov-17	8,053,735	19,491,771	27,545,506	0	0	0	1,260,883	15,137,426	16,398,309
Dec-17	8,271,571	19,531,290	27,802,861	0	0	0	1,260,883	15,135,108	16,395,991
Jan-18	8,075,038	18,317,964	26,393,002	0	0	0	1,260,883	15,136,391	16,397,274
Feb-18	6,443,649	17,507,247	23,950,896	0	0	0	1,260,883	15,135,893	16,396,776
Mar-18	8,292,929	23,027,287	31,320,216	0	2,291,667	2,291,667	1,260,883	15,136,739	16,397,622
Apr-18	9,243,981	16,173,870	25,417,852	0	2,291,667	2,291,667	1,260,883	15,136,070	16,396,953
May-18	8,989,292	18,356,200	27,345,492	0	2,291,667	2,291,667	1,260,883	15,135,927	16,396,810
YTD 5/31/2018	93,725,043	220,371,772	314,096,815	-	6,875,001	6,875,001	13,869,713	166,552,489	180,422,202
	\$ 234,137,229	\$ 571,026,973	\$ 805,164,202	\$ 1,163,500	\$ 16,870,801	\$ 18,034,301	\$ 36,193,513	\$ 452,343,611	\$ 488,537,124

Month	Local System O&M and MBO Disbursements			Difference (shortfall)/surplus			Budgeted Requirements (Reference)		
	Water	Sewer	Total	Water	Sewer	Total	Water	Sewer	Total
YE 6/30/2016	42,139,552	35,311,350	77,450,902	(21,607,671)	(57,040,566)	(78,648,237)	42,139,900	35,311,100	77,451,000
YE 6/30/2017	76,888,944	69,074,600	145,963,544	21,831,061	27,514,495	49,345,556	74,132,300	72,903,200	147,035,500
Jul-17	6,807,834	7,850,191	14,658,025	290,263	(4,416,232)	(4,125,969)	6,550,883	6,866,492	13,417,375
Aug-17	6,807,834	7,850,191	14,658,025	1,443,668	1,267,350	2,711,018	6,550,883	6,866,492	13,417,375
Sep-17	6,807,834	7,850,191	14,658,025	883,295	(1,675,021)	(791,726)	6,550,883	6,866,492	13,417,375
Oct-17	6,807,834	7,850,191	14,658,025	1,462,754	790,347	2,253,101	6,550,883	6,866,492	13,417,375
Nov-17	6,983,027	7,975,498	14,958,525	(190,175)	(3,621,153)	(3,811,328)	6,550,883	6,866,492	13,417,375
Dec-17	6,807,834	7,850,191	14,658,025	202,854	(3,454,009)	(3,251,155)	6,550,883	6,866,492	13,417,375
Jan-18	6,807,834	7,850,191	14,658,025	6,321	(4,668,618)	(4,662,297)	6,550,883	6,866,492	13,417,375
Feb-18	6,807,834	7,850,191	14,658,025	(1,625,068)	(5,478,837)	(7,103,905)	6,550,883	6,866,492	13,417,375
Mar-18	6,807,834	7,850,191	14,658,025	224,212	2,332,024	2,556,236	6,550,883	6,866,492	13,417,375
Apr-18	6,113,232	7,641,892	13,755,124	1,869,866	(4,312,425)	(2,442,558)	6,550,883	6,866,492	13,417,375
May-18	6,113,232	7,641,892	13,755,124	1,615,177	(2,129,952)	(514,775)	6,550,883	6,866,492	13,417,375
YTD 5/31/2018	73,672,163	86,060,810	159,732,973	6,183,166	(25,366,526)	(19,183,359)	72,059,717	75,531,408	147,591,125
	\$ 192,700,660	\$ 190,446,760	\$ 383,147,419	\$ 6,406,556	\$ (54,892,596)	\$ (48,486,040)	\$ 188,331,917	\$ 183,745,708	\$ 372,077,625

Report Notes: This report reflects actual cash receipts received. These values will not tie to revenues reported on the CAFR due to that difference.

Actual O&M/MBO Disbursements differ from budget in FY 17 & FY18 to date as a result of the use of lease payments to cover budgeted expenses and adjustments made for actual pension expense.

Great Lakes Water Authority
Regional System Trust Receipts & Disbursements - Budget to Actual
January 1, 2016 thru May 31, 2018

Month	Regional System Cash Receipts			Regional System O&M Disbursements			Regional System MBO Disbursements		
	Water	Sewer	Total	Water	Sewer	Total	Water	Sewer	Total
<i>YE 6/30/2016</i>	<i>148,460,783</i>	<i>222,315,173</i>	<i>370,775,955</i>	<i>58,846,800</i>	<i>92,551,800</i>	<i>151,398,600</i>	<i>86,181,457</i>	<i>116,923,983</i>	<i>203,105,440</i>
<i>YE 6/30/2017</i>	<i>352,432,097</i>	<i>469,205,155</i>	<i>821,637,251</i>	<i>117,927,700</i>	<i>186,682,800</i>	<i>304,610,500</i>	<i>170,340,472</i>	<i>254,176,813</i>	<i>424,517,285</i>
Jul-17	29,487,166	39,464,719	68,951,885	10,634,217	16,825,283	27,459,500	13,768,206	20,319,222	34,087,428
Aug-17	26,681,875	38,984,345	65,666,220	10,634,217	16,825,283	27,459,500	12,834,449	19,000,492	31,834,941
Sep-17	28,167,949	37,793,282	65,961,231	10,634,217	16,825,283	27,459,500	13,597,892	20,429,213	34,027,105
Oct-17	39,786,742	38,672,972	78,459,714	10,634,217	16,825,283	27,459,500	13,792,757	20,290,667	34,083,424
Nov-17	28,702,426	39,207,527	67,909,953	10,645,017	16,810,883	27,455,900	13,952,799	21,016,173	34,968,972
Dec-17	23,591,223	40,540,948	64,132,171	10,634,217	16,825,283	27,459,500	13,729,347	20,387,673	34,117,020
Jan-18	33,481,060	38,878,363	72,359,423	10,634,217	16,825,283	27,459,500	13,723,698	20,446,937	34,170,635
Feb-18	22,859,171	46,831,437	69,690,608	10,634,217	16,825,283	27,459,500	13,662,466	20,396,598	34,059,064
Mar-18	29,230,393	32,432,758	61,663,151	10,634,217	16,825,283	27,459,500	13,687,023	20,419,328	34,106,351
Apr-18	20,052,031	44,536,550	64,588,581	10,634,217	16,825,283	27,459,500	14,398,826	20,713,286	35,112,112
May-18	32,016,414	32,159,127	64,175,541	10,634,217	16,825,283	27,459,500	14,433,566	20,736,760	35,170,326
<i>YTD 5/31/2018</i>	<i>314,056,450</i>	<i>429,502,028</i>	<i>743,558,478</i>	<i>116,987,187</i>	<i>185,063,713</i>	<i>302,050,900</i>	<i>151,581,029</i>	<i>224,156,349</i>	<i>375,737,378</i>
	\$ 814,949,329	\$ 1,121,022,355	\$ 1,935,971,685	\$ 293,761,687	\$ 464,298,313	\$ 758,060,000	\$ 408,102,958	\$ 595,257,145	\$ 1,003,360,103

