



Audit Committee Meeting
Friday, April 22, 2022 at 8:00 a.m.
www.glwater.org

[Join Zoom Meeting](#)

Meeting ID: **844 2864 2613** Passcode: **709128**

US Toll-free: **888 788 0099** or **877 853 5247**

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
 - A. March 25, 2022 (Page 1)
5. PUBLIC PARTICIPATION
6. OLD BUSINESS
7. NEW BUSINESS
 - A. *Action Item:* External Financial Auditor Selection (Page 8)
(Note: Appendix to Audit Committee Binder includes proposal information)
 - B. *Action Item:* Underwriting Team Recommendation (Page 16)
(Note: Appendix to Audit Committee Binder includes proposal information)
 - i. Goldman Sachs & Co. LLC
 - ii. Siebert Williams Shank
 - iii. Wells Fargo Securities
 - C. *Action Item:* Resolution to Adopt Project Plans for FY 2023 Clean Water Revolving Fund (CWSRF) Consideration (Page 26)
8. REPORTS
 - A. CFO Report (Page 50)
 - B. Monthly Financial Report for January 2022 (Page 74)
 - C. Business Inclusion and Diversity Program Update (Page 75)
 - D. Quarterly CWIP Report (Page 78)
9. COMMUNICATIONS
 - A. *The Procurement Pipeline* for April 2022 (Page 101)
10. LOOK AHEAD
 - A. Next Audit Committee Meeting: May 27, 2022 at 8:00 a.m.
11. OTHER MATTERS
12. ADJOURNMENT

Note: Binder has been combined in agenda order and document was renumbered to include agenda item 7B4 and 8A3 Appendix.



Great Lakes Water Authority

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

Meeting Minutes - Draft

Audit Committee

Friday, March 25, 2022

8:00 AM

Zoom Telephonic Meeting

Zoom Telephonic Meeting

Join Zoom Meeting Here:

<https://glwater.zoom.us/j/88277957299?pwd=bzNpEdhb2dsQjdIYTIFcC91UjJ4QT09>

Join By Telephone:

888 788 0099 US Toll-free

877 853 5247 US Toll-free

Meeting ID: 882 7795 7299

Passcode: 399074

1. Call To Order

Chairperson Baker called the meeting to order at 8:00 a.m.

2. Quorum Call

Present: 3 - Chairperson Brian Baker, Director Gary Brown, and Director Jaye Quadrozzi

3. Approval of Agenda

Chairperson Baker requested a Motion to Approve the Agenda.

Motion By: Jaye Quadrozzi

Support: Gary Brown

Action: Approved

The motion carried unanimously.

4. Approval of Minutes

A. [2022-121](#) Approval of Minutes of February 25, 2022

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [4A February 25, 2022 Audit Committee Meeting Minutes](#)

Chairperson Baker requested a Motion to Approve the February 25, 2022 Audit Committee Meeting Minutes.

Motion By: Gary Brown

Support By: Jaye Quadrozzi

Action: Approved

The motion carried by a unanimous vote.

5. Public Comment

There were no public comments.

6. Old Business**A.** [2022-126](#) Water Residential Assistance Program Updates

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [6A1 Water Residential Assistance Program Update March 2022](#)

[6A2 Water Residential Assistance Program Update](#)

Motion By: Jaye Quadrozzi

Support By: Gary Brown

Action: Received and Filed

The motion carried by a unanimous vote.

7. New Business

- A.** [2022-119](#) **Resolution Regarding Approval of Series Ordinance Authorizing Issuance and Sale of Sewerage Disposal System Revenue Bonds in an Amount Not to Exceed \$42,000,000 (Ordinance 2022-02)**
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [7A3 Resolution Approving 2022-1 SRF Series Ordinance \(Sewer\) 5655-03](#)
 [7A4 Series Ordinance \(2022-SRF-1 GLWA Sewer\)](#)
- Motion By:** Gary Brown
 Support By: Jaye Quadrozzi
 Action: Recommended for Approval to the Board of Directors Workshop Meeting Agenda of April 13, 2022
 The motion carried by a unanimous vote.
- B.** [2022-120](#) **Resolution Authorizing Publication of Notice of Intent to Issue Water Supply System and Sewer Disposal System Revenue Bonds**
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [7B3 Resolution Regarding Publication of Notice of Intent to Issue Bonds \(Sewer\) 2022](#)
 [7B4 Resolution Regarding Publication of Notice of Intent to Issue Bonds \(Water\) 2022](#)
- Motion By:** Jaye Quadrozzi
 Support By: Gary Brown
 Action: Recommended for Approval to the Board of Directors Workshop Meeting Agenda of April 13, 2022
 The motion carried by a unanimous vote.
- C.** [2022-117](#) **Proposed FY 2022 Second Quarter Budget Amendments**
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [7C FY 2022 Second Quarter Budget Amendments](#)
- Motion By:** Gary Brown
 Support By: Jaye Quadrozzi
 Action: Recommended for Approval to the Board of Directors Agenda of April 27, 2022
 The motion carried by a unanimous vote.

D. [2022-128](#) Calendar Year 2022 Financing Team Selection

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [7D1 Proposed Underwriter Selection](#)

Chairperson Baker requested a Motion for the Audit Committee to adopt the approach outlined for the selection of the Book Running Senior Manager and Co-Senior Manager for the 2022 bond transaction, and authorize staff to proceed with soliciting the proposals and presentations.

Motion By: Jaye Quadrozzi

Support By: Brian Baker

Action: Adopted

The motion carried by a unanimous vote.

8. Reports**A.** [2022-122](#) CFO Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [8A1 CFO Report](#)
[8A2 Pre-Scoring Evaluation Team Meeting 3-24-22](#)

Chairperson Baker requested a Motion to direct staff to score proposals for the External Auditor Services and provide recommendations to the Audit Committee to interview.

Motion By: Gary Brown

Support By: Jaye Quadrozzi

Action: Approved

The motion carried by a unanimous vote.

Chairperson Baker requested a Motion to Receive and File the CFO Report.

Motion By: Gary Brown

Support By: Jaye Quadrozzi

Action: Received and Filed

The motion carried by a unanimous vote.

- B.** [2022-123](#) Monthly Financial Report for December 2021
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [8B December 2021 Financial Report_Tagetik](#)
- Motion By:** Gary Brown
 Support By: Brian Baker
 Action: Received and Filed
 The motion carried by a unanimous vote.
- C.** [2022-124](#) Business Inclusion and Diversity Program Update
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [8C Business Inclusion and Diversity Program Update](#)
- Motion By:** Jaye Quadrozzi
 Support By: Gary Brown
 Action: Received and Filed
 The motion carried by a unanimous vote.
- D.** [2022-125](#) Quarterly Gifts, Grants & Other Resources Report
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [8D Gifts, Grants and Other Resources Report](#)
- Motion By:** Jaye Quadrozzi
 Support By: Gary Brown
 Action: Received and Filed
 The motion carried by a unanimous vote.
- E.** [2022-118](#) Quarterly Debt Report
- Sponsors:** Nicolette Bateson
- Indexes:** Finance
- Attachments:** [8E Quarterly Debt Report as of 12.31.2021](#)
- Motion By:** Jaye Quadrozzi
 Support By: Gary Brown
 Action: Received and Filed
 The motion carried by a unanimous vote.

F. [2022-130](#) Annual Procurement Report

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [8F Annual Procurement Report FY 2021](#)

Motion By: Jaye Quadrozzi

Support By: Brian Baker

Action: Received and Filed

The motion carried by a unanimous vote.

9. Communications**A.** [2022-127](#) The Procurement Pipeline for March 2022

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [9A The Procurement Pipeline for March 2022](#)

No Action Taken

B. [2022-131](#) Correction of FY 2023 Approved Pollutant Surcharge Charge Support

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [9B FY 2023 Pollutant Surcharge Correction Communication](#)

No Action Taken

C. [2022-132](#) Moody's Credit Opinion Re Great Lakes Water Authority, March 23, 2022

Sponsors: Nicolette Bateson

Indexes: Finance

Attachments: [9C Moody's Credit Opinion - Great-Lakes-Wtr-Auth-MI - 23Mar22](#)

No Action Taken

10. Look Ahead

A. The next Audit Committee Meeting is scheduled to be held Friday, April 22, 2022 at 8:00 a.m.

11. Other Matters

There were no other matters.

12. Adjournment

Chairperson Baker requested a Motion to Adjourn.

Motion By: Jaye Quadrozzi

Support By: Gary Brown

Action: Approved

The motion carried by a unanimous vote.

There being no further business, the meeting was adjourned at 9:55 a.m.



Financial Services Audit Committee Communication

Date: April 22, 2022

To: Great Lakes Water Authority Audit Committee

From: Nicolette Bateson, CPA
Chief Financial Officer & Treasurer

Re: Proposed Appointment of External Auditor Proposals

Background: At the March 25, 2022 Audit Committee meeting, the Audit Committee requested GLWA Financial Services Area Staff to complete the evaluation of written proposals and conduct proposal interviews with those firms that submitted a request for proposal to provide external auditor services. GLWA Financial Services Staff would then provide a recommended auditor, evaluator scoring and a recommendation for the Audit Committee review.

Analysis: On March 28, 2022 two proposals for external auditor services were submitted. The proposals were reviewed to ensure that all minimum criteria was met and the written proposals were scored. Oral presentations were received on April 14, 2022 and a final scoring was then tabulated.

The following is attached.

1. Draft Board Letter for April 27, 2022
2. Procurement Report

An Appendix to the Audit Committee Binder includes the following.

1. Request for Proposal Related Documents and Tabulation
2. Baker Tilly files:
 - a. Vendor Certification
 - b. Audit Services proposal
 - c. Annual Services Fee schedule
 - d. Bond transaction fees
 - e. Hourly rate for as needed services
3. Rehmann files:
 - a. Vendor Certification
 - b. Audit Services proposal

- c. Annual Services Fee schedule
- d. Bond transaction fees
- e. Hourly rate for as needed services

Budget Impact: The proposed award is within the budget category as noted in the attached Board Letter.

Proposed Action: Pending recommendation of the Audit Committee, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA), authorizes a contract in an amount not to exceed Eight Hundred Thousand and 00/100 Dollars (\$800,000.00) which includes \$201,500 for the audit of the annual financial statements for FY 2022, \$211,500 for FY 2023, \$222,000 for FY 2024, and \$165,000 for other technical services, between the GLWA and Baker Tilly US, LLP to serve as the External Auditor of the GLWA for a term of three (3) years, and authorizes the Interim CEO to take such other action as may be necessary to accomplish the intent of this vote.

..Title

**Contract No. 2104125
External Auditor Services**

..Body

Agenda of: April 27, 2022

Item No.:

TO: The Honorable
Board of Directors
Great Lakes Water Authority

FROM: Brian Baker
Audit Committee Chairman
Great Lakes Water Authority

DATE: April 27, 2022

RE: **Contract No. 2104125**
External Auditor Services
Vendor: Baker Tilly US, LLP

MOTION

Pending recommendation of the Audit Committee, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA), authorizes a contract in an amount not to exceed Eight Hundred Thousand and 00/100 Dollars (\$800,000.00) which includes \$201,500 for the audit of the annual financial statements for FY 2022, \$211,500 for FY 2023, \$222,000 for FY 2024, and \$165,000 for other technical services, between the GLWA and Baker Tilly US, LLP to serve as the External Auditor of the GLWA for a term of three (3) years, and authorizes the Interim CEO to take such other action as may be necessary to accomplish the intent of this vote.

BACKGROUND

According to the Articles of Incorporation, Article 7J, the Audit Committee shall, once every three (3) years, recommend three (3) independent certified public accounting firms that, in the judgment of the Audit Committee, possess sufficient resources and qualifications to conduct annual financial audits of the accounts of the Authority. From the three recommendations of the Audit Committee, the Board may select the independent certified public accounting firm with whom the Authority shall execute an agreement to conduct annual financial audits for the succeeding three (3) fiscal years of the accounts of the Authority.

JUSTIFICATION

Subject to a request for proposal process facilitated by GLWA Procurement, two qualified proposals were received on March 28, 2022 for external auditor services. Those proposals were reviewed to ensure that all minimum criteria was met and the written proposals were scored. Oral presentations were received on April 14, 2022 and a final scoring was then tabulated. As required by the Articles, the Audit Committee has reviewed and is forwarding the two (2) firms for consideration by the full Board in selecting the External Auditor for GLWA.

See attached Procurement Report and related supporting documents. All materials related to the proposal, proposal responses, and presentations are posted at www.glwater.org in the Audit Committee binder for the meeting on April 22, 2022.

FINANCIAL PLAN IMPACT

Summary: Annual financial auditing services is included in the financial plan.

Funding Source: Operations & Maintenance (O&M) Budget

Cost Center(s): Financial Reporting & Accounting... Administrative Services 884111

Expense Type(s): Auditing (611200) (Including annual external audit and other technical services)

Estimated Cost by Year and Related Estimating Variance:


<u>Fiscal Year</u>	<u>Amount</u>
FY 2023 Budget	\$307,200.00
FY 2024 Financial Plan	313,400.00
FY 2025 Financial Plan	<u>316,600.00</u>
Total Financial Plan Forecast	\$937,200.00
Proposed Contract Amount	<u>\$800,000.00</u>
Forecast Variance (positive/ (negative))	\$137,200.00

COMMITTEE REVIEW

This matter was reviewed at the Audit Committee on April 22, 2022. The Audit Committee [insert action] that the Board of Directors (Board) of the Great Lakes Water Authority (GLWA), authorizes a contract in an amount not to exceed Eight Hundred Thousand and 00/100 Dollars (\$800,000.00) which includes \$201,500 for the audit of the annual financial statements for FY 2022, \$211,500 for FY 2023, \$222,000 for FY 2024, and \$165,000 for other technical services, between the GLWA and Baker Tilly US, LLP to serve as the External Auditor of the GLWA for a term of three (3) years, and authorizes the Interim CEO to take such other action as may be necessary to accomplish the intent of this vote.

SHARED SERVICES IMPACT

This item does not impact the shared services agreement between GLWA and DWSD.

 GLWA <small>Great Lakes Water Authority</small>	Procurement Form (FOR)		
	Effective Date: 5/1/2019	Document #: FSA_PRO_FOR_0039	Revision Date: 1/18/2022
Document Title: Procurement Board Report-RFP		Document Owner/Department: Procurement Team	


Date: April 27, 2022
To: Brian Baker, Audit Committee Chairman
From: Daniel Edwards, Procurement Manager
Re: Procurement Report

General Information			
Contract Number:	2104125	Project Owner:	Steve Hoover, Finance Manger
Contract Title:	External Auditor Services		
Vendor:	Baker Tilly US, LLP		
Budget:	Operations and Maintenance		
Contract Length:	Three (3) years		

Procurement Method			
Competitively bid – Request for Proposal (RFP) Qualification Based Selection (QBS) – Evaluation Committee			
Advertised:	February 28, 2022	Addendums released:	2
Buyer:	Joan Salwasser	Downloaded by:	32
Response due date:	March 28, 2022	Responses received:	2

Description	Proposed Cost
Task 1 – Base Fees	
Year 1	\$ 201,500.00
Year 2	211,500.00
Year 3	222,000.00
Task 2 – Fee per Consent Letters (each)	1,500.00
Task 3 – Hourly Rate (\$250.00/Hour) for as needed services.	

Benchmarking was completed by comparing the proposals for this project. This analysis confirmed that rates are in competitive range.

Procurement Form (FOR)			
 GLWA <small>Great Lakes Water Authority</small>	Effective Date: 5/1/2019	Document #: FSA_PRO_FOR_0039	Revision Date: 1/18/2022
			Revision#: 1
Document Title: Procurement Board Report-RFP		Document Owner/Department: Procurement Team	


Evaluation Committee: (Designation - Organization)
A - Finance Manager - GLWA
B - Manager, Special Projects - GLWA
C - Financial Services - GLWA

Vendor (Highest to lowest score)	Score	Proposed Fee (3 Years)
*Baker Tilly US, LLP	91.78	
Task 1- Base Fee		\$ 635,000.00
Task 2 - Consent Letter (each) **		1,500.00
Task 3 - Hourly Services Rate		\$ 250.00
Rehmann Robson LLC	85.43	
Task 1- Base Fee		\$ 645,000.00
Task 2 - Consent Letter (each)		5,000.00
Task 3 - Hourly Services Rate		\$ 290.00

*Negotiations to be scheduled following Board approval.

** The RFP was not clear in differentiating between consent letters versus comfort letters. It was subsequently discovered that a consent letter requires less hours to perform than a comfort letter. Follow-up with Baker Tilly US, LLP clarified that the fee for a consent letter is \$1,500 each and that a comfort letter is \$25,000 each. It is recommended that both levels of service be included in the contract to allow the financing team to make the decision of which level of service is required at the time of a transaction.

Business Inclusion and Diversity (B.I.D.)
<input type="checkbox"/> B.I.D. program required <input checked="" type="checkbox"/> B.I.D. program not required
<input type="checkbox"/> The recommended vendor for award submitted a B.I.D. plan per the requirements under this solicitation.
<input type="checkbox"/> The recommended vendor for award did not submit a B.I.D. plan per the requirements under this solicitation.
The vendor received points for the following scored criteria:
<input type="checkbox"/> Business presence in State of Michigan
<input type="checkbox"/> Business presence in GLWA service territory area (list the territory)
<input type="checkbox"/> Business presence in economically disadvantaged GLWA service territory area (list the territory)

	Procurement Form (FOR)		
	Effective Date: 5/1/2019	Document #: FSA_PRO_FOR_0039	Revision Date: 1/18/2022
Document Title: Procurement Board Report-RFP		Document Owner/Department: Procurement Team	

Other Data Requested by GLWA Board Members for Recommended Vendor

Minority Business Enterprise (MBE): No
 Small Business Enterprise (SBE): No
 Woman Business Enterprise (WBE): No
 Disadvantaged Business Enterprise (DBE): No
 Detroit Based Business (DBB): No

Other:
 Sub-Contractor(s) List: N/A
 Vendor Response Survey: N/A

Litigation

This vendor is not currently nor has been previously involved in any litigation with the GLWA.

Financials

A financial risk assessment was performed by the GLWA via Dun & Bradstreet and was determined that the selected vendor has the financial capacity to perform the tasks under this contract. This information is available for the Board of Directors to review upon request.

Previous Contract

Previous contract holder: Baker Tilly US, LLP

The previous contract, 1900933, was for the period of 6/12/2019 through 6/11/2022, for \$ 706,888.00 (including as needed services). The contract amount difference between the two contracts is provided in the table below.

Contract Number	Vendor Name	Amount
2104125	Baker Tilley US, LLP	\$ 635,000.00
1900933	Baker Tilley US, LLP	\$ 585,888.00
		\$ 49,112.00

Fees shown above represent Base Fees only. Other quoted fees are for "as needed" services.



Financial Services Audit Committee Communication

Date: April 22, 2022

To: Great Lakes Water Authority Audit Committee

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

Re: 2022 Bond Program Underwriting Team Recommendation

Background: GLWA staff recommended an underwriter selection process for the upcoming 2022 bond transaction at the March 25, 2022 Audit Committee meeting. This process, as approved on that date by the Audit Committee, required a request for proposal (RFP) and interview process to establish the senior managers and a simpler letter of interest process for the remaining underwriting syndicate of co-managers. The Audit Committee also approved a short-list of firms for the RFP for the senior manager roles to those that have previously served as co-senior managers. That short-list is: Goldman Sachs and Co. LLC, Wells Fargo Securities, and Siebert Williams Shank & Co., LLC. The Audit Committee further approved a short list of firms to submit letters of interest for co-managers to include all firms that have served on a GLWA financing team in the past.

Senior Managers

GLWA Procurement facilitated the process of developing and posting the RFP for the senior manager roles with the agreed-upon minimum short-list qualifications of (1) being part of the current underwriting pool, (2) having served in a co-senior manager role on a GLWA transaction and, (3) having never served as the bookrunning senior manager on a GLWA transaction. A summary of the procurement outcomes to date are found in the attached Procurement Report.

The Audit Committee will employ a simple evaluation process based upon (1) the written responses to the proposals, which included recommended financing plan and structure, rating agency strategy and investor marketing strategy, and (2) ten-minute oral interviews held with the three underwriting firms as part of this meeting. The proposed commission takedown fee and total fees are summarized in the attached Procurement Report.

Co-Managers

GLWA also received letters of interest submissions for the co-manager underwriting syndicate. Letters of Interest were requested from those firms within the current GLWA underwriter pool to confirm their continued interest in participating in the upcoming bond

transaction as co-managers. In addition to the pre-identified short-list, for the Audit Committees' consideration, a letter of interest was also solicited from Loop Capital which has strong public finance team as well as an office in the City of Detroit. This addition is in alignment with the Section 4.6 of GLWA's Procurement Policy to support Economic Equity and Development. All firms invited to submit letters of interest did provide successful responses. That list of firms is below.

- ✓ Citigroup Global Capital Markets, Inc.
- ✓ J.P. Morgan
- ✓ Loop Capital Markets
- ✓ Morgan Stanley
- ✓ Ramirez & Co., Inc.

Analysis: GLWA staff and GLWA's financial advisor, PFM Financial Advisors LLC, have reviewed the RFPs and letters of interest received. All firms continue to meet GLWA requirements regarding service and financial capabilities, adherence to laws and regulations, and no conflicts of interest.

The RFPs have been distributed to the Audit Committee for their review prior to the oral presentations from the three senior manager eligible firms at the Audit Committee on April 22, 2022. Based upon the three RFPs and related presentations the Audit Committee will determine which firm will serve as the Bookrunning Senior Managing Underwriter, Co-Senior Managing Underwriter, and as a Co-Manager.

Proposed Action: Audit Committee recommends that the GLWA Board of Directors:

1. Approve *{insert firm from RFP list}* to serve as Bookrunning Senior Managing Underwriter
2. Approve *{insert firm from RFP list}* to serve as Co-Senior Managing Underwriter
3. Authorize a Takedown Fee of *{TBD}* per bond (plus expenses)
4. Approve the following firms to serve as Co-Managers:
Citigroup,
JP Morgan Securities LLC,
Loop Capital,
Morgan Stanley & Co.,
Ramirez & Co., and
{insert firm from RFP list}.



Financial Services Group
Procurement
 735 Randolph Street, Suite 1508
 Detroit, Michigan 48226
 Phone: 313-964-9157

Date: April 22, 2022
To: Great Lakes Water Authority Audit Committee
From: Joan Salwasser, Procurement Management Professional
Re: Procurement Report – 2022 Underwriter Senior Manager Selection

Following is a summary of the procurement associated with selection of an underwriting Senior Manager from the current GLWA underwriting pool to support the Audit Committee evaluation and selection. Note that this procurement utilized a preselected vendor list based on criteria established by the GLWA Audit Committee on March 25, 2022.

General Information

Contract Number:	2200290	Project Owner:	Kim Garland
Contract Title:	Bond Underwriting Services		
Vendor Submissions:	Goldman Sachs & Co LLC Siebert, Williams, Shank & Co. LLC Wells Fargo Securities		
Budget:	N/A		
Contract Length:	12 Months		

Procurement Method

Competitively bid – Request for Proposal (RFP) Qualification Based Selection (QBS) – Evaluation Committee			
Advertised:	3-30-2022	Addendums released:	4-6-2022
Distributed to:	3	Downloaded by:	3
Response due date:	4-18-2022	Responses received:	3

Evaluation and Scores

Evaluation Committee: (Designation – GLWA Audit Committee)
A – Director Brian Baker (Chairperson)
B – Director Jaye Quadrozzi
C – Director Gary Brown

The Evaluation Committee will review and score the written and oral proposals in accordance with GLWA's policy. The composite rankings for commission takedown fee and estimated expenses are below.

**Financial Services Group****Procurement**

735 Randolph Street, Suite 1508

Detroit, Michigan 48226

Phone: 313-964-9157

Vendor (Highest to lowest score)	Score (1= Highest to 3 = Lowest)	Proposed Commission Takedown Fee prior to Negotiations	Total Fees including Estimated Expenses (\$/bond)¹
Wells Fargo Securities		\$2.25	\$2.36
Goldman Sachs & Co., LLC		\$2.50	\$2.61
Siebert Williams Shank & Co., LLC		\$2.50	\$2.78

Benchmarking was completed by comparing the proposals for this project. An analysis by PFM Financial Advisors LLC confirmed that proposed rates are in competitive range.

Other Data Requested by GLWA Board Members

	Wells Fargo	Goldman Sachs	Siebert Williams Shank
Business Inclusion & Diversity Plan	Yes	Yes	Yes
Detroit Based Business	No	No	Yes

Litigation

These vendors are not currently nor have been previously involved in any litigation with the GLWA.

Financials

A financial risk assessment was performed with the assistance of GLWA's financial advisor, PFM Financial Advisors LLC. It was determined that these vendors have the capacity to perform the tasks under this contract.

¹ Excludes consideration of Underwriter's Counsel fee, which is expected to be negotiated separately and not impacted by selection of the Senior Manager.

DRAFT for Audit Committee Review Only

..Title

Approval of the 2022 Bond Program Underwriting Team

Agenda of: April 27, 2022

Item No.: **2022-**____

Amount: N/A

TO: The Honorable
Board of Directors
Great Lakes Water Authority

FROM: Suzanne R. Coffey, P.E.
Interim Chief Executive Officer
Great Lakes Water Authority

DATE: April 27, 2022

RE: Approval of the 2022 Bond Program Underwriting Team

MOTION

Upon recommendation of Nicolette Bateson, Chief Financial Officer & Treasurer, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA):

- 1) Approves {insert firm} as Bookrunning Senior Managing Underwriter;**
- 2) Approves {insert firm} as Co-Senior Managing Underwriter;**
- 3) Authorizes a Takedown Fee of {TBD} per bond (plus expenses);**
- 4) Approves Citigroup, JP Morgan Securities LLC, Morgan Stanley & Co., Ramirez & Co., Loop Capital and {insert firm} as Co-Managers;**
- 5) and authorizes the Interim CEO to take such other action as may be necessary to accomplish the intent of this vote.

DRAFT for Audit Committee Review Only

BACKGROUND

GLWA's ten-year financial plan and the five-year capital improvement plan outline the need for a 2022 bond financing program. In addition, there are potentially favorable market conditions for a bond refunding. In prior GLWA financing programs, funding was also sought for the local water supply and local sewer disposal systems (Detroit Water & Sewerage Department, DWSD). For 2022, the management for the local water supply and local sewer disposal systems (Detroit Water & Sewerage Department, DWSD) has indicated that no additional bond proceeds beyond state revolving fund loans are requested by DWSD for at least the next two years.

The next step to begin the 2022 bond financing program is to select an underwriting team including a Book Running Senior Manager, Co-Senior Manager, and Co-Managers.

A selection process was recommended by staff, and approved by the GLWA Audit Committee, at its meeting on March 25, 2022 to move the financing forward as we see interest rates rise (although still in a historically favorable level). The following is additional background and an outline of that selection process for the underwriting team.

The Great Lakes Water Authority [Debt Management Policy](#) (page 5) provides the following overall guidance related to the selection of the senior manager.

Underwriter Selection

Senior Manager Selection. GLWA will select the senior manager for a proposed negotiated sale. The selection criteria will include, but not be limited to, the following:

- The firm's ability and experience in managing complex transactions
- Prior knowledge and experience with GLWA, if applicable
- The firm's willingness to risk capital and demonstration of such risk
- Quality and experience of personnel assigned to GLWA's engagement
- Financing plan presented
- Underwriting fees

Co-Manager Selection. Co-managers will be selected on the same basis as the senior manager. In addition to their qualifications, co-managers appointed to specific transactions will be a function of transaction size and the necessity to ensure maximum distribution of GLWA's bonds.

Selling Groups. GLWA may establish selling groups in certain transactions in order to broaden the reach to potential investors.

GLWA has had three financing programs since its inception on January 1, 2016. The underwriter pool has consisted of the following firms.

DRAFT for Audit Committee Review Only

Role	Sewage Disposal System Revenue Refunding Bonds 2016 (B&C) (\$421,295,000)	Sewage Disposal System Revenue & Refunding Bonds 2018 (A,B,C) (\$257,465,000)	Sewage Disposal System Revenue Refunding Bonds 2020 (A&B) (\$687,455,000)
Book Running Senior Manager	Citigroup	Citigroup	Citigroup
Co-Senior Manager	Goldman Sachs and Co. LLC	Wells Fargo Securities	Siebert Williams Shank & Co., LLC
Co-Managers		Goldman Sachs and Co. LLC	Goldman Sachs
	J.P. Morgan	J.P. Morgan	J.P. Morgan
	Morgan Stanley	Morgan Stanley	Morgan Stanley
	Ramirez & Co., Inc	Ramirez & Co., Inc	Ramirez & Co., Inc
	Siebert Williams Shank & Co., LLC	Siebert Cisneros Shank & Co., LLC	
	Wells Fargo Securities		Wells Fargo Securities

Given the changing market conditions, the GLWA administration would like to proceed with the proposed bond transaction sooner rather than later. While it is good to “refresh” the underwriter pool periodically, the timing, along with competing priorities, dictates that we assemble the team to being working on the transaction soon.

A few considerations as it relates to underwriter selection.

1. GLWA administration meets with the firms listed above on a regular basis. That pool reflects excellence in the field of public sector utility finance who are very interested in continuing to work with GLWA.

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2. In prior conversations with the Board, there was a strong preference to rotate the “bookrunning senior manager” role. Citigroup has held that role for the last three transactions. Accordingly, it is recommended that Citigroup be asked to participate as a co-manager in the next financing so that GLWA can meet the Board’s rotational objective among the underwriting firms.
3. That being said, continuity and experience as a co-manager are incredibly important to GLWA in a successor in the bookrunning senior manager role. It is therefore recommended that Goldman Sachs and Co. LLC, Siebert Williams Shank & Co., LLC and Wells Fargo Securities, who have all served as co-managers, be invited to a) submit proposals to GLWA for the bookrunning senior manager role as well as b) prepare a 10-minute presentation based on that proposal to present to the Audit Committee at its regular meeting on April 22, 2022. Based on the proposals submitted and the presentation, it is recommended that the Audit Committee make a recommendation to the Board of Directors for the May 2022 Board meeting for the underwriting team and related fee.
4. All firms that have served on the financing team in the past would be invited to submit letters of interest to serve as co-managers for the 2022 transaction.
5. Within 12 months after the close of the 2022 transaction, GLWA will solicit proposals to refresh the pool. It is anticipated that the vacant Public Finance Manager role will be filled by then (this position has been vacant since April 2021; an active recruitment process has been underway).

JUSTIFICATION

Based on the Audit Committee approved approach outlined above, GLWA Procurement facilitated the Request for Proposal for Senior Managers and Letters of Interest Request for Co-Managers.

Senior Managers

GLWA Procurement facilitated the process of developing and posting the RFP for the senior manager roles with the agreed-upon minimum short-list qualifications of (1) being part of the current underwriting pool, (2) having served in a co-senior manager role on a GLWA transaction and, (3) having never served as the bookrunning senior manager on a GLWA transaction. A summary of the procurement outcomes is in the attached Procurement Report.

The Audit Committee employed a simple evaluation process based upon (1) the written responses to the proposals, which included recommended financing plan and structure,

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rating agency strategy and investor marketing strategy, and (2) ten-minute oral interviews held with the three underwriting firms during the April 22, 2022 meeting. The proposed commission takedown fee and total fees are summarized in the attached Procurement Report.

Co-Managers

GLWA also received letters of interest submissions for the co-manager underwriting syndicate. Letters of Interest were requested from those firms within the current GLWA underwriter pool to confirm their continued interest in participating in the upcoming bond transaction as co-managers. In addition to the pre-identified short-list, for the Audit Committees' consideration, a letter of interest was also solicited from Loop Capital which has strong public finance team as well as an office in the City of Detroit. This addition is in alignment with the Section 4.6 of GLWA's Procurement Policy to support Economic Equity and Development. All firms invited to submit letters of interest did provide successful responses. That list of firms is below.

- ✓ Citigroup Global Capital Markets, Inc.
- ✓ J.P. Morgan
- ✓ Loop Capital Markets
- ✓ Morgan Stanley
- ✓ Ramirez & Co., Inc.

GLWA staff and GLWA's financial advisor, PFM Financial Advisors LLC, also reviewed the RFPs and Letters of Interest received. All firms continue to meet GLWA requirements regarding service and financial capabilities, adherence to laws and regulations, and no conflicts of interest.

The RFPs were distributed to the Audit Committee for their review prior to the oral presentations from the three senior manager eligible firms at the Audit Committee on April 22, 2022. Based upon the three RFPs and related presentations, the Audit Committee determined which firms will be recommended to the Board to serve as the Bookrunning Senior Managing Underwriter, Co-Senior Managing Underwriter, and as a Co-Managers.

Proposed Underwriter Takedown: The Takedown Fee in a bond transaction is the compensation paid to the underwriter for selling the bonds. It is expressed as a dollar amount per \$1,000 of the par amount of the transaction. GLWA's Financial Advisor, PFM Financial Management completed a benchmarking analysis of the proposed fees and confirmed that all were within a competitive range. {Insert firm}, as the recommended Bookrunning Senior Manager, bid a takedown of \$X per \$1,000 (not including reimbursable expenses).

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BUDGET IMPACT

All fees related to the proposed transactions will be paid out of the proceeds of the bonds issued. The bond proceeds as shown in the financial plan are net of fees.

COMMITTEE REVIEW

The outcome of the GLWA Audit Committee on April 22, 2022 is the following recommendation for approval by the GLWA Board.

- 1) Approve {insert firm} as Bookrunning Senior Managing Underwriter;**
- 2) Approve {insert firm} as Co-Senior Managing Underwriter;**
- 3) Authorize a Takedown Fee of {TBD} per bond (plus expenses);**
- 4) Approve Citigroup, JP Morgan Securities LLC, Morgan Stanley & Co., Ramirez & Co., Loop Capital and {insert firm} as Co-Managers;**
- 5) and authorizes the Interim CEO to take such other action as may be necessary to accomplish the intent of this vote.



Financial Services Audit Committee Communication

Date: April 22, 2022

To: Great Lakes Water Authority Audit Committee

From: Kim Garland, CPA, Director – Financial Services Area Chief of Staff

Re: Resolution to Adopt Project Plans for FY 2023 Clean Water State Revolving Fund (CWSRF) Consideration

Background/Analysis: See attached draft Board Letter.

Proposed Action: The GLWA Audit Committee recommends that the Great Lakes Water Authority Board of Directors approves the attached Resolution to Adopt the project plans for the 1) Rehabilitation of Pump Station 1 Improvements, 2) Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements, 3) Rehabilitation of Screened Final Effluent (SFE) Pump Station, and 4) Aeration Decks 1-2 Modification, 5) Oakwood District Intercommunity Relief Sewer Modification at Oakwood District - Northwest Interceptor Relief Sewer (NWI), and 6) Freud Pump Station projects for FY 2023 Clean Water State Revolving Fund (CWSRF) Consideration at its regularly scheduled meeting on May 25, 2022.

..Title

Resolution to Adopt the Project Plans for FY 2023 Clean Water State Revolving Fund (CWSRF) Consideration

..Body

Agenda of: May 25, 2022

Item No.: **2022-XXX**

Amount: N/A

TO: The Honorable
Board of Directors
Great Lakes Water Authority

FROM: Suzanne R. Coffey, P.E.
Interim Chief Executive Officer
Great Lakes Water Authority

DATE: May 25, 2022

RE: **Resolution to Adopt the Project Plans for FY 2023 Clean Water State Revolving Fund (CWSRF) Consideration**

MOTION

Upon recommendation of Nicolette N. Bateson, Chief Financial Officer//Treasurer, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA), **approves the attached Resolution to Adopt the project plans for the 1) Rehabilitation of Pump Station 1 Improvements, 2) Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements, 3) Rehabilitation of Screened Final Effluent (SFE) Pump Station, and 4) Aeration Decks 1-2 Modification, 5) Oakwood District Intercommunity Relief Sewer Modification at Oakwood District - Northwest Interceptor Relief Sewer (NWI), and 6) Freud Pump Station projects for FY 2023 Clean Water State Revolving Fund (CWSRF) at its regularly scheduled meeting on May 25, 2022** and authorizes the Interim CEO to take such action as may be necessary to accomplish the intent of this vote.

BACKGROUND

The Great Lakes Water Authority (the “GLWA”) has identified six wastewater system projects in the FY 2023 to FY 2027 Capital Improvement Plan (CIP) for submittal to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) FY 2023 SRF financing program. The deadline for submitting all CWSRF project plans to EGLE is June 1, 2022. Prior to submitting the project plans, GLWA must hold a public hearing to present the project plans, which is scheduled for May 25, 2022, at 2:00 pm.

The FY 2023 CWSRF project plans and public hearing notice for the following six proposed projects will be posted on the [GLWA website](#): 1) Rehabilitation of Pump Station 1 Improvements, 2) Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements, 3) Rehabilitation of Screened Final Effluent (SFE) Pump Station, 4) Aeration Decks 1-2 Modification, 5) Oakwood District Intercommunity Relief Sewer Modification at Oakwood District - Northwest Interceptor Relief Sewer (NWI), and 6) Freud Pump Station. A summary of each project plan will be presented at the public hearing. After the public hearing is closed, a resolution for the projects will be scheduled for action by the GLWA Board of Directors at its regularly scheduled meeting also on May 25, 2022. The resolution must be approved and signed to ensure the finalized project plans are assembled, printed, and submitted to the EGLE by the deadline of June 1, 2022.

The Projects:

Water Resource Recovery Facility (WRRF) Improvements – 4 Projects – The WRRF was originally constructed in the 1920s. Improvements to the infrastructure are needed to maintain the long-term reliability of the WRRF to treat wastewater from the surrounding communities. The following four (4) WRRF projects collectively will improve and provide for further safe and reliable transport and treatment of sewage flows to and through the WRRF. The total cost of the WRRF project improvements is currently estimated at \$347.8 million.

Rehabilitation of Pump Station 1 Improvements (CIP #211006) – The project is comprised of significant structural, mechanical, process, and electrical upgrades that will maintain the long-term reliability of this critical pumping facility at the headworks of the WRRF. The eight rehabilitated large main lift pumps will more reliably convey sewage for treatment during dry and wet weather conditions. The total cost of this project is currently estimated at \$95.6 million.

Aeration Decks 1-2 Modification - (CIP #212008): This project will allow for step-feed, biological phosphorus removal, and improved hydraulic control. The addition of step-feeding will allow the facility to accommodate larger swings in demand from wet weather conditions. The total cost of this project is currently estimated at \$74.1 million.

Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements - (CIP #211007): This project includes finer bar screens for enhanced capture, the addition of additional bar screens, improved screenings removal, improved grit removal, and a new grit processing facility. The total cost of this project is currently estimated at \$98 million.

Rehabilitation of Screened Final Effluent (SFE) Pump Station - (CIP #216008): This project provides for new right-sized pumps at the existing SFE pump station and includes additional water treatment allowing GLWA to significantly reduce the amount of potable water required to operate the WRRF. The total cost of this project is currently estimated at \$80.1 million.

Oakwood District Intercommunity Relief Sewer Modification at Oakwood District - Northwest Interceptor Relief Sewer (NWI) - (CIP #222001): This project is comprised of the construction of a relief tunnel between the NWI and the Oakwood CSO Control Facility. The proposed relief sewer will divert wet weather flow from the NWI to the currently underutilized Oakwood CSO Control Facility's Retention Treatment Basin to take advantage of its available capacity. The positive impacts of the project include reducing untreated CSO's to the Rouge River, reducing flooding of the Southfield Freeway near Hubbard Avenue, and providing GLWA better control of the high flow levels in the NWI and Detroit River Interceptor (DRI) during wet weather. The total cost of the project is currently estimated at \$75 million.

Freud Pump Station – (CIP #232002): This project is comprised of operational improvements to the storm pumps, structural and architectural improvements, and upgrading the ventilation and heating system. In addition, a new sanitary pump station will be constructed over the two (2) existing 16-foot diameter sewers which will require realigning Freud Street to the north between Conner Street and Navahoe Street. The impact of the project will improve GLWA's operational management of combined storm flows in the area served by the Freud Pump Station. The total cost of the project is currently estimated at \$82. million.

JUSTIFICATION

GLWA is seeking low interest loan assistance through the CWSRF program for these projects. There are several significant benefits to GLWA in utilizing funding through this program. First, although the EGLE interest rate for FY 2023 will not be determined until October 2022, the current year's interest rate of 1.875% for 20 -year and 2.125% for 30-year loans. Savings are typically significant when comparing the interest rates under the CWSRF program with a similar open market revenue bond issue.

In addition, funding secured through the CWSRF program does not require GLWA to undertake the rigorous effort of preparing an official statement as is necessary with a standard open market bond transaction. And finally, use of SRF funding as junior lien debt does not impact GLWA debt reserve requirements.

BUDGET IMPACT

Debt service interest payments on these projects would begin in the fall of FY 2024 and will be included as part of the FY 2024 financial plan.

COMMITTEE REVIEW

This matter was presented to the GLWA Audit Committee at its April 22, 2022 meeting. The Audit Committee *{insert action taken}* that the Great Lakes Water Authority Board of Director approve the attached Resolution to Adopt project plans for the 1) Rehabilitation of Pump Station 1 Improvements, 2) Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements, 3) Rehabilitation of Screened Final Effluent (SFE) Pump Station, and 4) Aeration Decks 1-2 Modification, 5) Oakwood District Intercommunity Relief Sewer Modification at Oakwood District - Northwest Interceptor Relief Sewer (NWI), and 6) Freud Pump Station projects for FY 2023 Clean Water State Revolving Fund (CWSRF) at its regularly scheduled meeting on May 25, 2022.