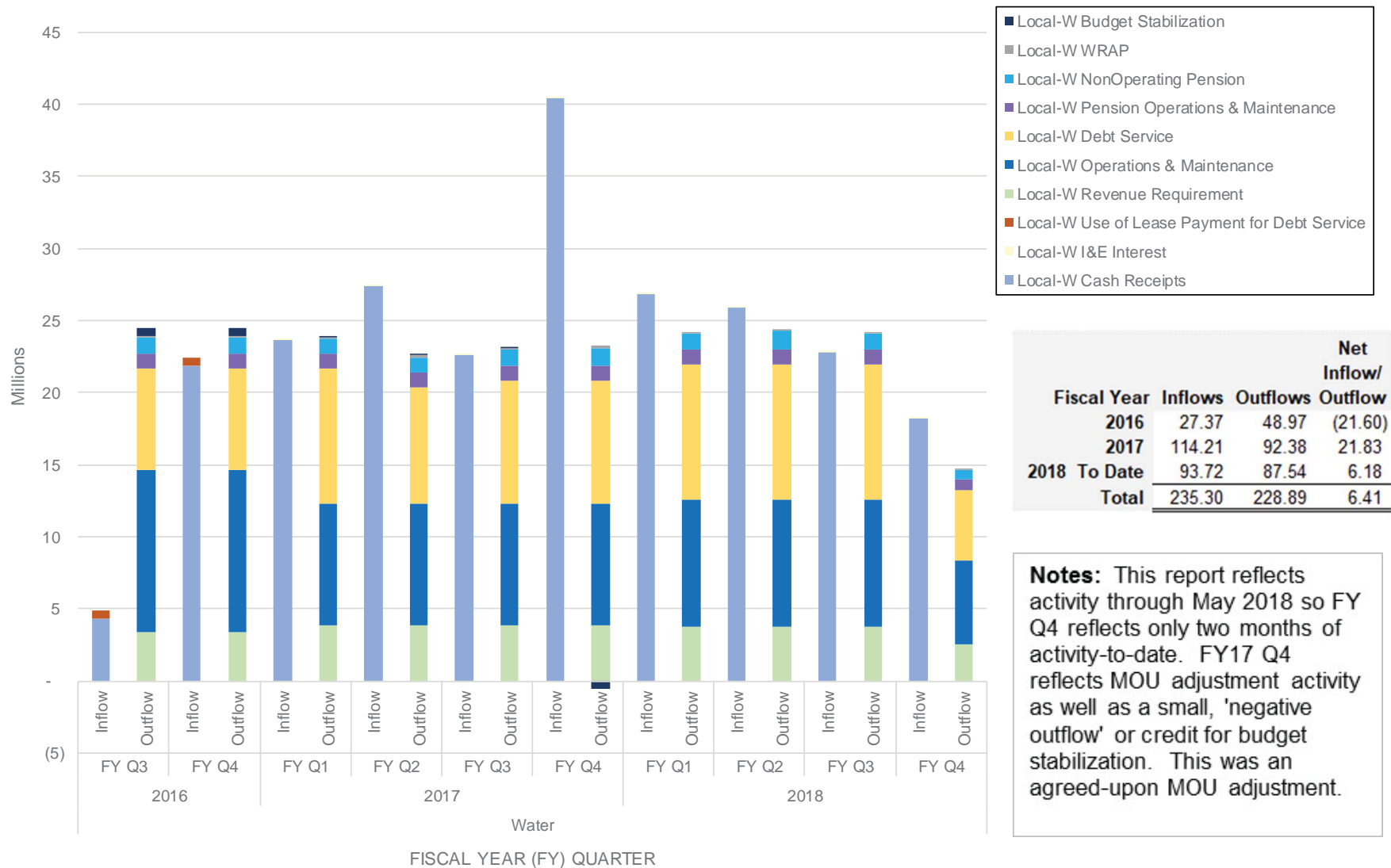
Month	Difference (shortfall)/surplus			Budgeted Requirements (Reference)		
	Water	Sewer	Total	Regional System O&M and MBO Requirements		
<i>YE 6/30/2016</i>	<i>3,432,526</i>	<i>12,839,390</i>	<i>16,271,915</i>	<i>159,276,000</i>	<i>220,731,000</i>	<i>380,007,000</i>
<i>YE 6/30/2017</i>	<i>64,163,925</i>	<i>28,345,542</i>	<i>92,509,466</i>	<i>331,213,200</i>	<i>471,710,200</i>	<i>802,923,400</i>
Jul-17	5,084,743	2,320,214	7,404,957	27,343,275	39,025,892	66,369,167
Aug-17	3,213,209	3,158,570	6,371,779	27,343,275	39,025,892	66,369,167
Sep-17	3,935,840	538,786	4,474,626	27,343,275	39,025,892	66,369,167
Oct-17	15,359,768	1,557,022	16,916,790	27,343,275	39,025,892	66,369,167
Nov-17	4,104,610	1,380,471	5,485,081	27,343,275	39,025,892	66,369,167
Dec-17	(772,341)	3,327,992	2,555,651	27,343,275	39,025,892	66,369,167
Jan-18	9,123,145	1,606,143	10,729,288	27,343,275	39,025,892	66,369,167
Feb-18	(1,437,512)	9,609,556	8,172,044	27,343,275	39,025,892	66,369,167
Mar-18	4,909,153	(4,811,853)	97,300	27,343,275	39,025,892	66,369,167
Apr-18	(4,981,012)	6,997,981	2,016,969	27,343,275	39,025,892	66,369,167
May-18	6,948,631	(5,402,917)	1,545,714	27,343,275	39,025,892	66,369,167
<i>YTD 5/31/2018</i>	<i>45,488,234</i>	<i>20,281,965</i>	<i>65,770,200</i>	<i>300,776,025</i>	<i>429,284,808</i>	<i>730,060,833</i>
	\$ 113,084,685	\$ 61,466,897	\$ 174,551,581	\$ 791,265,225	\$ 1,121,726,008	\$ 1,912,991,233

Report Notes: This report reflects actual cash receipts received. These values will not tie to revenues reported on the CAFR due to that difference.

Actual O&M/MBO Disbursements differ from budget in FY 17 & FY18 to date as a result of the use of lease payments to cover budgeted expenses, adjustments made for actual pension expense and because debt payments are net of interest earned.

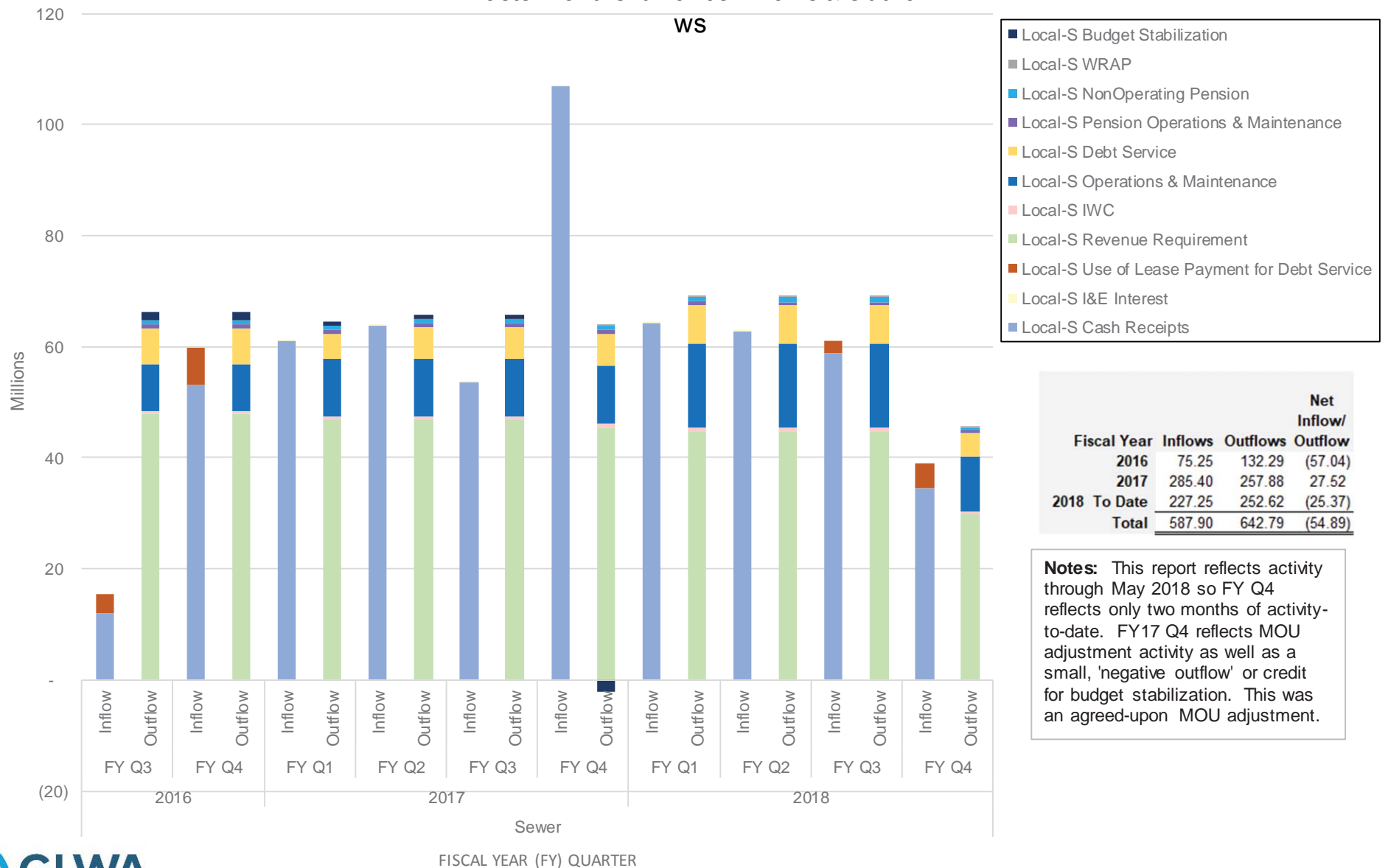
Revenue Requirement Reporting

Local Water System (DWSD)
Master Bond Ordinance Inflows and Outflows



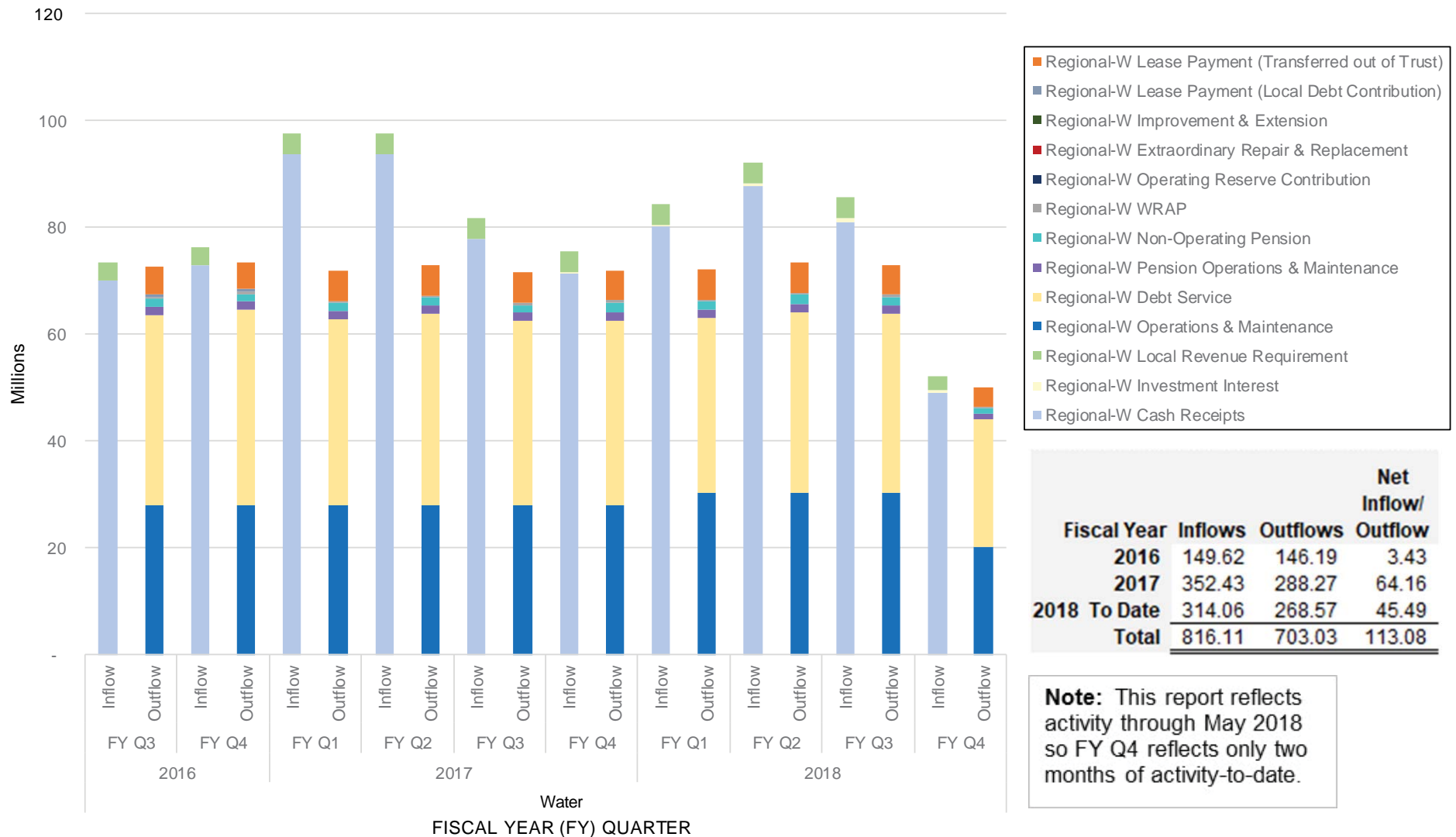
Revenue Requirement Reporting

Local Sewer System (DWSD) Master Bond Ordinance Inflows & Outflow



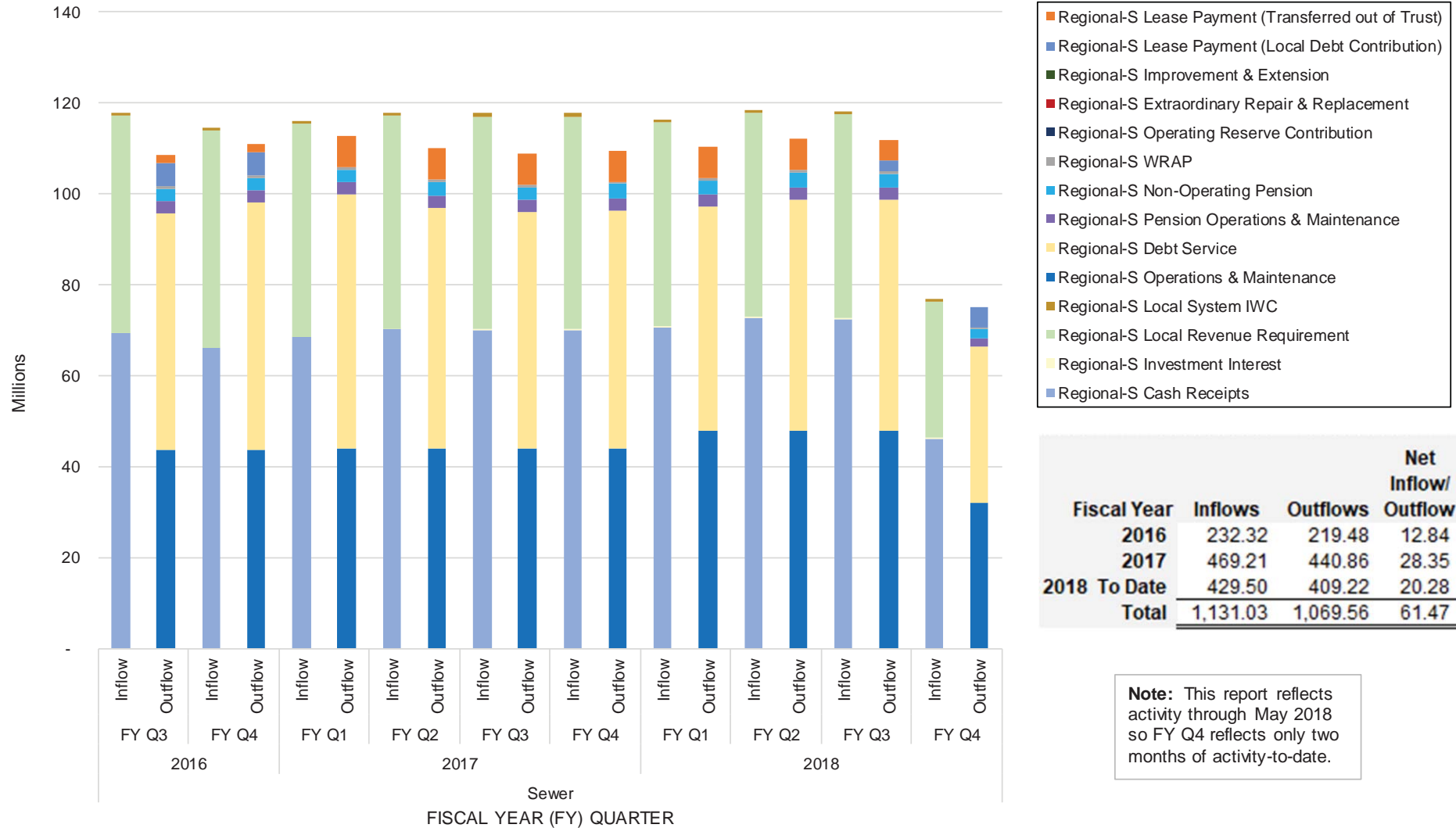
Revenue Requirement Reporting

Regional Water System Master Bond Ordinance Inflows and Outflows



Revenue Requirement Reporting

Regional Sewer System Master Bond Ordinance Inflows & Outflows





Audit Committee

Friday, July 20, 2018 at 8:00 a.m.

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

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
 - A. June 15, 2018 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
7. NEW BUSINESS
 - A. Proposed Resolution Regarding Approval of Series Ordinance (Page 8)
Authorizing Issuance and Sale of Water Supply System Revenue Refunding Bonds
an Amount Not to Exceed \$225,000,000 (Ordinance 2018-02)
 - B. Resolution Regarding Approval of Series Ordinance Authorizing (Page 33)
Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding
Bonds an Amount Not to Exceed \$325,000,000 (Ordinance 2018-03)
 - C. 2018 Bond Transaction Update (verbal)
 - D. Cash Analysis – Long-term Planning (Binder 2 Page 1)
 - E. Financial Reporting Schedule (Binder 2 Page 6)
 - F. Wastewater Charges Outreach Committee Update (verbal)
 - G. Proposed Amendments to the Great Lakes Water Authority (Page 61)
Investment Policy
 - H. Proposed Audit Fee Change Order for the FY 2017 Audit (Binder 2 Page 10)
 - I. Update: Drinking Water Revolving Fund (DWRP) Project Plan Submittals for
the Lake Huron Water Treatment Plant Sludge System Improvements Project