SHARED SERVICES IMPACT

This item does not impact the shared services agreement between GLWA and DWSD.

Great Lakes Water Authority
Resolution 2022-

RE: Resolution for the Water Resource Recovery Facility (WRRF) Improvements,
Oakwood District Intercommunity Relief Sewer Modification at Oakwood District, and
Freud Pump Station Projects
FY 2023 Clean Water State Revolving Fund Project Plan

By Board Member: _____

Whereas: The Water Resource Recovery Facility (WRRF) Improvements, Oakwood District Intercommunity Relief Sewer Modification at Oakwood District and Freud Pump Station CWSRF Project Plans for the FY 2023 CWSRF has been prepared by the GLWA;

Whereas: The WRRF project is comprised of the Rehabilitation of Pump Station 1, Pump Station 2 Bar Rack Replacements and Grit Collection System Improvements, the Rehabilitation of SFE Pump Station, and Aeration Decks 1-2 Modification;

Whereas: The WRRF project will improve the transport and treatment of sewage flows to and through the WRRF;

Whereas: The Oakwood District Intercommunity Relief System Modification at Oakwood District project is comprised of the construction of a relief tunnel between the Northwest Interceptor (NWI) and the Oakwood CSO Control Facility;

Whereas: The Oakwood District Intercommunity Relief System Modification at Oakwood District project will divert wet weather flow from the NWI:to the currently underutilized Oakwood CSO Control Facility’s Retention Treatment Basin to take advantage of its available capacity;

Whereas: The Freud Pump Station project is comprised of operational improvements to the storm, pumps, structural and architectural improvements, and upgrading the ventilation and heating system, and includes a new sanitary pump station;

Whereas: The Freud Pump Station project will improve GLWA’s operational management of combined storm flows in the area served by the Freud Pump Station;

Whereas: The FY 2023 CWSRF Project Plans have been placed on public notice and a Public Hearing was held May 25, 2022, at 2:00 p.m. where comments on the recommended project were solicited;

Whereas: It is the desire of the GLWA Board of Directors to secure low interest loan assistance through the CWSRF program; and

Whereas: Formal action by the GLWA Board of Directors is needed to adopt the recommended FY 2023 CWSRF Project Plans for the Water Resource Recovery Facility (WRRF) Improvements, Oakwood District Intercommunity Relief Sewer Modification at Oakwood District, and Freud Pump Station; as a requirement for participation in the State of Michigan's CWSRF program;

Now Therefore Be It:

Resolved That this Board hereby accepts the FY 2023 the Water Resource Recovery Facility (WRRF) Improvements, Oakwood District Intercommunity Relief Sewer Modification at Oakwood District, and Freud Pump Station project plans dated May 25, 2022, and as directs staff members of the GLWA to address all public comments, prepare the responsiveness summary, and publish the final Project Plans; and Be It Further

Resolved That the Interim Chief Executive Officer (ICEO) is authorized to transmit the final FY 2023 CWSRF Project Plans for the Water Resource Recovery Facility (WRRF) Improvements, Oakwood District Intercommunity Relief Sewer Modification at Oakwood District, and Freud Pump Station to the Michigan Department of Environment Great Lakes, and Energy on behalf of the GLWA Board of Directors and take all appropriate steps to secure approval of a low interest loan in accordance with the Sate of Michigan's CWSRF procedures so that the projects can proceed expeditiously to construction.

Adopted by the Great Lakes Water Authority Board on: May 25, 2022.



2023 WRRF CLEAN WATER STATE REVOLVING FUND PROJECT PLAN SUMMARY

APRIL 15, 2022





Project Boundary
 WRRF Boundary

Proposed Improvements

The Great Lakes Water Authority (GLWA) operates the Water Resource Recovery Facility (WRRF) located in the southwest corner of Detroit. The WRRF serves Detroit and the surrounding areas accepting wastewater and storm water from combined sewers. The water received is sent through multiple treatment processes within the WRRF. This treatment ensures the discharge meets the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit for the WRRF.

To keep the WRRF functioning at a high level of effectiveness, four projects are being proposed to upgrade the facility's equipment, structures, and processes. GLWA has identified and prioritized these projects as follows: Priority 1A - Pump Station No. 1 Improvements (PS-1 Project); Priority 1B - Aeration Decks 1-2 Modifications (Aeration Decks Project), Priority

1C - Pump Station No. 2 Bar Racks Replacement and Grit Collection System Improvements (PS-2 Project); and Priority 1D - Rehabilitation of the Screened Final Effluent (SFE) Pump Station (SFE Project).

Summary of Project Needs

The needs, and goals of each project are presented below.

PS-1 Project (Priority 1A)

PS-1 is over 80 years old and is the primary pump station that conveys up to 1,200 million gallons per day (MGD) of sewage. Improvements are needed to ensure reliable service of the pumping equipment and to extend the estimated useful life of the station for another 20 years. Failure of PS-1 could result in overflow of dry weather and combined sewage to the Detroit and Rouge Rivers and violations of the NPDES permit.

Major goals of the PS-1 Project include:

- Provide NDPES required firm capacity
- Rehabilitate the pumps to run within the manufacturers' recommended operating ranges
- Meet Hydraulic Institute recommendations for suction intake conditions
- Decrease electrical consumption
- Right size utilities and mechanical systems
- Provide for a minimum design life of 20 years for the process equipment and building
- Improve the pump station's ability to address grit entering the wet well
- Improve the pump station's ability to meter flow
- Reduce the number of steps needed to properly operate the pump station
- Improve ability of operations and maintenance (O&M) staff to access and disassemble the pumps

Aeration Decks Project (Priority 1B)

The secondary treatment process is the capacity limiting process at the WRRF. Changes to the high-purity oxygen activated sludge system are needed to optimize the aeration system's performance and accommodate more stringent phosphorus limits that will be included in an upcoming NPDES Permit. These changes include better control flow (contact time) for dry and wet weather flows by controlling water tank levels and the opportunity to utilize biological phosphorus removal to meet the pending NPDES Permit limits.

The surface aerators are limited to a narrow range of water levels, i.e. about 5 inches. The Aeration Deck level control system cannot maintain the water elevation in that range,

which is especially evident at low flows when up to 175 MGD (instantaneous) of clean water must be recycled to artificially maintain a higher minimum water level. The level control system relies on submerging the effluent weir and using downstream, manually-operated flow control valves to stabilize the level at the weir outlet. Restoring the system to free-discharge weirs will eliminate the need to manually manage the water level and give the weir complete, passive control of the bioreactor water levels. To limit the flow-induced water level variations in the secondary treatment process, the hydraulic loading rate range at the effluent weir must be narrowed.

Major goals for the Aeration Decks Project include:

- Increase the overall efficiency and wet weather treatment capacity of the secondary treatment process by providing step-feed and improving the performance efficiency of Intermediate Lift Pump (ILP) Station No. 1 by replacing ILPs 1 and 2.
- Provide better hydraulic control at Aeration Decks 1 and 2.
- Improve the system's energy efficiency by efficiently sizing the mixing and aeration equipment.
- Provide Biological Phosphorus (Bio P) removal to accommodate the more stringent NPDES standards.

Increasing the efficiency will improve the performance and reliability of the secondary treatment process. The increased capacity will also prepare the system for projected increased flows from service population growth.

PS-2 Project (Priority 1C)

The existing PS-2 Rack and Grit facilities remove sanitary trash and grit from up to 828 MGD of raw sewage that is treated at the WRRF. The screening and grit systems are not meeting expected removal standards, operate inefficiently, and are prone to failure.

Effective grit and screening removal can dramatically impact the performance and reliability of downstream treatment equipment. The cost of ineffective grit and screenings removal is difficult to quantify, but has been shown to manifest in excessive accumulation of grit in downstream channels and process tanks with severe consequences that include making gates difficult or impossible to operate; reducing conveyance capacities; inducing excessive wear and shortened life of primary sludge pumps and solids processing equipment; clogging the vertical turbine solids handling) inlet strainers on return activated sludge pumps; and reduced quality of the biosolids product which negatively impacts GLWA's long-term goal of adequate anaerobic digestion.

The following goals for the PS-2 Project have been set to address the potential consequences and increasing downtime of the aged equipment:

- Improve the systems to provide for significantly higher screenings and grit removal efficiencies
- Make changes that improve the long-term system reliability
- Simplify O&M

Upgrades will improve the WRRF's reliability by maintaining treatment processes with greater ease and reducing operating costs.

SFE Project (Priority 1D)

The SFE Pump Station at the WRRF provides water for treatment processes that do not require "potable quality" water. This pump station was originally constructed when the demand for SFE water was significantly higher than today. Eight existing pumps have a total capacity of 124 MGD while the current operational demand is only 23 MGD. Running these oversized pumps is over-pressurizing the system and wasting energy.

In addition, EGLE has expressed concerns regarding the availability of redundant water supplies to the WRRF process units. Processes that rely on water of higher quality, rather than SFE, use the secondary water system. Secondary water is sourced from the Detroit Water and Sewerage Department's (DWSD's) potable system into reservoirs and is repumped from the basement of the existing machine shop to the low, intermediate, and high-pressure systems throughout the plant. Currently, the WRRF does not have redundancy for the secondary water system, upon which many processes rely. The existing secondary water system uses almost 6 MGD of potable water.

If a water main supply line were to go down, several of the processes at the WRRF and the chlorination/dechlorination facilities on the east side of Jefferson Avenue would be interrupted, losing the water necessary to keep treatment running. This outage would cause the WRRF to be out of compliance with their NPDES Permit.

The following goals have been set for the SFE Project to address the risks associated with the existing process:

- Replace the aging SFE pump station with a new right-sized pump station
- Provide treatment to SFE water sufficient for use in the secondary water system
- Provide redundancy to the secondary water system.

Use of the existing SFE Pump Station cannot be optimized to meet the current operating demands. Coupled with the reliance on DWSD's potable water system, the SFE Pump Station and City water main are not suited to provide optimum performance for the WRRF treatment processes. Changes are needed to the SFE Pump Station to meet these needs.

Potential Alternatives

Multiple alternatives were considered for each project to provide the best and most cost-effective project plan. Brief descriptions of the alternatives evaluated and their determined feasibility are provided in the following sections.

Common Alternatives

Two initial alternatives were common to all projects: the "No Action" and "Regional" alternatives.

The "No Action" alternative was determined to be unacceptable for all projects based on the existing condition of the various treatment processes and was not evaluated further. This alternative would not address the identified needs for any project and put the ability to meet the NPDES Permit at risk, now and in the future.

The WRRF is the largest treatment plant in Michigan and is already considered a "Regional" treatment facility because it

accepts flows from multiple communities in the surrounding areas. Thus, the "Regional" alternative was not relevant to these projects and was not evaluated further.

Specific additional technical alternatives considered and evaluated for each project are presented below.

PS-1 Project Alternatives

Three pump system alternatives were considered for the PS-1 Project: rehabilitation of the existing pumps and motors; replacement with new constant speed driven pumps and motors; and replacement with new variable speed driven pumps and motors.

Rehabilitation of the existing pumps and motors was determined to be the most cost-effective solution to extend the remaining useful life of the pump station to 20 years. A condition assessment of the pumps revealed that the pump casings had adequate remaining life (i.e., the entire pump did not need to be replaced). The original pumps and facility were designed to have the pullout assemblies replaced periodically, and this can be done at a much lower cost than full pump replacement. The constant speed motors, already some of the most efficient available, could also be rebuilt at a lower cost than providing new motors.

An analysis of pumping demands determined that the existing pump capacity combinations provides the WRRF with the ability to manage flow properly, thereby avoiding the expense associated with variable speed controls and variable speed compatible motors.

Additional improvements included within the recommended alternative that benefit operations and maintenance of the facility include: relocation of equipment to a new electrical room addition; addition of air-locks and other improvements to achieve NFPA-820 “unclassified” space in the pump station’s dry spaces; structural and architectural improvements; replacement of gates, valves, and actuators; rehabilitation of the elevators; additional drains and sump pump replacements; replacement of instrumentation and controls that had exceeded their useful life; and addition of small cranes to facilitate the movement of maintenance materials.

Aeration Decks Project Alternatives

The Aeration Decks Project evaluated three alternatives for aeration/mixing and three alternatives for controlling the water level in the secondary system. An alternative for biological phosphorus removal (step-feed), which is dependent upon the selected aeration/mixing and water level control solution, was also evaluated. Finally, an alternative to replace, rather than maintain, intermediate lift pumps (ILPs) 1 and 2 was assessed.

The alternative selected includes a combination of mixers and aerators referred to as the “hybrid alternative”; three-stage weir modification; step feed to achieve biological phosphorus removal; and ILP replacement.

The Aeration Decks will have mixers in Bays 1 through 3 to create anoxic zones, and surface aerators in Bays 4 through 10 to create aerated zones. New weirs will be installed to create a three-stage system in the aeration decks, thus providing a more suitable/stable hydraulic

profile. New ILPs will increase the reliability and efficiency of the improved secondary process.

PS-2 Project Alternatives

Alternatives prepared for the PS-2 Project addressed needed improvements to screening, grit removal, and grit processing.

Five screening alternatives were identified. All screening alternatives include replacement of the eight coarse screens with either coarse ($\frac{3}{4}$ -inch) or fine ($\frac{1}{4}$ -inch) screens. Also, a hydraulic analysis determined that more screens were required to meet the percent removal goals. Additional screening was considered at the screening building; downstream of the existing screen channels at the grit chamber inlet; and at the grit chamber outlet.

Due to space constraints in the existing screening building, a single stage of multi-rake bar screens was selected as the optimal arrangement. This alternative included replacement of the eight coarse screens with $\frac{1}{4}$ -inch screens and the addition of two, $\frac{1}{4}$ -inch fine screens, for a total of 10 screens. The additional screens require the extension of the screening building, influent channel, and effluent channel.

Other screening improvements include the addition of a new sluice channel to carry the screenings to dewatering drum conveyors; improvements to the dumpster roll-off configuration; the addition of gated, screenings bypass channels; mechanical improvements to plumbing and HVAC; and architectural improvements including lighting.

Three grit removal alternatives were identified, including rehabilitating the aerated grit

chambers and replacing the clamshell bucket system with a new grit removal method; retrofitting the aerated grit chambers with stacked tray grit removal units; and retrofitting the aerated grit chambers with stirred vortex grit removal units.

Aerated grit removal was eliminated from consideration due to low grit removal performance. Stacked tray grit removal was eliminated because it required 24 units compared to only 8 stirred vortex units for comparable performance. Additionally, operation of the stirred vortex technology will be similar to the existing grit removal process. The stirred vortex alternative combines lower operations and maintenance cost with improved grit removal performance.

Due to the greater efficiency of the new grit removal process, a separate grit processing facility is needed. The grit processing facility equipment alternatives considered were conventional grit cyclones and classifiers; vortex grit washers and grit dewatering; and fluidized bed grit washers and grit dewatering.

Cyclone-classifiers were selected because they have lower construction and operation and maintenance costs than the vortex and fluidized bed grit processing options.

The final recommended combined alternative for the PS-2 Project includes 10 new fine screen units; 8 stirred vortex grit removal units; and a new grit processing facility with 8 pairs of conventional grit cyclones and eight classifiers.

SFE Project Alternatives

The SFE Project considered 2 alternatives: a new elevated storage tank and a new SFE

pump station and treatment facility. Evaluation of the tank showed that the space available for a facility sized to hold the required amount of water to supply all processes at the WRRF was not sufficient without encroaching on areas reserved for future expansion. In addition, the cost estimate for the storage tank was the highest of the alternatives. The need to treat the water within the tank or flush the system regularly to keep the water quality within acceptable limits also deterred the selection of this alternative.

Construction of a new SFE pump station and treatment facility was the alternative selected. While final selection of components in this progressive design-build project is still pending, this Project Plan assumes the new treatment and pumping facility will include reverse osmosis filtration, chlorination, and 8 centrifugal pumps with variable speed drives capable of discharging water at low, medium, and high pressures.

Environmental Evaluation

Short-term impacts, such as equipment noise and dust, cannot be avoided during construction of these proposed projects. However, thoroughly designed and well-planned construction sequencing should minimize impacts. Equipment noise impacts to surrounding areas can be minimized by controlling hours of work. Dust and soil deposits will be controlled through frequent watering and pavement sweeping. Soil erosion control measures will also be implemented as needed to reduce unwanted soil runoff. Specific techniques will be specified in the construction contract documents for each project.

A state historic resource evaluation and an endangered species and habitat review are underway for all projects at the WRRF. There are no known cases of conflict with the projects. Each project will be closely monitored, and any conflict will halt the project until the correct course of action is determined, and steps are taken for proper mitigation.

Estimated Project Costs

The total project costs for each project are summarized in the table below. These costs include estimated values for construction, project contingencies, and engineering.

Proposed Projects' Priorities and Costs		
Priority	Project	Estimated Total Project Cost
1-A	PS-1 Project	\$95,600,000
1-B	Aeration Decks Project	\$74,100,000
1-C	PS-2 Project	\$98,000,000
1-D	SFE Project	\$80,100,000
Total		\$347,800,000

Estimated User Cost Impact

Calculating the total present worth of each project, assuming a funding term of 20 years and a loan interest rate of 1.875% based on the EGLE posted loan rate, yields an equivalent annual cost of \$29,606,000. According to the GLWA Master Plan and available housing data from the Southeast Michigan Council of Governments, an estimated 1,136,500 households will be impacted by these projects.

The per household user cost is estimated to be \$26.05 per year, or \$ 2.17 per month.

Proposed Implementation Schedule

The proposed schedule for the project plan and design and construction of the projects contained within it is presented in the table below.

Proposed Schedule of Projects		
Project	Estimated Construction Start Date	Estimated Construction End Date
PS-1 Improvements Project (Design-Bid-Build) <i>Prepurchase of Equipment starts Q3 2022</i>	Q1 2023	Q1 2028
Aeration Decks 1-2 Modifications Project (Design-Build Contract) <i>Design starts Q1 2023</i>	Q2 2025	Q2 2031
PS-2 Bar Racks Replacement and Grit Collection System Improvements Project (Design-Bid-Build)	Q2 2023	Q3 2029
Rehabilitation of the Screened Final Effluent Pump Station Project (Progressive Design-Build)	Q1 2023	Q3 2026

Project Plan Summary

GLWA CON-2002655
Oakwood District Intercommunity Relief Sewer
Detroit, Michigan
Prepared for:



April 15, 2022

Prepared by:



FK Engineering Associates

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1.0 Project Summary

GLWA is responsible for the operations and maintenance of the 13-mile long Northwest Interceptor (NWI) from the Water Resource Recovery Facility (WRRF) to its northernmost point near the intersection of Hessel and Berg in northwest Detroit, servicing approximately 633,000 people in the area. The NWI was originally constructed between 1928 and 1950 to collect sewage from trunk and relief sewers, that previously ran to the Detroit and Rouge Rivers, and convey the flow to the WRRF. Currently, during extreme wet weather, the NWI experiences surcharging (more flow than capacity) that results in combined sewer

overflows and flooding. A concept for a connection from the NWI to the Oakwood Combined Sewage Overflow (CSO) Control Facility was originally developed during the 2016 Oakwood District Analysis, and further developed as part of the 2018 Wastewater Master Plan (WWMP) project to better control flow levels and CSOs along the NWI.

2.0 Project Needs

Significant surcharging has been observed along the NWI during large wet weather events. This surcharging causes CSOs, sanitary sewer overflows, flooding of a portion of the Southfield Freeway near Hubbard Road, and reduced



Figure 1: Location of proposed Oakland District Intercommunity Relief Sewer

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capacity for GLWA customers to discharge their contract capacity flow rates into the NWI. This surcharging is caused by overloading of the NWI and by high wet well levels at Pump Station 1 and 2 at the WRRF. The concept for the Relief Sewer was originally developed to optimize the operation of the NWI and reduce negative effects as a result of the previously mentioned surcharging.

3.0 Proposed Improvements

This relief sewer project consists of the construction of an approximately 3,500-foot-long, 10-foot finished diameter tunnel between the NWI and the Oakwood CSO Control Facility. This tunnel will have a backwater gate on the NWI and four regulator gates that will divert wet-weather flows to the Oakwood CSO Facility where it can be treated and discharged into the Rouge River. Diverting flow to the Oakwood CSO Control Facility, which is currently being under-utilized and has the available capacity to receive additional flow from the NWI, is expected to have the following benefits:

- Reduces the frequency and volume of SSO at the Dearborn's Greenfield Pump Station.
- Reduces flooding of the Southfield Freeway (M-39) near Hubbard Avenue.
- The NWI pipe capacity downstream of the VR-9 gate (Warren-Pierson) will be available for upstream CSO control.
- Minimizes the need for Allen Park to pump its wastewater into the NWI.
- Minimizes the frequency and volume of untreated CSO discharges to the Rouge River from GLWA Discharge Point 054 (B50 on the NWI at Fort and Bayside).
- Provides additional wet weather capacity for the DRI and NIEA at the DWRRF.
- Provides an emergency relief connection from the NWI to the Oakwood Pump

Station if there is a siphon failure or failure at the Detroit WRRF.

Multiple alignments were considered during the study phase of this project. The alignments were evaluated to minimize construction cost, minimize easement and property acquisition efforts, and avoid subsurface conflicts such as high-pressure gas mains, building foundations, and the piles supporting I-75 and Fort St. The preferred alignment has been chosen and starts at the NWI near the intersection of Bayside St. and Gale. The tunnel alignment then follows Stocker St, runs below I-75, and turns to connect to the southeast Side of the Oakwood CSO Control Facility.

4.0 Environmental Evaluation

Without this proposed relief sewer project, the surcharging of the NWI will continue, which results in SSO's, CSO's, and the inability of GLWA customers to discharge contract capacities in the NWI. Additionally, the population of the NWI service area is expected to increase over the next 20 years. This project is designed to address these issues for current and future GLWA customers in the NWI service area and ensure that they can discharge contract capacities without increasing the amount or frequency of SSOs and CSOs at certain locations.

Throughout the design of this project, the design team has evaluated environmental impacts that could occur from the construction or operation of this project. The review included cultural and historical resources in the project area and the natural environment which includes air quality, wetlands, sensitive floodplains and high-risk erosion areas, rivers and surface waters, recreational facilities, agricultural resources, and the presence of rare and endangered species of plants and animals. It has been determined that any negative environmental impacts are short-term and will result from the 3-year construction

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phase of the project. The majority of the construction areas will be below ground, and as such, above ground impacts are limited to a small amount of predicted settlement from tunneling activities. The tunnel-mining and excavation methods will be developed to minimize any long-term settlement. Three at-grade construction locations will generate short-term environmental impacts such as increased generation of noise and dust, potential traffic disruption, and potential odors from an open sewer during portions of the construction. These impacts will be minimized by limiting contractor working hours and the development of soil erosion and sedimentation plan and traffic control plans.

Long term impacts are limited to traffic disruption along Bayside Street between Ormond and Gale streets where the road will be permanently vacated and an at-grade flow-

control structure will be constructed. There are currently no homes located along this section of Bayside Street, so impact to the public is expected to be minimal.

5.0 Estimated User Cost Impact

This proposed project is anticipated to directly impact approximately 464,900 GLWA customers and indirectly impact approximately 633,100 GLWA customers. The total estimated project cost of approximately \$75,000,000 will be distributed between the entire GLWA user-base of approximately 2.8 million residents in approximately 1.14 million households. The estimated cost per household annual user has been determined to be \$4.01.

6.0 Proposed Implementation Schedule

The currently anticipated schedule for this work is summarized as follows:

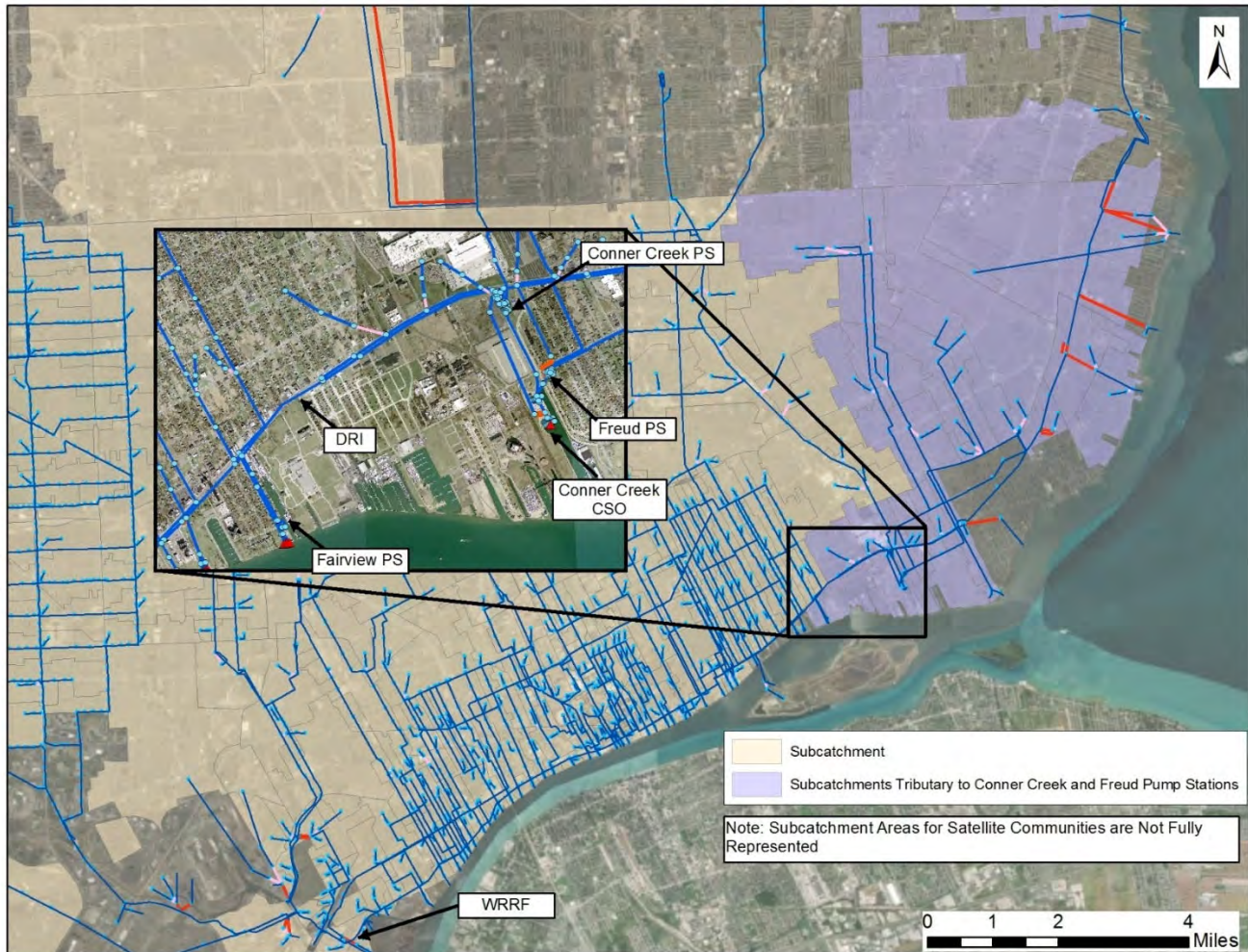
Project Schedule	
Design Notice to Proceed	November, 2021
60% Design	June, 2022
90% Design	August, 2022
100% Design	November, 2022
Bid Due	April, 2023
Construction Notice to Proceed	May 2023
Construction Final Completion	May, 2026

GREAT LAKES WATER AUTHORITY

Freud Pump Station Improvements Project

Project Plan
May 25, 2022





Proposed Improvements

The Freud and Conner Creek pumping systems are key components in relaying wastewater and storm water generated in the eastern portion of Detroit. The dry weather flow is conveyed to the Fairview Sewage Pump Station, and ultimately, to the Detroit Water Resource Recovery Facility (WRRF), while wet weather flow is conveyed to the Conner Creek CSO facility. The operation of these facilities is critical to prevent flooding of stakeholders' premises, but they also protect the water quality in the Detroit River and ultimately the drinking water supply for Detroit. The conveyance system is very complex involving at least eight interceptors/sewers, multiple regulating structures, three large pump stations, and a CSO treatment system. The conveyance system has grown and been modified numerous times over the past 100-years with the last major improvement being the construction of the Conner Creek CSO Basin and Treatment Facility which was placed into operation in 2005. The Freud Pump Station (FPS) was constructed in the mid-1950s primarily to handle the overflows from the

Conner Creek Pump Station (CCPS). When the capacity of the CCPS is exceeded, the East Jefferson Relief Sewer overflows to the Fox Creek and Ashland Relief Sewers. The original concept was for the FPS and the Fox Creek and Ashland Relief Sewers to store approximately 20 million gallons for return to the CCPS through the East Jefferson Relief sewer when the CCPS could handle the flow. The operation concept of Freud was changed when the Conner Creek CSO Facility was placed into operation. The Freud Pump Station has eight storm water pumps with a firm storm pumping capacity of 2,030 million gallons per days (MGD). The station also includes two pumps in the center of the wet well that were originally intended for dewatering. These two pumps currently pump dry weather sanitary flow. Storm pumps convey flow to the Conner Creek CSO Basin and Treatment Facility for screening, settling and disinfection prior to discharge to Conner Creek and the Detroit River.

The purpose of the Freud Pump Station Improvements Project is to make modifications and improvements to enhance protection of the health, safety and welfare of residents served by the pump station for the next 50+ years. The focus of the project is to improve operability,

reliability, integrity, and maintainability of the station over the life of the facility. Primary scope items include rehab of the eight storm water pumps including replacement of the pump rotating assembly, line shafts, and concrete pump supports; installing new dewatering pumps inside the Freud Pump Station with an approximate 10.8 MGD firm capacity, providing dedicated access to the Freud Pump Station wet well to allow draining, cleaning, inspections, and maintenance; and construction of a new Freud Sanitary Pump Station approximately 1.5 blocks east of the existing storm pump station. The sanitary pump station will be constructed over the two 16-ft diameter tunnels that convey flow to the existing Freud Pump Station. The structure includes provisions to add stop logs in the two 16-ft tunnels to isolate Freud Storm Pump Station. The stop logs, along with the improved access to the wet well at the existing Freud Pump Station, will enable Great Lakes Water Authority (GLWA) to inspect, clean and maintain the wet well. The proposed structure will include a sanitary pump station with a firm capacity of 30 MGD to manage dry weather flows. Sanitary pumps will discharge to a proposed 36-inch force on Navahoe Street that will connect to the existing 9-ft diameter Detroit River Interceptor (DRI) on East Jefferson.

The proposed project will improve the reliability of the station and reduce the risk of collection system surcharging and combined sewage backups into basements. The pump station improves water quality during storm events by conveying flow to the Conner Creek CSO Facility for treatment prior to discharge to the Detroit River.

Summary of Project Needs

The Freud Pump Station is a key component in relaying wastewater and storm water generated in the eastern portion of Detroit. The operation of the facility is critical to prevent flooding of stakeholders' premises. The Freud Storm Pump Station has a firm capacity of 2,030 MGD and this must be maintained.

The purpose of the Freud Pump Station Improvements Project is to make modifications and improvements to the pump station to protect the health, safety and welfare of residents served by improving operability, reliability, integrity, and maintainability. Primary scope items include rehab of the storm water pumps including replacement of the pump rotating assembly, line shafts, and concrete pump supports for managing the station capacity of 2,030 MGD, design of a single isolation shaft with a 30 MGD firm sanitary capacity to manage dry weather flow conditions,

installing new dewatering pumps inside the Freud Pump Station to provide access to the Freud Pump wet well to allow draining, cleaning, inspections, and maintenance.

Operation reliability and resiliency are project drivers for the Freud Pump Station Improvements. The Freud Sanitary Pump Station is needed to allow for safe isolation of the Freud Storm Pump Station for inspection, repairs as needed to ensure proper functionality. The existing Freud Storm Pump Station dewatering pumps were never intended to operate as daily sanitary service. The current Freud Storm Pump Station dewatering pumps are operating outside the allowable operating range which requires the pumps to be repaired and serviced yearly.

Potential Alternatives

The following alternatives were analyzed in the project plan. The no-action alternative; Alternative 1 - minimum improvements the existing Freud Pump Station; Alternative 2 – storm water pump improvements and New Freud Sanitary Pump Station; and Alternative 3 – is combining the existing Freud and Conner Creek Pump Stations.

As stated in the previous section, the Freud Pump Station was originally constructed about 70 years ago and the operational reliability of Freud Pump Station is critical to health and welfare of the public. As such, Alternative 2 was selected. Therefore, Alternatives 1 and 3 are not recommended due to increased cost and longer service interruptions with Alternative 3, and Alternative 1 will not provide a safe means to isolate the Freud Pump Station wet well for maintenance and inspections.

Environmental Evaluation

Short-term and long-term impacts due to construction activities such as noise, dust and traffic disruption cannot be avoided.

In areas where there will be construction activities above ground, efforts will be made to minimize the adverse impacts by use of thoroughly designed and well-planned construction sequencing. Noise from equipment cannot be avoided, but hours of work will be controlled. Dust and soil deposits on the streets will be controlled through watering and frequent street sweeping. Construction area footprints will be minimized, and traffic control measures will be necessary. Site restoration will minimize the adverse impacts of construction, and the implementation of a Soil Erosion and Sedimentation Control program will minimize the impacts due to ground disturbance, when

such disturbance is found to be necessary. Specific techniques will be specified in the construction contract documents.

Estimated Project Cost

Item	Estimated Cost (\$)
Design	\$ 3,600,000
Construction Admin	\$ 3,500,000
Construction	\$ 75,000,000
Total	\$ 82,100,000

Estimated User Cost Impact

Assuming a funding term of 30 years and a loan interest rate of 2.125 percent, the total project cost has an equivalent annual cost of \$3,405,000. According to the 2020 GLWA Wastewater Master Plan, there is approximately 2.8 million residents between 2018 and 2045 in the GLWA regional service area. The number of persons per household in Michigan was estimated by the U.S. Census Bureau as 2.45 between 2016 - 2020. The estimated number of households that will be impacted by this project is estimated to be 1.14 million.

The per household user cost is \$2.98 per year.

Proposed Implementation Schedule

Item	Date
Design Notice to Proceed	January 2020
50% Design	November 2021
90% Design	May 2022
100% Design	June 2022
Bid Opening	January 2023
Construction Notice to Proceed	April 2023
Construction Substantial Completion	June 2026
Construction Final Completion	December 2026



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Financial Services Audit Committee Communication

Date: April 22, 2022

To: Great Lakes Water Authority Audit Committee

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

Re: CFO Update

Fiscal Year-End Planning

The last day that the Board will be able to adopt FY 2023 budget amendments is June 22, 2022. For this reason, we may need to schedule a Special Audit Committee in advance of that date for review of proposed budget amendments. A date for consideration is June 17, 2022.

Final Ten-Year Financial Plan

The FY 2032 ten-year financial plan has been updated to reflect the action by the Board of Directors to adopt the FY 2023 & FY 2024 Biennial Budget and FY 2023 Charges. That plan is attached and will be posted on the Financials page of the GLWA website.

TFG
THE FOSTER GROUP

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BART FOSTER, PRESIDENT
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MEMORANDUM

GLWA Financial Forecast Update

December 15, 2021
Finalized March 29, 2022

To: Nicolette Bateson

From: Bart Foster

This memorandum is intended to introduce updated long-term financial plan forecasts for the GLWA Regional System Water and Sewer funds, prepared in coordination with development of the Fiscal Year 2023 budget and charges. ***The material presented herein updates that originally presented in similar documents published on October 15, 2021 and December 15, 2021. This version of the forecast aligns with the approved FY 2023 Budget and the approved FY 2023 Water and Sewer Service Charge Schedules. The Water material presented herein is identical to that from the December 15, 2021 version. The Sewer material has been updated to reflect modifications made during the budget and charge review process, which resulted in a reduction in the overall budgeted FY 2023 revenue requirement (and charges) of approximately \$5.9 million.*** These updated projections reflect forecasted financial results for a ten-year¹ projection period (*Fiscal Year 2022 through Fiscal Year 2032*) for GLWA's capital and operating financial requirements. Separate exhibits are designed to summarize forecasts for both the Water Fund and the Sewer Fund. These forecast summaries are presented in similar format to prior published work products we have prepared in various forums, which largely focused on revenue requirements (reflected as either "budget" or "cash" basis) in a manner that aligns with requirements of the GLWA Master Bond Ordinances (MBO's). We have also included forecast exhibits that illustrate projected "GAAP basis" results, and forecasted "Net Position" of both utilities.

This version of the forecast report continues to focus entirely on projected financial results for the GLWA Regional System. We are in the process of incorporating preliminary budget and forecast information for the DWSD Local System into the comprehensive forecast. Those exhibits will also be presented in subsequent documents.

This forecast document embraces a forecasting approach and format that we've utilized for several years, and readers should find the general exhibits and discussion familiar. It has been used in support of GLWA revenue bond issues and annual budgeting and charge setting. This material is designed to align with the recently approved FY 2023 budget and charges. ***Our final report summarizing the approved FY 2023 Water Charges and FY 2023 Sewer Charges is available under separate cover.***

¹ Actually 11 years, including estimated results for the current year.

Executive Summary Takeaways

- This forecast illustrates the overall FY 2023 **System Charge Adjustments** of a 3.7% increase for the Water System and a 2.4% increase for the Sewer System.
 - *The Water adjustment is the product of:*
 - 3.5% to address a \$12.0 million revenue requirement increase;
 - 0.15% to reflect a decrease in budgeted water sales volumes, creating a \$0.5 million negative sales revenue forecast.
 - *The Sewer adjustment is the product of:*
 - 1.25% to address a \$5.9 million revenue requirement increase;
 - **1.15% to reflect reinstatement of Highland Park bad debt adjustment, creating a \$5.4 million negative revenue forecast.**
 - ***These adjustments are more fully documented in other material published contemporaneously with this forecast update.***
- The forecast produces the executive summary metrics for the 10-year forecast period summarized below.

GLWA Financial Plan Summary (\$ millions)
Executive Summary Metrics

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<u>Water Supply System</u>											
Charge Adjustment		3.7%	3.3%	3.0%	3.0%	3.6%	3.5%	3.6%	3.5%	3.6%	3.6%
Projected Revenue	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
Projected Expenses	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
Net Revenues	198.2	211.2	219.8	227.1	239.1	249.4	260.6	272.1	284.1	296.6	309.6
Projected Cash Balance	222.7	202.8	203.8	203.1	202.7	202.6	203.0	202.6	202.5	202.9	202.9
Capital Improvements *	160.4	172.8	195.6	189.5	151.2	130.5	228.4	228.5	179.3	176.4	153.5
Debt Service Coverage **	1.42	1.36	1.38	1.33	1.32	1.34	1.33	1.34	1.30	1.32	1.32
<u>Sewage Disposal System</u>											
Charge Adjustment		2.4%	2.3%	2.0%	2.1%	2.5%	2.5%	2.5%	2.6%	2.6%	2.5%
Projected Revenue	472.9	481.4	493.4	505.7	518.4	531.3	544.6	558.2	572.2	586.5	601.2
Projected Expenses	181.3	184.1	189.4	190.5	196.0	199.7	203.7	207.8	211.9	216.2	220.5
Net Revenues	291.6	297.3	304.0	315.2	322.4	331.6	340.9	350.5	360.3	370.3	380.7
Projected Cash Balance	247.2	241.7	244.4	244.0	244.3	244.9	244.2	244.2	244.2	246.0	274.1
Capital Improvements *	95.5	112.9	133.3	146.5	126.9	108.7	181.1	161.0	121.7	123.5	82.8
Debt Service Coverage **	1.37	1.39	1.38	1.48	1.50	1.49	1.47	1.50	1.54	1.60	1.64

* Includes Budgeted Capital Outlay

** Regional System contribution only

- The Water CIP creates relatively more financing pressure on the forecast than does the Sewer CIP. As a result the Water System forecast contains continuation of significant debt financing, while mostly “pay go” capital financing is forecasted for the Sewer System towards the end of the ten year period.
 - *This fundamental difference in the Water and Sewer Forecasts is highlighted throughout this memorandum and in the accompanying exhibits.*

Forecast Introduction and Exhibits

As noted earlier, the efforts undertaken to prepare these forecasts are consistent with the analyses that we utilize to prepare financial feasibility report(s) that we have provided to GLWA in support of financial transactions. However, the efforts to date have not been as rigorous as those designed to support a public offering of debt, and should be considered “**Preliminary**”. We encourage stakeholders to review these forecasts with that understanding in mind. In addition, our formally published forecasts always carry this caveat:

In conducting our studies and formulating our projections and opinions contained herein, we reviewed the books, records, agreements, capital improvement programs and other information produced by the Authority as we deemed necessary. While we consider such books, records, and other documents to be reliable, we have not verified the accuracy of these documents. The projections set forth herein are intended as “forward-looking statements”. Actual results may differ materially from those projected, as influenced by conditions, events, and circumstances that may actually occur.

Having said all that, let’s review the next look at the updated forecasts. First, an introduction of the core executive summary assumptions we’ve incorporated into the baseline analysis.