and the Waterworks Park to Northeast Transmission Main Project (Binder 2
Page 15)
8. REPORTS
 - A. Quarterly Investment Report as of March 31, 2018 (Page 82)
 - B. Master Bond Ordinance Monthly Cash Transfers through (Page 111)
June 1, 2018
 - C. Monthly Revenue & Collections Report for May 2018 (Page 116)
 - D. Trust Receipts & Disbursements Report for May 2018 (Page 140)
9. CFO Update (verbal)
10. LOOK AHEAD

Next Audit Committee Meeting – August 17, 2018 at 8 am (Regular Meeting)

Binder 1 - Items highlighted in gray.

Binder 2 – Items highlighted in blue.

11. INFORMATION
12. OTHER MATTERS
13. ADJOURNMENT



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Cash Analysis – Long-term Planning

Background: Over the past several months, the Great Lakes Water Authority (GLWA) Audit Committee has been presented with various analysis as we work through the long-term financial plan to ensure sustainability (i.e. the FY 2030 Plan).

Analysis: Key elements of the financial plan are reducing GLWA's long-term financial obligations, proactively addressing financial commitments to the Detroit General Retirement System, and a balanced debt vs. pay-as-you-go capital financing program while preserving the commitment to an annual revenue requirement ceiling of 4%.

This month, we would like to review GLWA's cash balances, restrictions on those balances, and potential priorities for the use of cash for future capital investment as well as reducing long-term liabilities. Attached for this discussion are 1) the FY 2017 cash and investment footnote noting restrictions and 2) and analysis from The Foster Group based upon an internal, preliminary FY 2018 analysis calculating similar cash balance restrictions.

Proposed Action: Receive and file report.

GREAT LAKES WATER AUTHORITY

Notes To Financial Statements

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

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

TFG
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MEMORANDUM

GLWA Cash and Investment Balance Review

July 20, 2018

To: Nicolette Bateson

From: Bart Foster

You have asked for preliminary observations regarding estimated unrestricted GLWA cash and investment balances. The attached exhibits summarize our initial analysis, which supports the next iteration of the scenario projections we prepared and discussed at the May Audit Committee meeting. *Those* initial projections utilized audited FY 2017 information for available cash and investment balances and explored policy decisions regarding ongoing application of such balances. *This* analysis evaluates preliminary FY 2018 cash and investment balances and further explores policy considerations regarding use of those balances.

As we have explored in prior discussions with the Audit Committee, analyses of the adequacy of cash and investment balances are often evaluated via a “days cash on hand” metric. Schedules included in the GLWA audited financial statements include evaluation of this metric utilizing **actual audited** operating expense as a measure of “days” of required operating expense. We believe that this approach is appropriate for purposes of establishing peer comparisons, etc. However, we submit that for purposes of evaluating policy decisions for financial planning the appropriate relative operating expense metric is **budgeted** operating expense, and that this amount should include the operating portion of the legacy pension reimbursement – as long as such amounts are considered an “operating expense” in the various guiding documents and requirements. This approach is outlined on Lines 1 through 3 of the attached exhibit. In essence, the approved FY 2019 Budget establishes a “daily operating cash requirement” of approximately \$349,600 for the Water System and \$553,200 for the Sewer System.

On Line 4 of the exhibit, we have presented the reported (for FY 2017, as reflected in the audited financial statements) and estimated (for FY 2018, unaudited) cash and investment balances in the “unrestricted” GLWA funds and accounts. On Lines 5 through 8, we “designate” application of these available balances to specific Funds established by the Master Bond Ordinance, in accordance with our understanding of current GLWA policy positions. A brief introduction:

- Line 5 - Designated to O&M Minimum Balance: We first designate 120 days of budgeted operating expense as a minimum allocation to the O&M Fund for “working capital purposes.”
 - *The 120 days aligns with our understanding of current GLWA management policy positions.*
- Line 6 – Designated to ER&R Balance: We next designate balances to the current policy position on the minimum ER&R balances.
 - *These balances were established as part of the recent GLWA / DWSD discussions that resulted in the 2018 MOU.*
- Line 7 - Designated to Minimum I&E Balance: We next designate balances to the current policy position regarding carryover balances for each GLWA I&E Fund.
 - *As noted in our May scenario planning analyses, the preliminary policy position establishes a minimum carryover balance of \$90 million for each system.*
- Line 8 - The remaining “unrestricted” cash and investment balances that are “**undesignated**” amounts available to the Water and Sewer Systems.
 - *Based on the assumptions above, our analysis results in estimated 6/30/18 “undesignated” cash and investment balances equating to an adjusted “undesignated days cash on hand” metric of 440 for the Water System and 14 for the Sewer System.*

The estimated 6/30/18 amounts shown on Line 8 (\$153.8 million for Water and \$7.7 million for Sewer) are intended to reflect estimated “**undesignated** liquidity” balances that can be directed towards cash financing of capital improvements or other financing purposes. Obviously changing the assumptions regarding policy decisions outlined herein would result in alternative “**undesignated**” balances.

We are prepared to elaborate on our initial analysis at the July 20 Audit Committee Meeting and to further discuss this matter at your convenience.

Preliminary Review of Available "Unrestricted" Cash and Investment Balances

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Water System			Sewer System			Combined	
	<u>Annual</u>	<u>Daily</u>		<u>Annual</u>	<u>Daily</u>		<u>Annual</u>	<u>Daily</u>
		(1)/365			(4)/365			(7)/365
Basis for "Days Cash"								
1 FY 2019 Budgeted Operating Expense	121,562,600	333,000		191,079,400	523,500		312,642,000	856,500
2 FY 2019 Operating Pension Reimbursement	6,048,000	16,600		10,824,000	29,700		16,872,000	46,300
3 Total O&M Fund Requirements	127,610,600	349,600		201,903,400	553,200		329,514,000	902,800
	Water Cash & Investment Balances				Sewer Cash & Investment Balances			
	Reported @ 6/30/17		Unaudited Estimate @ 6/30/18		Reported @ 6/30/17		Unaudited Estimate @ 6/30/18	
	<u>Amount</u>	<u>Days</u>	<u>Amount</u>	<u>Days</u>				
4 "Unrestricted" Cash & Investment Balance	267,335,558	765	313,263,626	896	205,179,312	371	208,063,267	376
5 Designated to O&M Minimum Balance (a)	41,952,000	120	41,952,000	120	66,384,000	120	66,384,000	120
6 Designated to ER&R Balance (b)	27,500,000	79	27,500,000	79	44,000,000	80	44,000,000	80
7 Designated to Minimum I&E Balance (c)	90,000,000	257	90,000,000	257	90,000,000	163	90,000,000	163
8 "Undesignated" Available Balance	107,883,558	309	153,811,626	440	4,795,312	9	7,679,267	14

(a) Target minimum carrying balance in O&M Fund for working capital purposes.

(b) Frozen by policy at this amount pending potential future modifications to Master Bond Ordinance.

(c) Target minimum carrying balance in I&E Fund.



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Lisa Mancini, Interim Financial Planning & Analysis Manager

Re: Financial Reporting Schedule and Planning Calendar

Background & Analysis: The Great Lakes Water Authority (GLWA) Financial Services Area is working toward a standard, comprehensive monthly reporting package which will be presented at the monthly Audit Committee Meetings beginning in August 2018. This package will include, but not be limited to, the following information.

- ✓ Financial Statements (including a crosswalk from revenue requirement basis to accrual basis of monthly financial activity)
- ✓ Budget to Actual Analysis (including operating area input)
- ✓ Revenue Billings and Collections Report
- ✓ Cash Inflows/Outflows Report
- ✓ Treasury Report
- ✓ Construction Work in Progress Summary

Attached is a timeline for the creation and distribution of the consolidated report.

In addition to the monthly reporting of FY 2019 activity, as described above, work has begun on the development of the FY 2020 through FY 2024 Financial Plan which includes the FY 2020 & FY 2021 Biennial Budget and Five-year Financial Plan, the Five-year Capital Improvement Plan (CIP), and the Schedule of Revenues and Charges. The following are key dates in the development and presentation of the FY 2020 through FY 2024 Financial Plan.

Customer Charges Work Group Meetings (previously posted on the Outreach calendar)

- ✓ October 25, 2018 – Rollout Meeting #1: Capital Improvement Plan (CIP)
- ✓ November 29, 2018 – Rollout Meeting #2: Units of Service

- ✓ January 10, 2019 – Rollout Meeting #3: Proposed FY 2020 Revenue Requirements (FY 2020 through FY 2024 Budget/Financial Plan)
- ✓ January 24, 2019 – Rollout Meeting #4: Propose FY 2020 Service Charges

The above sequence of meetings will allow for the Public Hearing to be held during the Board of Directors meeting which will take place in February 2019 (date to be determined). During this meeting the key sections of the FY 2020 through FY 2024 Financial Plan (Revenue Requirements, CIP, and Service Charges) will be presented with the proposal of adoption.

The timing of the Board meeting is important to meet the following applicable statutory and contractual requirements.