1. FY 2022 estimated activity is consistent with the approved first quarter budget amendments, with additional minor estimates to reflect ongoing review.
2. FY 2023 through FY 2027 O&M is consistent with the approved budget established by GLWA.
 - *FY 2023 increase of 1.1% in total (combined Water and Sewer) compared to originally approved FY 2022 budget;*
 - *Water increase for FY 2023 is 0.6%, Sewer increase is 1.5% - this reflects diligent review of the FY 2023 budget preparation and individual budget programs, including increased focus on programs to address Sewer issues.*
3. Future O&M growth beyond FY 2023 = 2%, on average, overall for the System, with varying amounts between Water and Sewer through FY 2027 to match the FY 2023 Budget documents, and uniformly thereafter.
4. CIP’s reflect the versions approved by the GLWA Board.
5. CIP Expenditure Level reflects a Spend Rate Assumption of:
 - *80% for the Water System for FY 2022 through FY 2027;*
 - *75% for the Sewer System for FY 2022 through FY 2027;*
 - *100% for both systems for FY 2028 through FY 2032.*
6. Investment earnings rate = 0.45% for FY 2022, declining to 0.35% for FY 2023, then gradually increasing to 2.2% by FY 2026 and remaining at that level for the remainder of the forecast period (*consistent with estimates provided by PFM*).
7. Capital financing forecast policy:
 - *Fund all Major CIP expenditures via Construction Fund, which is sourced by:*
 - SRF loans
 - Transfers from I&E

- Bond Proceeds
 - Investment Earnings on Bond Proceeds
 - *CIP funding source priority:*
 - Identify short lived CIP projects that should be financed by I&E (*currently estimated at 10% of total CIP*);
 - Apply “confirmed” SRF resources to specific projects²; then
 - Spend existing I&E Funds until they reach policy minimum (*\$90 million*);
 - Do not rely on annual deposits to I&E to finance CIP until subsequent year(s);
 - Issue debt to finance remainder of annual capital requirements;
 - Plan biennial bond sales in amounts that result in moderate “carryover” balances at end of 2nd year³
 - *Apply Capital Spend Rate Assumption to ALL elements noted above, including:*
 - Total annual requirements;
 - Estimated short lived projects;
 - Scheduled SRF reimbursements
8. “Top Line” increases in annual revenue requirements starting in FY 2023 of:
- *3.5% for the Water System;*
 - *2.5% for the Sewer System*
9. Approved FY 2023 System Charge adjustments of:
- **3.7% increase for Water**
 - Reflects moderate reduction in baseline sales revenue compared to approved FY 2022 Budget and Charges
 - **2.4% increase for Sewer**
 - Reflects reinstatement of Highland Park bad debt adjustment compared to approved FY 2022 Budget and Charges
10. Total GLWA / DWSD “Legacy Pension Obligation” annual payments reduce from \$45.4 million to \$11.0 million starting in FY 2024, and all amounts are treated as a non-operating expense after FY 2023.

The forecasted financial results resulting from our application of these assumptions are summarized in the attached exhibits, and briefly introduced below. The exhibit page number references are consistent between the separate Water (W) and Sewer (S) page numbers.

1. Forecasted CIP Financing Plan

² In prior forecasts “confirmed” SRF projects were limited to those for which GLWA Board had formally passed ordinances and intent to issue. The forecast policy has been updated to include as “confirmed” all projects that have been approved on the State’s Project Priority List.

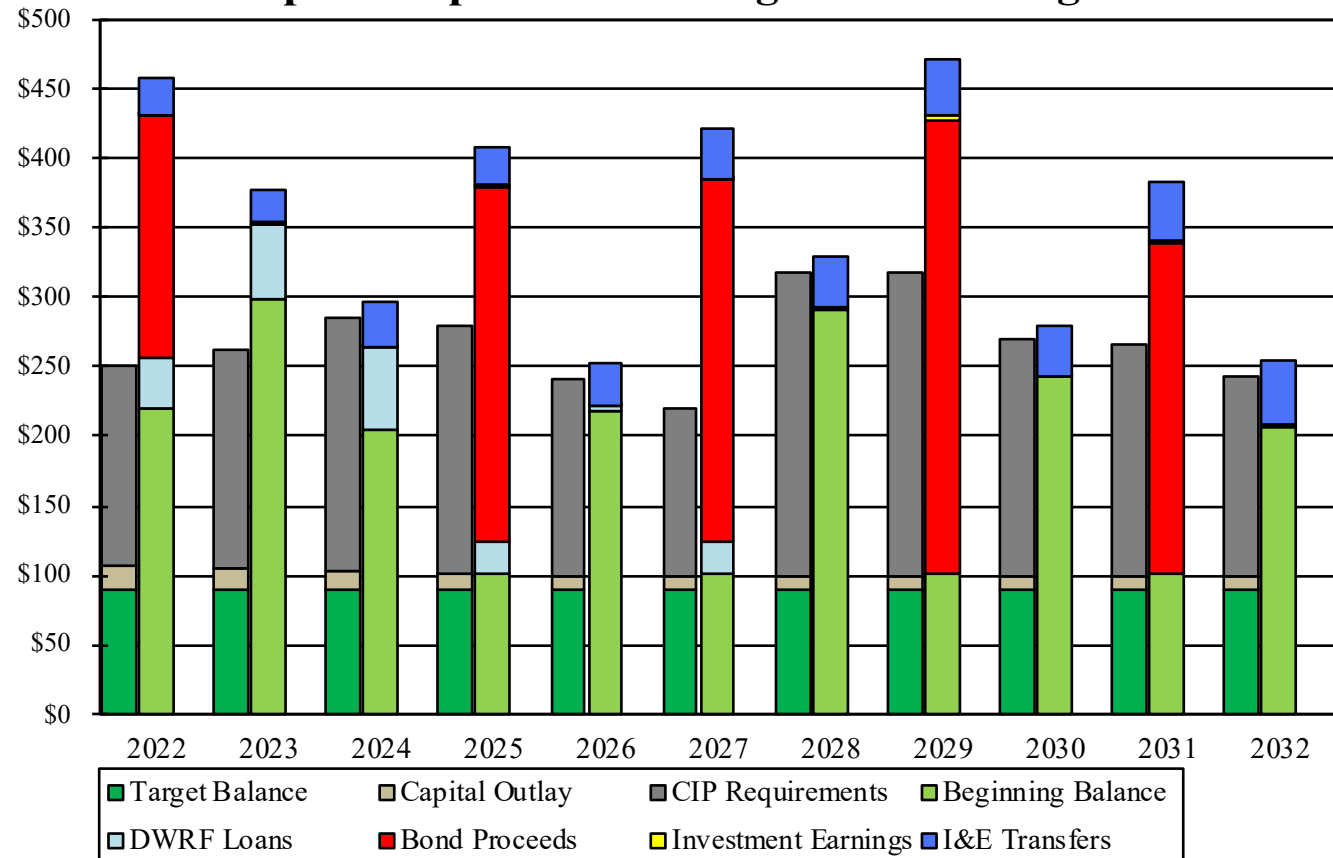
³ The forecasted bond sales anticipated towards the end of FY 2022 are designed to provide financing through FY 2024, with the “biennial cycle” continuing starting in FY 2025.

- Illustrates forecasted plan resulting from application of CIP financing policy noted above. Note that the forecast anticipates the next “new money Regional System” bond transactions to occur in late FY 2022 for both the Water and Sewer Systems. These transactions are designed in this forecast to not provide any meaningful bond funds to pay for CIP expenditures during FY 2022, nor result in any debt service during FY 2022. We’ve assumed that the FY 2023 debt service would include a full annual interest payment, but that principal amortization would not start until FY 2024. The size and nature of these transactions are subject to change, and could be impacted by availability of additional SRF loans, DWSD Local System needs, and/or refinancing opportunities. Also note the relatively larger need for forecasted additional Water bond sales compared to Sewer due to the relatively larger Water CIP requirements. The Sewer forecast anticipates being able to “pay go” all **known and projected** CIP Financing starting in FY 2030.
- 2. Forecasted CIP Financing Plan Table
 - Same as 1, in tabular form consistent with published Feasibility Reports.
- 3. Forecasted Application of CIP Funding Sources
 - Illustrates growing utilization of I&E monies to finance annual capital improvements, particularly for Sewer. The Water picture is “muddied” because of the early year spend down of existing balances while the Sewer picture is more evident of steady growth – sufficient to fully fund the CIP and exceed the \$90 million policy minimum by the end of the forecast period.
 - ***At the bottom of the exhibit, we’ve included a metric that identifies the amount of spend from, and deposit to, the I&E Funds as a percentage of total annual CIP. We note that once the existing I&E reserves are spent down to the targeted balance of \$90 million, the amounts deposited to the I&E Funds annually basically match the amounts spent from the I&E Funds. Again, the current level, and the growth, in this metric is more favorable for Sewer than Water.***
- 4. Revenue Requirement Financing Plan
 - Graphical depiction of the “business plan” assuming annual top line revenue requirement growth of 3.5% for Water and 2.5% for Sewer and 2% O&M growth rate assumption for the balance of the forecast period. Note the relatively stable transfers to Water I&E compared to the rapid growth in the Sewer amounts.
- 5. Wholesale System Revenue Requirement Financing Plan Table
 - Same as 4, in tabular form consistent with published Feasibility Reports.
- 6. Forecasted Fund Balance Summary
 - Illustrates “non-restricted” liquidity balances and debt service coverage (as computed for the Regional System portion).
 - * *Note that the targeted and forecasted balances reflect a “Working Capital Reserve” that is designed to reflect an Operating Fund reserve balance equivalent to 105 days of annual Operations and Maintenance Expense plus 60 days of scheduled transfers to all other MBO Funds.*

- Shows forecasted reduction of existing I&E balances to policy minimums for both systems, with Sewer increasing towards the end of the forecast period.
 - * *Note that if full “pay go” status of the Sewer CIP is achieved it may be appropriate to reduce the top line revenue growth assumption in the forecast.*
- Debt service coverage provided by Regional System net revenues is relatively stable for Water and gradually increasing for Sewer.
- 7. Projected Cash and Investment Balances – Wholesale System Table
 - Same as 6, in tabular form consistent with published Feasibility Reports.
 - Documents forecasted “Days Cash on Hand” metric
- 8. Relative Revenue Requirement Distribution
 - Illustrates “where each \$ of revenue goes” with respect to revenue requirements. Again, note the reduction in debt service, and corresponding increase in I&E bottom line transfers for Sewer, while the Water bottom line contribution is fairly constant as the relative debt service portion increases.
- 9. I&E Flow of Funds Forecast
 - Illustrates draw down of existing balances to fund CIP requirements, maintenance of the \$90 million policy minimums, and the growth in annual transfers from revenues, particularly for Sewer.
- 10. GAAP Basis Income Statement Forecast
 - Presents forecast of changes in, and level of, net position as reported on a GAAP Basis for forecast purposes;
 - As has been discussed in prior deliberations, the reductions in net position reported for both funds since GLWA’s inception have (in part) been related to an accelerated level of depreciation expense associated with the valuation of acquired and leased assets;
 - Due to the accelerated depreciation structure, many of the acquired assets will be fully depreciated in the next few years, and the annual depreciation expense is projected to decrease;
 - As a result the GAAP basis change in net position is projected to increase during the forecast period, and result in positive cumulative net position metrics by FY 2027 for Water and by FY 2026 for Sewer, and to continue to grow thereafter;
 - We note that there are other “non cash revenue requirement” elements that impact the GAAP basis results, many of which are difficult to project. These include statements of liabilities associated with long term liabilities.

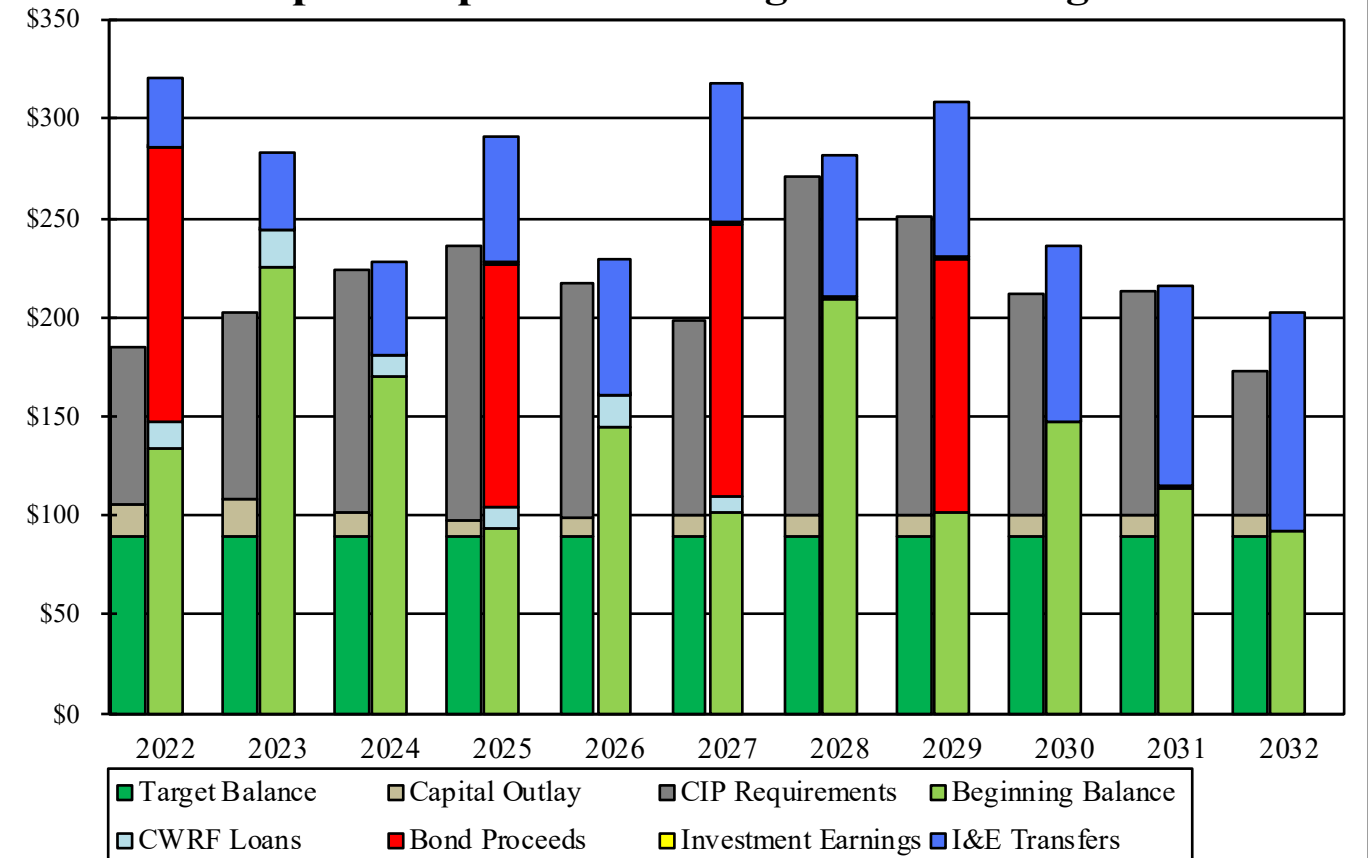
We are hopeful that this executive summary presentation provides a platform for comprehensive understanding of the GLWA financial planning policies and assumptions as applied in the development of the approved FY 2023 Budget and the approved FY 2023 Water Charges and Sewer Charges. We are prepared to develop further updated forecasts as GLWA begins the planning process for the projected revenue bond transactions in the coming months.

Capital Improvement Program Financing Plan



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Requirements											
Target Balance	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	17.0	15.5	13.4	10.4	9.6	9.0	10.0	10.0	10.0	10.0	10.0
CIP Requirement	143.4	157.4	182.2	179.1	141.6	121.5	218.4	218.5	169.3	166.4	143.5
Total	250.4	262.8	285.6	279.5	241.2	220.5	318.4	318.5	269.3	266.4	243.5
Sources											
Beginning Balance	219.9	298.4	205.1	101.8	219.1	100.9	290.4	100.3	242.4	101.2	207.5
DWRf Loans	36.5	55.0	59.4	21.4	2.4	22.5	-	-	-	-	-
Bond Proceeds	175.8	-	-	256.5	-	261.3	-	327.8	-	237.5	-
Investment Earnings	0.1	0.1	0.4	1.2	1.3	1.1	2.1	2.4	1.6	1.7	1.2
I&E Transfers	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Total Sources	458.8	377.9	297.5	408.7	252.2	420.9	328.7	470.9	280.4	383.9	255.5
End Balance	298.4	205.1	101.8	219.1	100.9	290.4	100.3	242.4	101.2	207.5	102.0

Capital Improvement Program Financing Plan



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Requirements											
Target Balance	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Capital Outlay	16.0	18.4	11.6	8.1	8.7	10.3	10.0	10.0	10.0	10.0	10.0
CIP Requirement	79.5	94.4	121.7	138.4	118.3	98.5	171.1	151.0	111.7	113.5	72.8
Total	185.5	202.9	223.3	236.5	216.9	198.7	271.1	251.0	211.7	213.5	172.8
Sources											
Beginning Balance	133.9	225.1	170.4	94.0	145.0	102.2	209.6	101.1	147.6	114.4	92.0
CWRf Loans	14.1	18.7	10.2	9.8	15.4	7.2	-	-	-	-	-
Bond Proceeds	137.8	-	-	123.5	-	137.8	-	128.3	-	-	-
Investment Earnings	0.1	0.1	0.3	0.6	0.5	0.5	1.2	1.1	0.4	0.3	-
I&E Transfers	34.7	39.3	46.5	63.6	68.3	70.7	71.4	78.1	88.1	100.9	110.9
Total Sources	320.6	283.2	227.4	291.5	229.2	318.4	282.2	308.6	236.1	215.5	202.9
End Balance	225.1	170.4	94.0	145.0	102.2	209.6	101.1	147.6	114.4	92.0	120.1

Water Table 4

GLWA Wholesale System Capital Improvement Program Financing Plan (\$ millions)

Table with 13 columns: Line No., Fiscal Year (2022-2032), Total. Rows include Financing Requirements (Total: 1,841.2), Financing Sources (Total: 1,852.8), Subsidiary Capital Financing Funds (Total: 0.0), and GLWA Regional System Improvement and Extension Account (Total: 102.0).

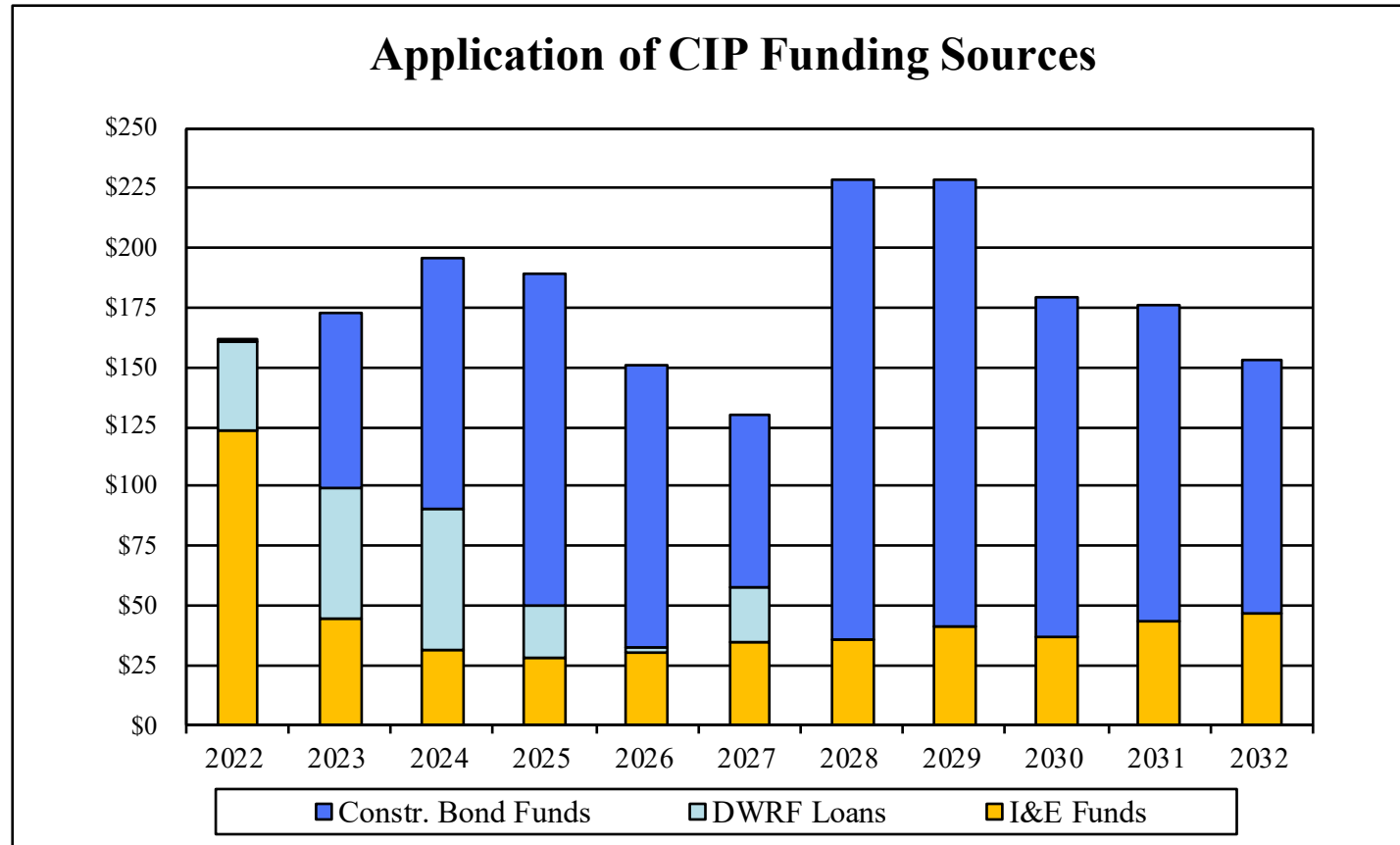
- (a) From Table 1.
(b) Estimated balance available June 30, 2021 (applies only to Fiscal Year 2022).
(c) Par value for future bonds.
(d) Reserved
(e) Includes amounts to provide funding to the DWSD CIP.
(f) Assumes amounts will be required from bond proceeds to fund debt service reserve fund.
(g) Total column reflects estimated balance available June 30, 2021.
(h) Total column reflects estimated balance available June 30, 2032.

Sewer Table 4

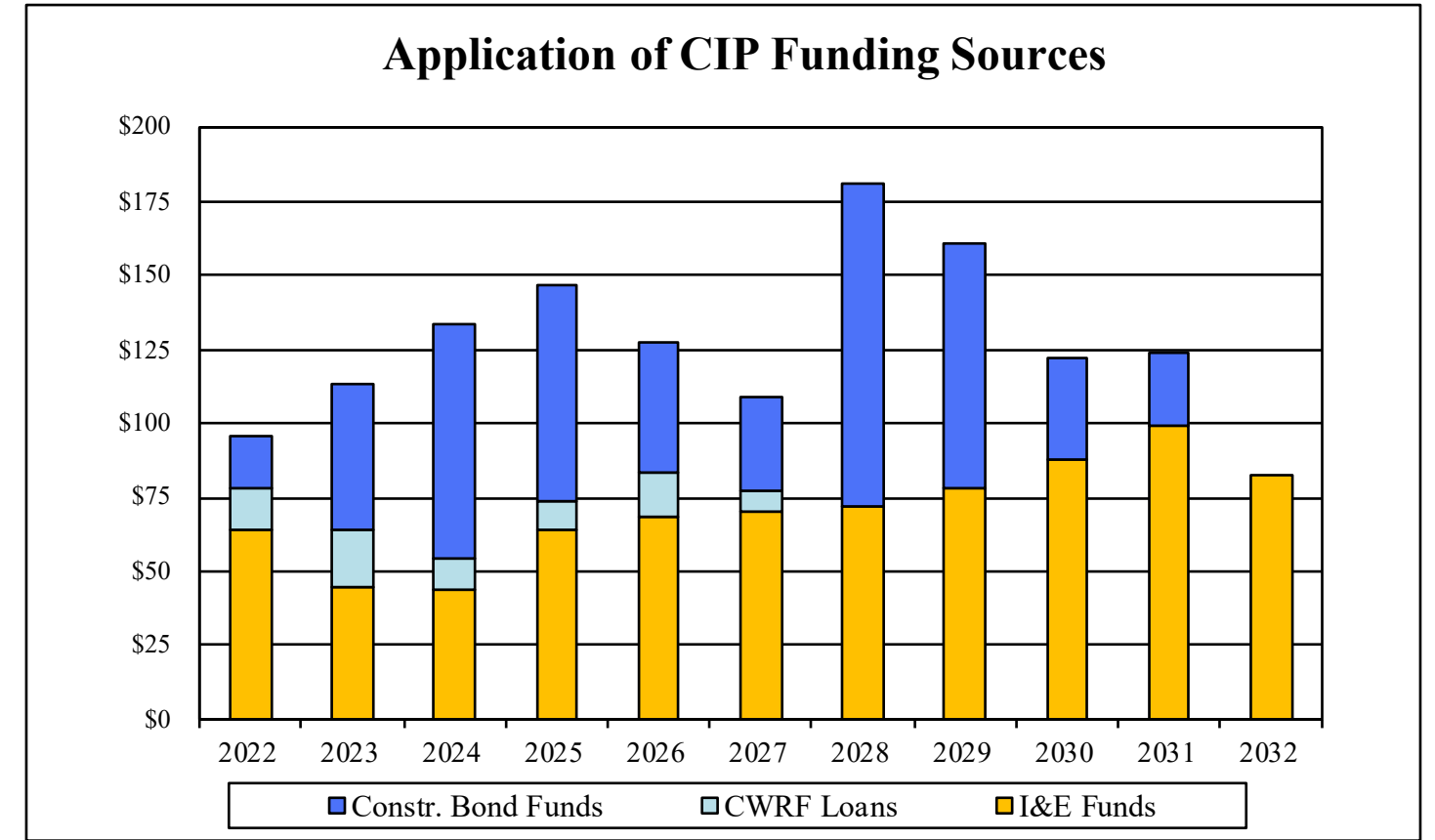
GLWA Wholesale System Capital Improvement Program Financing Plan (\$ millions)

Table with 13 columns: Line No., Fiscal Year (2022-2032), Total. Rows include Financing Requirements (Total: 1,270.9), Financing Sources (Total: 1,270.9), Subsidiary Capital Financing Funds (Total: -0.0), and GLWA Regional System Improvement and Extension Account (Total: 120.1).

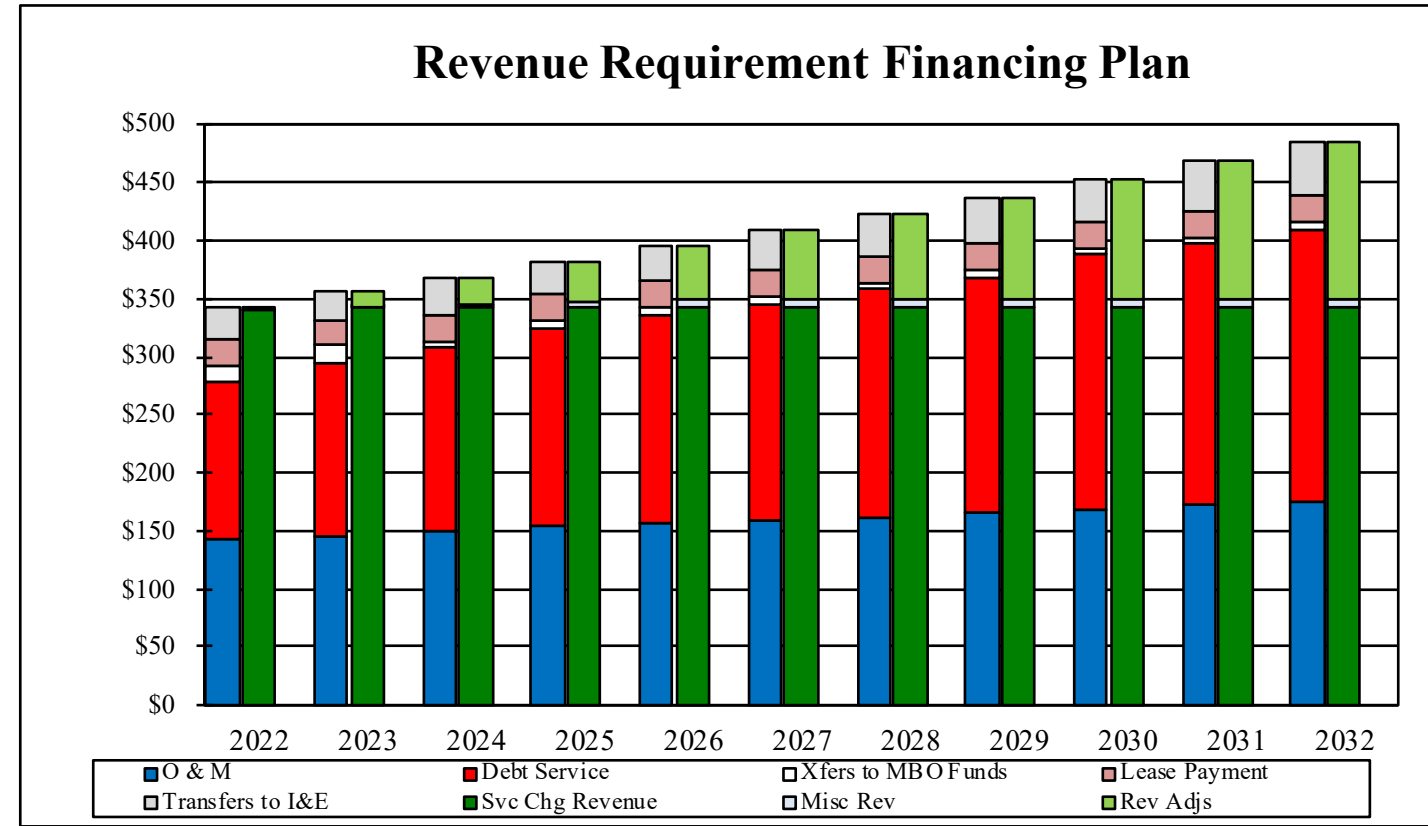
- (a) From Table 1.
(b) Estimated balance available June 30, 2021 (applies only to Fiscal Year 2022).
(c) Par value for future bonds.
(d) Reserved
(e) Includes amounts to provide funding to the DWSD CIP.
(f) Assumes amounts will be required from bond proceeds to fund debt service reserve fund.
(g) Total column reflects estimated balance available June 30, 2021.
(h) Total column reflects estimated balance available June 30, 2032.



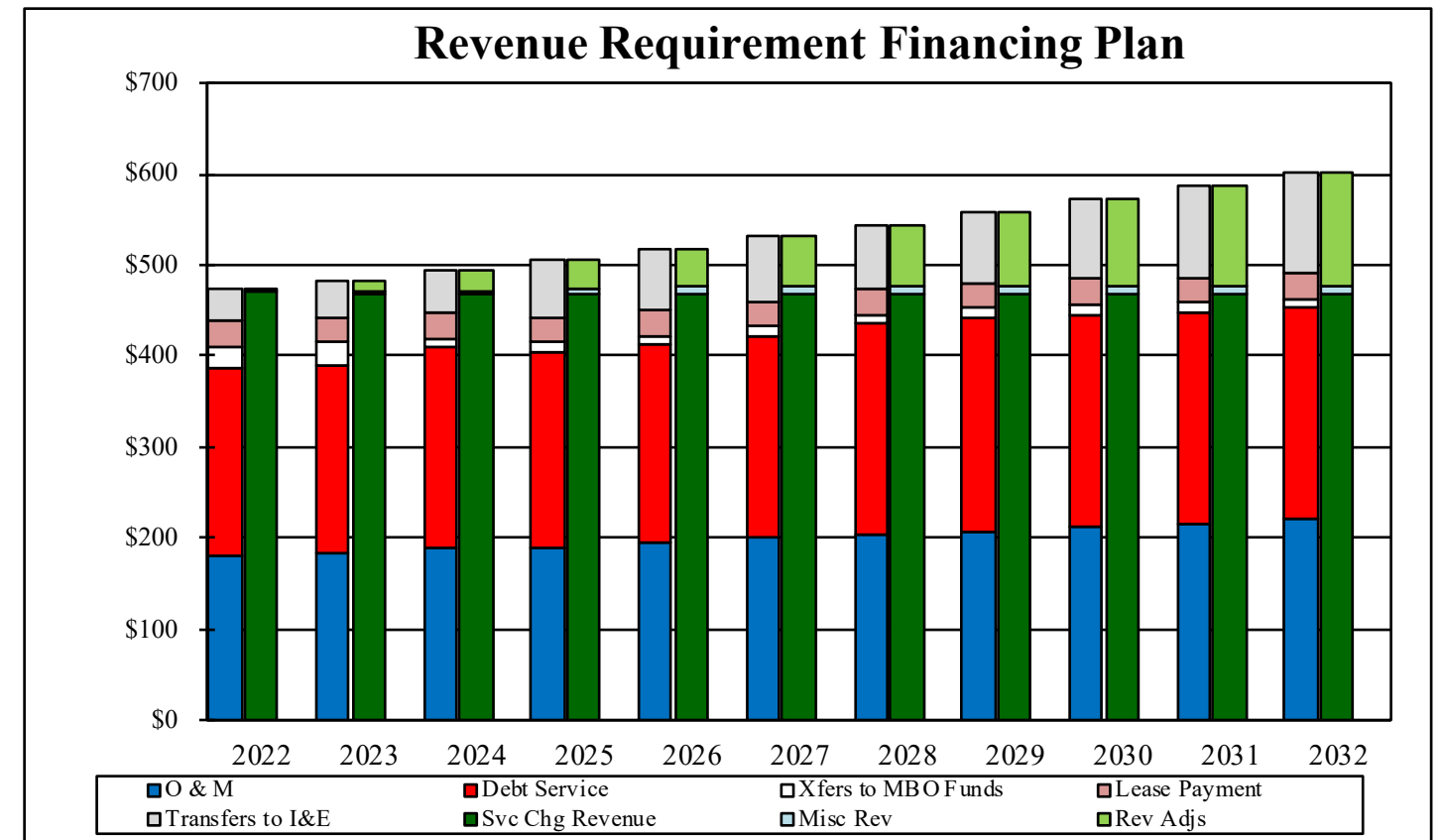
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
I&E Funds	123.8	44.2	31.6	28.3	29.8	35.2	35.8	40.9	36.4	43.1	46.8
DWRP Loans	36.5	55.0	59.4	21.4	2.4	22.5	-	-	-	-	-
Constr. Bond Funds	0.0	73.6	104.5	139.8	119.0	72.8	192.5	187.7	142.8	133.3	106.6
<i>I&E Spend % of Total</i>	77%	26%	16%	15%	20%	27%	16%	18%	20%	24%	31%
<i>I&E Deposit % of Tot</i>	17%	14%	17%	15%	19%	27%	16%	18%	20%	25%	31%



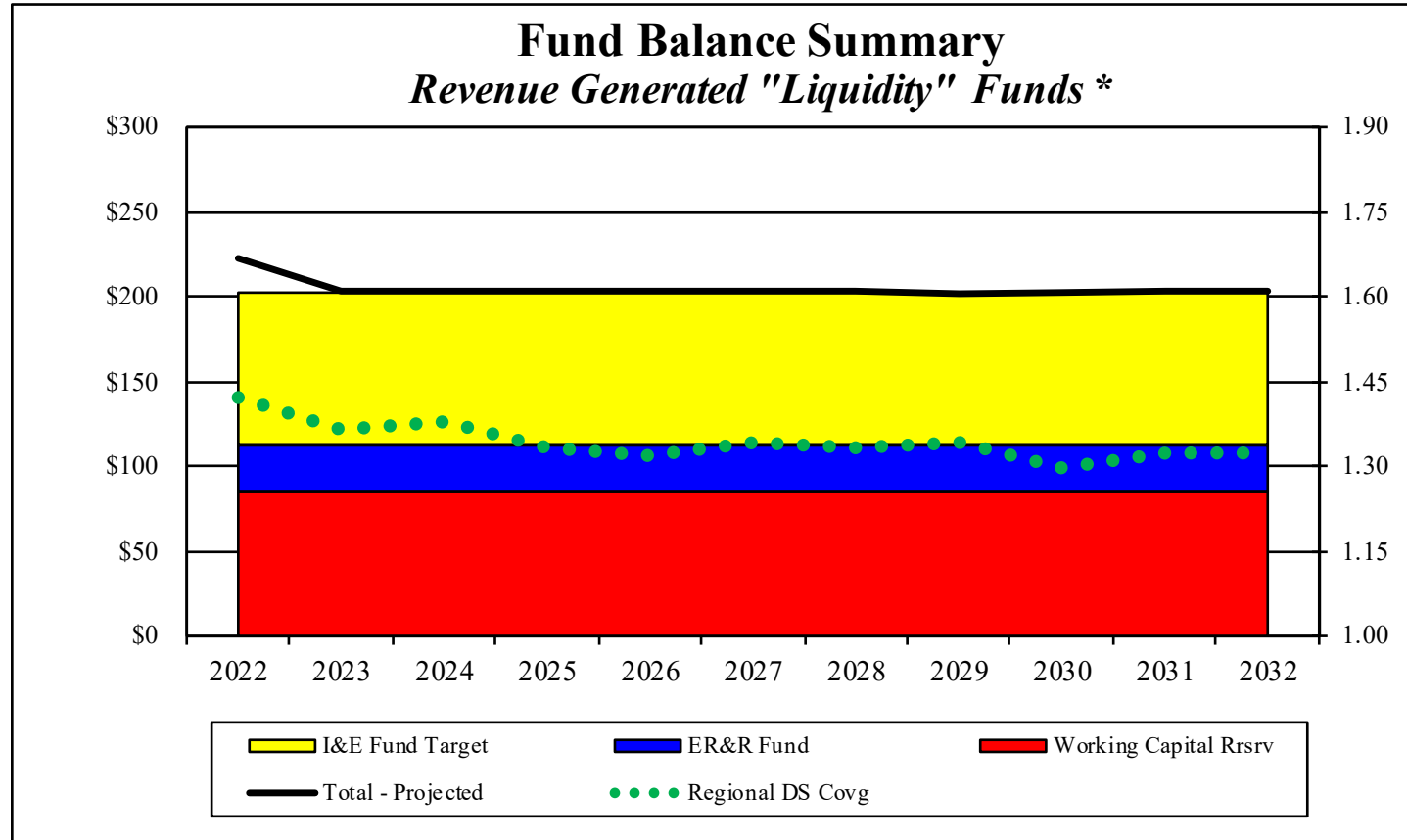
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
I&E Funds	63.9	44.9	43.8	63.9	68.0	70.1	72.1	78.1	88.2	99.0	82.8
CWRF Loans	14.1	18.7	10.2	9.8	15.4	7.2	-	-	-	-	-
Constr. Bond Funds	17.4	49.3	79.3	72.8	43.6	31.4	109.0	82.9	33.5	24.5	-
<i>I&E Spend % of Total</i>	67%	40%	33%	44%	54%	64%	40%	49%	72%	80%	100%
<i>I&E Deposit % of Tot</i>	36%	35%	35%	43%	54%	65%	39%	49%	72%	82%	134%



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
REVENUE											
Svc. Chg. Revenue	340.4	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3	342.3
Charge Adjustments		3.7%	3.3%	3.0%	3.0%	3.6%	3.5%	3.6%	3.5%	3.6%	3.6%
Revenue from Adjs		12.7	24.2	35.1	46.4	60.2	74.5	89.3	104.4	120.3	136.7
Other	1.7	1.1	2.0	4.1	6.1	6.1	6.2	6.2	6.3	6.3	6.3
Total Revenue	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
BUDGET											
O&M Expense	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
Debt Service	135.1	150.3	159.2	170.6	181.0	185.6	195.7	202.9	218.9	224.3	233.9
Xfers to MBO Funds	14.0	14.1	5.5	6.3	6.4	6.3	6.2	6.2	6.3	6.3	6.4
Lease Payment	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Transfers to I&E	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Total BUDGET	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3
Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

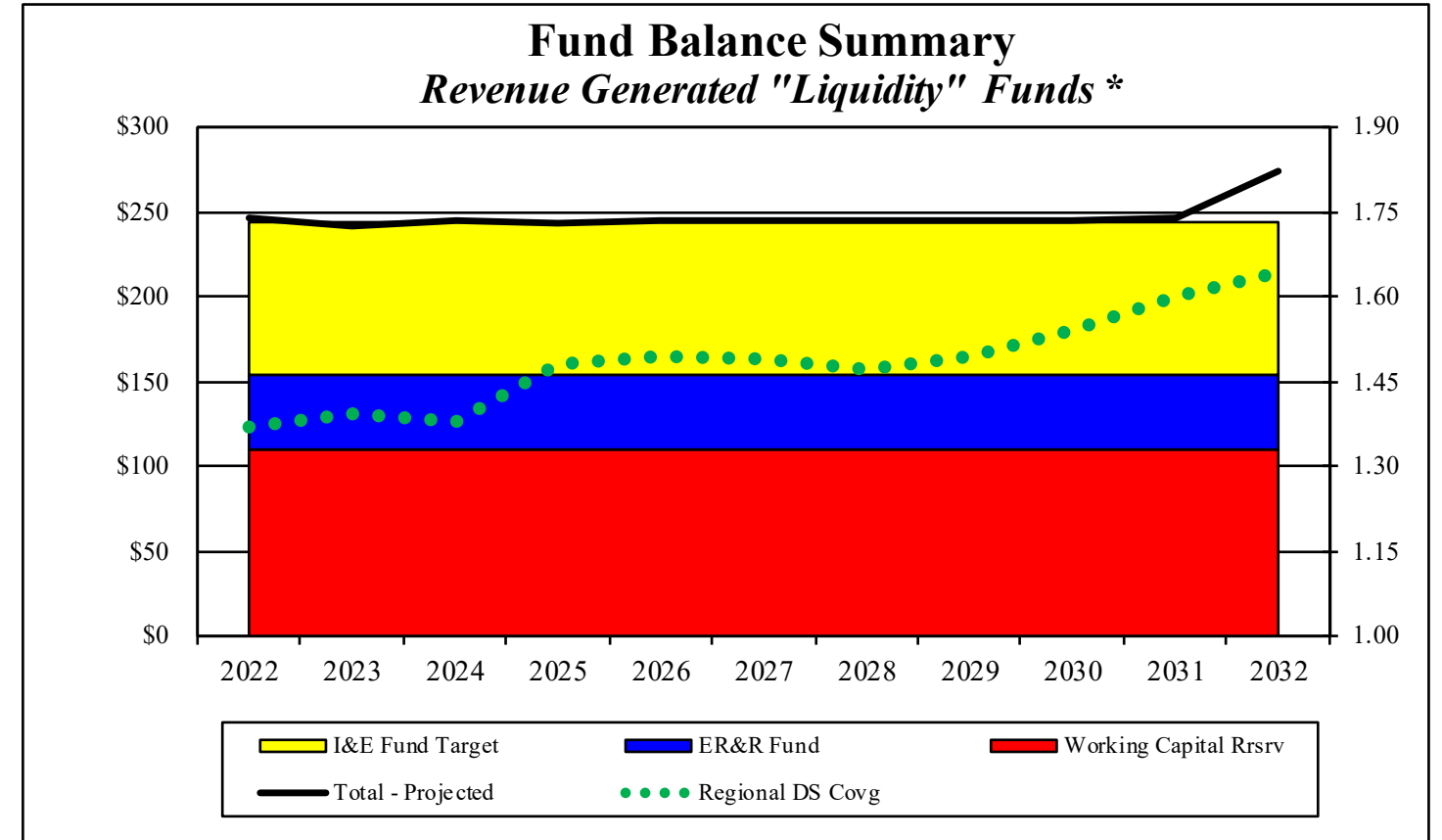


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
REVENUE											
Svc. Chg. Revenue	471.0	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6	468.6
Charge Adjustments		2.4%	2.3%	2.0%	2.1%	2.5%	2.5%	2.5%	2.6%	2.6%	2.5%
Revenue from Adjs		11.2	22.1	32.1	42.3	55.3	68.5	82.2	96.2	110.7	125.1
Other	1.9	1.6	2.7	5.0	7.4	7.4	7.5	7.4	7.3	7.2	7.4
Total Revenue	472.9	481.4	493.4	505.7	518.4	531.3	544.6	558.2	572.2	586.5	601.2
BUDGET											
O&M Expense	181.3	184.1	189.4	190.5	196.0	199.7	203.7	207.8	211.9	216.2	220.5
Debt Service	205.0	205.6	220.7	212.9	215.4	222.5	231.4	234.2	234.0	231.3	231.7
Xfers to MBO Funds	24.8	24.8	9.4	11.2	11.2	10.9	10.6	10.6	10.6	10.6	10.6
Lease Payment	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Transfers to I&E	34.3	39.3	46.5	63.6	68.3	70.7	71.4	78.1	88.1	100.9	110.9
Total BUDGET	472.9	481.4	493.4	505.7	518.4	531.3	544.6	558.2	572.2	586.5	601.2
Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<u>Fund Balance Minimums</u>											
Working Capital Rrsr	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
ER&R Fund	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund Target	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Minimums	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5	202.5
<u>Projections</u>											
Working Capital Rrsr	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
ER&R Fund	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	90.4
Total - Projected	222.7	202.8	203.8	203.1	202.7	202.6	203.0	202.6	202.5	202.9	202.9
Projected > Minimum	20.2	0.3	1.3	0.6	0.2	0.1	0.5	0.1	0.0	0.4	0.4
Regional DS Covg	1.42	1.36	1.38	1.33	1.32	1.34	1.33	1.34	1.30	1.32	1.32

* Revenue Generated Funds only. Excludes Debt Service Reserve & Construction Funds (Bond Generated) & "Pass Thru" Funds such as Debt Service Payment Funds, WRAP, etc.



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<u>Fund Balance Minimums</u>											
Working Capital Rrsr	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
ER&R Fund	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund Target	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
Total - Minimums	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0	244.0
<u>Projections</u>											
Working Capital Rrsr	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
ER&R Fund	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund	93.2	87.7	90.4	90.0	90.3	90.9	90.2	90.2	90.2	92.0	120.1
Total - Projected	247.2	241.7	244.4	244.0	244.3	244.9	244.2	244.2	244.2	246.0	274.1
Projected > Minimum	3.2	(2.3)	0.4	0.0	0.3	0.9	0.2	0.2	0.2	2.0	30.1
Regional DS Covg	1.37	1.39	1.38	1.48	1.50	1.49	1.47	1.50	1.54	1.60	1.64

* Revenue Generated Funds only. Excludes Debt Service Reserve & Construction Funds (Bond Generated) & "Pass Thru" Funds such as Debt Service Payment Funds, WRAP, etc.

Water Table 6

Projected Cash and Investment Fund Balances - Wholesale System (\$ millions) (a)

Line No.	Fiscal Year Ended June 30,										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Working Capital Reserve (b)											
1	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
2	-	-	-	-	-	-	-	-	-	-	-
3	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
Budget Stabilization Fund (a)											
4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
5	-	-	-	-	-	-	-	-	-	-	-
6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ER&R Fund (a)											
7	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
8	-	-	-	-	-	-	-	-	-	-	-
9	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
I&E Fund (c)											
10	207.5	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4
11	(17.0)	(15.5)	(13.4)	(10.4)	(9.6)	(9.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
12	(106.8)	(28.7)	(18.2)	(17.9)	(20.2)	(26.1)	(25.8)	(30.9)	(26.4)	(33.1)	(36.8)
13	83.6	66.0	58.7	63.0	60.9	55.0	54.3	49.6	53.6	46.9	43.6
14	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
15	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	90.4
Total Revenue Generated Funds (d)											
16	322.0	224.7	204.8	205.8	205.1	204.7	204.6	205.0	204.6	204.5	204.9
17	(97.3)	(19.9)	1.0	(0.6)	(0.5)	(0.0)	0.3	(0.4)	(0.0)	0.4	(0.0)
18	224.7	204.8	205.8	205.1	204.7	204.6	205.0	204.6	204.5	204.9	204.9
19	565	511	500	480	475	465	456	447	438	430	421
Other Funds											
20	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
21	-	-	-	-	-	-	-	-	-	-	-
22	188.3	114.8	10.6	128.5	10.8	200.2	9.8	152.4	11.1	117.0	11.6
23	417.4	324.1	220.8	338.1	219.9	409.4	219.3	361.4	220.2	326.5	221.0
24	229.2	209.3	210.3	209.6	209.2	209.1	209.5	209.1	209.0	209.4	209.4

(a) Technically includes "Combined System" amounts held by GLWA.

(b) Represents Operating Reserve and amounts maintained in the Receiving Fund for subsequent MBO transfers.

(c) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.

(d) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond Interest and Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

(e) Excludes Budget Stabilization Fund amounts from Line 6.

Sewer Table 6

Projected Cash and Investment Fund Balances - Wholesale System (\$ millions) (a)

Line No.	Fiscal Year Ended June 30,										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Working Capital Reserve (b)											
1	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
2	-	-	-	-	-	-	-	-	-	-	-
3	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
Budget Stabilization Fund (a)											
4	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	-	-	-	-	-	-	-	-	-	-	-
6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
ER&R Fund (a)											
7	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
8	-	-	-	-	-	-	-	-	-	-	-
9	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
I&E Fund (c)											
10	122.4	93.2	87.7	90.4	90.0	90.3	90.9	90.2	90.2	90.2	92.0
11	(16.0)	(18.4)	(11.6)	(8.1)	(8.7)	(10.3)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
12	(48.0)	(26.4)	(32.2)	(55.8)	(59.3)	(59.8)	(62.1)	(68.1)	(78.2)	(89.0)	(72.8)
13	58.5	48.3	43.9	26.4	22.0	20.2	18.8	12.1	2.0	(8.8)	9.2
14	34.3	39.3	46.5	63.6	68.3	70.7	71.4	78.1	88.1	100.9	110.9
15	0.4	-	-	-	-	-	-	-	-	-	-
16	93.2	87.7	90.4	90.0	90.3	90.9	90.2	90.2	90.2	92.0	120.1
Total Revenue Generated Funds (e)											
17	281.4	252.2	246.7	249.4	249.0	249.3	249.9	249.2	249.2	249.2	251.0
18	(29.6)	(5.5)	2.7	(0.4)	0.3	0.6	(0.7)	0.0	(0.0)	1.9	28.0
19	251.8	246.7	249.4	249.0	249.3	249.9	249.2	249.2	249.2	251.0	279.1
20	497	479	471	467	455	448	438	429	420	415	454
Other Funds											
21	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
22	-	-	-	-	-	-	-	-	-	-	-
23	21.3	24.6	39.7	42.6	21.8	22.6	54.5	47.8	16.8	12.2	(0.0)
24	791.0	771.6	781.1	780.0	747.1	741.2	762.2	747.0	707.4	699.6	753.7
25	769.7	746.9	741.4	737.5	725.3	718.6	707.7	699.2	690.6	687.4	753.7

(a) Technically includes "Combined System" amounts held by GLWA.

(b) Represents Operating Reserve and amounts maintained in the Receiving Fund for subsequent MBO transfers.

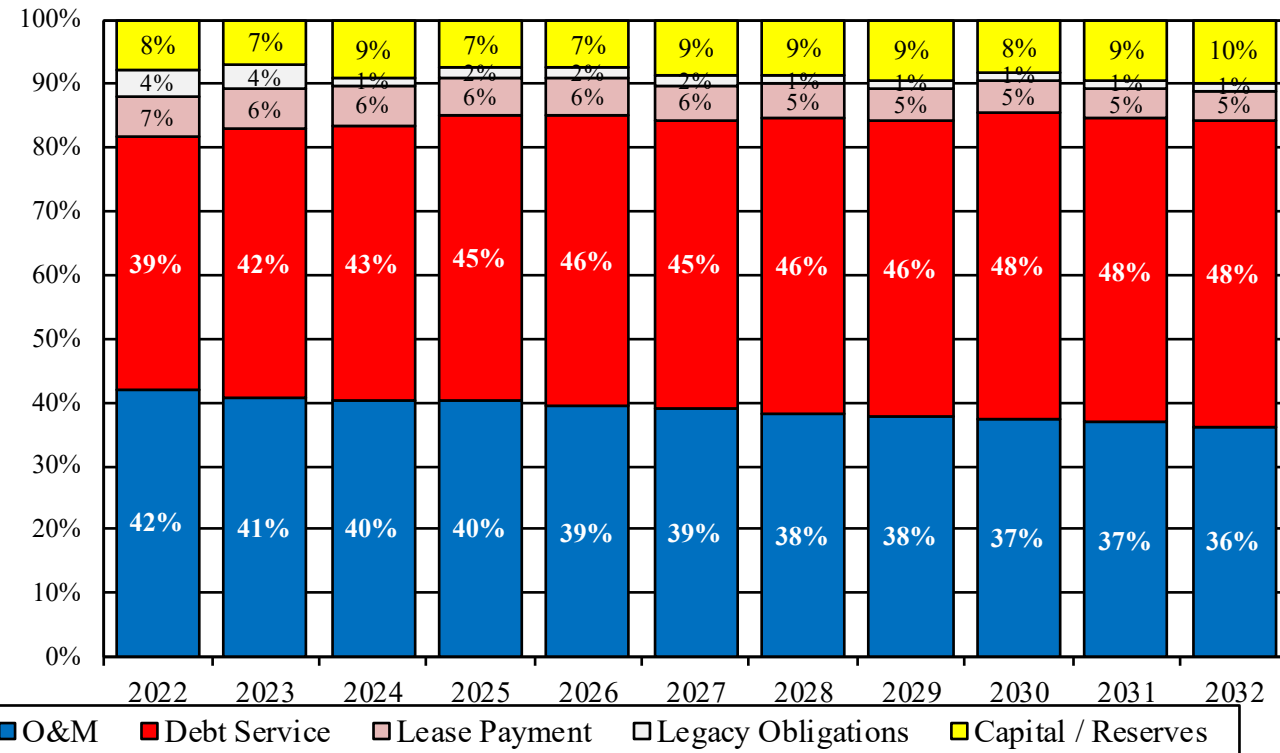
(c) Only includes GLWA Regional I&E Account. Does not include Lease Payment transferred to DWSD Local I&E Account.

(d) Repayment of DWSD loan receivable.

(e) Excludes MBO Funds that are funded and assumed to be fully expended each year, such as the Bond Interest and Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

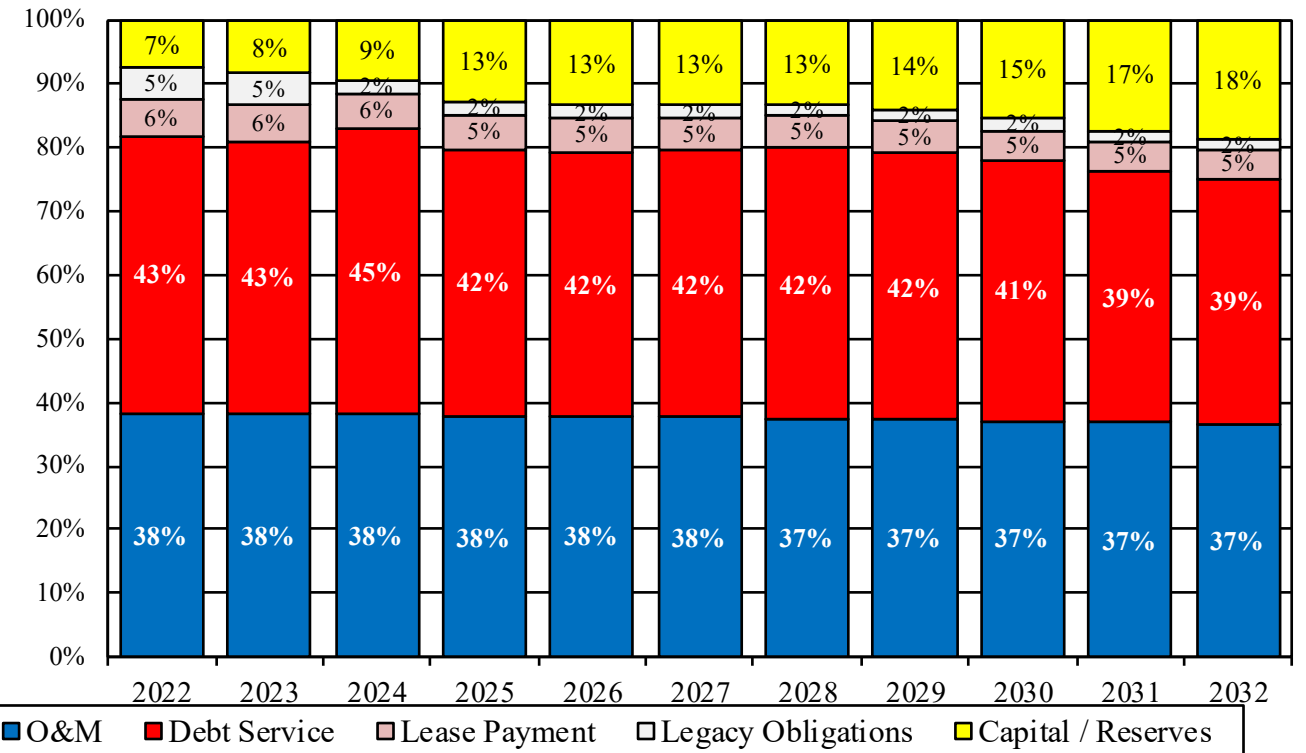
(f) Excludes Budget Stabilization Fund amounts from Line 6.

Relative Revenue Requirement Distribution

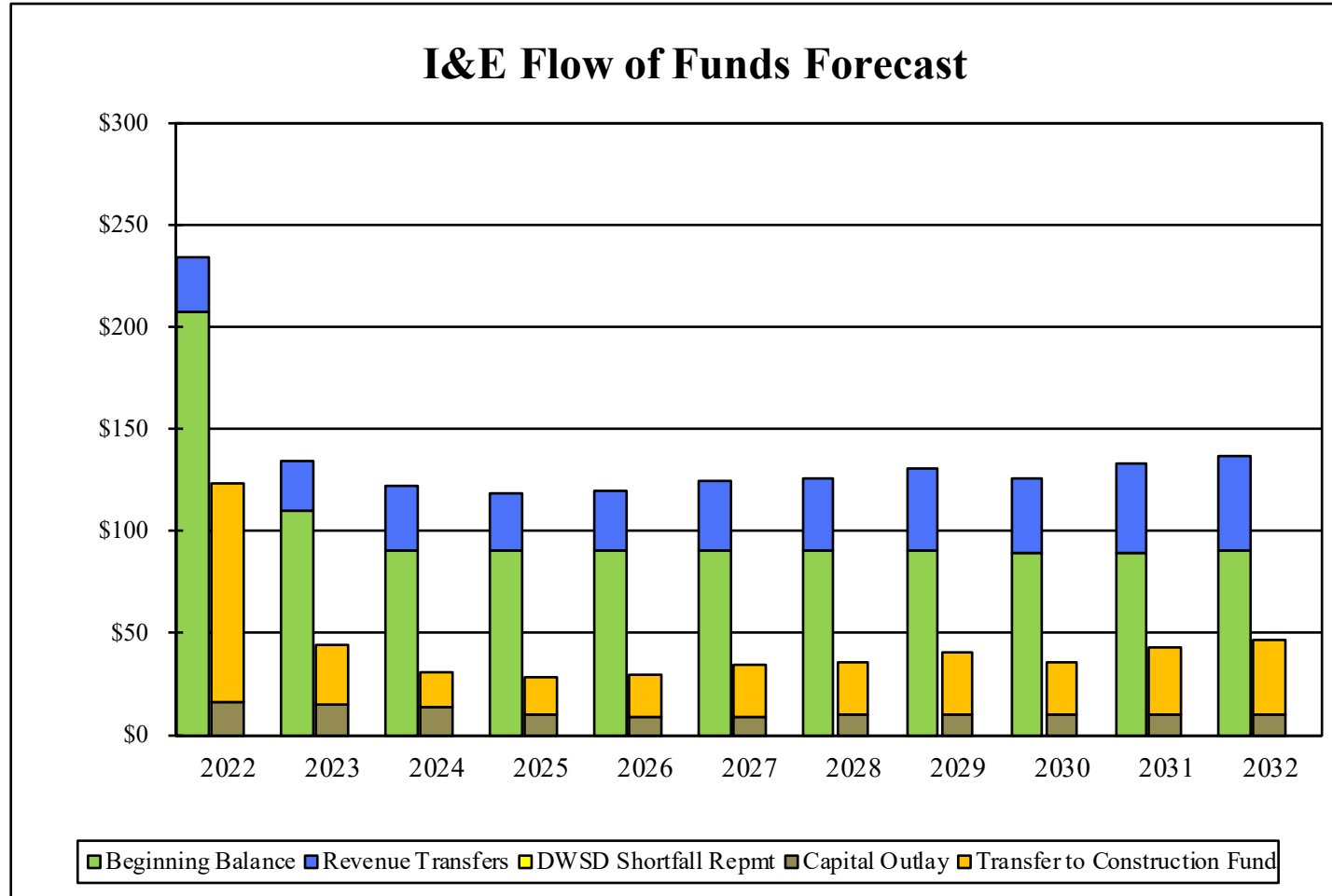


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
O&M	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
Debt Service	135.1	150.3	159.2	170.6	181.0	185.6	195.7	202.9	218.9	224.3	233.9
Lease Payment	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Legacy Obligations	14.0	14.1	5.5	6.3	6.4	6.3	6.2	6.2	6.3	6.3	6.4
Capital / Reserves	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Total	342.1	356.1	368.5	381.4	394.8	408.6	422.9	437.7	453.0	468.9	485.3

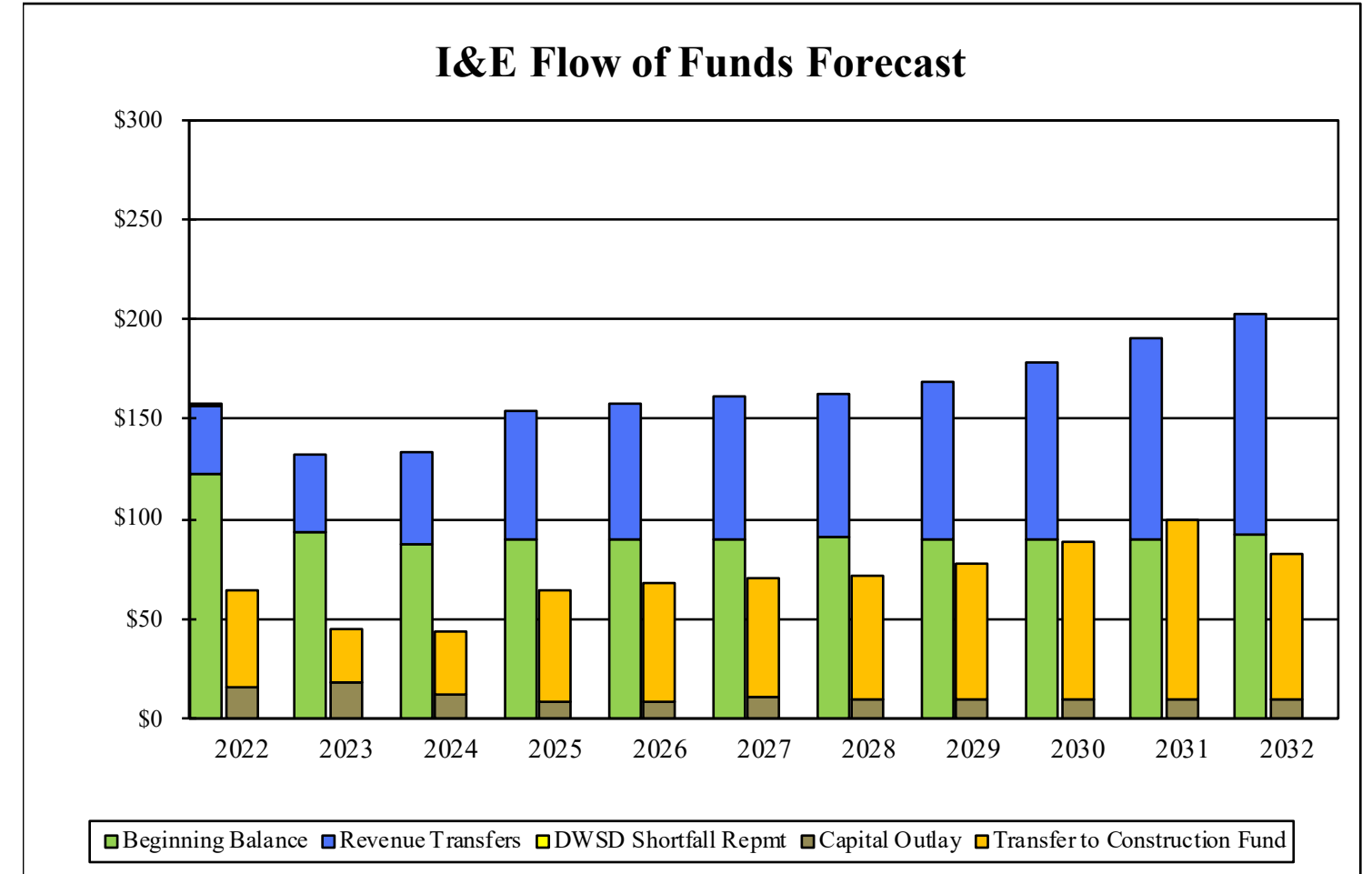
Relative Revenue Requirement Distribution



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
O&M	181.3	184.1	189.4	190.5	196.0	199.7	203.7	207.8	211.9	216.2	220.5
Debt Service	205.0	205.6	220.7	212.9	215.4	222.5	231.4	234.2	234.0	231.3	231.7
Lease Payment	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Legacy Obligations	24.8	24.8	9.4	11.2	11.2	10.9	10.6	10.6	10.6	10.6	10.6
Capital / Reserves	34.3	39.3	46.5	63.6	68.3	70.7	71.4	78.1	88.1	100.9	110.9
Total	472.9	481.4	493.4	505.7	518.4	531.3	544.6	558.2	572.2	586.5	601.2

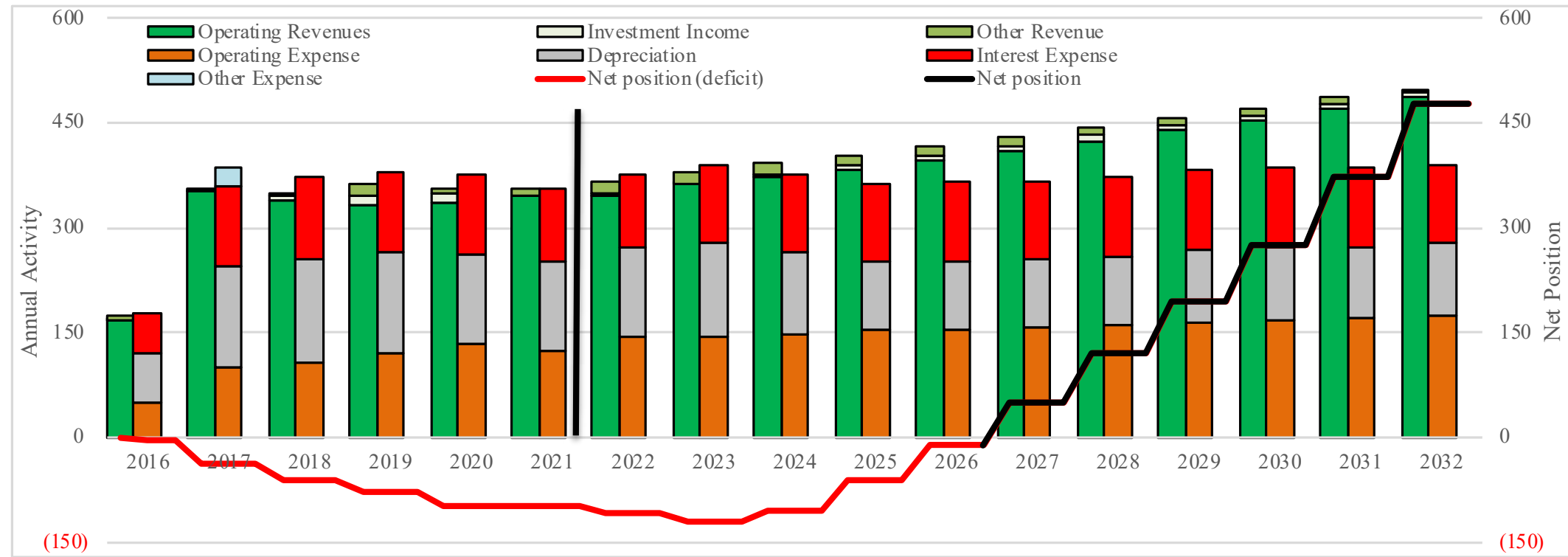


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Beginning Balance	207.5	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4
Capital Outlay	(17.0)	(15.5)	(13.4)	(10.4)	(9.6)	(9.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
Transfer to Constr	(106.8)	(28.7)	(18.2)	(17.9)	(20.2)	(26.1)	(25.8)	(30.9)	(26.4)	(33.1)	(36.8)
Initial Balance	83.6	66.0	58.7	63.0	60.9	55.0	54.3	49.6	53.6	46.9	43.6
Revenue Transfers	26.6	24.3	32.6	27.7	29.3	35.1	36.2	40.4	36.4	43.5	46.8
Ending Balance	110.2	90.3	91.3	90.6	90.2	90.1	90.5	90.1	90.0	90.4	90.4



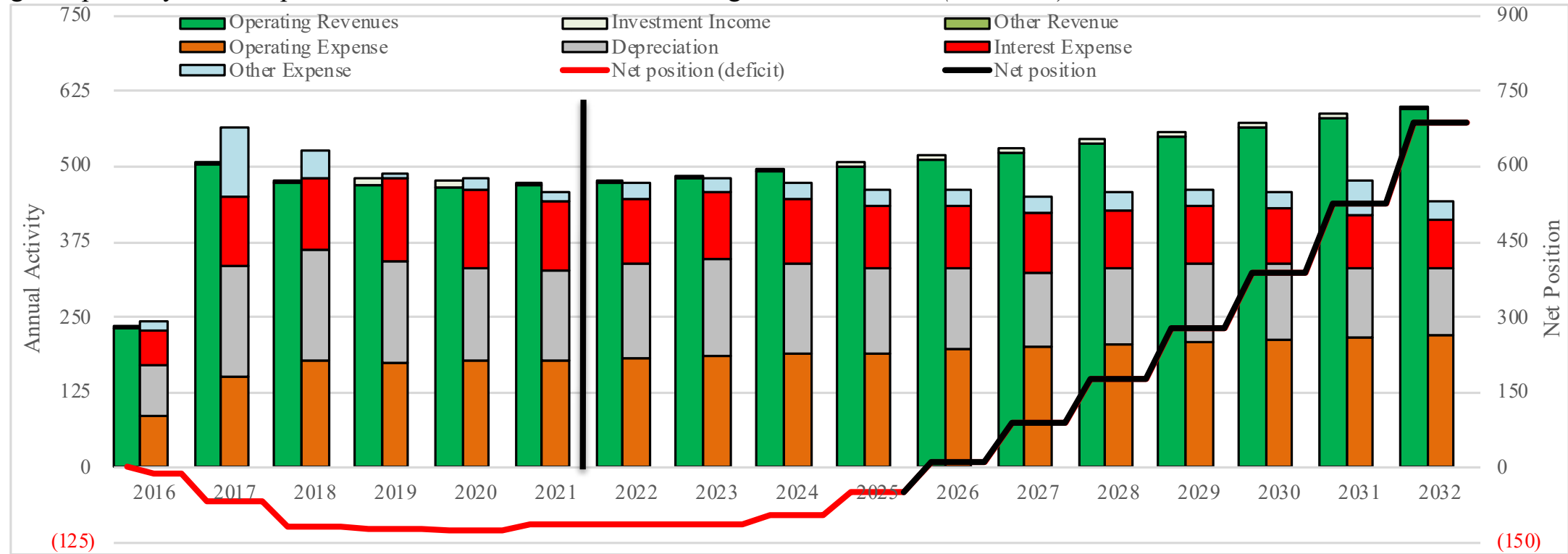
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Beginning Balance	122.4	93.2	87.7	90.4	90.0	90.3	90.9	90.2	90.2	90.2	92.0
Capital Outlay	(16.0)	(18.4)	(11.6)	(8.1)	(8.7)	(10.3)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
Transfer to Constr	(48.0)	(26.4)	(32.2)	(55.8)	(59.3)	(59.8)	(62.1)	(68.1)	(78.2)	(89.0)	(72.8)
Initial Balance	58.5	48.3	43.9	26.4	22.0	20.2	18.8	12.1	2.0	(8.8)	9.2
Revenue Transfers	34.3	39.3	46.5	63.6	68.3	70.7	71.4	78.1	88.1	100.9	110.9
DWSD Shortfall Repmt	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending Balance	93.2	87.7	90.4	90.0	90.3	90.9	90.2	90.2	90.2	92.0	120.1

Water Supply System - Reported and Forecasted Statement of Changes in Net Position (\$ millions)



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Est.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>
1 Total operating revenues	167.7	351.7	338.3	331.6	334.3	344.6	347.2	361.8	373.4	384.2	395.5	409.3	423.6	438.4	453.5	469.4	485.8
2 Operating expenses	49.5	101.7	108.5	119.8	132.5	123.6	143.9	144.8	148.7	154.3	155.6	159.2	162.3	165.6	168.9	172.3	175.7
3 Depreciation/Amortization	71.3	144.1	146.1	144.1	130.7	126.8	129.2	135.3	117.0	97.5	97.5	94.6	97.2	102.0	101.4	99.5	101.4
4 Total operating expenses	120.8	245.9	254.6	264.0	263.3	250.5	273.1	280.2	265.7	251.9	253.2	253.8	259.5	267.6	270.3	271.7	277.2
5 Operating income	46.8	105.9	83.7	67.6	71.0	94.1	74.1	81.6	107.7	132.3	142.3	155.6	164.1	170.8	183.2	197.7	208.6
Nonoperating revenue (expenses)																	
6 Earnings on investments	0.4	1.8	6.1	14.8	13.7	0.8	1.6	1.1	2.2	5.1	7.3	7.0	8.1	8.4	7.7	7.8	7.3
7 Interest Expense - Bonded Debt	(56.5)	(113.7)	(118.2)	(114.2)	(111.3)	(106.3)	(104.2)	(110.7)	(108.9)	(110.9)	(112.2)	(112.9)	(113.8)	(115.4)	(116.8)	(115.5)	(113.8)
8 Other Non-Operating	5.2	6.4	4.4	15.3	7.0	10.5	17.2	16.6	15.7	14.7	13.6	12.4	11.1	9.8	7.7	5.6	3.5
9 Special Item	0.0	(32.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Change in net position	(4.1)	(32.4)	(24.0)	(16.4)	(19.5)	(0.9)	(11.3)	(11.4)	16.7	41.3	51.0	62.0	69.4	73.6	81.8	95.7	105.6
10 Net position (deficit), beginning of year	0.0	(4.1)	(36.5)	(60.4)	(76.9)	(96.4)	(97.3)	(108.5)	(120.0)	(103.3)	(62.0)	(11.0)	51.0	120.4	194.0	275.8	371.5
11 Net position (deficit), end of year	(4.1)	(36.5)	(60.4)	(76.9)	(96.4)	(97.3)	(108.5)	(120.0)	(103.3)	(62.0)	(11.0)	51.0	120.4	194.0	275.8	371.5	477.1

Sewage Disposal System - Reported and Forecasted Statement of Changes in Net Position (\$ millions)



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Act.</i>	<i>Est.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>	<i>Proj.</i>
1 Total operating revenues	230.5	505.8	473.6	469.5	466.6	470.8	471.4	480.2	491.1	501.1	511.4	524.3	537.5	551.2	565.3	579.7	594.2
2 Operating expenses	84.4	151.3	176.4	174.0	176.9	178.1	181.3	184.1	189.4	190.5	196.0	199.7	203.7	207.8	211.9	216.2	220.5
3 Depreciation/Amortization	86.0	185.6	187.3	168.5	152.9	150.9	156.9	161.8	151.5	139.9	136.0	125.0	127.9	131.3	127.8	117.0	112.0
4 Total operating expenses	170.4	336.9	363.6	342.6	329.9	329.0	338.2	345.8	340.8	330.5	332.0	324.7	331.7	339.1	339.8	333.2	332.5
5 Operating income	60.1	168.9	110.0	126.9	136.8	141.8	133.2	134.4	150.3	170.6	179.4	199.6	205.9	212.1	225.5	246.5	261.7
Nonoperating revenue (expenses)																	
6 Earnings on investments	1.1	2.2	5.3	11.8	11.7	0.5	1.6	1.2	2.6	5.3	7.5	7.5	8.3	8.1	7.3	7.1	7.0
7 Interest Expense - Bonded Debt	(56.5)	(113.7)	(118.2)	(136.8)	(132.6)	(112.6)	(109.3)	(111.2)	(107.4)	(104.6)	(101.7)	(99.8)	(97.5)	(94.1)	(90.9)	(84.9)	(79.0)
8 Other Non-Operating	(17.2)	(51.7)	(46.9)	(7.5)	(17.1)	(17.4)	(25.1)	(25.5)	(25.9)	(26.3)	(26.8)	(27.2)	(27.8)	(28.3)	(28.9)	(29.5)	(30.2)
9 Special Item	0.0	(61.5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Change in net position	(12.6)	(55.8)	(50.0)	(5.6)	(1.2)	12.3	0.4	(1.1)	19.5	45.0	58.4	80.1	88.9	97.8	113.0	139.1	159.5
10 Net position (deficit), beginning of yea	0.0	(12.6)	(68.4)	(118.3)	(123.9)	(125.2)	(112.9)	(112.4)	(113.5)	(94.0)	(49.0)	9.4	89.5	178.4	276.2	389.2	528.3
11 Net position (deficit), end of year	(12.6)	(68.4)	(118.3)	(123.9)	(125.2)	(112.9)	(112.4)	(113.5)	(94.0)	(49.0)	9.4	89.5	178.4	276.2	389.2	528.3	687.8



Financial Services Audit Committee Communication

Date: April 26, 2022

To: Great Lakes Water Authority Audit Committee

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

Re: Post Meeting Appendix – April 2022

The following documents found in this Appendix provide support for recent requests made of Financial Area staff or as referenced at public meetings.

- 1) *DWSRF Loan 7548-01 DWSD Lead Service Line Replacement – Funding Status:* an update on funding for this loan through the Michigan Finance Authority and progress made between EGLE and DWSD regarding loan forgiveness and initial limitations on funding by service line.
- 2) *Board Member Inquiry – KPI Revenue & Collection Reporting for Flint & Dearborn:* a response to a Board Member inquiry on this topic presented at the April 13 GLWA Board of Directors workshop.
- 3) *GLWA Underwriter Cost Proposal Summary:* an outline of proposed fees by the three firms requesting consideration for Senior Manager in GLWA's upcoming bond transaction. This summary by GLWA's financial advisor was presented during the April 22 Audit Committee meeting to support the committee discussion. GLWA staff committed to distributing the document following the meeting.



Financial Services
735 Randolph Street, Suite 1601
Detroit, Michigan 48226
Phone: 313-964-9201

Memorandum

Date: April 13, 2022

To: Nicolette Bateson, CPA, Chief Financial Officer & Treasurer

From: Kim Garland, CPA, Financial Services Area Chief of Staff

RE: DWSRF Loan 7548-01 DWSD Lead Service Line Replacement – Funding Status

I reported to you on March 23 that DWSD Drinking Water Revolving Fund (DWSRF) Loan 7548-01 supporting local system Lead Service Line Replacements (LSLR) qualified through EGLE for 100% loan forgiveness of \$10 million project under a Booker grant. However, we were made aware at that time that the loan forgiveness only covered up to \$5,000 per LSLR.

DWSD had found that actual bids associated with this work are averaging \$9,000 per 1” service line, requiring DWSD to fund the difference through other sources. As discussed previously, DWSD and EGLE did explore options to help overcome this funding issue. Steps taken include the following.

1. As of April 8, 2022, we were informed that EGLE leadership has eliminated the \$5,000/lead service line limit. The \$10 million in loan forgiveness via Booker grant funding will remain simply as the maximum funding limit.
2. As of April 11, 2022, DWSD leadership has communicated that they will be submitting a construction estimate revision to EGLE to reduce the scope of the current project (WS-721) bringing it within the \$10 million grant amount awarded.

EGLE issued the order of approval on this project April 8, 2022. Final loan closing is scheduled for May 4, 2022. This process is required despite the fact that the loan principal will be forgiven as drawdowns occur.



Financial Services
 735 Randolph Street, Suite 1601
 Detroit, Michigan 48226
 Phone: 313-964-9201

Memorandum

Date: April 13, 2022

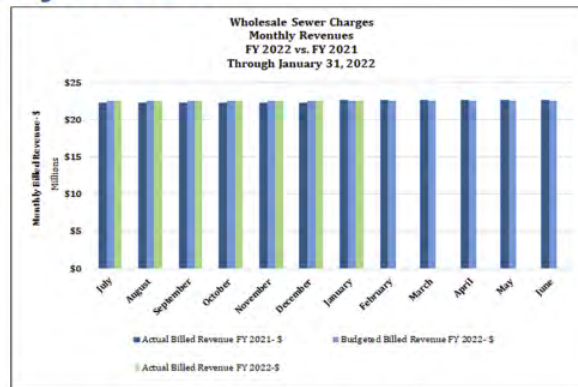
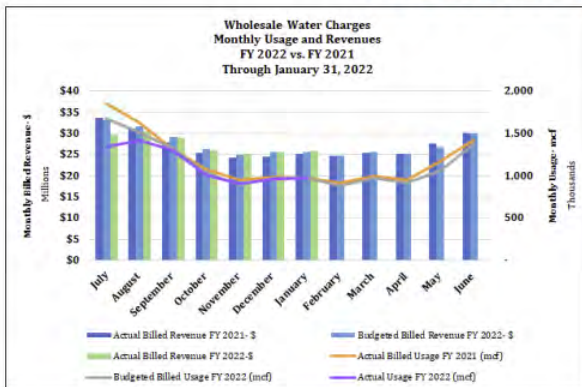
To: Nicolette Bateson, CPA, Chief Financial Officer & Treasurer

From: Kim Garland, CPA, Financial Services Area Chief of Staff

RE: Board Member Inquiry – KPI Revenue & Collection Reporting for Flint & Dearborn

At today’s Board Meeting, Director Baker inquired on whether the impact of Flint’s water testing and the Dearborn contract dispute were reflected in the Water Revenue projection provided. I understood the question to be based on the following Key Performance Indicator (KPI):

Financial Viability – Reliability of Wholesale Water and Sewer Revenue Projections



Wholesale Water System billed revenues for FY 2022 are at 97.6% of original, budgeted charge revenue and actual usage at 94.4% of original, budgeted usage through January 2022. Billed revenue for FY 2022 was 0.2% lower compared to the same period in FY 2021.