- A. **Uniform Budgeting and Accounting Act, Act 2 of 1968, Section 141.434**, “Before final passage of a general appropriations act by the legislative body, a public hearing shall be held as required by 1963 (2nd Ex Sess) PA 43, MCL 141.411 to 141.415, and the open meetings act, 1976 PA 267, MCL 15.261 to 15.275.” (For purposes of Public Act 2, the GLWA Board is the legislative body.)
- B. **Home Rule City Act, Act 279 of 1909, Section 117.5e**, “Municipal water or sewage system; annual audit; public hearing before proposed rate increase. A municipal water or sewage system established by a city incorporated under this act which serves more than 40% of the population of the state shall:(b) Hold at least 1 public hearing at least 120 days before a proposed rate increase is scheduled to take effect. ...A final vote by the governing body of the city to implement a proposed rate increase shall not be taken until the hearings provided for in this subdivision are concluded and the results of those hearings are considered by the city's governing body.” (Emphasis added)

It should be noted that the Home Rule City Act does not apply to GLWA. It is relevant to GLWA’s planning cycle, however, as it is referenced in the *Wholesale Customer Model Water Contract* as noted below.

- C. **GLWA Wholesale Customer Model Water Contract Section 7.02** provides: “Notification of Rates. As soon as possible in the ratemaking process, the Board shall provide information on proposed rates and the draft data and information used in the calculation of proposed rates in a format that will enable Customer to assist in the ratemaking process. Not less than thirty calendar days prior to the hearing required by Act 279, the Board shall provide Customer with written notice of a proposed rate and the underlying data used to calculate the rate. The Board

shall meet with Customer to review the rate and the data.” (Emphasis added; Act 279 is the Home Rule City Act noted above.)

Proposed Action: Receive and file report.

Great Lakes Water Authority
Monthly Financial Reporting Cycle
As of July 20, 2018

Month Ending	Financial Statements Drafted (FR&A)	FP&A Budget Review Meetings with Internal Customers (CEO may rotate into review meetings)		Monthly CWIP Summary Sent to Internal Customers	FP&A Board Report due to CFO	Financial Statements with Crosswalk due to CFO	Revenue Reports (Public Finance) due to CFO	Cash Inflows/ Outflows due to CFO (Kim)	Monthly Treasury Report due to CFO (Deirdre)	Monthly CWIP Summary due to CFO	Consolidated Report Complete	Audit Committee Meeting
		Start	End									
4/30/2018	5/30/2018	5/31/2018	6/10/2018	6/2/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/14/2018	6/24/2018	7/20/2018
5/31/2018	6/30/2018	7/1/2018	7/11/2018	7/3/2018	7/15/2018	7/15/2018	7/15/2018	7/15/2018	7/15/2018	7/15/2018	7/25/2018	8/17/2018
6/30/2018	7/30/2018	7/31/2018	8/10/2018	8/2/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/24/2018	9/21/2018
7/31/2018	8/30/2018	8/31/2018	9/10/2018	9/2/2018	9/14/2018	9/14/2018	9/14/2018	9/14/2018	9/14/2018	9/14/2018	9/24/2018	10/19/2018
8/31/2018	9/30/2018	10/1/2018	10/11/2018	10/3/2018	10/15/2018	10/15/2018	10/15/2018	10/15/2018	10/15/2018	10/15/2018	10/25/2018	11/16/2018
9/30/2018	10/30/2018	10/31/2018	11/10/2018	11/2/2018	11/14/2018	11/14/2018	11/14/2018	11/14/2018	11/14/2018	11/14/2018	11/24/2018	12/21/2018
10/31/2018	11/30/2018	12/1/2018	12/11/2018	12/3/2018	12/15/2018	12/15/2018	12/15/2018	12/15/2018	12/15/2018	12/15/2018	12/25/2018	TBD
11/30/2018	12/30/2018	12/31/2018	1/10/2019	1/2/2019	1/14/2019	1/14/2019	1/14/2019	1/14/2019	1/14/2019	1/14/2019	1/24/2019	TBD
12/31/2018	1/30/2019	1/31/2019	2/10/2019	2/2/2019	2/14/2019	2/14/2019	2/14/2019	2/14/2019	2/14/2019	2/14/2019	2/24/2019	TBD
1/31/2019	3/2/2019	3/3/2019	3/13/2019	3/5/2019	3/17/2019	3/17/2019	3/17/2019	3/17/2019	3/17/2019	3/17/2019	3/27/2019	TBD
2/28/2019	3/30/2019	3/31/2019	4/10/2019	4/2/2019	4/14/2019	4/14/2019	4/14/2019	4/14/2019	4/14/2019	4/14/2019	4/24/2019	TBD
3/31/2019	4/30/2019	5/1/2019	5/11/2019	5/3/2019	5/15/2019	5/15/2019	5/15/2019	5/15/2019	5/15/2019	5/15/2019	5/25/2019	TBD
4/30/2019	5/30/2019	5/31/2019	6/10/2019	6/2/2019	6/14/2019	6/14/2019	6/14/2019	6/14/2019	6/14/2019	6/14/2019	6/24/2019	TBD
5/31/2019	6/30/2019	7/1/2019	7/11/2019	7/3/2019	7/15/2019	7/15/2019	7/15/2019	7/15/2019	7/15/2019	7/15/2019	7/25/2019	TBD
6/30/2019	7/30/2019	7/31/2019	8/10/2019	8/2/2019	8/14/2019	8/14/2019	8/14/2019	8/14/2019	8/14/2019	8/14/2019	8/24/2019	TBD



Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

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

Re: Proposed Audit Fee Change Order for the FY 2017 Audit

Background: The firm of Rehmann Robson was selected as auditors for the Great Lakes Water Authority (GLWA) in January 2017.

Analysis: The audit for FY 2017 was started in October 2017. Audit fieldwork and draft financial statements were largely completed in November 2017. Concurrently, discussions related to a Memorandum of Understanding (MOU) with the Detroit Water & Sewerage Department (DWSD) were underway. While it was anticipated that there would be a financial impact, the dollar amount was not determinable until April 2018 when the boards for both entities approved an MOU Term Sheet. The technical nature of the MOU, inefficiencies from the delay, and related additional effort by all parties translate into a reasonable request by Rehmann Robson for additional compensation. Attached is an analysis from the auditors providing an additional request for \$48,500 which is net of a negotiated discount of 7.5%.

Budget Impact: To the extent that there are not savings in the Financial Reporting & Accounting cost center, a budget amendment from unallocated reserve would be required. There are sufficient funds in that budget reserve.

Proposed Action: Move that the Audit Committee recommends that the Board of Directors of the Great Lakes Water Authority approve a change order for audit services contract with Rehmann Robson in the amount of \$48,500 for the FY 2017 audit.

Great Lakes Water Authority Fees for Fiscal 2017 Audit Incremental Work/Rework

Going into the fiscal 2017 audit, we had anticipated a much smoother process than the prior year initial audit, and that was indeed the case through the first two months of the year-end fieldwork, which began in late October. It then became apparent prior to the end of the calendar year (and leading up to the State's original six month reporting deadline) that an extension would be necessary to address Director Daddow's "Current and Legacy Business Issues" and allow for the negotiations with COD/DWSD to resolve various lease issues (most of which were highlighted in Director Daddow's Current and Legacy Business Issues).

Taking a lesson from the prior audit, we separately coded our time to distinguish the regular audit tasks from the extra work/rework to specifically identify the out-of-scope work (or additional time for the incremental work for the meetings, conference calls, workpaper changes, report changes and other work/rework caused by the "issues" and MOU). That detail is attached along with a summary.

Per the attached, we identified approximately 150 hours (heavily skewed towards partner/principal time given the nature of the tasks, with the remainder being manager time) of out-of-scope work time for fees of approximately \$52,400 including expenses. We would propose a discount of roughly 7.5% to a rounded amount of \$48,500. Accordingly, we request approval of this amount.

Mark Kettner
Engagement signing principal

Great Lakes Water Authority
Fees for Fiscal 2017 Audit - Incremental Work/Rework

Sum of Amount	Column Labels				
Row Labels	Mark Kettner	Kenneth Melvin	Phil Copi	(blank)	Grand Total
Time	\$ 32,512.50	\$ 19,392.50	\$ 423.15		\$ 52,328.15
MOU changes	\$ 10,412.50	\$ 17,187.50			\$ 27,600.00
Mgmt meetings	\$ 9,775.00				\$ 9,775.00
Board requests	\$ 4,675.00				\$ 4,675.00
Fund FS	\$ 7,650.00	\$ 1,237.50			\$ 8,887.50
Other		\$ 967.50	\$ 423.15		\$ 1,390.65
Expenses	\$ 97.20			\$ 9.63	\$ 106.83
Grand Total	\$ 32,609.70	\$ 19,392.50	\$ 423.15	\$ 9.63	\$ 52,434.98

Sum of Hours	Column Labels				
Row Labels	Mark Kettner	Kenneth Melvin	Phil Copi	(blank)	Grand Total
Time	76.50	71.50	2.17		150.17
MOU changes	24.50	62.50			87.00
Mgmt meetings	23.00				23.00
Board requests	11.00				11.00
Fund FS	18.00	4.50			22.50
Other		4.50	2.17		6.67
Expenses	0.00			0.00	0.00
Grand Total	76.50	71.50	2.17	0.00	150.17

MOU changes - client adjustments stemming from the MOU negotiations/settlement necessitated various changes and review/edits to the CAFR as well as updating leadsheets and work papers.

Mgmt meetings - meeting attendance (in person or by teleconference) requested by management and related follow up.

Board requests - time to consider/address Board member prepared documents and the questions/comments contained therein or otherwise posed to us in relation to such documents and/or the MOU settlement/changes.

Fund FS - additional time to incorporate MOU-specific CAFR changes into previously created fund financial statement templates.

Other - other assorted out-of-scope time caused by delays, inefficiencies or client changes.

Date	Service Code Description	Staff	ChargeType	Hours	Amount	Service Area	Detail
11/16/2017	Change Order	Kenneth Melvin	Time	2.50	537.50	Other	Time spent getting the preliminary draft together for the audit committee
11/27/2017	Change Order	Kenneth Melvin	Time	2.00	430.00	Other	Potential change order time. Spent quite a bit of time in a meeting for bifurcation capital assets.
12/1/2017	Change Order	Phil Copi	Time	2.17	423.15	Other	Changing workpapers for entry made for retail receivable
1/17/2018	Change Order	Mark Kettner	Time	2.00	850.00	Board requests	Read Bob Daddow's "Current and Legacy Business Issues" document.
1/19/2018	Change Order	Mark Kettner	Time	5.00	2,125.00	Mgmt meetings	Meeting with CFO (Nickie Bateson), Bill Wolfson and Randall Jones (in-house legal counsel) and Bart Foster (consultant) regarding COD lease issue.
1/20/2018	Change Order	Mark Kettner	Time	3.00	1,275.00	Board requests	Finish reading Daddow's questions/comments.
1/22/2018	Change Order	Mark Kettner	Time	2.00	850.00	Board requests	Consideration of Daddow questions/comments.
1/22/2018	Change Order	Mark Kettner	Time	1.00	425.00	Board requests	Consideration of Daddow questions/comments.
1/27/2018	Change Order	Kenneth Melvin	Time	3.00	825.00	MOU changes	TB/FS coding changes, etc
2/5/2018	Change Order	Mark Kettner	Time	5.00	2,125.00	Mgmt meetings	Lease interpretation meeting (including drive time).
2/6/2018	Change Order	Mark Kettner	Time	1.00	425.00	Mgmt meetings	
2/8/2018	Change Order	Mark Kettner	Time	2.00	850.00	Mgmt meetings	
2/19/2018	Change Order	Mark Kettner	Time	5.00	2,125.00	Mgmt meetings	Out of scope hours for emails, discussions with Ken and Kathy Smith-Roy, and then phone conference with Nickie and Bart Foster regarding "MOU clean up" issues and financial reporting treatment.
2/20/2018	Change Order	Mark Kettner	Time	2.50	1,062.50	Mgmt meetings	MOU resolution conference call with Bob Daddow, Terry Donnelly, Randall Brown and Nickie Bateson.
2/23/2018	Change Order	Mark Kettner	Time	2.50	1,062.50	Mgmt meetings	Special audit cmte meeting (joined via phone).
4/5/2018	Change Order	Mark Kettner	Time	1.00	425.00	MOU changes	Completion planning discussion following MOU negotiations and implementation.
4/9/2018	Change Order	Kenneth Melvin	Time	8.50	2,337.50	MOU changes	Time spent inputting MOU entries, updating the financials, etc.
4/10/2018	Change Order	Kenneth Melvin	Time	3.00	825.00	MOU changes	
4/11/2018	Change Order	Kenneth Melvin	Time	6.00	1,650.00	MOU changes	
4/13/2018	Change Order	Kenneth Melvin	Time	0.75	206.25	MOU changes	
4/15/2018	Change Order	Kenneth Melvin	Time	2.50	687.50	MOU changes	
4/17/2018	Change Order	Kenneth Melvin	Time	1.75	481.25	MOU changes	
4/18/2018	Change Order	Mark Kettner	Time	3.00	1,275.00	MOU changes	CAFR status meeting and review of binder (both due to MOU changes).
4/18/2018	Change Order	Kenneth Melvin	Time	1.00	275.00	MOU changes	
4/19/2018	Change Order	Mark Kettner	Time	2.00	850.00	MOU changes	
4/19/2018	Change Order	Kenneth Melvin	Time	4.00	1,100.00	MOU changes	Additional FS preparation tasks for MOU changes
4/20/2018	Mileage	Mark Kettner	Expenses		87.20	MOU changes	Detroit mileage.
4/20/2018	Parking	Mark Kettner	Expenses		10.00	MOU changes	Detroit parking.