Wholesale Sewer System billed revenues for FY 2022 are at 100% of original budgeted charge revenue (based on the full fixed monthly charge) through January 2022. Billed revenue for FY 2022 was 1.1% higher compared to the same period in FY 2021.

CEO Priority KPI Performance Criteria: Water system wholesale monthly billed revenues will meet or exceed budgeted amount. (Green = 100%; Yellow= 90-99%; Red = <90%)

Commentary: This KPI is yellow. The budget impact of this under performance has been addressed in the first quarter budget amendments. The current water revenue variance is a \$4.7 million shortfall from the adopted budget. To date, budget amendments (\$2.4 million) and confirmed billing adjustments (\$0.5 million) reduce that variance to \$1.8 million. The remaining variance will continue to be evaluated.



The data underlying this KPI is also presented as part of the monthly financial report to the Audit Committee and is based on this table from the Wholesale Billings, Receivables, and Collections section of the report (the table below will be presented with the January report presented to the Audit Committee on April 22):

Table 1 – FY 2022 Wholesale Water Billings Report

WHOLESALE WATER CHARGES								
Month (1)	FY 2022 Charges (3)		FY 2022 - Actual		FY 2022 - Variance		FY 2021 - Actuals	
	Volume	Revenue	Volume	Revenue (2)	Volume	Revenue	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$	Mcf	\$
July	1,677,100	33,302,700	1,342,686	29,642,785	(334,414)	(3,659,915)	1,862,791	33,583,619
August	1,509,200	31,598,500	1,417,142	30,604,230	(92,058)	(994,270)	1,622,324	31,230,027
September	1,316,400	29,141,000	1,296,750	29,065,588	(17,650)	(75,412)	1,313,440	27,836,560
October	1,034,000	26,280,800	1,006,217	26,123,483	(27,783)	(157,317)	1,070,660	25,454,840
November	896,800	25,001,500	905,525	25,117,181	8,725	115,681	956,542	24,390,303
December	972,100	25,612,000	958,879	25,542,432	(13,221)	(69,568)	981,770	24,600,202
January	972,000	25,650,600	979,803	25,791,405	7,803	140,805	969,483	25,235,130
February	884,400	24,852,700					920,467	24,794,259
March	979,500	25,678,200					1,001,073	25,450,418
April	914,000	25,117,700					964,308	25,140,003
May	1,059,200	26,721,900					1,181,186	27,569,969
June	1,374,300	30,029,900					1,424,230	30,086,864
Total	13,589,000	328,987,500	7,909,002	191,887,103	(468,598)	(4,699,997)	14,258,274	325,352,214
Subtotals ytd	8,377,600	196,587,100	7,909,002	191,887,103	(468,598)	(4,699,997)		
Achievement of Original Plan			94.41%	97.61%				
1st Quarter Budget Amendments	(220,000)	(2,400,000)			220,000	2,400,000		
Billing Adjustments			65,470	544,190	65,470	544,190		
Revised Subtotal	8,157,600	194,187,100	7,974,472	192,431,293	(183,128)	(1,755,807)		
Achievement of Amended Plan			97.76%	99.10%				

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

(2) Water Revenues differ from Table 1A because amounts are reduced by the monthly payment to the City of Flint for a license to raw water rights under the Flint Raw Water Contract in Table 1A

(3) Charges are based on the approved FY 2022 water supply system charge schedule.

This table and the underlying actual FY 2022 data does reflect the reduction in volume and revenue resulting from Flint's testing of their emergency connection through GDCD. However, budget amendments for water revenue of \$2.4 million to date were in response to the lower volume experienced in July & August. So budgeted and amended revenue projections do not yet reflect any impact of that Flint testing activity.

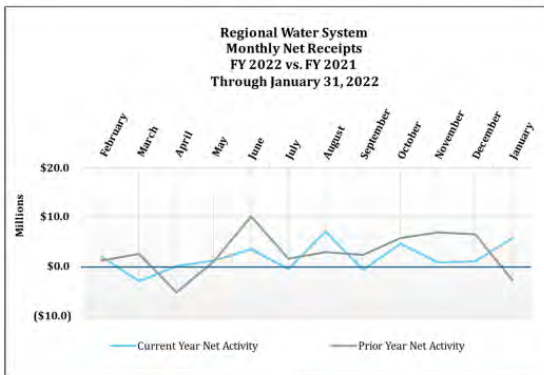
In addition to the testing of their emergency water connection, Flint also has an ongoing billing issue with GLWA regarding an oversized meter (FL-01) at the Flint main water connection with GLWA. Both Flint and GLWA are aware of this issue and have been working through a resolution process which is two-fold. First, Flint and GLWA have determined that Flint was underbilled because of the meter being too large for the current usage and implemented a rebilling and payment plan adjust for that underbilling. Second, a project to replace that meter was targeted to take place while the emergency water connection was

being tested. Therefore, because these billing adjustments will be made before June 30, 2022 we have factored that additional revenue (\$544k) into the projection above. This along with anticipated increases in usage during the Spring will allow us to better gauge if further budget amendments will be required.

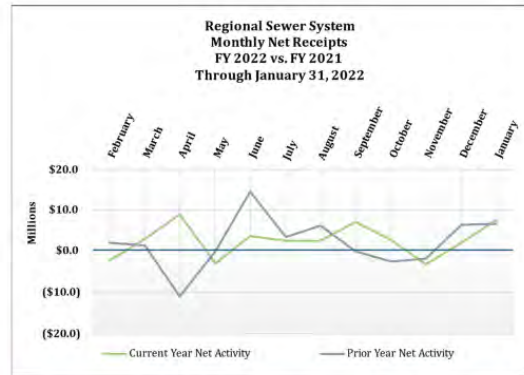
On the other hand, the matter of the City of Dearborn and their contract dispute has not impacted revenues as GLWA continues to invoice the City based on the charge schedule approved by the GLWA Board. The City of Dearborn dispute is a cash receipt and collection issue for GLWA. That dispute had a more significant impact in FY 2021 when the short payments were \$430k monthly. In FY 2022, the monthly short payment associated with their contract dispute is \$64k. The impact of that short payment of cash would be reflected in this KPI associated with net cash receipts but has had no significant impact to date for FY 2022.

Financial Viability – GLWA Regional System Net Receipts

*For the purposes of this reporting, Net Receipts equals cash collections less Master Bond Ordinance (MBO) disbursements.
The black line in the charts below at zero highlights the minimum goal for net receipts.
While this measure may vary monthly based on billing and collection cycles,
cumulative positive net receipts supports long-term financial sustainability.*



Regional Water System net receipts for the month of January 2022 exceeded required MBO disbursements by \$725 thousand. This equates to an 11% surplus of net monthly receipts over required disbursements or \$20.3 million year-to-date.



Regional Sewer System net receipts for the month of January 2022 exceeded required MBO disbursements by \$7.4 million. This equates to an 8% surplus of net monthly receipts over required disbursements or \$21.1 million year-to-date.



	Average Takedown (\$/bond) (1)	Est. Takedown (\$ (1)	Management Fee (\$/bond)	Est. Management Fee (\$)	Est. Expenses (\$ (2)	Total Fees Including Expenses (\$/bond)	Est. Total Fees (\$)	Points Awarded
Wells Fargo	2.25	659,000	-	-	33,000	2.36	692,000	10.00
Goldman Sachs	2.50	733,000	-	-	32,000	2.61	765,000	9.05
Siebert Williams Shank & Co.	2.50	733,000	-	-	82,000	2.78	815,000	8.49

Notes:

- (1) Estimated takedowns rounded to nearest thousand and are based on estimated base case financing. Assumes issued without bond insurance.
 - (2) Estimated expenses rounded to nearest thousand and exclude Underwriter's Counsel.
 - (3) All firms proposed same takedowns for insured or uninsured bonds.
 - (4) Base case financing assumed as par of 293.065m (Assumes proceeds of: 175.8m for Water; 137.8m for Sewer; 17.985m in Sewer Refunded Par)
- Amortization Shown Below:

1	21,460,000
2	4,360,000
3	4,575,000
4	4,805,000
5	5,045,000
6	5,295,000
7	5,560,000
8	5,840,000
9	6,130,000
10	6,440,000
11	6,760,000
12	7,100,000
13	7,455,000
14	7,825,000
15	8,215,000
16	8,630,000
17	9,060,000
18	9,515,000
19	9,990,000
20	10,490,000
21	11,010,000
22	11,565,000
23	12,140,000
24	12,750,000
25	13,385,000
26	14,055,000
27	14,760,000
28	15,495,000
29	16,270,000
30	17,085,000

GLWA

Great Lakes Water Authority



Monthly Financial Report Binder

January 2022

**Presented to the
Great Lakes Water Authority
Audit Committee on April 22, 2022**

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Appendix

 Aged Accounts Receivable Report..... A-1

 Highland Park Life-to-Date Billings & Collections B-1



Key Financial Metrics

The table below provides key report highlights and flags the financial risk of a budget shortfall by year-end as follows:

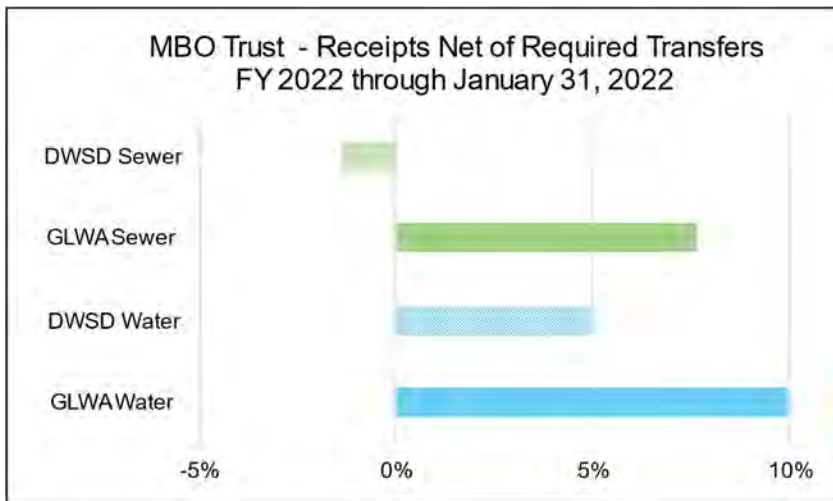
No Risk (green) - Potential (yellow) - Likely (red)

Each variance is monitored by the Great Lakes Water Authority (GLWA) management and, where appropriate, operating and/or budget priorities are re-evaluated. Budget amendments are prepared and presented quarterly based on most current information. To address the wholesale water revenue shortfall, a first quarter budget amendment was approved for \$2.4 million. Capital spend is less than the total CIP; an amendment is under consideration.

As of January 31, 2022					
Metric	FY 2022 Budget	FY 2022 Amended Budget	FY 2022 Actual	Variance from Financial Plan	Report Page Reference
Wholesale Water Billed Revenue (\$M)	\$196.6	\$194.2	\$192.4	-1%	48
Wholesale Water Billed Usage (mcf)	8,378,000	8,158,000	7,974,000	-2%	
Wholesale Sewer Billed Revenue (\$M)	\$158.3	\$158.3	\$158.3	0%	50
Wholesale Water Operations & Maintenance (\$M)	\$84.0	\$84.0	\$77.2	-8%	5
Wholesale Sewer Operations & Maintenance (\$M)	\$105.8	\$105.8	\$104.1	-2%	
Investment Income (\$M)	\$1.8	\$1.8	\$2.2	26%	37
Water Prorated Capital Spend w/SRA* (\$M)	\$78.8	\$78.8	\$95.0	21%	28
Sewer Prorated Capital Spend w/SRA* (\$M)	\$47.3	\$47.3	\$38.8	-18%	29

*SRA refers to the capital spending ratio assumption which allows capital program delivery realities to align with the financial plan.

Master Bond Ordinance (MBO) Trust Net Receipts (page 53)



Net cash flow receipts remain positive for GLWA Water and Sewer. This means that all legal commitments of the MBO Trust and the lease payment are fully funded – and that positive cash flow is available for additional capital program funding in subsequent year(s). DWSD Water reports a surplus of \$2.8 million and

DWSD Sewer reports a \$2.3 million shortfall of net receipts over disbursements through January 2022. On August 26, 2021, the DWSD Board of Water Commissioners proactively adopted budget amendments to address potential shortfalls for FY 2022. These budget amendments are reflected in this January 2022 report. DWSD continues to monitor these balances and anticipates improved monthly receipts supplemented by tax lien collections will resolve the current Sewer shortfall before yearend.

The current DWSD loan receivable balance for fiscal year 2018 is \$3.5 million.

Budget to Actual Analysis (page 3)

- FY 2022 information includes the second quarter budget amendments which were approved by the Audit Committee on March 25, 2022 and pending approval by the GLWA Board on April 27, 2022.
- The total Revenue Requirements are on target through January 2022.
- The total Operations & Maintenance expenses are at 55.7% of budget through January 2022.

Basic Financial Statements (page 9)

- The Basic Financial Statements are prepared on a full accrual basis and reflect preliminary, unaudited results.
- Operating income for January 2022 is \$52.1 million for the Water fund (25.4% of total revenues) and \$79.8 million for the Sewer fund (28.8 % of total revenues).
- Water Net Position decreased by \$-2.7 million, and Sewage Disposal Net Position increased by \$2.7 million for the year to date through January 2022.

Capital Improvement Plan Financial Summary (page 27)

- Water systems exceed the 75% Capital Spend Ratio assumption.
- Sewer systems also exceed the 75% Capital Spend Ratio assumption.

Master Bond Ordinance Transfers (page 30)

- For January, transfers of \$13.6 million and \$17.6 million were completed for the GLWA Water and Sewer funds, respectively.
- Also for January, transfers of \$3.2 million and \$7.4 million were completed for the DWSD Water and Sewer funds, respectively.

Cash Balances & Investment Income (page 36)

- Total cash & investments are \$418 million in the Water fund and \$446 million in the Sewer fund.
- Total, combined, cumulative, FY 2022 investment income through January is \$2.2 million.

DWSD Retail Revenues, Receivables & Collections (page 41)

- Water usage through January 31, 2022 is at 109.44% and revenues at 100.57% of budget.
- Sewer usage through January 31, 2022 is at 104.91% and revenues at 100.25% of budget.
- Combined accounts receivable balances for the water and sewer funds report an increase of \$47.7 million over the prior year.
- Past dues over 180 days make up 66.0% of the total accounts receivable balance. The current bad debt allowance covers 100.8% of past dues over 60 days.

GLWA Wholesale Billing, Receivables & Collections (page 47)

- GLWA accounts receivable past due balance net of Highland Park is 9.53% of the total accounts receivable balance, with the majority of that balance related to one water account dispute currently under discussion.
- The Highland Park past due balance is \$52.4 million. It includes \$40.2 million for wastewater treatment services, \$1.8 million for industrial waste control services, and \$10.5 million for water supply services. Highland Park has not made a payment in FY 2022 through January 2022.

Questions? Contact the Office of the Chief Financial Officer at CFO@glwater.org



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

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

The FY 2022 information presented in these sections includes the second quarter budget amendments approved by the Audit Committee on March 25, 2022 and pending approval by the GLWA Board on April 27, 2022.

Revenue Requirement Budget Basis Analysis

GLWA's annual revenue requirement represents the basis for calculating Member Partner charges and aligns with the Master Bond Ordinance flow of funds categories. The budget basis is not the same as the full accrual basis used for financial reporting although the revenues and operations and maintenance expense are largely reported on an accrual basis. The primary difference between the revenue requirement budget basis to the financial reporting basis is the treatment of debt service, legacy pension obligations, and lease related activities. The Revenue Requirement Basis is foundational to GLWA's daily operations, financial plan, and of most interest to key stakeholders.

Table 1A – Water Revenue Requirement Budget and **Table 1B – Sewer Revenue Requirement Budget** presents a year-over-year budget to actual performance report. The revenue requirement budget is accounted for in the operations and maintenance fund for each system. Since this report is for January 2022, the pro-rata benchmark is 58.3% (7 of 12 months of the fiscal year).

Items noted below are highlighted in gold on Tables 1A (Water) and 1B (Sewer).

1. **Revenues:** For *both* systems, FY 2022 revenues are slightly above target. Detailed schedules related to revenues are provided in the *Wholesale Billings, Collections, and Receivables* section of this financial report binder.

Water revenues presented in Table 1A differ from those presented in *Table 2 – Statement of Revenues, Expenses and Changes in Net Position* found in the *Basic Financial Statement* section of this report. Water Revenues presented in Table 1A for revenue requirement purposes are reduced by the monthly payment to the City of Flint for a license to raw water rights under the Flint Raw Water Contract as documented in Appendix A-2 of the [Flint Water Agreement](#). Through January 31, 2022, these payments total \$3.8 million for FY 2022.

2. **Investment Earnings:** Investment earnings is above the pro-rata benchmark for FY 2022 for the *water* system at 62.1%; while the *sewer* system is below the pro-rata benchmark at 50.6%. Detailed analysis of investment earnings activity to date

can be found in the *Cash & Investment Income* section of this financial report binder.

3. **Other Revenues:** These are one-time and unusual items that do not fit an established revenue category. Both the *water* and *sewer* systems actual amount will vary from budget due to the nature of the items recorded in this category.
4. **Operations & Maintenance Expense:** Actual expenses¹ for *both* systems have variances from the pro-rata benchmark. The *water* system is less than the pro-rata benchmark for FY 2022 at 53.6%. The *sewer* system O&M expenses, at 57.4%, is slightly under the pro-rata benchmark.
5. **Debt Service:** For both systems, debt service is on target with the pro-rata benchmark for FY 2022; the *water* system is at 58.5%; while the *sewer* system is at 58.8%. The activity is based on the payment schedules adjusted for the State Revolving Fund loans that are still being drawn down.
6. **Operating Reserve Deposit:** GLWA has established a target balance in the O&M Fund of 45 days of operating expense which works in tandem with the I&E Funds to provide liquidity to the utility. Adequate funding is in place to meet this requirement; therefore, it is expected that additional transfers to this reserve will not be required in FY 2022.
7. **DWSD Budget Shortfall Pending:** To the extent that the local (DWSD) system experiences budgetary shortfalls as defined by the Water & Sewer Services Agreement, the GLWA budget is impacted.² Steps to proactively detect, and ideally prevent, this shortfall scenario were put into place with the 2018 Memorandum of Understanding (dated June 27, 2018). For FY 2021, DWSD management successfully implemented a formal plan to end the year with positive net cash flows for both the DWSD *water* system and the DWSD *sewer* system. For FY 2022, the DWSD *water* system does not have a budgetary shortfall and the DWSD *sewer* system has a budgetary shortfall of \$2.3 million through January 31, 2022. GLWA and DWSD staff are meeting regularly to discuss steps to mitigate this shortfall as outlined in the 2018 MOU.
8. **Improvement & Extension (I&E) Fund Transfer Pending:** The contribution to the I&E Fund is for improvements, enlargements, extensions, or betterment of the Water System.
9. **Other Revenue Requirements:** The remaining revenue requirements for *both* systems are funded on a 1/12th basis each month in accordance with the Master Bond Ordinance.
10. **Overall:** Total revenue requirements for *both* systems are in line with the benchmark.

¹The tables in this analysis reflect actual amounts spent. If this analysis was on a master bond ordinance (MBO) basis, like that used for calculating debt service coverage, O&M "expense" would equal the pro-rata budget because 1/12 of the O&M budget is transferred monthly outside the MBO trust to an O&M bank account.

² As a reminder, the monthly O&M transfer for MBO purposes is at 1/12 of the budget to a DWSD O&M bank account outside the trust. Actual budget may be less than that amount providing an actual positive variance for DWSD.

Table 1A – Water Revenue Requirement Budget (year-over-year) – (\$000)

	FY2021 AMENDED BUDGET	FY 2021 ACTIVITY THRU 1/31/2021	Percent Year-to- Date	FY 2022 BOARD ADOPTED BUDGET	FY 2022 AMENDED BUDGET	FY 2022 ACTIVITY THRU 1/31/2022	Percent Year-to- Date
Water System							
Revenues							
Suburban Wholesale Customer Charges	\$ 317,034	\$ 188,475	59.4%	\$ 321,111	\$ 318,711	\$ 188,150	59.0%
Retail Service Charges	21,926	12,921	58.9%	21,697	21,697	12,657	58.3%
Investment Earnings	3,956	2,857	72.2%	1,047	1,924	1,196	62.1%
Other Revenues	229	161	70.4%	175	291	247	84.9%
Total Revenues	\$ 343,144	\$ 204,414	59.6%	\$ 344,031	\$ 342,623	\$ 202,249	59.0%
Revenue Requirements							
Operations & Maintenance Expense	\$ 134,127	\$ 74,903	55.8%	\$ 143,934	\$ 143,934	\$ 77,166	53.6%
General Retirement System Legacy Pension	6,048	3,528	58.3%	6,048	6,048	3,528	58.3%
Debt Service	137,436	81,183	59.1%	135,481	135,121	79,060	58.5%
General Retirement System Accelerated Pension	6,268	3,657	58.3%	6,268	6,268	3,657	58.3%
Extraordinary Repair & Replacement Deposit	-	-	0.0%	-	-	-	0.0%
Water Residential Assistance Program Contribution	1,669	974	58.3%	1,706	1,706	995	58.3%
Regional System Lease	22,500	13,125	58.3%	22,500	22,500	13,125	58.3%
Operating Reserve Deposit	-	-	0.0%	-	-	-	0.0%
DWSD Budget Shortfall Pending Improvement & Extension Fund Transfer Pending	-	-	0.0%	-	-	-	0.0%
	35,095	16,497	47.0%	28,094	27,046	15,911	58.8%
Total Revenue Requirements	\$ 343,144	\$ 193,866	56.5%	\$ 344,031	\$ 342,623	\$ 193,442	56.5%
Net Difference		\$ 10,548				\$ 8,807	
<i>Recap of Net Positive Variance</i>							
		Revenue Variance	\$ 4,247			\$ 2,386	
		Revenue Requirement Variance	6,301			6,422	
		Overall Variance	\$ 10,548			\$ 8,807	

Table 1B – Sewer Revenue Requirement Budget (year-over-year) – (\$000)

	FY 2021 AMENDED BUDGET	FY 2021 ACTIVITY THRU 1/31/2021	Percent Year-to- Date	FY 2022 BOARD ADOPTED BUDGET	FY 2022 AMENDED BUDGET	FY 2022 ACTIVITY THRU 1/31/2022	Percent Year-to- Date
Sewer System							
Revenues							
Suburban Wholesale Customer Charges	\$ 272,454	\$ 157,012	57.6%	\$ 272,130	\$ 266,730	\$ 158,838	59.5%
Retail Service Charges	187,960	110,092	58.6%	188,662	188,662	110,053	58.3%
Industrial Waste Control Charges	7,685	4,629	60.2%	9,025	8,325	4,843	58.2%
Pollutant Surcharges	6,108	3,528	57.8%	4,189	4,189	2,910	69.5%
Investment Earnings	2,778	1,843	66.3%	1,023	1,876	950	50.6%
Other Revenues	2,195	327	14.9%	400	490	309	63.1%
Total Revenues	\$ 479,179	\$ 277,431	57.9%	\$ 475,429	\$ 470,272	\$ 277,902	59.1%
Revenue Requirements							
Operations & Maintenance Expense	\$ 182,296	\$ 98,209	53.9%	\$ 181,300	\$ 181,300	\$ 104,134	57.4%
General Retirement System Legacy Pension	10,824	6,314	58.3%	10,824	10,824	6,314	58.3%
Debt Service	201,780	119,793	59.4%	207,210	204,985	120,516	58.8%
General Retirement System Accelerated Pension	11,621	6,779	58.3%	11,621	11,621	6,779	58.3%
Extraordinary Repair & Replacement Deposit	-	-	0.0%	-	-	-	0.0%
Water Residential Assistance Program Contribution	2,415	1,409	58.3%	2,358	2,358	1,376	58.3%
Regional System Lease	27,500	16,042	58.3%	27,500	27,500	16,042	58.3%
Operating Reserve Deposit	-	-	0.0%	-	-	-	0.0%
DWSD Budget Shortfall Pending Improvement & Extension Fund Transfer Pending	-	2,838	0.0%	-	-	2,349	0.0%
	42,743	23,474	54.9%	34,617	31,685	19,611	61.9%
Total Revenue Requirements	\$ 479,179	\$ 274,856	57.4%	\$ 475,429	\$ 470,272	\$ 277,120	58.9%
Net Difference		\$ 2,575				\$ 782	
<i>Recap of Net Positive Variance</i>							
		Revenue Variance	\$ (2,090)			\$ 3,576	
		Revenue Requirement Variance	4,665			(2,794)	
		Overall Variance	\$ 2,575			\$ 782	

Operations & Maintenance Budget – Major Budget Categories

The year-over-year benchmark ratio as of January 31, 2022, is 58.3% (seven months). When comparing FY 2022 to FY 2021 in **Table 2 – Operations & Maintenance Budget – Major Budget Categories**, it appears that overall spending is consistent.

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

Table 2 – Operations & Maintenance Budget – Major Budget Categories – (\$000)

Major Budget Categories	FY 2021			FY 2022			FY 2022		
	FY 2021 AMENDED BUDGET	ACTIVITY THRU 1/31/2021	Percent Year-to-Date	BOARD ADOPTED BUDGET	FY 2022 AMENDED BUDGET	ACTIVITY THRU 1/31/2022	Percent Year-to-Date		
Water	\$ 70,820	\$ 42,096	59.4%	\$ 74,813	\$ 74,813	\$ 44,624	59.6%		
Sewer	114,975	61,658	53.6%	111,971	111,971	65,985	58.9%		
Centralized	100,339	53,965	53.8%	103,846	103,846	51,721	49.8%		
Administrative	30,290	15,660	51.7%	34,603	34,603	18,970	54.8%		
Employee Benefits	-	(267)	0.0%	-	-	-	0.0%		
Total O&M Budget	\$ 316,424	\$ 173,112	54.7%	\$ 325,234	\$ 325,234	\$ 181,300	55.7%		

Totals may be off due to rounding

Alignment of Operations & Maintenance Budget Priorities – Expense Variance Analysis

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

Total: In total, the O&M expenses are at 55.7% which is reasonably within the pro-rata benchmark of 58.3%. This positive variance equates to a dollar amount of \$8.4 million. The expense category commentary is provided below for items highlighted on Table 3.

Personnel Costs: The overall category is slightly under the pro-rata benchmark; coming in at 56.1% through January 2022.

Utilities: The overall category is higher than the pro-rata benchmark; coming in at 64.3% through January 2022. Variances within this category, when they occur, are not unexpected as usage varies throughout the year.

- **Electric** is higher than the pro-rata benchmark, coming in at 65.0%. The first three months of GLWA's fiscal year (July, August, and September) are typically peak months for the usage of electricity. June, the last month of GLWA's fiscal year, is typically a peak month as well.
- **Gas** is coming in at 68.1% which is higher than the benchmark of 58.3%. Variances within this category are not unexpected as usage is variable throughout the year.
- **Sewage service** is higher than the benchmark, coming in at 68.4%. Bills for a meter for a large line at the WRRF, which previously had been estimated, are now being received for actual readings.
- **Water service** is lower than the benchmark, coming in at 45.2%. Usage of this account varies throughout the year. A review of this category is being conducted.

Chemicals: This category is higher than the pro-rate benchmark; coming in at 63.7% through January 2022. While variances within this category are not unexpected as usage varies throughout the year, the increase in chemical costs is the primary driver for this variance.

Supplies & Other: This category is lower than the benchmark; coming in at 46.2% through January 2022. Given that the nature of the items in this category are subject to one-time expenses that do not occur evenly throughout the year, variances are not unexpected. A review of this category is being conducted.

Contractual Services: The overall category is slightly lower than the pro-rata benchmark; coming in at 56.1% through January 2022. Variances in this category, when they occur, are not unexpected as the usage of contracts varies throughout the year (projects scheduled to begin during the latter half of the year as well as contracts that are on an as needed basis). Budget amendments will be processed for those projects in which the actual start dates have been delayed from that in which they were budgeted.

Capital Program Allocation: This category is lower than the benchmark; coming in at 45.8% through January 2022. The amount in the Capital Program Allocation account is shown as negative as this is a "contra" account which represents an offset to the Personnel Costs section of the Operations & Maintenance (O&M) budget.

Shared Services: This category is lower than the benchmark; coming in at 54.6% through January 2022. The shared services reimbursement is comprised of both labor (tracked via BigTime) and expenses, such as annual fees for software licensing. Staff from both GLWA and DWSD have been working together to evaluate and refine the budget for the shared services agreements. Based on these evaluations, adjustments have been made to both the billings and accounting accruals to reflect the forecasted activity more accurately for FY 2022. A second quarter budget amendment was entered to adjust the shared services budget to this revised FY 2022 forecast. In addition, it is important to note that some of the shared services agreements are not billed at a monthly rate of 1/12 of the annual budgeted amount.

Table 3 – Operations & Maintenance Expense Variance Analysis – (\$000)

Expense Categories	FY 2021 AMENDED BUDGET	FY 2021 ACTIVITY THRU 1/31/2021	Percent Year-to- Date at 1/31/2021	FY 2021 ACTIVITY THRU 6/30/2021	Percent Year-to- Date at 6/30/2021	FY 2022		FY 2022 ACTIVITY THRU 1/31/2022	Percent Year-to- Date 1/31/2022	FY 2022
						FY 2022 AMENDED BUDGET	PRORATED BUDGET (7 MONTHS)			PRORATED BUDGET LESS FY 2022 ACTIVITY
Entity-wide										
Salaries & Wages	\$ 67,306	\$ 37,828	56.2%	\$ 64,910	58.3%	\$ 70,564	\$ 41,163	\$ 38,198	54.1%	\$ 2,965
Workforce Development	895	512	57.2%	829	61.8%	977	570	446	45.6%	124
Overtime	7,537	4,517	59.9%	7,365	61.3%	6,904	4,027	4,689	67.9%	(661)
Employee Benefits	26,806	15,511	57.9%	25,448	61.0%	26,811	15,640	14,709	54.9%	931
Transition Services	8,557	5,482	64.1%	8,392	65.3%	8,652	5,047	5,853	67.6%	(805)
Employee Benefits Fund	-	(267)	0.0%	-	0.0%	-	-	-	0.0%	-
Personnel Costs	<u>111,100</u>	<u>63,584</u>	57.2%	<u>106,945</u>	59.5%	<u>113,908</u>	<u>66,446</u>	<u>63,893</u>	56.1%	<u>2,553</u>
Electric	41,554	24,691	59.4%	41,982	58.8%	39,676	23,144	25,795	65.0%	(2,651)
Gas	5,924	2,940	49.6%	5,706	51.5%	5,566	3,247	3,791	68.1%	(544)
Sewage Service	2,297	1,063	46.3%	2,075	51.2%	2,079	1,213	1,421	68.4%	(208)
Water Service	2,608	1,547	59.3%	2,987	51.8%	3,120	1,820	1,409	45.2%	411
Utilities	<u>52,383</u>	<u>30,241</u>	57.7%	<u>52,749</u>	57.3%	<u>50,441</u>	<u>29,424</u>	<u>32,416</u>	64.3%	<u>(2,993)</u>
Chemicals	14,362	8,456	58.9%	13,982	60.5%	17,515	10,217	11,156	63.7%	(939)
Supplies & Other	35,595	17,198	48.3%	31,216	55.1%	37,083	21,632	17,126	46.2%	4,506
Contractual Services	99,977	58,092	58.1%	92,020	63.1%	106,793	62,296	59,898	56.1%	2,398
Capital Program Allocation	(3,447)	(1,787)	51.8%	(3,192)	56.0%	(3,471)	(2,025)	(1,591)	45.8%	(434)
Shared Services	(4,512)	(2,672)	59.2%	(2,567)	104.1%	(2,929)	(1,709)	(1,598)	54.6%	(110)
Unallocated Reserve	10,966	-	0.0%	-	0.0%	5,894	3,438	-	0.0%	3,438
Total Expenses	<u>\$ 316,424</u>	<u>\$ 173,112</u>	54.7%	<u>\$ 291,153</u>	59.5%	<u>\$ 325,234</u>	<u>\$ 189,720</u>	<u>\$ 181,300</u>	55.7%	<u>\$ 8,420</u>

Totals may be off due to rounding



The Basic Financial Statements report includes the following four tables.

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

At a macro level GLWA has two primary funds for financial reporting purposes: *Water Fund* and *Sewage Disposal Fund*. These funds represent the combined total of four sub-funds for each system that are used internally to properly account for sources and uses of funds. Those sub-funds for each system are: *Operations & Maintenance Fund*, *Improvement & Extension Fund*, *Construction Fund*, and *Capital Asset Fund*.

The June 2021 comparative amounts shown in the tables below are presented based on final audited figures.

Statement of Net Position – All Funds Combined

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

**Table 1 – Statement of Net Position - All Funds Combined
As of January 31, 2022
(\$000)**

	Water	Sewage Disposal	Total Business- type Activities	Comparative June 30, 2021
Assets				
Cash - unrestricted (a)	\$ 164,062	\$ 194,702	\$ 358,764	\$ 354,351
Cash - restricted (a)	16,951	18,650	35,601	162,646
Investments - unrestricted (a)	144,064	111,522	255,586	322,930
Investments - restricted (a)	75,998	133,081	209,080	70,225
Accounts Receivable	79,834	57,307	137,141	165,059
Due from (to) Other Funds (b)	(3,144)	3,144	-	-
Other Assets (c)	679,562	424,963	1,104,525	1,098,362
Cash Held FBO DWSD Advance (d)	-	(566)	(566)	-
Capital Assets, net of Depreciation	1,277,660	2,137,130	3,414,790	3,546,027
Land	293,897	124,377	418,274	417,512
Construction Work in Process (e)	275,839	223,920	499,759	395,973
Total assets	3,004,725	3,428,229	6,432,954	6,533,085
Deferred Outflows (f)	52,541	130,699	183,239	225,074
Liabilities				
Liabilities - Liabilities-ST	132,970	152,838	285,808	329,279
Due to (from) Other Funds (b)	-	-	-	-
Other Liabilities (h)	2,391	6,381	8,773	7,500
Cash Held FBO DWSD (d)	4,359	2,937	7,296	6,064
Liabilities - Long-Term (i)	2,946,937	3,427,976	6,374,913	6,529,068
Total liabilities	3,086,658	3,590,132	6,676,790	6,871,911
Deferred Inflows (f)	70,611	78,983	149,594	96,380
Total net position (j)	\$ (100,004)	\$ (110,186)	\$ (210,191)	\$ (210,132)
<i>Totals may be off due to rounding</i>				

In general, the Statement of Net Position reflects a mature organization with no unexpected trends.

An ongoing challenge is the Net Position Deficit. The underlying causes took years to build (largely heavy use of debt to finance capital asset investment versus a strategic blend of debt, state revolving funds, and cash). The effect is reflected in GLWA's high debt interest expense. The GLWA is regularly updating the FY 2032 forecast which helps to provide a pathway to a positive Net Position in the future.

Footnotes to Statement of Net Position

- a. *Cash and Investments* are reported at market value. Investments at June 30, 2021 are also reported at market value. The January 31, 2022 values differ from the Cash and Investment section of this Financial Report Binder due to timing of certain items recognized on a cash versus accrual basis.
- b. *Due from Other Funds* and *Due to Other Funds* are shown at gross for sub-fund activity.
- c. *Other Assets* primarily consists of the contractual obligation receivable from DWSD related to reimbursement of bonded indebtedness for local system improvements.
- d. *Cash Held FBO Advance (for benefit of) DWSD* and *Cash Held FBO DWSD* represents the net difference between DWSD retail cash received from customers and net financial commitments as outlined in the Master Bond Ordinance.
- e. *Construction Work in Process* represents the beginning balance of CWIP plus any construction spending during the fiscal year. The balance will fluctuate based on the level of spend less any capitalizations or write-offs.
- f. *Deferred Inflow* and *Deferred Outflow* relate mainly to financing activity and GLWA's share of the legacy General Retirement System (GRS) pension obligation.
- g. *Liabilities - Short-term* include accounts payable, retainage payable, and certain accrued liabilities. Some items, such as compensated absences and worker's compensation, are reviewed periodically but only adjusted in the interim if there is a material change.
- h. *Other Liabilities* account for the cash receipts set aside for the Budget Stabilization Fund and the Water Residential Assistance Program.
- i. *Liabilities – Long-term* include bonds payable, lease payable, and legacy General Retirement System pension liabilities.
- j. *Net Position Deficit* is defined by accounting standards as the residual of all other elements presented in a statement of financial position. It is the difference between (a) assets and deferred outflows of resources and (b) liabilities and deferred inflows of resources. A net deficit occurs when the liabilities and deferred inflows exceed assets and deferred outflows. GLWA's net deficit is largely driven by an increase in depreciation expense because of the increase in the acquisition valuation approach for recording capital asset values in the opening Statement of Net Position on January 2016. Efforts are underway to evaluate the net operating effect of this matter over the long term.

Statement of Revenues, Expenses and Changes in Net Position

– All Funds Combined

This statement, shown in Table 2, is presented in summary format. The accrual basis of revenues and operations and maintenance expense vary from the revenue requirement basis presented in the *Budget to Actual Analysis* and the *Wholesale Billings, Receivables & Collections* sections of the January 2022 Financial Report Binder. Prior year ending balances are provided in the June 30, 2021 column as a reference for comparative purposes. Explanatory notes follow this statement.

Water revenues presented below in Table 2 differ from those presented in *Table 1A – Water Revenue Requirement Budget* found in the *Budget to Actual Analysis* section of this report because water revenues presented in Table 1A for revenue requirement purposes are reduced by the monthly payment to the City of Flint for a license to raw water rights.

Table 2 – Statement of Revenues, Expenses and Changes in Net Position
– All Funds Combined
For the Seven Months ended January 31, 2022
(\$000)

	Water	Percent of Revenue	Sewage Disposal	Percent of Revenue	Total Business- Type Activities	Comparative June 30, 2021
Revenue						
Wholesale customer charges	\$ 191,972	93.7%	\$ 158,838	57.4%	\$ 350,809	\$ 589,992
Local system charges	12,657	6.2%	110,053	39.7%	122,710	209,885
Industrial waste charges		0.0%	4,843	1.7%	4,843	8,005
Pollutant surcharges		0.0%	2,910	1.1%	2,910	6,720
Other revenues	247	0.1%	309	0.1%	556	767
Total Revenues	204,875	100.0%	276,953	100.0%	481,828	815,369
Operating expenses						
Operations and Maintenance	78,771	38.4%	105,797	38.2%	184,568	301,740
Depreciation	71,959	35.1%	91,137	32.9%	163,095	274,044
Amortization of intangible assets	2,081	1.0%	256	0.1%	2,337	3,677
Total operating expenses	152,810	74.6%	197,190	71.2%	350,000	579,460
Operating Income	52,065	25.4%	79,763	28.8%	131,828	235,909
Total Nonoperating (revenue) expense	54,804	26.8%	77,083	27.8%	131,887	224,464
Increase/(Decrease) in Net Position	-2,739	-1.3%	2,680	1.0%	-59	11,445
Net Position (deficit), beginning of year	(97,266)		(112,867)		(210,132)	(221,578)
Net position (deficit), end of year	\$ (100,004)		\$ (110,186)		\$ (210,191)	\$ (210,132)

Totals may be off due to rounding

Water Fund

- ✓ The decrease in Water Fund Net Position is \$ 2.7 million.
- ✓ Wholesale water customer charges of \$192.0 million account for 93.7% of Water System revenues.
- ✓ Operating expenses of \$152.8 million represent 74.6% of total operating revenue. Depreciation is the largest operating expense at \$72.0 million or 47.1% of operating expense.
- ✓ Amortization of intangible assets represents activity for raw water rights.
- ✓ Operating income after operating expenses (including depreciation) equals \$52.1 million or 25.4% of operating revenue.
- ✓ The largest category within nonoperating activities is bonded debt interest expense of \$45.8 million (this equates to the bonded debt interest expense less the offset from DWSD contractual obligation income).

Sewage Disposal Fund

- ✓ The increase in the Sewage Disposal Fund Net Position is \$2.7 million.
- ✓ Wholesale customer charges of \$158.8 million account for 57.4% of Sewer System revenues. Wholesale customer charges are billed one-twelfth each month based on an agreed-upon historical average “share” of each customer’s historical flows which are formally revisited on a periodic basis. The result is no revenue shortfall or overestimation.
- ✓ Local system (DWSD) charges of \$110.1 million account for 39.7% of total operating revenues. These are also billed at one-twelfth of the annual revenue requirement.
- ✓ Operating expenses of \$197.2 million represent 71.2% of total operating revenue. Depreciation is the largest operating expense at \$91.1 million or 46.2% of total operating expense.
- ✓ Amortization of intangible assets represents activity for a warehouse lease.
- ✓ Operating income after operating expenses (including depreciation) equals \$79.8 million or 28.8% of operating revenue.
- ✓ The largest category within nonoperating activities is bonded debt interest expense of \$53.4 million (this equates to the bonded debt interest expense less the offset from DWSD contractual obligation income).

Supplemental Schedule of Operations & Maintenance Expenses – All Funds Combined

This Supplemental Schedule of Operations & Maintenance Expenses (O&M) schedule is shown below in Table 3. This accrual basis of operations and maintenance expense may vary from the revenue requirement basis presented in the *Budget to Actual Analysis* section of the January 2022 Financial Report Binder. Explanatory notes follow this schedule.