4/20/2018	Change Order	Mark Kettner	Time	2.50	1,062.50	MOU changes	Audit Cmte attendance/comments and return drive during normal business hours.
4/23/2018	Change Order	Mark Kettner	Time	6.00	2,550.00	MOU changes	Update CAFR for Cindy comments.
4/23/2018	Change Order	Kenneth Melvin	Time	1.25	343.75	MOU changes	
4/24/2018	Change Order	Mark Kettner	Time	2.00	850.00	MOU changes	
4/24/2018	Change Order	Kenneth Melvin	Time	3.00	825.00	MOU changes	
4/25/2018	Change Order	Mark Kettner	Time	4.00	1,700.00	MOU changes	"Page turning" review of draft CAFR and review of Bob Daddow's comments (and analysis of depreciation expense).
4/25/2018	Change Order	Kenneth Melvin	Time	5.00	1,375.00	MOU changes	
4/26/2018	Change Order	Mark Kettner	Time	1.00	425.00	MOU changes	
4/26/2018	Change Order	Kenneth Melvin	Time	7.25	1,993.75	MOU changes	
4/27/2018	Change Order	Mark Kettner	Time	3.00	1,275.00	MOU changes	Status call and review of many emails regarding report changes.
4/29/2018	Change Order	Kenneth Melvin	Time	4.00	1,100.00	MOU changes	Time from 4/27
5/4/2018	Change Order	Kenneth Melvin	Time	2.00	550.00	MOU changes	
5/7/2018	Change Order	Kenneth Melvin	Time	6.00	1,650.00	MOU changes	
5/8/2018	Change Order	Mark Kettner	Time	3.00	1,275.00	Board requests	Concluding work on Daddow comments/questions and CAFR review comments.
5/8/2018	Change Order	Kenneth Melvin	Time	3.50	962.50	MOU changes	
5/10/2018	Change Order	Mark Kettner	Time	3.00	1,275.00	Fund FS	Separate fund FS (to incorporate changes to CAFR due to MOU changes).
5/10/2018	Change Order	Kenneth Melvin	Time	2.00	550.00	Fund FS	
5/11/2018	Change Order	Mark Kettner	Time	6.00	2,550.00	Fund FS	Separate fund FS (to incorporate changes to CAFR due to MOU changes).
5/12/2018	Change Order	Mark Kettner	Time	5.00	2,125.00	Fund FS	Separate fund FS (to incorporate changes to CAFR due to MOU changes).
5/31/2018	FS Prep	Kenneth Melvin	Time	1.00	275.00	Fund FS	
6/1/2018	Supervision And Review	Mark Kettner	Time	2.00	850.00	Fund FS	
6/1/2018	FS Prep	Kenneth Melvin	Time	1.50	412.50	Fund FS	
6/6/2018	Supervision And Review	Mark Kettner	Time	2.00	850.00	Fund FS	
6/11/2018	Postage Charge		Expenses		9.63	Fund FS	UPS
				150.17	52,434.98		

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Financial Services Audit Committee Communication

Date: July 20, 2018

To: Great Lakes Water Authority Audit Committee

From: Jon Wheatley, Public Finance Manager

Re: Update: Drinking Water Revolving Fund (DWRf) Project Plan Submittals for the Lake Huron Water Treatment Plant Sludge System Improvements Project and the Waterworks Park to Northeast Transmission Main Project

Background: The Great Lakes Water Authority (the “GLWA”) has identified two water system projects in the proposed FY 2019 to FY 2023 Capital Improvement Plan (CIP) for submittal to the Michigan Department of Environmental Quality (MDEQ) for the DWRf financing program for funding in the state’s 2019 fiscal year. Public hearings were held for both projects on April 11, 2018 and both were approved by the GLWA Board of Directors at its meeting later that day. Both project plans were submitted to MDEQ by the July 1, 2018 deadline.

On July 18, 2018, GLWA received notification from MDEQ that both the Lake Huron Water Treatment Plant Sludge System Improvements (DWRf Project #7446-01) and the Water Conveyance System – Waterworks Park to Northeast Transmission Main Project (DWRf Project #7445-01) projects were within the fundable range for the states FY 2019. Final project milestone schedules have not been determined for either project.

At the April 20, 2018 GLWA Audit Committee meetings, GLWA had presented information on the Water Infrastructure Finance and Innovation Act (WIFIA) program which is administered by the United States Environmental Protection Agency (EPA). This program provides funding for large water and sewer projects at an interest rate that is lower than traditional revenue bonds. The deadline for submitting letters of intent for the next funding cycle is July 31, 2018. GLWA had originally identified the Water Conveyance System – Waterworks Park to Northeast Transmission Main Project as a candidate for this program to cover eligible costs that were not funded through the DWRf. Since MDEQ has indicated the entire project will be in the fundable range, then GLWA will not be pursuing WIFIA funding since the DWRf program interest rate is lower.

The Projects: Lake Huron Water Treatment Plant Sludge System Improvements – (CIP# 111007): The project is comprised of the evaluation, design, and construction of the Raw Sludge Clarifiers and Raw Sludge Pumping Systems at the Lake Huron Water Treatment Plant (LHWTP). Constructed in 1976, the LHWTP is a Type I public water system that

supplies water to residential, commercial, and industrial customers in GLWA's Northern communities. The LHWTP uses source water drawn from a single intake located in Lake Huron. There are major issues associated with the sludge handling system at the LHWTP as it relates to the twice annual cleaning of the settling basins. This project is necessary to ensure that GLWA can maintain treatment of flows at the LHWTP without system failure.

The proposed project will provide construction of a new redundant wash water retention basin and a new sludge pumping station with the existing clarifiers being abandoned or demolished. Additionally, provisions for decanting clear water from Lagoon 5 and Lagoon 6 to Lagoon 8 so Lagoon 8 can serve as temporary overflow storage during basin cleanout are included within the scope of this project. These improvements and modifications are detailed in the Project Plan. The estimated cost of the project is \$7,250,000.

Water Conveyance System – Waterworks Park to Northeast Transmission Main Project- (CIP# 122003): The primary purpose of the project is to better align the GLWA water production capacity with long-term system water demands, while improving reliability, water quality protection and reducing future operational and maintenance costs as well as capital improvement costs.

The intent of the project is to provide finished water to the NE site from WWP through a proposed transmission pipeline such that treatment facilities at the NE site can be de-commissioned and the existing NE high lift station and reservoirs can be used to re-pump finished water to the NE service area. The proposed NE Repurposing will largely eliminate the need to complete the large and costly backlog of capital improvement projects at the NE site with the goal of long term capital cost savings. In addition to NE repurposing, the project is also intended to provide additional reliability to the WWP service area through the proposed transmission pipeline in case of loss of service at the WWP. The project is comprised of the final design and construction of a new transmission main, isolation valves, control valves, and related appurtenances to provide a design flow rate of 160 million gallons per day (MGD) of finished drinking water from Waterworks Park WTP to the Northeast facility. These improvements and modifications are detailed in the Project Plan. The estimated cost of this project is \$133,700,000.

Justification: GLWA is seeking low interest loan assistance through the DWRF program for both projects. Although the Michigan Department of Environmental Quality (MDEQ) interest rate for FY 2019 will not be determined until October 2018, the current year's interest rate of 2.00% is less than the present conventional revenue bond interest rates. Based on the combined project amounts of \$140.9 million, GLWA could save an estimated \$92 million in interest costs and avoided issuance costs, based on a similar open market revenue bond with a 30-year term and 5.00% interest rate, over the life of the 30-year bond issue. This will afford savings to both GLWA and its members.

Budget Impact: Debt service is anticipated to begin in FY 2020 for both projects and will be included as part of the FY 2020 financial plan.

Proposed Action: Receive and file report.

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