**Table 3 – Supplemental Schedule of Operations & Maintenance Expenses
– All Funds Combined
For the Seven Months ended January 31, 2022
(\$000)**

	Water	Percent of Total	Sewage Disposal	Percent of Total	Total Business- Type Activities	Percent of Total
Operating Expenses						
Personnel						
Salaries & Wages	13,277	16.9%	31,219	29.5%	44,496	24.1%
Overtime	2,985	3.8%	1,703	1.6%	4,688	2.5%
Benefits	10,174	12.9%	4,535	4.3%	14,709	8.0%
Total Personnel	\$ 26,436	33.6%	\$ 37,458	35.4%	\$ 63,893	34.6%
Utilities						
Electric	15,772	20.0%	10,024	9.5%	25,795	14.0%
Gas	673	0.9%	3,118	2.9%	3,791	2.1%
Sewage	524	0.7%	897	0.8%	1,421	0.8%
Water	2	0.0%	1,408	1.3%	1,409	0.8%
Total Utilities	\$ 16,970	21.5%	\$ 15,446	14.6%	\$ 32,416	17.6%
Chemicals	4,339	5.5%	6,817	6.4%	11,156	6.0%
Supplies and other	5,336	6.8%	11,592	11.0%	16,928	9.2%
Contractual services	28,123	35.7%	35,302	33.4%	63,425	34.4%
Capital Adjustment	-	0.0%	-	0.0%	-	0.0%
Capital program allocation	(1,026)	-1.3%	(565)	-0.5%	(1,591)	-0.9%
Intergovernmental Agreement	(10)	0.0%	(51)	0.0%	(61)	0.0%
Shared services allocation	(1,397)	-1.8%	(201)	-0.2%	(1,598)	-0.9%
Operations and Maintenance Expenses	\$ 78,771	100.0%	\$ 105,797	100.0%	\$ 184,568	100.0%

Totals may be off due to rounding

- ✓ Core expenses for water and sewage disposal systems are utilities (17.6% of total O&M expenses) and chemicals (6.0% of total O&M expenses).
- ✓ Personnel costs (34.6% of total O&M expenses) include all salaries, wages, and benefits for employees as well as staff augmentation contracts that fill a vacant position (contractual transition services).
- ✓ Contractual services (34.4%) includes:
 - Water System costs of sludge removal and disposal services at the Northeast, Southwest and Springwells Water Treatment Plants (approximately \$6.2 million);
 - Sewage Disposal System costs for the operation and maintenance of the biosolids dryer facility (approximately \$9.5 million); and
 - Centralized and administrative contractual costs allocated to both systems for information technology, building maintenance, field, planning and other services.
- ✓ The Capital Program Allocation, Intergovernmental Agreement and Shared Services Allocation are shown as negative amounts because they are 'contra' expense accounts representing offsets to associated costs in other Operations and Maintenance expense categories.

Supplemental Schedule of Nonoperating Expenses – All Funds Combined

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

**Table 4 – Supplemental Schedule of Nonoperating Expenses – All Funds Combined
For the Seven Months ended January 31, 2022
(\$000)**

	Water	Sewage Disposal	Total Business-type Activities	Comparative June 30, 2021
Nonoperating (Revenue)/Expense				
Interest income contractual obligation	\$ (14,609)	\$ (9,924)	\$ (24,533)	\$ (43,087)
Interest income DWSD Shortfall	-	(117)	(117)	(635)
Investment earnings	(1,204)	(957)	(2,160)	(7,040)
Net incr (decr) in fair value of invstmt	1,500	1,006	2,505	5,781
Other nonoperating revenue	(74)	(2)	(76)	476
Interest Expense				
Bonded debt	60,363	63,363	123,726	218,857
Lease obligation	9,960	12,173	22,133	38,332
Other obligations	2,640	972	3,612	6,296
Total interest expense	72,963	76,508	149,471	263,485
Other non-capital expense	-	-	-	-
Memorandum of Understanding	-	-	-	-
Capital Contribution	-	34	34	(5,960)
Amortization, issuance costs, debt	(8,892)	1,445	(7,447)	(12,966)
(Gain) loss on disposal of capital assets	(15)	(39)	(54)	365
Loss on impairment of capital assets	-	-	-	-
Water Residential Assistance Program	146	202	348	1,517
Legacy pension expense	4,988	8,927	13,915	22,528
Total Nonoperating (Revenue)/Expense	54,804	77,083	131,887	224,464

Totals may be off due to rounding

- ✓ Interest income on contractual obligation relates to the portion of the total GLWA debt obligation attributable to DWSD. This interest income offsets the total debt interest expense paid by GLWA on behalf of both entities monthly.
- ✓ Interest income DWSD shortfall represents interest from a budgetary shortfall loan from fiscal years 2016, 2017 and 2018 and is paid in accordance with the 2018 Memorandum of Understanding (MOU).
- ✓ Investment earnings in this report are reflected at book value. Any differences between the Basic Financial report and Cash and Investment section of this Financial Report binder are due to accrued interest. FY 2020 market value adjustments for Water and Sewer totaled \$4.9 million and \$3.3 million, respectively.

FY 2021 market value adjustments for Water and Sewer totaled \$1.5 million and \$1.0 million, respectively.

- ✓ Interest expense, the largest category of nonoperating expenses, is made up of three components:
 - Bonded debt;
 - Lease obligation for the regional assets from the City of Detroit; and
 - Other obligations such as an obligation payable to the City of Detroit for an allocation BC Notes related to assumed DWSD liabilities; acquisition of raw water rights related to the KWA Pipeline.
- ✓ The FY 2021 capital contribution in Nonoperating (revenue) expense represents one-half of an \$11.92 million payment made by Oakland Macomb Interceptor Drainage District (OMIDD). The payment was part of an amendment to the OMIDD Wastewater Disposal Services Contract and was split between FY 2020 and FY 2021 based on budgeted revenue requirements for those respective years.

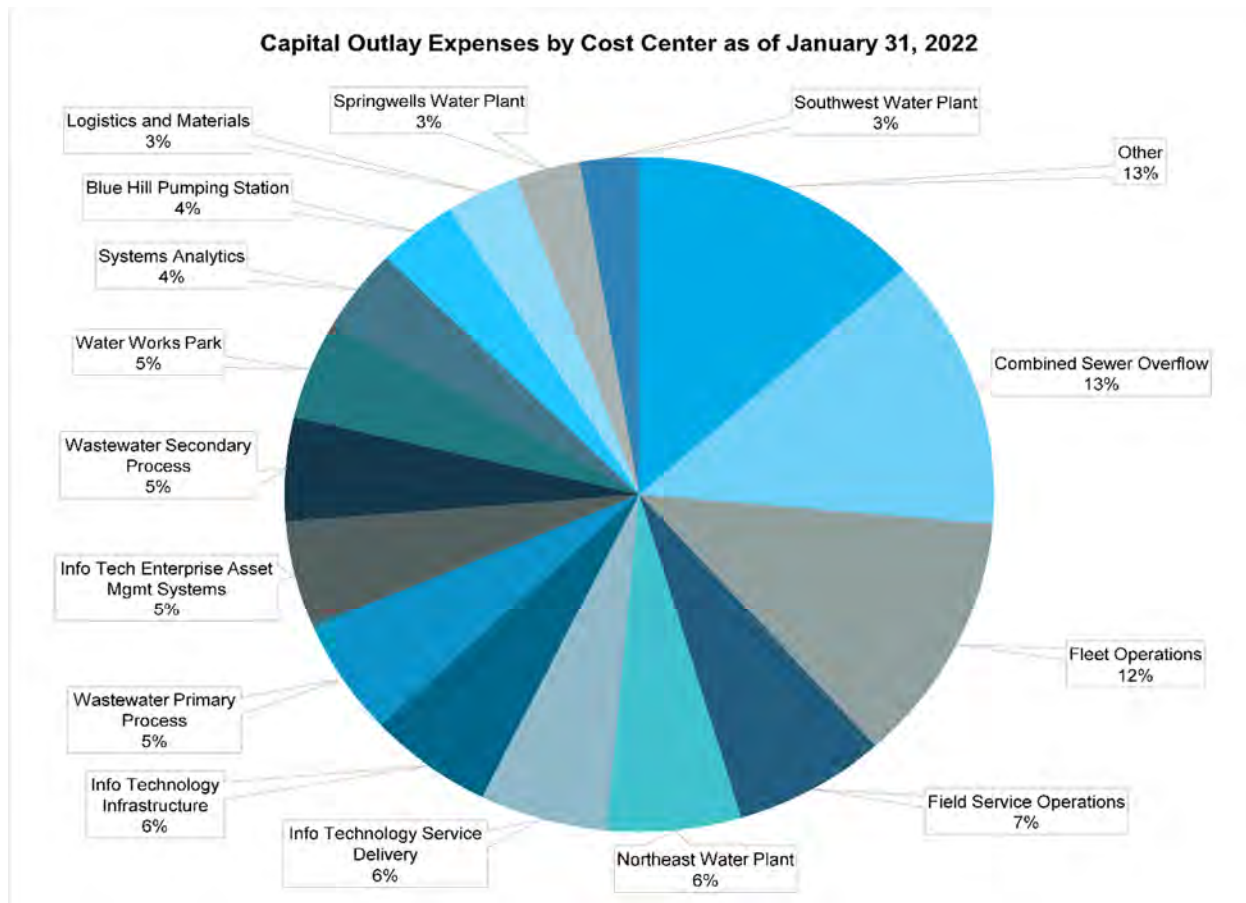


Financial Activity Charts

Chart 1 – Capital Outlay – Water and Sewer System Combined

Capital Outlay represents purchases of equipment, software, and small facility improvement projects. It *excludes* any capital investment which is included in the monthly construction work-in-progress report related to the Capital Improvement Program. Some items span several months so the entire cost may not have been incurred yet. In addition, items are capitalized only if they meet GLWA’s capitalization policy.

Through January 31, 2022, total capital outlay spend is \$6.0 million. Following this chart is a sample list of projects and purchases from the total spend of \$6.0 million:



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

Water Operations: 14 Mile Water Main Assessment (\$350k); Turbidimeter at Northeast Water Plant (\$216k); high pressure water tank (\$174k); power inverter (\$141k); Water Works Park furniture (\$115k); Southwest Water Plant furniture (\$74k); buoy system

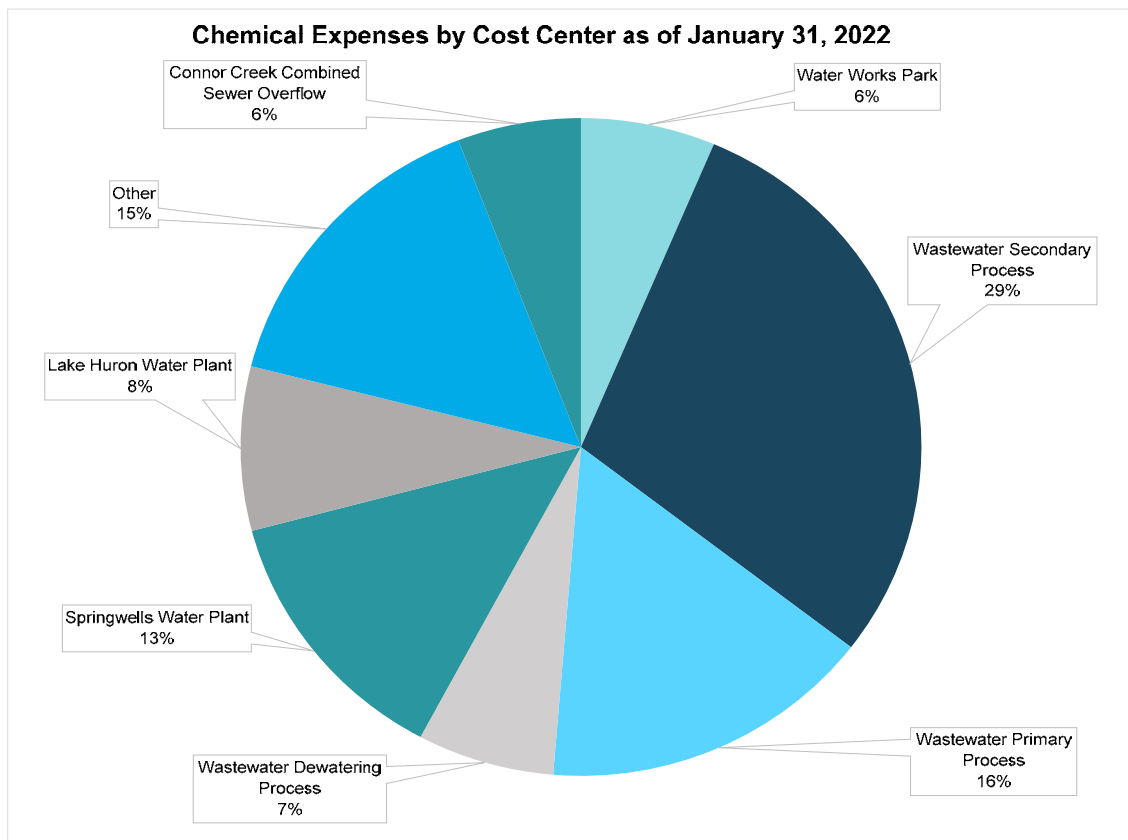
(\$56k); excitation motor retrofit (\$42k); vacuum regulator (\$40k) and steam generator (\$39k).

Wastewater Operations: PQM Meters for CSO Facilities (\$787k); wastewater pump (\$347k); Main Lift Pump emergency repair (\$267k); B-houses (\$167k); sewer pump (\$81k); Leib CSO accusonic flow meters; metering pump (\$33k) and pump service (32k).

Centralized & Administrative Facilities: Trucks and vehicles (\$727k); IT software (\$537k); IT computers and hardware (\$348k); sewer meter support (\$239k); Rialto Security (\$199k) and chemical monitoring equipment (\$78k).

Chart 2 – Chemical Expenses – Water and Sewer System Combined

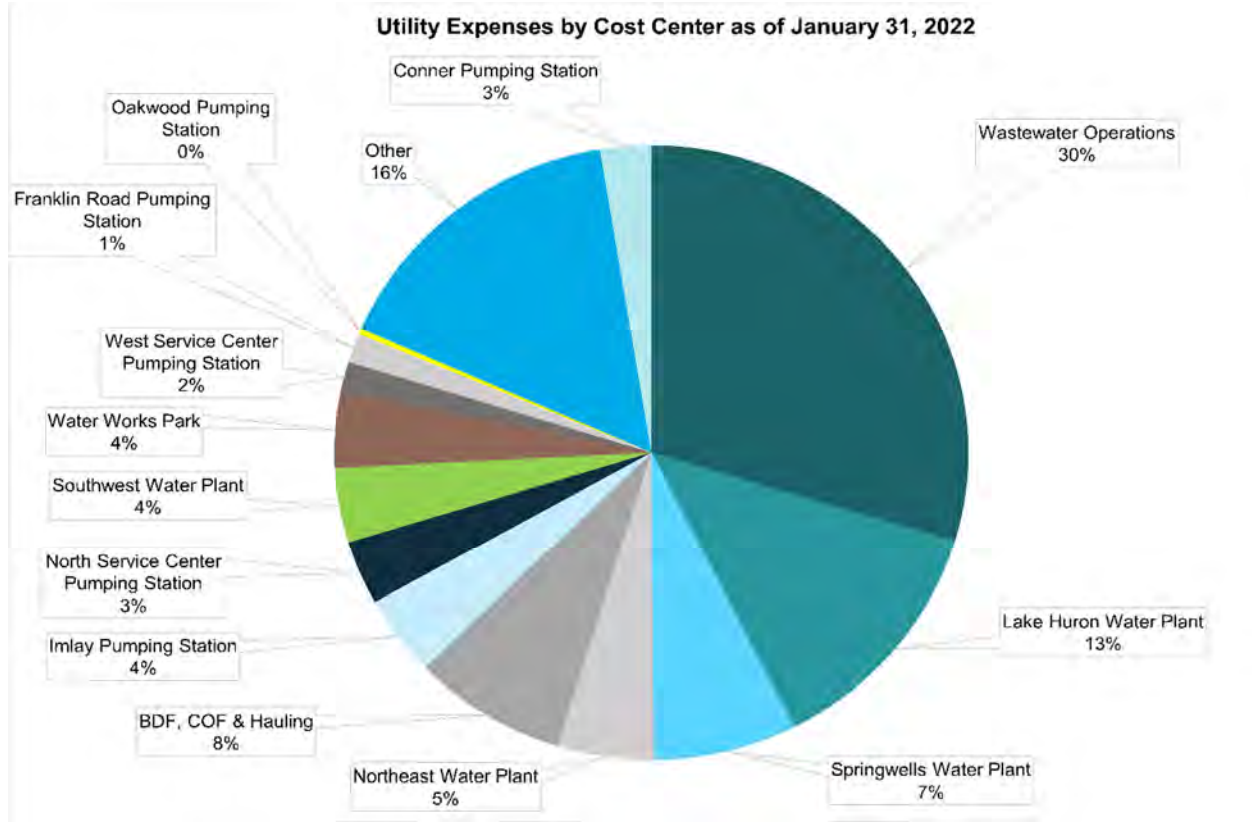
Chemical expenses are \$11.2 million through January 31, 2022. The allocation is shown in the chart below and remains consistent with prior periods.



Note: “Other” includes Combined Sewer Overflow (CSO), portions of the Wastewater process and two departments from Water. Due to rounding totals may not equal 100%.

Chart 3 – Utility Expenses – Water and Sewer System Combined

Utility expenses are \$32.4 million through January 31, 2022. The allocation is shown in the chart below and consistent with prior periods.



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



Financial Operations KPI

This key performance indicator shown in **Chart 1 – Bank Reconciliation Completion Status** below provides a measure of the progress made in the month-end close process which includes bank reconciliations with a completed status at month end. Through January 31, 2022 all reconciliations are up-to-date and complete.

There were no changes in accounts since December 2021.

Chart 1 – Bank Reconciliation Completion Status

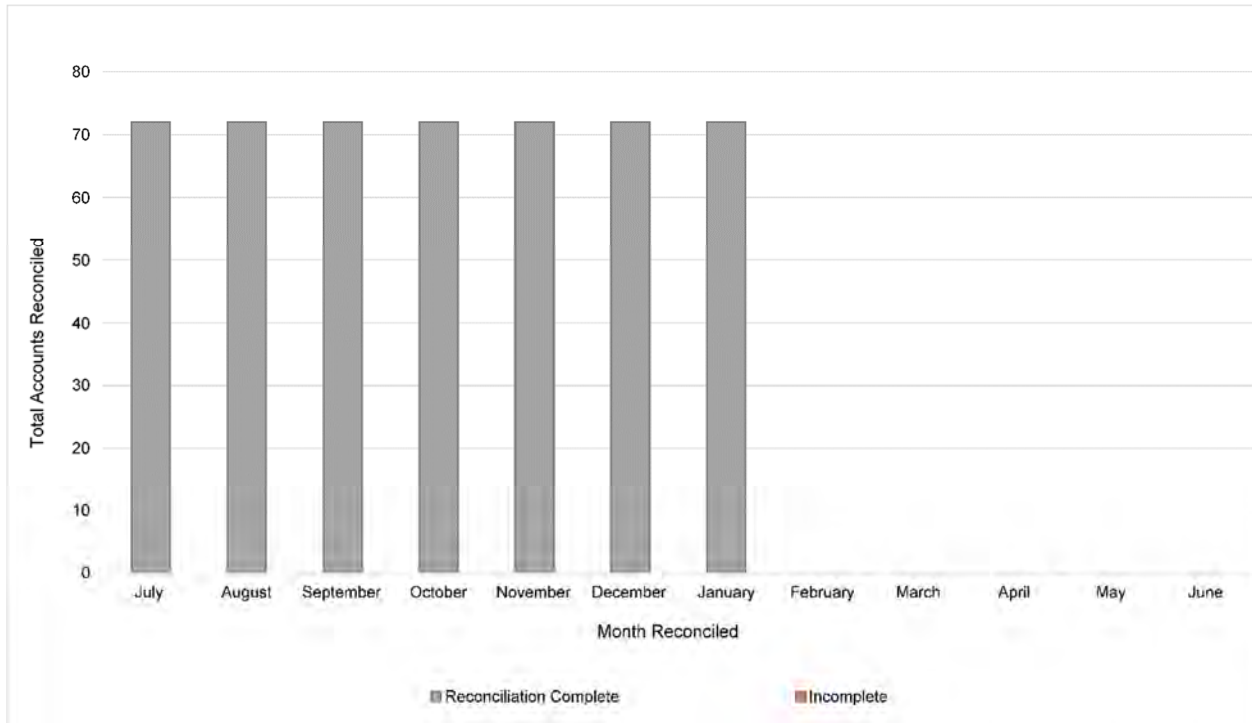


Table 1 – Fiscal Year 2022 GL Cash Account Rollforward

Total GL Cash accounts as of July 1, 2021	72
New GL Cash accounts	0
Inactivated GL Cash accounts	0
Total GL Cash accounts as of January 31, 2022	<u>72</u>

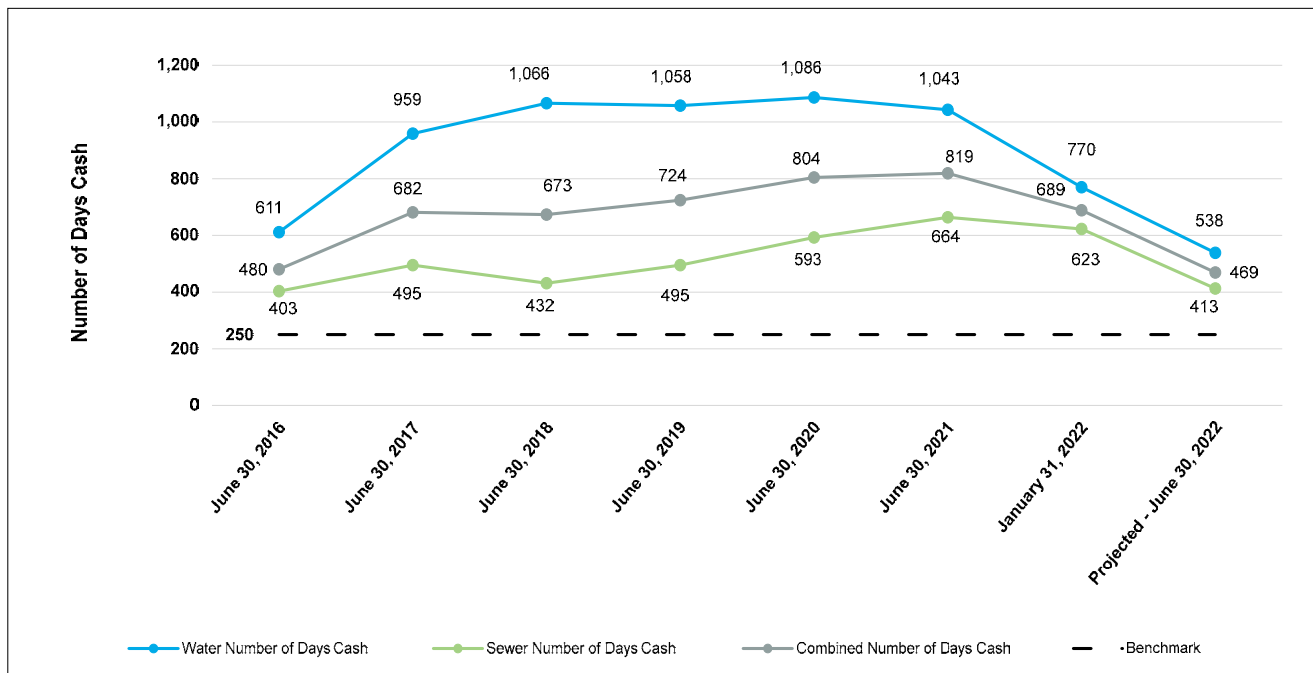


Financial Operations KPI - Liquidity

This key performance indicator shown in **Chart 1 – Historical Schedule of Days Cash on Hand – Liquidity – Regional System** and **Table 1 – Schedule of Days Cash on Hand – Liquidity – Regional System** below provides a measure of a utility’s ability to meet expenses, cope with emergencies and navigate business interruptions. Liquidity is one of several key metrics monitored by bond rating agencies reflecting an organization’s financial strength. A best practice benchmark for this key performance indicator is greater than 250 days cash on hand as shown by the dashed line in Chart 1 below.

Both GLWA Water and Sewer funds continue to exceed this target with Water at 770 and Sewer at 623 days cash on hand as of January 31, 2022. These balances remain strong for the regional system in large part due to the need to fund CIP projects with I&E funds but drop in the FY 2022 projection as these funds are depleted and GLWA transitions to a planned bond issue. The FY 2022 projection is calculated based on values from the GLWA FY 2022 – 2026 Budget & Five-Year Plan.

Chart 1 – Historical Schedule of Days Cash on Hand – Liquidity – Regional System



Note: The GLWA Annual Comprehensive Financial Reports are the source of all historic data referenced. Refer to these reports for detailed calculations by fiscal year.

Table 1 – Schedule of Days Cash on Hand – Liquidity – Regional System

	<u>June 30, 2021</u>	<u>January 31, 2022</u>	<u>Projected June 30, 2022</u>
Water Fund			
Cash and Investments - Unrestricted	\$ 353,308,000	\$ 308,126,000	\$ 217,600,000
Operating Expense			
Operating Expense (a)	\$ 250,476,000	\$ 161,234,000	\$ 276,400,000
Less: Depreciation (a)	(123,272,000)	(73,111,000)	(125,333,000)
Less: Amortization of Intangible Asset (a)	(3,567,000)	(2,081,000)	(3,567,000)
Net Operating Expense	\$ 123,638,000	\$ 86,042,000	\$ 147,500,000
Operating Expense per Day	\$ 339,000	\$ 400,000	\$ 404,000
Days Cash			
Number of Days Cash	1,043	770	538
Sewage Disposal Fund			
Cash and Investments - Unrestricted	\$ 323,973,000	\$ 306,224,000	\$ 205,000,000
Operating Expense			
Operating Expense (a)	\$ 328,983,000	\$ 191,392,000	\$ 328,100,000
Less: Depreciation (a)	(150,772,000)	(85,633,000)	(146,800,000)
Less: Amortization of Intangible Asset (a)	(110,000)	-	-
Net Operating Expense	\$ 178,101,000	\$ 105,758,000	\$ 181,300,000
Operating Expense per Day	\$ 488,000	\$ 492,000	\$ 497,000
Days Cash			
Number of Days Cash	664	623	413
Combined			
Cash and Investments - Unrestricted	\$ 677,281,000	\$ 614,350,000	\$ 422,600,000
Operating Expense			
Operating Expense (a)	\$ 579,460,000	\$ 352,625,000	\$ 604,500,000
Less: Depreciation (a)	(274,044,000)	(158,744,000)	(272,133,000)
Less: Amortization of Intangible Asset (a)	(3,677,000)	(2,081,000)	(3,567,000)
Net Operating Expense	\$ 301,740,000	\$ 191,800,000	\$ 328,800,000
Operating Expense per Day	\$ 827,000	\$ 892,000	\$ 901,000
Days Cash			
Number of Days Cash	819	689	469
<i>Totals may be off due to rounding</i>			

(a) Current year expenses are expressed as a proration of the annual budget for the purposes of this metric.



The monthly Budget to Financial Statements Crosswalk includes the following.

1. Crosswalk Budget Basis to Financial Reporting Basis
2. Explanatory Notes for Crosswalk

Purpose for Crosswalk: The Great Lakes Water Authority establishes a “Revenue Requirements” budget for the purposes of establishing charges for services. The financial report is prepared in accordance with Generally Accepted Accounting Policies for enterprise funds of a local government. Because the budget and the financial statements are prepared using different basis of accounting, the crosswalk reconciles the “Net Difference” to the “Increase/(Decrease) in Net Position” in Table 2 of the Basic Financial Statements in the monthly Financial Report.

The Authority has a Water Master Bond Ordinance and a Sewer Master Bond Ordinance (MBO). The Ordinances provide additional security for payment of the bonds. All revenues of the system are deposited into Revenue Receipts Funds which are held in trust by a trustee. The cash is moved to multiple bank accounts monthly based on 1/12th of the budget as defined in the MBO (“the flow of funds”) for all revenue requirements except for the Debt Service monthly transfer. The Debt Service monthly requirement is computed by the trustee, U.S. Bank. The cash transfer for debt is net of investment earnings that remain in the debt service accounts to be used for debt service.

The budget is prepared on a modified cash basis. The revenue requirements are determined based upon the cash needed to meet the financial commitments as required by the Master Bond Ordinance.

- Operation & Maintenance (O&M) expenses based on an accrual basis
- O&M Legacy Pension Allocation (includes administrative fee) and Accelerated Legacy Pension Allocation (includes B&C notes obligation) based on a cash basis
- Debt Service Allocation based on a cash set aside basis to provide the cash for the debt payments on the due dates
- Lease payments based on a cash basis
- Water Residential Assistance Program based on a percentage of budgeted revenue
- Regional System Improvement & Extension Fund Allocation on a cash basis

Budget: In Table 1A and Table 1B of the Budget to Actual Analysis the ‘Revenues’ section is the accrual basis revenues that are available to meet the ‘Revenue Requirements’. The ‘Revenue Requirements’ section budget column indicates the annual cash transfers to be made.

Financial Reporting: The Authority's financial statements are prepared in conformity with generally accepted accounting principles (GAAP) as applied to government units. The Authority maintains its records on the accrual basis of accounting to conform to GAAP. Revenues from operations, investments and other sources are recorded when earned. Expenses (including depreciation) are recorded when incurred.

Table 1 – Crosswalk Budget Basis to Financial Reporting Basis provides a reconciliation of the “Net Difference” in Table 1A and Table 1B in the Budget to Actual Analysis report to the “Increase/(Decrease) in Net Position” in Table 2 of the Basic Financial Statements in this monthly Financial Report. Explanatory notes follow the Crosswalk shown in Table 1 below.

**Table 1 – Crosswalk Budget Basis to Financial Reporting Basis (\$000)
For the Seven Months Ended January 31, 2022**

	Water	Sewer	Total
Net Revenue Requirement Budget Variance (a)	\$ 8,807	\$ 782	\$ 9,589
Budgetary categories adjustments to financial reporting basis			
Pension delayed accounting election adjustments			
Current year pension transfers/payments recorded as deferral (c)	6,674	11,944	18,618
Prior year pension contribution accounted for in current year (d)	(4,988)	(8,927)	(13,915)
Administrative prepaid adjustment (e)	-	-	-
Debt service (f)	33,306	67,077	100,383
Accelerated pension B&C notes obligation portion (g)	114	255	369
Regional System lease (h)	3,165	3,869	7,034
Right to use lease - warehouse (h)		122	122
WRAP (i)	849	1,174	2,023
DWSD short term allocation (j)	-	2,349	2,349
Operating Reserve Deposit (j)	-	-	-
Improvement & Extension Fund transfers (j)	14,306	17,699	32,005
Nonbudgeted financial reporting categories adjustments			
Depreciation and amortization (k)	(74,040)	(91,393)	(165,433)
Amortization - debt related (k)	8,892	(1,445)	7,447
Other nonoperating income (k)	74	2	76
Other nonoperating expense (k)	-	-	-
Gain(loss) on disposal of capital assets (k)	15	39	54
Raw water rights obligation (l)	1,581	-	1,581
Investment earnings for construction fund (m)	6	5	11
Interest on DWSD note receivable (n)	-	117	117
Investment earnings unrealized gain/loss (o)	(1,500)	(1,006)	(2,506)
Interlocal agreement reimbursements to improvement & extension fund (p)	-	51	51
Capital Contribution (q)	-	(34)	(34)
Net Position Increase/(Decrease) per Financial Statements (b)	\$ (2,739)	\$ 2,680	\$ (59)

Table 2 - Explanatory Notes for Crosswalk

- (a) Source: Budget to Actual Table 1A and Table 1B in Monthly Financial Report
- (b) Source: Basic Financial Statements Table 2 in Monthly Financial Report
- (c) Current year pension payments are an expense for budget purposes but not for financial reporting purposes.
- (d) Prior year pension payments are accounted for in the current year financial statements.

- (e) The administrative fee is part of the O&M Legacy Pension shown as an expense for budget purposes. For financial reporting purposes part of the administrative fee is considered prepaid based on the prior year General Retirement System audit information and therefore not an expense for the current year financial reporting. The prepaid portion is adjusted in June each year.
- (f) Debt service (principal and interest payments) are shown as an expense for budget purposes. Most of the adjustment relates to principal payments which are not an expense for financial reporting purposes. A portion of the adjustment relates to interest expense variances on state revolving fund debt due to the timing of payment draws. The cash set aside basis for interest expense generally is the same as the accrual basis for financial reporting.
- (g) The accelerated pension payment includes the obligation payable for the B&C notes. The pension portion is included in item (c) above. This adjustment relates to the B&C note obligation payments. The principal and interest cash basis payments are treated as an expense for budget purposes. The principal portion is not an expense for financial reporting purposes. For financial reporting purposes interest is expensed on an accrual basis which is different from the cash basis.
- (h) The lease payment is included as an expense for budget and includes both principal and interest payments. Most of the adjustment relates to the principal payments which are not an expense for financial reporting purposes. A portion of the adjustment relates to interest expense which is recorded on an accrual basis for financial reporting which is different from the cash basis.
- (i) WRAP is shown as an expense for budget purposes. For financial reporting purposes the expense is not recognized until the funds have been transferred to the WRAP administrator. The adjustment shown is the amount of current year transfers that have not been transferred to the WRAP administrator. Note that there are funds from the prior year that have not been transferred to the WRAP administrator.
- (j) The DWSD short term allocation, Operating Reserve Deposit, and Improvement & Extension Fund transfers are shown as an expense for budget purposes but not for financial reporting purposes. For FY 2022, the Water Improvement and Extension fund reflects \$1.6 million, and the Sewer Improvement and Extension fund reflects \$1.9 million in expenses relating to repairs paid for through the Water and Sewer Improvement and Extension funds, respectively. These are consolidated expenses for financial reporting purposes but are not reflected in the current Operations and Maintenance budget expenses.

- (k) Certain nonoperating income and expenses are reported in financial statements only.
- (l) The water service contract with Flint includes a license for raw water rights which has been recorded as an asset and liability by the Authority. The contract provides a credit to Flint as Flint satisfies its monthly bond payment obligation to KWA. This KWA credit is treated as a noncash payment of principal and interest on the liability recorded for the raw water rights. For budget, wholesale customer charges are net of the anticipated KWA credits to Flint as that is the cash that will be received and available to meet the budgeted revenue requirements. For financial reporting basis the Flint wholesale charges are recorded at the total amount billed. When the KWA credit is issued, the receivable from Flint is reduced and the principal and interest payments on the liability for the raw water rights are recorded as a noncash transaction. Most of the adjustment shown relates to the principal reduction made for the credits applied which are not an expense for financial reporting basis.
- (m) Investment earnings from the construction fund are not shown as revenue in the budget and are shown as revenue in the financial statements. Construction fund investment earnings are excluded from the definition of revenue for budget purposes as they are used for construction costs and are not used to meet the revenue requirements in the budget.
- (n) Interest on the DWSD note receivable is budgeted as part of the Sewer improvement and extension fund and is transferred directly to that fund as payments are made.
- (o) Unrealized gains and losses are recorded annually as required for financial reporting purposes but do not reflect actual investment earnings and are not included in cash basis reporting.
- (p) GLWA enters Interlocal Agreements with other local governments to coordinate projects and services and reduce overlapping expense. Many of these agreements relate to current capital improvement projects. Where another local government reimburses GLWA for direct expenses associated with a capital improvement project financed using improvement and extension funds, those reimbursements received under the agreement are transferred back to the Improvement and Extension fund.



The Monthly Capital Improvement Plan Financial Summary includes the following.

1. Water System Capital Improvement Plan Spend Incurred to date
2. Sewer System Capital Improvement Plan Spend Incurred to date

Capital Improvement Plan Financial Summary

Great Lakes Water Authority (GLWA) capital improvement projects generally span two or more years due to size and complexity. Therefore, the GLWA Board of Directors adopts a five-year capital improvement plan (CIP). The CIP is a five-year, rolling plan which is updated annually and formally adopted by the GLWA Board of Directors. In addition, the Board of Directors adopts a capital spending ratio assumption (SRA) which allows the realities of capital program delivery to align with the financial plan. The SRA is an analytical approach to bridge the total dollar amount of projects in the CIP with what can realistically be spent due to limitations beyond GLWA's control and/or delayed for nonbudgetary reasons. Those limitations, whether financial or non-financial, necessitate the SRA for budgetary purposes, despite the prioritization established.

This report presents quarterly and monthly CIP spending against the prorated CIP in total and the CIP adjusted for the SRA. The prorated CIP is calculated by dividing the total fiscal year 2022 board-approved CIP plan by twelve equal months. It should be noted that for operational purposes, GLWA utilizes Primavera P6 for refined monthly projections for cash management and project management.

Beginning January 1, 2021, GLWA has intentionally depleted Bond funds and has moved to solely using I&E and State Revolving Loans to fund CIP expenditures to lower the cost of debt. It is expected that the I&E funds will be sufficient to fund the capital program through FY 2022 including an allowance to provide flexibility in the timing of future bond issues.

Chart 1 – Water System Capital Improvement Plan Spend Incurred to Date

As of January 2022, the Water system incurred over \$95 million of construction costs to date. This is 91% of the fiscal year 2022 CIP through January and 121% of the financial plan which is labeled as the FY 2022 CIP w/SRA in the chart below.

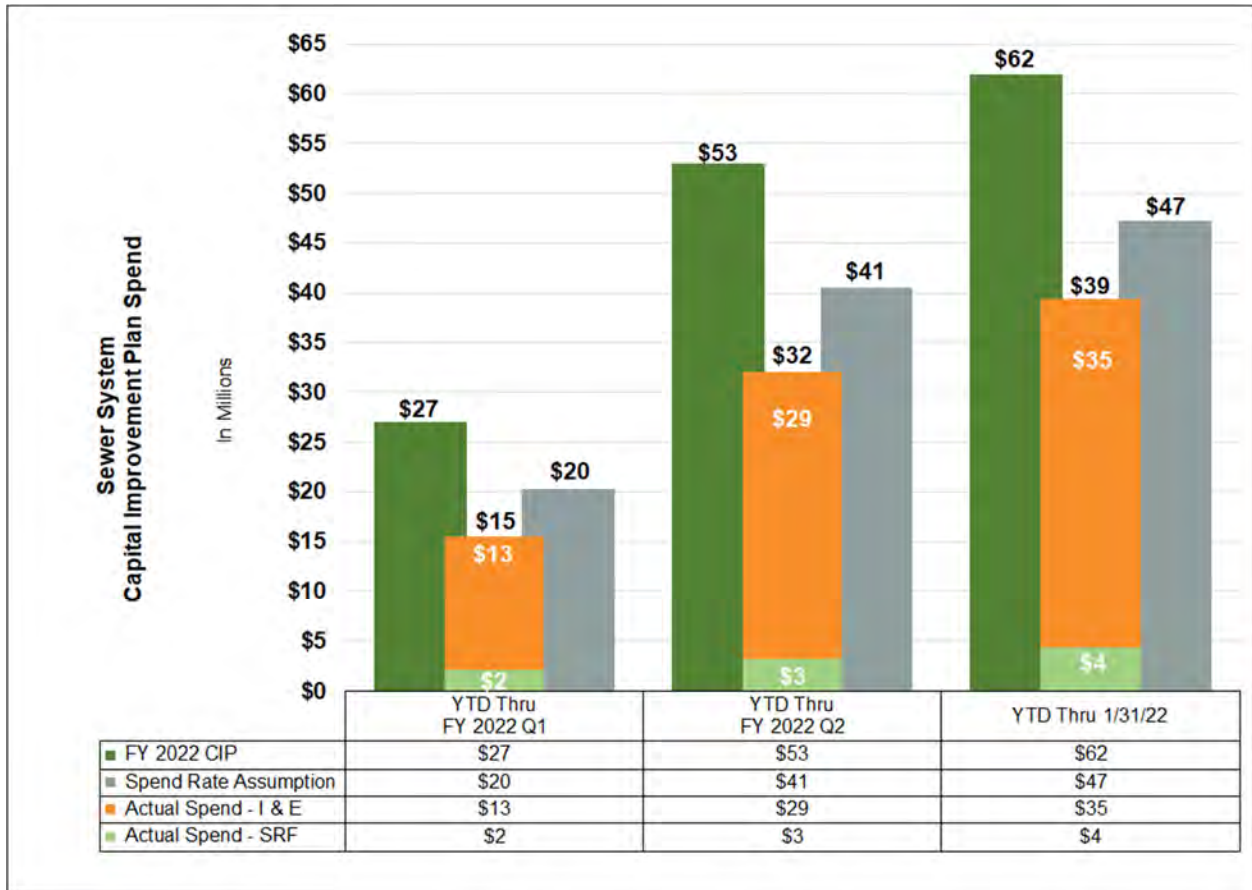
Chart 1 – Water System Capital Improvement Plan Spend Incurred to Date



Chart 2 – Sewer System Capital Improvement Plan Spend Incurred to Date

As of January 2022, the Sewer system incurred nearly \$39 million of construction costs to date. This is 63% of the fiscal year 2022 CIP through January and 82% of the financial plan which is labeled as the FY 2022 CIP w/SRA in the chart below.

Chart 2 – Sewer System Capital Improvement Plan Spend Incurred to Date





This report includes the following.

1. Master Bond Ordinance (MBO) Required Transfers to Accounts Held by GLWA
2. Master Bond Ordinance (MBO) Required Transfers to Accounts Held by DWSD

MBO Transfers to Accounts Held by GLWA

GLWA Transfers: The Treasury team completes required MBO transfers on the first business day of each month. These transfers are completed in accordance with the Great Lakes Water Authority (GLWA) and Detroit Water & Sewerage Department (DWSD) budgets as approved and adopted by the GLWA Board of Directors and DWSD Board of Water Commissioners annually.

Monthly transfers for Operations & Maintenance (O&M), Pension, and Water Residential Assistance Program (WRAP) are one-twelfth of the annual, budgeted amount. Budget stabilization should not require additional funding due to new, baseline funding levels established as part of the June 2018 Memorandum of Understanding but is included to reflect historical activity. Transfers to the Extraordinary Repair & Replacement (ER&R) fund are completed annually based on budget and year-end fund status.

Table 1 – GLWA FY 2022 Water MBO Transfers reflects the required transfers for FY 2022 completed through January 3, 2021. MBO transfers for water totaling \$95.1 million have been transferred to GLWA accounts.

Table 2 – GLWA FY 2022 Sewer MBO Transfers reflects the required transfers for FY 2022 completed through January 3, 2021. MBO transfers for sewer totaling \$122.9 million have been transferred to GLWA accounts.

Table 3 – GLWA MBO Transfer History reflects historical transfers for FY 2016 through FY 2022 to date.

Table 1 – GLWA FY 2022 Water MBO Transfers

	WATER				Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Water
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP			
FY 2022							
July 2021	\$ 11,994,483	\$504,000	\$921,308	\$198,050	-	-	\$13,617,841
August 2021	11,994,483	504,000	921,308	198,050	-	-	13,617,841
September 2021	11,994,483	504,000	831,488	198,050	-	-	13,528,021
October 2021	11,994,483	504,000	921,308	198,050	-	-	13,617,841
November 2021	11,994,483	504,000	861,308	198,050	-	-	13,557,841
December 2021	11,994,483	504,000	891,308	198,050	-	-	13,587,841
January 2022	11,994,483	504,000	891,308	198,050	-	-	13,587,841
Total FY 2022	\$ 83,961,381	\$3,528,000	\$6,239,336	\$1,386,350	\$ -	\$ -	\$95,115,067

Table 2 – GLWA FY 2022 Sewer MBO Transfers

	SEWER				Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Sewer
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP			
FY 2022							
July 2021	\$ 15,108,317	\$902,000	\$1,223,950	\$322,392	-	-	\$17,556,659
August 2021	15,108,317	902,000	1,223,950	322,392	-	-	17,556,659
September 2021	15,108,317	902,000	1,223,950	322,392	-	-	17,556,659
October 2021	15,108,317	902,000	1,223,950	322,392	-	-	17,556,659
November 2021	15,108,317	902,000	1,223,950	322,392	-	-	17,556,659
December 2021	15,108,317	902,000	1,223,950	322,392	-	-	17,556,659
January 2022	15,108,317	902,000	1,223,950	322,392	-	-	17,556,659
Total FY 2022	\$105,758,219	\$6,314,000	\$8,567,650	\$2,256,744	\$ -	\$ -	\$122,896,613

Table 3 – GLWA MBO Transfer History

	GLWA MBO Transfer History						
	WATER				Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Water
Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP				
Total FY 2016	\$71,052,000	\$6,037,100	\$10,297,200	\$1,983,300	\$2,326,900	\$606,000	\$92,302,500
Total FY 2017	111,879,600	6,037,200	10,297,200	2,077,200	360,000	-	130,651,200
Total FY 2018	121,562,604	6,048,000	10,695,696	2,159,400	-	-	140,465,700
Total FY 2019	121,562,604	6,048,000	10,695,696	2,061,000	-	-	140,367,300
Total FY 2020	126,840,204	6,048,000	10,695,683	1,980,804	-	-	145,564,691
Total FY 2021	134,127,300	6,048,000	10,695,700	2,324,200	-	-	153,195,200
Total FY 2022 (7 months)	83,961,381	3,528,000	6,239,336	1,386,350	-	-	95,115,067
Life to Date	\$770,985,693	\$39,794,300	\$69,616,511	\$13,972,254	\$2,686,900	\$606,000	\$897,661,658
	SEWER						
	Operations & Maintenance	Pension Sub Account	Pension Obligation	WRAP	Budget Stabilization (For Benefit of DWSD)	Extraordinary Repair & Replacement (ER&R)	Total Sewer
Total FY 2016	\$100,865,600	\$10,838,400	\$14,025,800	\$2,523,400	\$5,591,700	\$779,600	\$134,624,500
Total FY 2017	175,858,800	10,838,400	14,026,800	2,654,400	2,654,400	-	206,032,800
Total FY 2018	191,079,396	10,824,000	14,687,496	2,760,804	-	-	219,351,696
Total FY 2019	191,079,396	10,824,000	14,687,496	2,870,992	-	-	219,461,884
Total FY 2020	181,925,800	10,824,000	14,687,517	2,887,300	-	-	210,324,617
Total FY 2021	182,296,000	10,824,000	14,687,500	3,764,300	-	-	211,571,800
Total FY 2022 (7 months)	105,758,219	6,314,000	8,567,650	2,256,744	-	-	122,896,613
Life to Date	\$1,128,863,211	\$71,286,800	\$95,370,259	\$19,717,940	\$8,246,100	\$779,600	\$1,324,263,910

MBO Required and Lease Payment Transfers to DWSD

DWSD Transfers: The GLWA Treasury team completes the required MBO transfers on the first business day of each month. These transfers are completed in accordance with the GLWA and DWSD budgets as approved and adopted by the GLWA Board of Directors and DWSD Board of Water Commissioners annually. Transfers are coordinated with other areas of GLWA Financial Services in advance of the first business day of each month. GLWA Treasury sends confirmation of transfers made to DWSD Treasury.

Monthly transfers for O&M and O&M Pension are one-twelfth of the annual, budgeted amount. The annual lease payment, as stated in the Water & Sewer Lease Agreements, is \$22,500,000 for Water and \$27,500,000 for Sewer. The monthly lease transfer is one-twelfth of the amount as stated in the Lease agreements unless otherwise designated by DWSD. Per Section 3.5 of the Lease, the Lease payment may be used for (a) bond principal and interest for Local System Improvements, (b) bond principal and interest for the City's share of common-to-all System Improvements, and (c) Local System improvements.

Table 4 – DWSD FY 2022 Water MBO Transfers reflects the required transfers for FY 2022 completed through January 3, 2021. MBO transfers for Water totaling \$26.5 million have been transferred to accounts held by DWSD. For FY 2022, DWSD originally requested that \$6,690,600 of the lease payment be utilized to offset a portion of debt service. Beginning with the October transfers, DWSD amended budget required an additional portion of the lease payment be directed to offset debt service. The total offset for FY 2022 is now \$14,277,800.

Table 5 – DWSD FY 2022 Sewer MBO Transfers reflects the required transfers for FY 2022 completed through January 3, 2021. MBO transfers for Sewer totaling \$54.6 million have been transferred to accounts held by DWSD.

Table 6 – DWSD Water MBO and Lease Payment Transfer History reflects historical transfers for FY 2016 through FY 2022 to date.

Table 7 – DWSD Sewer MBO and Lease Payment Transfer History reflects historical transfers for FY 2016 through FY 2022 to date.

Table 4 – DWSD FY 2022 Water MBO Transfers

WATER				
	<u>Operations & Maintenance</u>	<u>Pension</u>	<u>Lease Payment (I&E Fund)</u>	<u>Total Water</u>
FY 2022				
July 2021	\$2,887,383	\$356,000	\$1,317,450	\$4,560,833
August 2021	2,887,383	356,000	1,317,450	4,560,833
September 2021	2,887,383	356,000	1,317,450	4,560,833
October 2021	2,369,650	356,000	479,983	3,205,633
November 2021	2,369,650	356,000	479,983	3,205,633
December 2021	2,369,650	356,000	479,983	3,205,633
January 2022	2,369,650	356,000	479,983	3,205,633
Total FY 2022	\$18,140,749	\$2,492,000	\$5,872,282	\$26,505,031

Table 5 – DWSD FY 2022 Sewer MBO Transfers

SEWER				
	<u>Operations & Maintenance</u>	<u>Pension</u>	<u>Lease Payment (I&E Fund)</u>	<u>Total Sewer</u>
FY 2022				
July 2021	\$5,769,417	\$238,000	\$2,291,667	\$8,299,084
August 2021	5,769,417	238,000	2,291,667	8,299,084
September 2021	5,769,417	238,000	2,291,667	8,299,084
October 2021	4,888,083	238,000	2,291,667	7,417,750
November 2021	4,888,083	238,000	2,291,667	7,417,750
December 2021	4,888,083	238,000	2,291,667	7,417,750
January 2022	4,888,083	238,000	2,291,667	7,417,750
Total FY 2022	\$36,860,583	\$1,666,000	\$16,041,669	\$54,568,252

Table 6 – DWSD Water MBO and Lease Payment Transfer History

Transfers to DWSD				
WATER				
	Operations & Maintenance	Operations & Maintenance Pension	Lease Payment (I&E Fund)	Total Water
FY 2016 *				
MBO/Lease Requirement	\$26,185,600	\$4,262,700	\$22,500,000	\$52,948,300
Offset to Debt Service	-	-	(2,326,900)	(2,326,900)
Net MBO Transfer	26,185,600	4,262,700	20,173,100	50,621,400
FY 2017				
MBO/Lease Requirement	33,596,400	4,262,400	22,500,000	60,358,800
Offset to Debt Service	-	-	-	-
Net MBO Transfer	33,596,400	4,262,400	22,500,000	60,358,800
FY 2018				
MBO/Lease Requirement	35,059,704	4,272,000	22,500,000	61,831,704
Offset to Debt Service	-	-	(1,875,000)	(1,875,000)
Net MBO Transfer	35,059,704	4,272,000	20,625,000	59,956,704
FY 2019				
MBO/Lease Requirement	35,484,300	4,272,000	22,500,000	62,256,300
Offset to Debt Service	-	-	(3,972,200)	(3,972,200)
Net MBO Transfer	35,484,300	4,272,000	18,527,800	58,284,100
FY 2020				
MBO/Lease Requirement	34,662,400	4,272,000	22,500,000	61,434,400
Offset to Debt Service	-	-	(3,548,000)	(3,548,000)
Net MBO Transfer	34,662,400	4,272,000	18,952,000	57,886,400
FY 2021				
MBO/Lease Requirement	35,833,900	4,272,000	22,500,000	62,605,900
Offset to Debt Service	-	-	(8,278,300)	(8,278,300)
Net MBO Transfer	35,833,900	4,272,000	14,221,700	54,327,600
FY 2022 (7 months)				
MBO/Lease Requirement	18,140,749	2,492,000	13,125,000	33,757,749
Offset to Debt Service	-	-	(7,252,718)	(7,252,718)
Net MBO Transfer	18,140,749	2,492,000	5,872,282	26,505,031
Life-to-Date				
MBO/Lease Requirement	218,963,053	28,105,100	148,125,000	395,193,153
Offsets	-	-	(27,253,118)	(27,253,118)
Total Water	218,963,053	28,105,100	120,871,882	367,940,035

Table 7 – DWSD Sewer MBO and Lease Payment Transfer History

	SEWER			
	Operations & Maintenance	Operations & Maintenance Pension	Lease Payment (I&E Fund)	Total Sewer
FY 2016 *				
MBO/Lease Requirement	\$19,774,300	\$2,861,800	\$27,500,000	\$50,136,100
Offset to Debt Service	-	-	(19,991,500)	(19,991,500)
Total MBO Transfer	19,774,300	2,861,800	7,508,500	30,144,600
FY 2017				
MBO/Lease Requirement	41,535,600	2,862,000	27,500,000	71,897,600
Offset to Debt Service	-	-	-	-
Total MBO Transfer	41,535,600	2,862,000	27,500,000	71,897,600
FY 2018				
MBO/Lease Requirement	60,517,992	2,856,000	27,500,000	90,873,992
Offset to Debt Service	-	-	(9,166,664)	(9,166,664)
Total MBO Transfer	60,517,992	2,856,000	18,333,336	81,707,328
FY 2019				
MBO/Lease Requirement	56,767,920	2,856,000	27,500,000	87,123,920
Offset to Debt Service	-	-	(4,415,000)	(4,415,000)
Total MBO Transfer	56,767,920	2,856,000	23,085,000	82,708,920
FY 2020				
MBO/Lease Requirement	62,343,500	2,856,000	27,500,000	92,699,500
Offset to address shortfall	(7,100,000)	-	-	(7,100,000)
Offset to Debt Service	-	-	(5,032,700)	(5,032,700)
Total MBO Transfer	55,243,500	2,856,000	22,467,300	80,566,800
FY 2021				
MBO/Lease Requirement	69,915,700	2,856,000	27,500,000	100,271,700
Offset to Debt Service	-	-	(3,257,200)	(3,257,200)
Total MBO Transfer	69,915,700	2,856,000	24,242,800	97,014,500
FY 2022 (7 months)				
MBO/Lease Requirement	36,860,583	1,666,000	16,041,669	54,568,252
Offset to Debt Service	-	-	-	-
Total MBO Transfer	36,860,583	1,666,000	16,041,669	54,568,252
Life-to-Date				
MBO/Lease Requirement	347,715,595	18,813,800	181,041,669	547,571,064
Offsets	(7,100,000)	-	(41,863,064)	(48,963,064)
Total Sewer	340,615,595	18,813,800	139,178,605	498,608,000

* Note: FY 2016 lease transfer amounts shown do not include prepayment on the lease amount for the 6 months period before bifurcation.



This report includes the following:

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

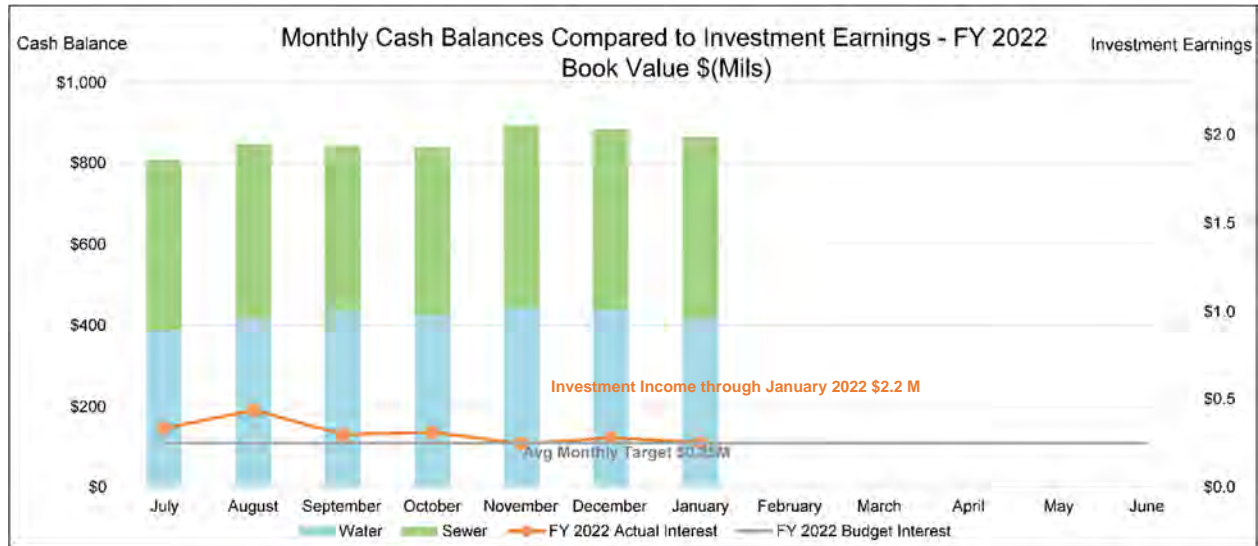
Monthly Cash Balances Compared to Investment Income

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

Cash and investment balances change each month based on Master Bond Ordinance (MBO) funding requirements, operational needs, capital spending pace, and mandatory debt payments. Investment income fluctuates monthly based on cash and investment balances as well as market conditions and investment strategy. For the month of January 2022, GLWA earned investment income of \$0.3 million and the cumulative FY 2022 earnings through January 2022 is \$2.2 million. Total investment income reported includes earnings from revenue requirement funds as well as construction bond funds.

GLWA continues to refine cash flows and work with its investment advisor to identify strategies to maximize future investment income while meeting the objectives of safety and liquidity.

Chart 1 – Monthly Cash Balances Compared to Investment Income – Through January 2022



\$(Mils)	July	August	September	October	November	December	January	February	March	April	May	June
Water	\$391	\$416	\$433	\$426	\$443	\$439	\$418	-	-	-	-	-
Sewer	\$417	\$432	\$410	\$414	\$450	\$445	\$446	-	-	-	-	-
Total	\$808	\$848	\$844	\$840	\$893	\$884	\$864	-	-	-	-	-
Investment Income	\$0.3	\$0.4	\$0.3	\$0.3	\$0.2	\$0.3	\$0.3	-	-	-	-	-

Cash Balance Detail

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

Funds Held Within Trust:

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

Funds Held Outside Trust:

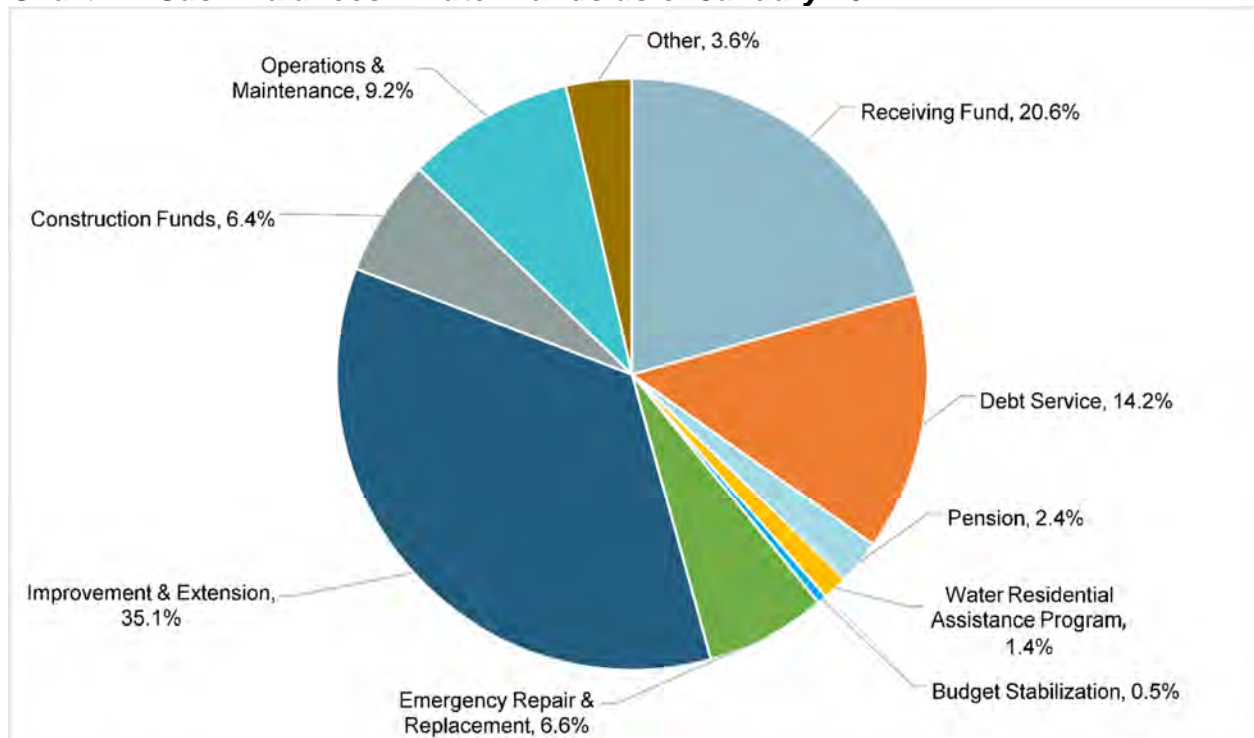
- Bond Proceeds – funds raised from debt issuance used for costs of repairs, construction, and improvements of the regional system
- Operations & Maintenance (O&M) – funds used to meet the operational and maintenance requirements of the regional system
- Other – retainage funds held on behalf of contractors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

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

Chart 2 – Cash Balances - Water Funds as of January 2022 - Shows the allocation of the balance among the different categories defined in the section above. The total cash balance for Water Funds as of January 31, 2022 is \$418 million. The allocation of balances among the I&E, bond proceeds, and debt service reserve funds reflects GLWA’s commitment to funding capital improvements and meeting debt reserve requirements while simultaneously increasing I&E resources to fund pay-as-you-go capital funding to reduce long-term debt in the future.

It should be noted existing proceeds from revenue bonds are depleted. This means that all capital projects will now be funded with Improvement & Extension (I&E) funds, except for SRF funded projects. It is expected that the I&E funds supplemented with SRF low-interest loan funding will be sufficient to fund the capital program through FY 2022 including an allowance to provide flexibility in the timing of future bond issues.

Chart 2 – Cash Balances - Water Funds as of January 2022

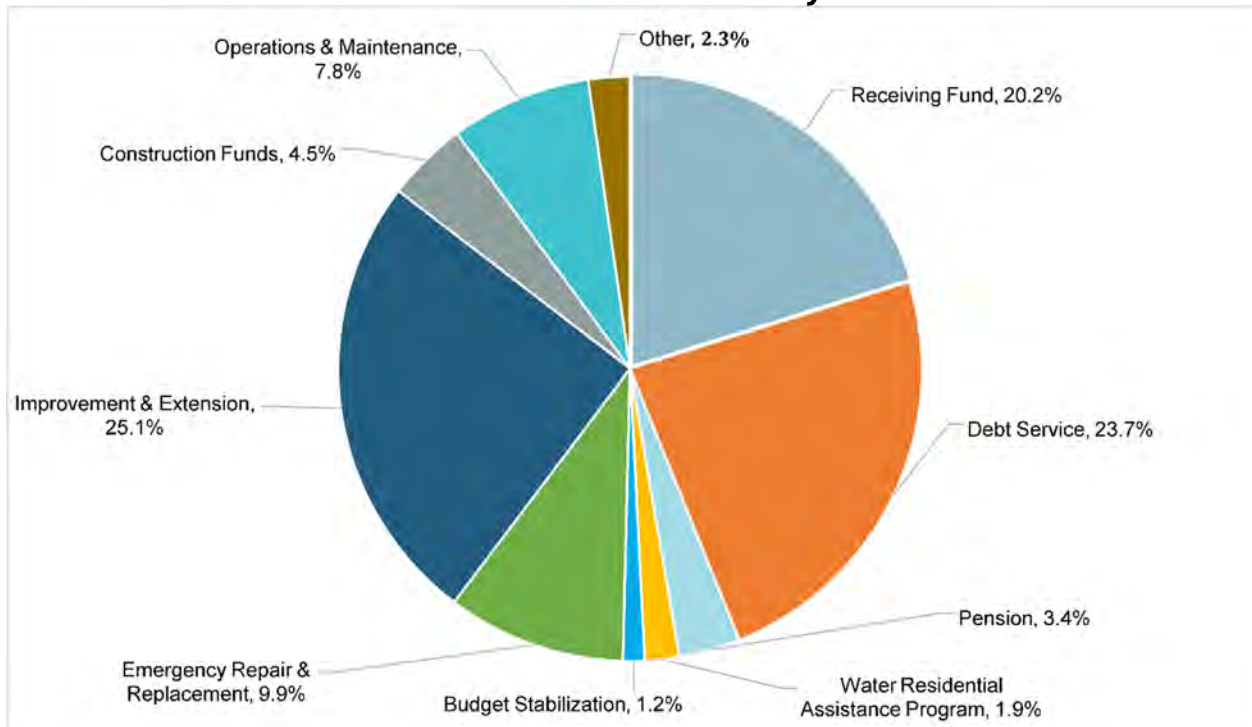


Note: Due to rounding totals may not equal 100%.

Chart 3 – Cash Balances - Sewer Funds as of January 2022 - Shows the allocation of the balance among the different funds defined in the section above. The total cash balance for Sewer Funds as of January 31, 2022 is \$446 million. Like the Water Funds, the allocation of balances among the I&E, bond proceeds, and debt service reserve funds reflects GLWA’s commitment to funding capital improvements and meeting debt reserve requirements while simultaneously increasing I&E resources to fund pay-as-you-go capital funding to reduce long-term debt in the future.

It should be noted existing proceeds from revenue bonds are depleted. This means that all capital projects will now be funded with Improvement & Extension (I&E) funds, except for SRF funded projects. It is expected that the I&E funds supplemented with SRF low-interest loan funding will be sufficient to fund the capital program through FY 2022 including an allowance to provide flexibility in the timing of future bond issues.

Chart 3 – Cash Balances - Sewer Funds as of January 2022



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



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

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

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

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

DWSD Retail Water Billings and Collections

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

Table 1 - DWSD Retail Billings shows the FY 2022 water usage and billed revenue which are provided by DWSD staff. As of January 31, 2022, the DWSD usage was at 109.44% of the budget and billed revenue was at 100.57% of budget.

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

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

Table 1 – DWSD Retail Water Billing

RETAIL WATER CUSTOMERS								
Month (1)	FY 2022 - Original Budget		FY 2022 - Actual		FY 2022 - Variance		FY 2021 - Actuals	
	Volume	Revenue	Volume	Revenue (2)	Volume	Revenue	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$	Mcf	\$
July	245,000	9,963,800	266,704	10,064,683	21,704	100,883	265,796	9,747,518
August	235,000	9,697,500	264,644	9,994,589	29,644	297,089	250,308	9,378,385
September	210,000	9,032,500	232,348	9,169,300	22,348	136,800	218,840	8,544,457
October	195,000	8,633,500	204,290	8,422,092	9,290	(211,408)	197,362	7,978,833
November	195,000	8,633,500	209,830	8,544,611	14,830	(88,889)	194,648	7,952,436
December	195,000	8,633,500	204,072	8,442,152	9,072	(191,348)	197,125	7,985,955
January	190,000	8,500,500	221,369	8,819,430	31,369	318,930	190,289	7,827,536
February	190,000	8,500,500					191,180	7,895,496
March	200,080	8,768,700					205,631	8,242,563
April	210,000	9,032,500					214,288	8,438,333
May	210,000	9,032,500					214,232	8,519,154
June	240,000	9,830,500					243,301	9,249,694
Total	2,515,080	108,259,500	1,603,257	63,456,857	138,257	362,057	2,583,000	101,760,360
Subtotals ytd	1,465,000	63,094,800	1,603,257	63,456,857	138,257	362,057		
Achievement of Budget				109.44%		100.57%		

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

(2) Retail Revenues include Miscellaneous Revenues and Penalties

Table 2 – DWSD Retail Water Collections

Water				
Month	Current Year	Prior Year	Variance	Ratio
February	6,426,553	8,281,985	(1,855,432)	-22.40%
March	8,458,827	6,948,308	1,510,519	21.74%
April	7,536,272	5,956,105	1,580,167	26.53%
May	7,365,204	8,109,469	(744,265)	-9.18%
June	8,917,831	7,821,791	1,096,040	14.01%
July	8,387,705	8,017,490	370,215	4.62%
August	8,588,507	7,135,456	1,453,051	20.36%
September	8,041,683	9,031,966	(990,283)	-10.96%
October	8,512,614	9,079,199	(566,585)	-6.24%
November	7,926,331	10,803,009	(2,876,678)	-26.63%
December	8,121,586	7,409,888	711,698	9.60%
January	6,919,040	7,884,889	(965,849)	-12.25%
Rolling, 12-Month Total	95,202,153	96,479,555		
Rolling, 12-Month Average	7,933,513	8,039,963		

DWSD Retail Sewer Billings and Collections

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

Table 3 - DWSD Retail Sewer Billings shows the FY 2022 sewer billed revenue which are provided by DWSD staff. As of January 31, 2022, the DWSD usage was at 104.91% of the budget and billed revenue was at 100.25% of budget.

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

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

Table 3 - DWSD Retail Sewer Billings

RETAIL SEWER CUSTOMERS								
Month (1)	FY 2022 - Original Budget		FY 2022 - Actual		FY 2022 - Variance		FY 2021 - Actuals	
	Volume	Revenue	Volume	Revenue (2)	Volume	Revenue	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$	Mcf	\$
July	233,100	30,779,300	219,791	29,462,804	(13,309)	(1,316,496)	252,929	29,802,377
August	225,700	30,357,000	249,522	31,231,624	23,822	874,624	240,390	29,261,344
September	198,500	28,805,000	215,748	29,401,234	17,248	596,234	206,880	27,232,400
October	186,000	28,091,700	190,483	27,936,280	4,483	(155,420)	188,816	26,230,683
November	186,000	28,091,700	194,135	28,032,939	8,135	(58,761)	184,240	25,933,888
December	186,000	28,091,700	189,283	27,836,982	3,283	(254,718)	187,397	26,628,891
January	178,700	27,675,200	203,526	28,493,782	24,826	818,582	179,115	26,098,738
February	184,600	28,011,800					185,696	26,370,674
March	192,030	28,435,800					197,486	27,090,940
April	199,600	28,867,800					203,684	27,447,662
May	200,100	28,896,300					204,107	27,765,537
June	228,500	30,516,800					231,627	29,058,129
Total	2,398,830	346,620,100	1,462,488	202,395,645	68,488	504,045	2,462,367	328,921,263
Subtotals ytd	1,394,000	201,891,600	1,462,488	202,395,645		504,045		
Achievement of Budget/Goal			104.91%	100.25%				

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

(2) Retail Revenues include Miscellaneous Revenues and Penalties

Table 4 – DWSD Retail Sewer Collections

Sewer				
Month	Current Year	Prior Year	Variance	Ratio
February	22,777,467	22,682,982	94,485	0.42%
March	25,002,508	19,325,377	5,677,131	29.38%
April	21,196,170	17,105,146	4,091,024	23.92%
May	21,888,687	23,639,652	(1,750,965)	-7.41%
June	32,508,249	22,558,827	9,949,422	44.10%
July	24,185,252	20,652,159	3,533,093	17.11%
August	25,036,198	22,395,220	2,640,978	11.79%
September	22,635,796	26,463,387	(3,827,591)	-14.46%
October	25,119,240	26,683,109	(1,563,869)	-5.86%
November	23,505,249	28,730,139	(5,224,890)	-18.19%
December	24,880,743	22,856,217	2,024,526	8.86%
January	23,020,491	22,057,276	963,215	4.37%
Rolling 12-Month Total	291,756,050	275,149,491		
Rolling, 12-Month Average	24,313,004	22,929,124		

DWSD Retail Water and Sewer Accounts Receivable Aging Report

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

Table 5 is a summary of the monthly sales, total receivables, bad debt allowance and net Water and Sewer receivables as of January 31, 2022 with comparative totals from June 30, 2021 and June 30, 2020. This table does not include past due accounts that have been transferred to the City of Detroit for collection as tax liens.

The table provides a comparison of days in accounts receivable calculated as net receivables divided by daily sales and confirms that over time Days in AR is declining due in large part to a consistent practice of recognizing past dues over 60 days as bad debt expense. To the extent this allowance is adjusted, and bad debt expense is recognized in the DWSD budget, it does not impact GLWA.

Table 6 is a summary of the total, current and non-current Water and Sewer receivables by category as of January 31, 2022 with comparative totals from January 31, 2021. This table does not include past due accounts that have been transferred to the City of Detroit for collection as tax liens.

The Total Balance and Total Bad Debt Allowance as of January 31, 2022 are reflective of the values in both the Table 5 Summary and Table 6 breakdown.

Table 5 – DWSD Retail Accounts Receivable Aging Report – Summary

Summary					
Period Ending	Monthly Sales	Receivables			Days in AR (1)
		Total	Allowance	Net	
June 30, 2020	\$ 33,061,000	\$ 213,846,000	\$ (142,882,000)	\$ 70,964,000	64
June 30, 2021	\$ 36,335,000	\$ 248,055,000	\$ (200,146,000)	\$ 47,909,000	40
January 31, 2022	\$ 36,377,000	\$ 275,171,000	\$ (227,651,000)	\$ 47,519,000	39

Totals may be off due to rounding

(1) Days in AR is calculated as net receivables divided by daily sales (monthly sales/30 days)

Table 6 – DWSD Retail Accounts Receivable Aging Report – Water & Sewer Combined

Sales Class	# of Accounts	Avg. Balance	Current	> 30 Days	> 60 Days	> 180 Days	Balance
Residential	209,779	\$ 687.13	\$ 13,810,000	\$ 8,210,000	\$ 25,233,000	\$ 96,894,000	\$ 144,146,000
			9.6%	5.7%	17.5%	67.2%	100.0%
Commercial	21,165	1,419.28	7,951,000	2,966,000	7,732,000	11,390,000	30,039,000
			26.5%	9.9%	25.7%	37.9%	100.0%
Industrial	3,474	4,708.75	4,859,000	1,864,000	2,499,000	7,136,000	16,358,000
			29.7%	11.4%	15.3%	43.6%	100.0%
Tax Exempt	3,658	746.71	515,000	257,000	509,000	1,450,000	2,731,000
			18.9%	9.4%	18.6%	53.1%	100.0%
Government	55,776	348.85	2,552,000	1,630,000	3,103,000	12,173,000	19,458,000
			13.1%	8.4%	15.9%	62.6%	100.0%
Drainage	40,921	722.95	2,790,000	1,678,000	5,109,000	20,007,000	29,584,000
			9.4%	5.7%	17.3%	67.6%	100.0%
Subtotal - Active Accounts	334,773	\$ 723.82	\$ 32,477,000	\$ 16,603,000	\$ 44,185,000	\$ 149,051,000	\$ 242,316,000
			13.4%	6.9%	18.2%	61.5%	100.0%
Inactive Accounts	307,805	106.74	260,000	15,000	103,000	32,476,000	32,855,000
			0.8%	0.0%	0.3%	98.8%	100.0%
Total	642,578	\$ 428.23	\$ 32,737,000	\$ 16,618,000	\$ 44,288,000	\$ 181,528,000	\$ 275,171,000
<i>% of Total AVR</i>			11.9%	6.0%	16.1%	66.0%	100.0%
Water Fund	237,473	227.19	\$ 7,173,000	\$ 3,435,000	\$ 9,302,000	\$ 34,043,000	\$ 53,953,000
Sewer Fund	277,109	798.31	\$ 25,564,000	\$ 13,184,000	\$ 34,986,000	\$ 147,485,000	\$ 221,218,000
Total January 31, 2022 (a)	642,578	428.23	\$ 32,737,000	\$ 16,618,000	\$ 44,288,000	\$ 181,528,000	\$ 275,171,000
Water Fund- Allowance							\$ (42,689,000)
Sewer Fund- Allowance							\$ (184,962,000)
Total Bad Debt Allowance							\$ (227,651,000)
Comparative - January 2021 (b)	625,944	363.33	\$ 28,616,000	\$ 13,815,000	\$ 39,523,000	\$ 145,467,000	\$ 227,422,000
Difference (a) - (b)	16,634	64.90	\$ 4,121,000	\$ 2,803,000	\$ 4,764,000	\$ 36,061,000	\$ 47,749,000



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

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

Wholesale Water Billings and Collections

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

Service Arrangement Type

Model Contract	83
Emergency	1
Older Contracts	3
Total	87

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

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

Table 1 - Wholesale Water Billings shows the FY 2022 water billed usage and revenues. As of January 31, 2022, the billed usage was at 94.41% of the original plan and billed revenue at 97.61% of the original plan. Billings and usage from the City of Flint are included as they were assumed in the FY 2022 Budget.

This table also reflects the positive impact of approved FY 2022 budget amendments and known billing adjustments on the original plan.

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

Table 2 - Wholesale Water Collections shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. Collections report lower than prior year for November and December 2021 due to issues with receipt of payments via US mail service over the holiday season. Payment activity rebounds in January when many of these timing issues were resolved.

Table 1 – FY 2022 Wholesale Water Billings Report

WHOLESALE WATER CHARGES								
Month (1)	FY 2022 Charges (3)		FY 2022 - Actual		FY 2022 - Variance		FY 2021 - Actuals	
	Volume	Revenue	Volume	Revenue (2)	Volume	Revenue	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$	Mcf	\$
July	1,677,100	33,302,700	1,342,686	29,642,785	(334,414)	(3,659,915)	1,862,791	33,583,619
August	1,509,200	31,598,500	1,417,142	30,604,230	(92,058)	(994,270)	1,622,324	31,230,027
September	1,316,400	29,141,000	1,298,750	29,065,588	(17,650)	(75,412)	1,313,440	27,836,560
October	1,034,000	26,280,800	1,006,217	26,123,483	(27,783)	(157,317)	1,070,660	25,454,840
November	896,800	25,001,500	905,525	25,117,181	8,725	115,681	956,542	24,390,303
December	972,100	25,612,000	958,879	25,542,432	(13,221)	(69,568)	981,770	24,600,202
January	972,000	25,650,600	979,803	25,791,405	7,803	140,805	969,483	25,235,130
February	884,400	24,852,700					920,467	24,794,259
March	979,500	25,678,200					1,001,073	25,450,418
April	914,000	25,117,700					954,308	25,140,003
May	1,059,200	26,721,900					1,181,186	27,569,969
June	1,374,300	30,029,900					1,424,230	30,066,884
Total	13,589,000	328,987,500	7,909,002	191,887,103	(468,598)	(4,699,997)	14,258,274	325,352,214
Subtotals ytd	8,377,600	196,587,100	7,909,002	191,887,103	(468,598)	(4,699,997)		
Achievement of Original Plan			94.41%	97.61%				
1st Quarter Budget Amendments								
	(220,000)	(2,400,000)			220,000	2,400,000		
Billing Adjustments			65,470	544,190	65,470	544,190		
Revised Subtotal	8,157,600	194,187,100	7,974,472	192,431,293	(183,128)	(1,755,807)		
Achievement of Amended Plan			97.76%	99.10%				

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

(2) Water Revenues differ from Table 1A because amounts are reduced by the monthly payment to the City of Flint for a license to raw water rights under the Flint Raw Water Contract in Table 1A

(3) Charges are based on the approved FY 2022 water supply system charge schedule.

Table 2 - Wholesale Water Collections

Water				
Month	Current Year	Prior Year	Variance	Ratio
February	25,694,176	24,629,768	1,064,408	4.32%
March	20,854,506	25,017,989	(4,163,483)	-16.64%
April	23,545,123	17,856,644	5,688,479	31.86%
May	24,878,479	24,811,582	66,897	0.27%
June	25,403,968	27,098,783	(1,694,815)	-6.25%
July	23,709,847	25,080,575	(1,370,728)	-5.47%
August	31,668,492	26,241,018	5,427,474	20.68%
September	23,849,618	26,078,015	(2,228,397)	-8.55%
October	29,212,277	29,292,690	(80,413)	-0.27%
November	25,265,770	32,218,822	(6,953,052)	-21.58%
December	25,302,369	29,609,061	(4,306,692)	-14.55%
January	31,280,599	20,716,948	10,563,651	50.99%
Rolling 12-Month Total	310,665,224	308,651,895		
Rolling, 12-Month Average	25,888,769	25,720,991		

Wholesale Sewer Billings and Collections

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

Service Arrangement Type

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

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

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

Table 3 - Wholesale Sewer Billings shows the FY 2022 sewer billed revenue. As of January 31, 2022 the billed revenue is at 100.00% of the original plan.

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

Table 4 - Wholesale Sewer Collections shows collections by month for the past 12 months compared to collections for the prior year as well as the calculated difference between the periods. The year-over-year rolling average from FY 2021 to FY 2022 shows continued improvement through January 31.

The shift in wholesale sewer collection patterns is largely attributable to the timing of payments received. There are several large accounts whose payments swing between the end of the current month and the beginning of the next month.

Table 3 – FY 2022 Wholesale Sewer Billings Report

WHOLESALE SEWER CHARGES								
Month (1)	FY 2022 Charges		FY 2022 - Actual		FY 2022 - Variance		FY 2021 - Actuals	
	Volume (2)	Revenue	Volume (2)	Revenue	Volume (2)	Revenue	Volume	Revenue
	Mcf	\$	Mcf	\$	Mcf	\$	Mcf	\$
July	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,323,183
August	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,323,183
September	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,323,183
October	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,323,183
November	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,323,183
December	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,323,183
January	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,633,025
February	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,633,025
March	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,633,025
April	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,633,025
May	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,633,025
June	N/A	22,615,000	N/A	22,615,000	N/A	-	N/A	22,633,025
Total		271,380,000		158,305,000		-		269,737,248
Subtotals ytd		158,305,000		158,305,000		-		
Achievement of Budget				100.00%				

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

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

Table 4 - Wholesale Sewer Collections

Sewer				
Month	Current Year	Prior Year	Variance	Ratio
February	16,872,900	23,284,737	(6,411,837)	-27.54%
March	22,368,124	21,108,100	1,260,024	5.97%
April	28,128,933	10,024,575	18,104,358	180.60%
May	15,972,800	21,189,047	(5,216,247)	-24.62%
June	28,523,650	28,598,467	(74,817)	-0.26%
July	21,842,125	22,297,737	(455,612)	-2.04%
August	22,191,725	25,354,280	(3,162,555)	-12.47%
September	26,706,558	19,593,613	7,112,945	36.30%
October	22,176,058	16,853,983	5,322,075	31.58%
November	16,534,758	18,966,208	(2,431,450)	-12.82%
December	21,765,958	25,232,649	(3,466,691)	-13.74%
January	26,436,258	25,968,849	467,409	1.80%
Rolling 12-Month Total	269,519,847	258,472,245		
Rolling, 12-Month Average	22,459,987	21,539,354		

City of Highland Park Billings and Collections

The City of Highland Park is provided water service pursuant to an emergency service basis. Sewer service is provided pursuant to a 1982 amended contract which indicates that the parties are guided in their legal relationship by a Michigan Supreme Court decision from 1949.

As of January 31, 2022, Highland Park had a delinquent balance of \$52.4 million, including \$40.2 million for wastewater treatment services, \$1.8 million for industrial waste control services, and \$10.5 million for water supply services.

Table 5 - City of Highland Park Billings and Collections provides a life-to-date balance summary of the billing and collection history for Highland Park with detail provided for fiscal year 2022 through January 31, 2022. Please note the numbers below reflect the month the billing was sent and not the month the service was provided. A life-to-date summary is provided as an appendix to this monthly financial report.

Table 5 - City of Highland Park Billings and Collections

	Water	Sewer	IWC	Total
February 28, 2021 Balance	9,332,943	35,559,799	1,753,534	46,646,276
March 2021 Billing	95,121	478,900	4,060	578,081
March 2021 Payments	-	(220,241)	-	(220,241)
March 31, 2021 Balance	9,428,064	35,818,458	1,757,594	47,004,116
April 2021 Billing	96,950	478,900	4,051	579,901
April 2021 Payments	-	(224,583)	-	(224,583)
April 30, 2021 Balance	9,525,014	36,072,775	1,761,645	47,359,434
May 2021 Billing	94,839	478,900	4,065	577,804
May 2021 Payments	-	-	-	-
May 31, 2021 Balance	9,619,853	36,551,675	1,765,710	47,937,238
June 2021 Billing	99,337	478,900	4,053	582,290
June 2021 Payments	-	-	-	-
June 30, 2021 Balance	9,719,190	37,030,575	1,769,763	48,519,528
July 2021 Billing	102,730	478,900	3,972	585,602
July 2021 Payments	-	-	-	-
July 31, 2021 Balance	9,821,920	37,509,475	1,773,735	49,105,130
August 2021 Billing	109,067	446,400	4,067	559,534
August 2021 Payments	-	-	-	-
August 31, 2021 Balance	9,930,987	37,955,875	1,777,802	49,664,664
September 2021 Billing	110,440	446,400	4,062	560,902
September 2021 Payments	-	-	-	-
September 30, 2021 Balance	10,041,427	38,402,275	1,781,864	50,225,566
October 2021 Billing	109,853	446,400	4,053	560,306
October 2021 Payments	-	-	-	-
October 31, 2021 Balance	10,151,280	38,848,675	1,785,917	50,785,872
November 2021 Billing	103,417	446,400	4,069	553,886
November 2021 Payments	-	-	-	-
November 30, 2021 Balance	10,254,697	39,295,075	1,789,986	51,339,758
December 2021 Billing	100,908	446,400	4,075	551,383
December 2021 Payments	-	-	-	-
December 31, 2021 Balance	10,355,605	39,741,475	1,794,061	51,891,141
January 2022 Billing	96,633	446,400	4,002	547,035
January 2022 Payments	-	-	-	-
January 31, 2022 Balance	10,452,238	40,187,875	1,798,063	52,438,176

Wholesale Water & Sewer Accounts Receivable Aging Report

The detailed accounts receivable aging is in the Appendix to this monthly report. This report reflects the wholesale receivables only and does not include DWSD.

Table 6 - Wholesale Accounts Receivable Aging Report Summary is a summary of the total, current and non-current receivables by category as of January 31, 2022.

Table 7 - Wholesale Accounts Receivable Aging Report, Net of Highland Park is the same summary *without* the past due balances for the City of Highland Park. One member partner contract dispute accounts for \$5.42 million of the current water past due balance. The remaining water past due accounts were paid in early February.

Pollutant surcharge past dues generally consist of smaller account holders that GLWA staff continue to communicate with. The pollutant surcharge balance over 105 days is related to a bankruptcy that is currently pending further court action.

Table 6 - Wholesale Accounts Receivable Aging Report Summary

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 50,840,350.32	\$ 35,030,427.41	\$ 1,191,192.79	\$ 2,515,499.48	\$ 12,103,230.64
Sewer	\$ 57,287,343.26	\$ 17,545,868.10	\$ 446,400.00	\$ 446,400.00	\$ 38,848,675.16
IWC	\$ 2,275,398.83	\$ 484,482.93	\$ 4,998.48	\$ 4,053.30	\$ 1,781,864.12
Pollutant Surcharge	\$ 633,219.24	\$ 604,733.99	\$ 709.86	\$ 2,336.59	\$ 25,438.80
Total	\$ 111,036,311.65	\$ 53,665,512.43	\$ 1,643,301.13	\$ 2,968,289.37	\$ 52,759,208.72
	100.00%	48.33%	1.48%	2.67%	47.52%

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

	Total	Current	46-74 Days	75-104 Days	>105 Days
Water	\$ 40,388,112.83	\$ 34,832,886.68	\$ 1,087,775.88	\$ 2,405,646.11	\$ 2,061,804.16
Sewer	\$ 17,099,468.10	\$ 17,099,468.10	\$ -	\$ -	\$ -
IWC	\$ 477,335.67	\$ 476,406.42	\$ 929.25	\$ -	\$ -
Pollutant Surcharge	\$ 633,219.24	\$ 604,733.99	\$ 709.86	\$ 2,336.59	\$ 25,438.80
Total	\$ 58,598,135.84	\$ 53,013,495.19	\$ 1,089,414.99	\$ 2,407,982.70	\$ 2,087,242.96
	100.00%	90.47%	1.86%	4.11%	3.56%

Note: percentages vary from 100% due to rounding.



The Monthly Trust Receipts & Disbursements Report includes the following.

1. GLWA Trust Receipts & Disbursements – Net Cash Flows and Receipts
2. DWSD Trust Receipts & Disbursements – Net Cash Flows, Receipts & Loan Receivable
3. Combined System Trust Receipts & Disbursements – Net Cash Flows

GLWA Trust Receipts & Disbursements

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

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

Table 1 – GLWA Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year. Fiscal year 2022 reflects seven months of activity to date.

Water fund receipts exceeded required disbursements by 11% through January 31, 2022 compared to the four-year historical average ratio of required receipts exceeding disbursements by 13% since July 1, 2017.

Sewer fund receipts exceeded required disbursements by 8% through January 31, 2022 consistent with the four-year historical average ratio of required receipts exceeding disbursements by 6% since July 1, 2017.

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

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

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

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022 Thru Jan 31
Water					
1 Receipts	\$ 338,452,001	\$ 336,594,234	\$ 332,606,196	\$ 336,642,021	\$ 204,679,707
2 MOU Adjustments	-	-	-	-	-
3 Adjusted Receipts	338,452,001	336,594,234	332,606,196	336,642,021	204,679,707
4 Disbursements	(297,064,810)	(289,230,481)	(296,190,425)	(308,713,407)	(184,325,669)
5 Receipts Net of Required	41,387,191	47,363,753	36,415,771	27,928,614	20,354,038
6 I&E Transfer	(25,739,700)	(47,695,000)	(25,719,751)	(31,991,687)	(13,478,137)
7 Net Receipts	\$ 15,647,491	\$ (331,247)	\$ 10,696,020	\$ (4,063,073)	\$ 6,875,901
8 <i>Ratio of Receipts to Required Disbursements (Line 3/Line 4)</i>	114%	116%	112%	109%	111%
Sewer					
9 Receipts	\$ 476,269,761	\$ 467,743,744	\$ 490,461,356	\$ 472,871,853	\$ 277,939,260
10 MOU Adjustments	-	-	-	-	-
11 Adjusted Receipts	476,269,761	467,743,744	490,461,356	472,871,853	277,939,260
12 Disbursements	(458,903,335)	(453,406,636)	(445,604,952)	(436,600,883)	(256,784,201)
13 Receipts Net of Required	17,366,426	14,337,108	44,856,404	36,270,970	21,155,059
14 I&E Transfer	(22,698,100)	(22,547,700)	(19,096,200)	(40,504,727)	(23,342,663)
15 DWSD Shortfall Advance	(24,113,034)	-	-	-	-
16 Shortfall Repayment (principal)	-	9,367,355	17,542,669	18,206,431	4,807,344
17 Net Receipts	\$ (29,444,708)	\$ 1,156,763	\$ 43,302,873	\$ 13,972,674	\$ 2,619,740
18 <i>Ratio of Receipts to Required Disbursements (Line 11/Line 12)</i>	104%	103%	110%	108%	108%
Combined					
19 Receipts	\$ 814,721,762	\$ 804,337,978	\$ 823,067,552	\$ 809,513,874	\$ 482,618,967
20 MOU Adjustments	-	-	-	-	-
21 Adjusted Receipts	814,721,762	804,337,978	823,067,552	809,513,874	482,618,967
22 Disbursements	(755,968,145)	(742,637,117)	(741,795,377)	(745,314,290)	(441,109,870)
23 Receipts Net of Required	58,753,617	61,700,861	81,272,175	64,199,584	41,509,097
24 I&E Transfer	(48,437,800)	(70,242,700)	(44,815,951)	(72,496,414)	(36,820,800)
25 Shortfall Advance	(24,113,034)	-	-	-	-
26 Shortfall Repayment	-	9,367,355	17,542,669	18,206,431	4,807,344
27 Net Receipts	\$ (13,797,217)	\$ 825,516	\$ 53,998,893	\$ 9,909,601	\$ 9,495,641
28 <i>Ratio of Receipts to Required Disbursements (Line 21/Line 22)</i>	108%	108%	111%	109%	109%

Chart 1 – GLWA 12-Month Net Receipts – Water

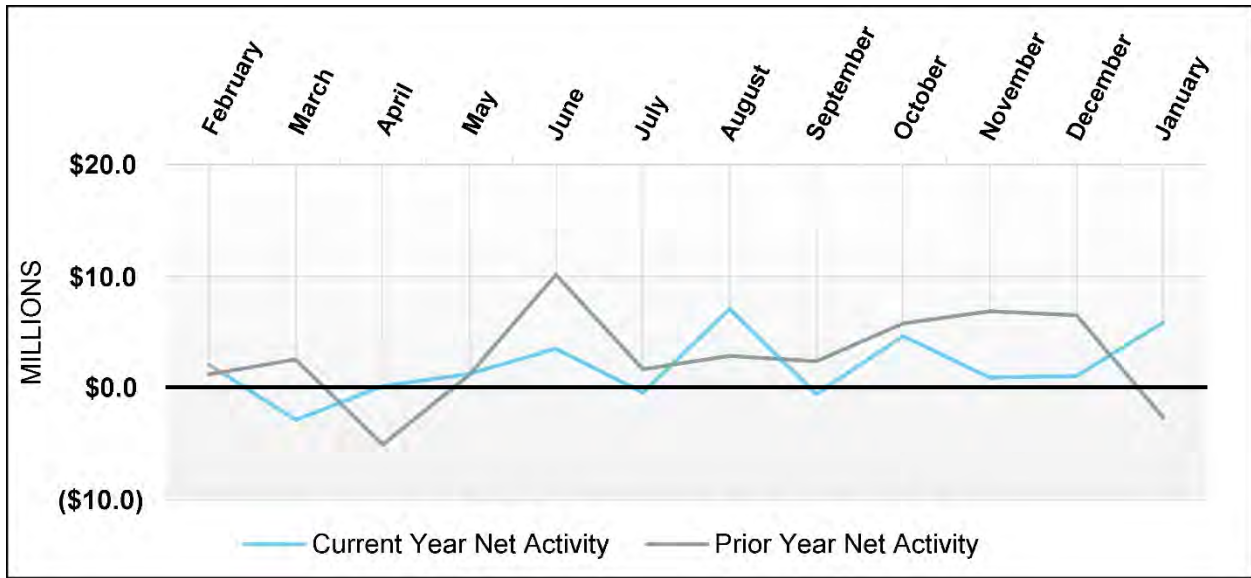
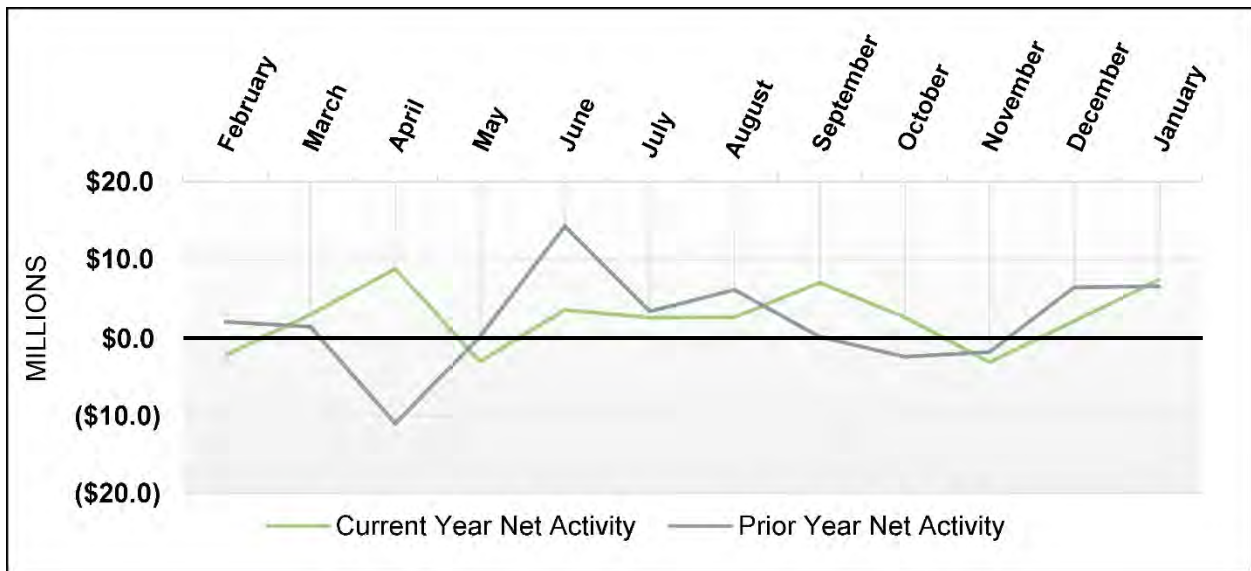


Chart 2 – GLWA 12-Month Net Receipts – Sewer



DWSD Trust Receipts & Disbursements

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

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

Table 2 – DWSD Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year. Fiscal year 2022 reflects seven months of activity to date.

Water fund receipts exceeded required disbursements by 5% through January 31, 2022 compared to the four-year historical average ratio of required receipts exceeding disbursements by 3% since July 1, 2017.

Sewer fund receipts fell short of required disbursements by 1% through January 31, 2022 compared to the four-year historical average ratio of required receipts falling short of disbursements by 2% since July 1, 2017.

Table 3 – FY 2018 DWSD Loan Receivable - Sewer provides an activity summary of the loan receivable established under the terms of the April 2018 MOU addressing the cash shortfall from FY 2018.

Table 4 – FY 2018 DWSD Loan Receivable Payments - Sewer provides an activity summary of loan receivable payments to date on the FY 2018 Sewer Loan Receivable including the interest on the loan. This payment is transferred directly to GLWA Sewer Improvement & Extension fund monthly.

The Reconciliation Committee monitors this balance and repayment progress as part of its quarterly meetings.

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

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

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

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022 Thru Jan 31
Water					
1 Receipts	\$ 101,233,147	\$ 99,868,219	\$ 96,885,723	\$ 102,067,423	\$ 56,497,606
2 MOU Adjustments	-	-	-	-	-
3 Adjusted Receipts	101,233,147	99,868,219	96,885,723	102,067,423	56,497,606
4 Disbursements	(93,049,457)	(97,694,600)	(97,823,097)	(100,707,200)	(53,723,362)
5 Receipts Net of Required	8,183,690	2,173,619	(937,374)	1,360,223	2,774,244
6 I&E Transfer	-	(8,407,080)	-	-	-
7 Net Receipts	\$ 8,183,690	\$ (6,233,461)	\$ (937,374)	\$ 1,360,223	\$ 2,774,244
8 <i>Ratio of Receipts to Required Disbursements (Line 3/Line 4)</i>	109%	102%	99%	101%	105%
Sewer					
9 Receipts	\$ 242,104,791	\$ 265,339,797	\$ 264,689,559	\$ 308,210,767	\$ 168,383,228
10 MOU Adjustments	-	6,527,200	-	-	-
11 Adjusted Receipts	242,104,791	271,866,997	264,689,559	308,210,767	168,383,228
12 Disbursements	(266,217,825)	(271,018,306)	(275,507,374)	(295,100,771)	(170,732,008)
13 Receipts Net of Required	(24,113,034)	848,691	(10,817,815)	13,109,996	(2,348,780)
14 I&E Transfer	-	-	-	-	-
15 Shortfall Advance from GLWA	24,113,034	-	-	-	-
16 Net Receipts	\$ -	\$ 848,691	\$ (10,817,815)	\$ 13,109,996	\$ (2,348,780)
17 <i>Ratio of Receipts to Required Disbursements (Line 11/Line 12)</i>	91%	100%	96%	104%	99%
Combined					
18 Receipts	\$ 343,337,938	\$ 365,208,016	\$ 361,575,282	\$ 410,278,190	\$ 224,880,834
19 MOU Adjustments	-	6,527,200	-	-	-
20 Adjusted Receipts	343,337,938	371,735,216	361,575,282	410,278,190	224,880,834
21 Disbursements	(359,267,282)	(368,712,906)	(373,330,471)	(395,807,971)	(224,455,370)
22 Receipts Net of Required	(15,929,344)	3,022,310	(11,755,189)	14,470,219	425,464
23 I&E Transfer	-	(8,407,080)	-	-	-
24 Shortfall Advance from GLWA	24,113,034	-	-	-	-
25 Net Receipts	\$ 8,183,690	\$ (5,384,770)	\$ (11,755,189)	\$ 14,470,219	\$ 425,464
26 <i>Ratio of Receipts to Required Disbursements (Line 20/Line 21)</i>	96%	101%	97%	104%	100%

Table 3 – FY 2018 DWSD Loan Receivable – Sewer

Date	Transaction	Amount	Balance
06-30-19	Record Loan Receivable		24,113,034
07-15-19	Payment for July 2019	638,978	23,474,056
08-08-19	Payment for August 2019	640,686	22,833,370
09-06-19	Payment for September 2019	642,400	22,190,970
10-02-19	Payment for October 2019	644,118	21,546,852
11-04-19	Payment for November 2019	645,840	20,901,012
12-03-19	Payment for December 2019	647,567	20,253,445
01-06-20	Payment for January 2020	649,299	19,604,146
02-04-20	Payment for February 2020	651,035	18,953,111
03-03-20	Payment for March 2020	652,776	18,300,335
04-15-20	Payment for April 2020	654,522	17,645,813
05-06-20	Payment for May 2020	656,272	16,989,541
06-02-20	Payment for June 2020	658,027	16,331,514
07-07-20	Payment for July 2020	659,787	15,671,727
08-04-20	Payment for August 2020	661,551	15,010,176
09-02-20	Payment for September 2020	663,320	14,346,855
10-05-20	Payment for October 2020	665,094	13,681,761
11-03-20	Payment for November 2020	666,873	13,014,888
12-03-20	Payment for December 2020	668,656	12,346,232
01-05-21	Payment for January 2021	670,444	11,675,788
02-02-21	Payment for February 2021	672,237	11,003,551
03-03-21	Payment for March 2021	674,035	10,329,517
04-05-21	Payment for April 2021	675,837	9,653,679
05-04-21	Payment for May 2021	677,644	8,976,035
06-03-21	Payment for June 2021	679,457	8,296,578
07-02-21	Payment for July 2021	681,274	7,615,305
08-03-21	Payment for August 2021	683,095	6,932,209
09-03-21	Payment for September 2021	684,922	6,247,287
10-05-21	Payment for October 2021	686,754	5,560,534
11-03-21	Payment for November 2021	688,590	4,871,944
12-06-21	Payment for December 2021	690,432	4,181,512
01-05-22	Payment for January 2022	692,278	3,489,234
		20,623,800	3,489,234

Table 4 – FY 2018 DWSD Loan Receivable Payments – Sewer

Date	Transaction	Principal	Interest	Total Paid
07-15-19	Payment for July 2019	638,978	64,482	703,460
08-08-19	Payment for August 2019	640,686	62,774	703,460
09-06-19	Payment for September 2019	642,400	61,060	703,460
10-02-19	Payment for October 2019	644,118	59,342	703,460
11-04-19	Payment for November 2019	645,840	57,620	703,460
12-03-19	Payment for December 2019	647,567	55,893	703,460
01-06-20	Payment for January 2020	649,299	54,161	703,460
02-04-20	Payment for February 2020	651,035	52,425	703,460
03-03-20	Payment for March 2020	652,776	50,684	703,460
04-15-20	Payment for April 2020	654,522	48,938	703,460
05-06-20	Payment for May 2020	656,272	47,188	703,460
06-02-20	Payment for June 2020	658,027	45,433	703,460
07-07-20	Payment for July 2020	659,787	43,673	703,460
08-04-20	Payment for August 2020	661,551	41,909	703,460
09-02-20	Payment for September 2020	663,320	40,140	703,460
10-05-20	Payment for October 2020	665,094	38,366	703,460
11-03-20	Payment for November 2020	666,873	36,587	703,460
12-03-20	Payment for December 2020	668,656	34,804	703,460
01-05-21	Payment for January 2021	670,444	33,016	703,460
02-02-21	Payment for February 2021	672,237	31,223	703,460
03-03-21	Payment for March 2021	674,035	29,425	703,460
04-05-21	Payment for April 2021	675,837	27,623	703,460
05-04-21	Payment for May 2021	677,644	25,816	703,460
06-03-21	Payment for June 2021	679,457	24,003	703,460
07-02-21	Payment for July 2021	681,274	22,186	703,460
08-03-21	Payment for August 2021	683,095	20,365	703,460
09-03-21	Payment for September 2021	684,922	18,538	703,460
10-05-21	Payment for October 2021	686,754	16,706	703,460
11-03-21	Payment for November 2021	688,590	14,870	703,460
12-06-21	Payment for December 2021	690,432	13,028	703,460
01-05-22	Payment for January 2022	692,278	11,182	703,460
		20,623,800	1,183,461	21,807,260

Chart 3 – DWSD 12-Month Net Receipts – Water

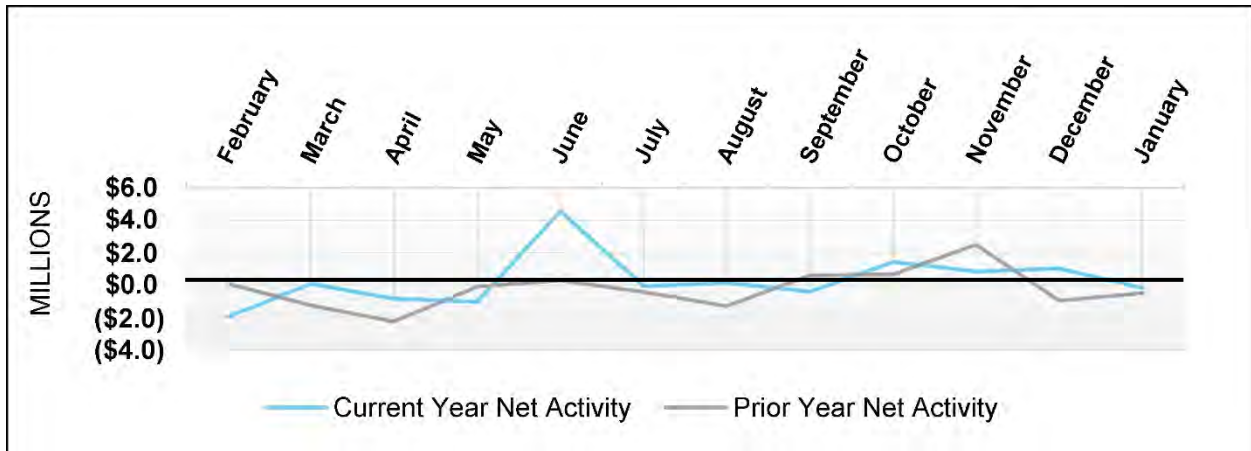
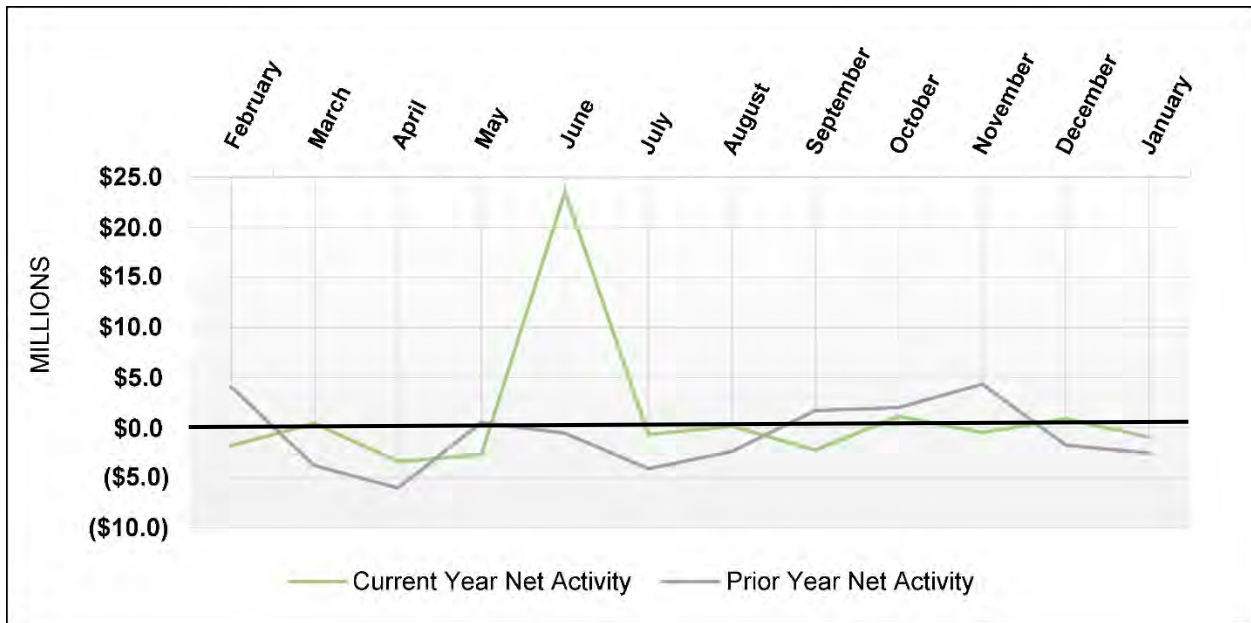


Chart 4 – DWSD 12-Month Net Receipts – Sewer



Combined System Trust Receipts & Disbursements

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

Table 5 – Combined Net Cash Flows from Trust Receipts & Disbursements provides a summary of cash receipt collections and required MBO transfers by fiscal year. Fiscal year 2022 reflects seven months of activity to date.

Water fund net receipts exceeded required disbursements by 10% through January 31, 2022 consistent with the four-year historical average ratio of required receipts exceeding disbursements by 10% since July 1, 2017.

Sewer fund receipts exceeded required disbursements by 4% through January 31, 2022 compared to the four-year historical average ratio of required receipts exceeding disbursements by 3% since July 1, 2017.

Table 5 – Combined Net Cash Flows from Trust Receipts & Disbursements

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022 Thru Jan 31
Water					
1 Receipts	\$ 439,685,148	\$ 436,462,453	\$ 429,491,919	\$ 438,709,444	\$ 261,177,313
2 MOU Adjustments	-	-	-	-	-
3 Adjusted Receipts	439,685,148	436,462,453	429,491,919	438,709,444	261,177,313
4 Disbursements	(390,114,267)	(386,925,081)	(394,013,522)	(409,420,607)	(238,049,031)
5 Receipts Net of Required	49,570,881	49,537,372	35,478,397	29,288,837	23,128,282
6 I&E Transfer	(25,739,700)	(56,102,080)	(25,719,751)	(31,991,687)	(13,478,137)
7 Net Receipts	\$ 23,831,181	\$ (6,564,708)	\$ 9,758,646	\$ (2,702,850)	\$ 9,650,145
8 <i>Ratio of Receipts to Required Disbursements (Line 3/Line 4)</i>	113%	113%	109%	107%	110%
Sewer					
9 Receipts	\$ 718,374,552	\$ 733,083,541	\$ 755,150,915	\$ 781,082,620	\$ 446,322,488
10 MOU Adjustments	-	6,527,200	-	-	-
11 Adjusted Receipts	718,374,552	739,610,741	755,150,915	781,082,620	446,322,488
12 Disbursements	(725,121,160)	(724,424,942)	(721,112,326)	(731,701,654)	(427,516,209)
13 Receipts Net of Required	(6,746,608)	15,185,799	34,038,589	49,380,966	18,806,279
14 I&E Transfer	(22,698,100)	(22,547,700)	(19,096,200)	(40,504,727)	(23,342,663)
15 Shortfall Advance	-	-	-	-	-
16 Shortfall Repayment (principal)	-	9,367,355	17,542,669	18,206,431	4,807,344
17 Net Receipts	\$ (29,444,708)	\$ (7,361,901)	\$ 32,485,058	\$ 27,082,670	\$ 270,960
18 <i>Ratio of Receipts to Required Disbursements (Line 11/Line 12)</i>	99%	102%	105%	107%	104%
Combined					
19 Receipts	\$1,158,059,700	\$1,169,545,994	\$1,184,642,834	\$1,219,792,064	\$ 707,499,801
20 MOU Adjustments	-	6,527,200	-	-	-
21 Adjusted Receipts	1,158,059,700	1,176,073,194	1,184,642,834	1,219,792,064	707,499,801
22 Disbursements	(1,115,235,427)	(1,111,350,023)	(1,115,125,848)	(1,141,122,261)	(665,565,240)
23 Receipts Net of Required	42,824,273	64,723,171	69,516,986	78,669,803	41,934,561
24 I&E Transfer	(48,437,800)	(78,649,780)	(44,815,951)	(72,496,414)	(36,820,800)
25 Shortfall Advance	-	-	-	-	-
26 Shortfall Repayment	-	9,367,355	17,542,669	18,206,431	4,807,344
27 Net Receipts	\$ (5,613,527)	\$ (4,559,254)	\$ 42,243,704	\$ 24,379,820	\$ 9,921,105
28 <i>Ratio of Receipts to Required Disbursements (Line 21/Line 22)</i>	104%	106%	106%	107%	106%

APPENDIX

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$467,512.46	\$467,512.46	\$0.00	\$0.00	\$0.00
ALMONT VILLAGE	\$20,047.01	\$20,047.01	\$0.00	\$0.00	\$0.00
ASH TOWNSHIP	\$67,256.13	\$67,256.13	\$0.00	\$0.00	\$0.00
BELLEVILLE	\$27,092.75	\$27,092.75	\$0.00	\$0.00	\$0.00
BERLIN TOWNSHIP	\$61,767.35	\$61,767.35	\$0.00	\$0.00	\$0.00
BROWNSTOWN TOWNSHIP	\$304,144.07	\$304,144.07	\$0.00	\$0.00	\$0.00
BRUCE TOWNSHIP	\$24,371.28	\$24,371.28	\$0.00	\$0.00	\$0.00
BURTCHVILLE TOWNSHIP	\$25,044.33	\$25,044.33	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$844,035.94	\$844,035.94	\$0.00	\$0.00	\$0.00
CENTER LINE	\$80,928.28	\$80,928.28	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$712,719.72	\$712,719.72	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$614,472.53	\$614,472.53	\$0.00	\$0.00	\$0.00
COMMERCE TOWNSHIP	\$202,534.62	\$202,534.62	\$0.00	\$0.00	\$0.00
DEARBORN	\$7,139,172.10	\$1,716,959.68	\$954,762.15	\$2,405,646.11	\$2,061,804.16
DEARBORN HEIGHTS	\$610,499.36	\$610,499.36	\$0.00	\$0.00	\$0.00
EASTPOINTE	\$133,958.83	\$133,958.83	\$0.00	\$0.00	\$0.00
ECORSE	\$114,878.86	\$114,878.86	\$0.00	\$0.00	\$0.00
FARMINGTON	\$83,665.36	\$83,665.36	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$635,054.19	\$635,054.19	\$0.00	\$0.00	\$0.00
FERNDALE	\$179,663.14	\$179,663.14	\$0.00	\$0.00	\$0.00
FLAT ROCK	\$213,827.55	\$213,827.55	\$0.00	\$0.00	\$0.00
FLINT	\$276,243.68	\$276,243.68	\$0.00	\$0.00	\$0.00
FRASER	\$101,972.19	\$101,972.19	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
GARDEN CITY	\$134,811.17	\$134,811.17	\$0.00	\$0.00	\$0.00
GIBRALTAR	\$28,472.58	\$28,472.58	\$0.00	\$0.00	\$0.00
GROSSE ILE TOWNSHIP	\$189,571.44	\$189,571.44	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$232,341.00	\$210,586.70	\$21,754.30	\$0.00	\$0.00
GROSSE POINTE SHORES	\$47,370.01	\$47,370.01	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$102,800.91	\$102,800.91	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$135,273.39	\$135,273.39	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$73,909.88	\$73,909.88	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$136,607.31	\$136,607.31	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$60,917.66	\$60,917.66	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$10,452,237.49	\$197,540.73	\$103,416.91	\$109,853.37	\$10,041,426.48
HURON TOWNSHIP	\$130,837.49	\$130,837.49	\$0.00	\$0.00	\$0.00
IMLAY CITY	\$115,890.37	\$115,890.37	\$0.00	\$0.00	\$0.00
IMLAY TOWNSHIP	\$1,059.65	\$1,059.65	\$0.00	\$0.00	\$0.00
INKSTER	\$105,939.80	\$105,939.80	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$22,280.21	\$22,280.21	\$0.00	\$0.00	\$0.00
LAPEER	\$136,522.75	\$136,522.75	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$76,436.21	\$50,345.32	\$26,090.89	\$0.00	\$0.00
LINCOLN PARK	\$201,868.76	\$201,868.76	\$0.00	\$0.00	\$0.00
LIVONIA	\$908,716.52	\$908,716.52	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$1,028,504.92	\$1,028,504.92	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$169,050.80	\$169,050.80	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MAYFIELD TOWNSHIP	\$3,199.87	\$3,199.87	\$0.00	\$0.00	\$0.00
MELVINDALE	\$56,656.38	\$56,656.38	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$32,124.03	\$32,124.03	\$0.00	\$0.00	\$0.00
NOCWA	\$1,772,550.17	\$1,772,550.17	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$62,439.27	\$62,439.27	\$0.00	\$0.00	\$0.00
NORTHVILLE TOWNSHIP	\$429,349.30	\$429,349.30	\$0.00	\$0.00	\$0.00
NOVI	\$725,808.30	\$725,808.30	\$0.00	\$0.00	\$0.00
OAK PARK	\$236,924.04	\$236,924.04	\$0.00	\$0.00	\$0.00
OAKLAND CO DR COM	\$6,859.15	\$6,859.15	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$88,775.85	\$88,775.85	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$697,958.02	\$697,958.02	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$535,598.88	\$535,598.88	\$0.00	\$0.00	\$0.00
RIVER ROUGE	\$119,147.96	\$119,147.96	\$0.00	\$0.00	\$0.00
RIVERVIEW	\$73,456.79	\$73,456.79	\$0.00	\$0.00	\$0.00
ROCKWOOD	\$23,458.67	\$23,458.67	\$0.00	\$0.00	\$0.00
ROMEO	\$62,642.79	\$41,376.42	\$21,266.37	\$0.00	\$0.00
ROMULUS	\$357,649.34	\$357,649.34	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$224,546.85	\$224,546.85	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$14,844.49	\$14,844.49	\$0.00	\$0.00	\$0.00
SHELBY TOWNSHIP	\$1,116,296.00	\$1,116,296.00	\$0.00	\$0.00	\$0.00
SOCWA	\$3,701,351.00	\$3,701,351.00	\$0.00	\$0.00	\$0.00
SOUTH ROCKWOOD	\$10,120.91	\$10,120.91	\$0.00	\$0.00	\$0.00
SOUTHGATE	\$193,851.04	\$193,851.04	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- WATER ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ST. CLAIR CNTY-GREENWOOD ENE	\$64,971.41	\$64,971.41	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$534,411.30	\$534,411.30	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$2,504,813.74	\$2,504,813.74	\$0.00	\$0.00	\$0.00
SUMPTER TOWNSHIP	\$190,575.47	\$126,673.30	\$63,902.17	\$0.00	\$0.00
SYLVAN LAKE	\$19,999.93	\$19,999.93	\$0.00	\$0.00	\$0.00
TAYLOR	\$391,113.86	\$391,113.86	\$0.00	\$0.00	\$0.00
TRENTON	\$140,274.31	\$140,274.31	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$1,062,277.31	\$1,062,277.31	\$0.00	\$0.00	\$0.00
UTICA	\$46,981.16	\$46,981.16	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$557,969.53	\$557,969.53	\$0.00	\$0.00	\$0.00
WALLED LAKE	\$59,522.71	\$59,522.71	\$0.00	\$0.00	\$0.00
WARREN	\$1,760,755.84	\$1,760,755.84	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$181,490.75	\$181,490.75	\$0.00	\$0.00	\$0.00
WAYNE	\$537,991.67	\$537,991.67	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (C-O)	\$1,717,416.11	\$1,717,416.11	\$0.00	\$0.00	\$0.00
WESTLAND	\$1,036,907.07	\$1,036,907.07	\$0.00	\$0.00	\$0.00
WIXOM	\$195,676.83	\$195,676.83	\$0.00	\$0.00	\$0.00
WOODHAVEN	\$139,187.24	\$139,187.24	\$0.00	\$0.00	\$0.00
YCUA	\$1,720,122.93	\$1,720,122.93	\$0.00	\$0.00	\$0.00
TOTAL WATER ACCOUNTS	\$50,840,350.32	\$35,030,427.41	\$1,191,192.79	\$2,515,499.48	\$12,103,230.64

GLWA Aged Accounts Receivable- SEWER ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$69,800.00	\$69,800.00	\$0.00	\$0.00	\$0.00
CENTER LINE	\$85,799.50	\$85,799.50	\$0.00	\$0.00	\$0.00
DEARBORN	\$1,671,500.00	\$1,671,500.00	\$0.00	\$0.00	\$0.00
EVERGREEN-FARMINGTON	\$2,980,500.00	\$2,980,500.00	\$0.00	\$0.00	\$0.00
FARMINGTON	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GROSSE POINTE PARK	\$156,900.00	\$156,900.00	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$332,800.00	\$332,800.00	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$40,187,875.16	\$446,400.00	\$446,400.00	\$446,400.00	\$38,848,675.16
MELVINDALE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
OAKLAND COUNTY GWK DD	\$3,819,000.00	\$3,819,000.00	\$0.00	\$0.00	\$0.00
OMID	\$5,896,568.60	\$5,896,568.60	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$22,200.00	\$22,200.00	\$0.00	\$0.00	\$0.00
ROUGE VALLEY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SOUTH MACOMB SANITATION DIST	\$2,064,400.00	\$2,064,400.00	\$0.00	\$0.00	\$0.00
WAYNE COUNTY-AREA #3	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL SEWER ACCOUNTS	\$57,287,343.26	\$17,545,868.10	\$446,400.00	\$446,400.00	\$38,848,675.16

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
ALLEN PARK	\$1,605.39	\$1,605.39	\$0.00	\$0.00	\$0.00
AUBURN HILLS (C-O)	\$9,627.28	\$9,627.28	\$0.00	\$0.00	\$0.00
AUBURN HILLS (C-O) ADMIN	\$1,813.71	\$1,813.71	\$0.00	\$0.00	\$0.00
AUBURN HILLS (E-F)	\$384.09	\$384.09	\$0.00	\$0.00	\$0.00
BERKLEY	\$3,147.06	\$3,147.06	\$0.00	\$0.00	\$0.00
BEVERLY HILLS	\$994.74	\$994.74	\$0.00	\$0.00	\$0.00
BINGHAM FARMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BIRMINGHAM (E-F)	\$2,431.98	\$2,431.98	\$0.00	\$0.00	\$0.00
BIRMINGHAM (SEOC)	\$5,667.54	\$5,667.54	\$0.00	\$0.00	\$0.00
BLOOMFIELD HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BLOOMFIELD TOWNSHIP	\$7,533.12	\$7,533.12	\$0.00	\$0.00	\$0.00
CANTON TOWNSHIP	\$84.96	\$84.96	\$0.00	\$0.00	\$0.00
CENTER LINE	\$3,667.44	\$3,667.44	\$0.00	\$0.00	\$0.00
CHESTERFIELD TOWNSHIP	\$12,551.07	\$12,551.07	\$0.00	\$0.00	\$0.00
CITY OF FARMINGTON (E-F)	\$200.01	\$200.01	\$0.00	\$0.00	\$0.00
CITY OF FERNDALE	\$8,867.70	\$8,867.70	\$0.00	\$0.00	\$0.00
CITY OF ROCHESTER	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLARKSTON (C-O) ADMIN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CLAWSON	\$3,079.80	\$3,079.80	\$0.00	\$0.00	\$0.00
CLINTON TOWNSHIP	\$26,411.94	\$26,411.94	\$0.00	\$0.00	\$0.00
DEARBORN	\$74,520.54	\$73,915.20	\$605.34	\$0.00	\$0.00
DEARBORN HEIGHTS	\$9,696.06	\$9,696.06	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$106.20	\$106.20	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
EASTPOINTE	\$6,426.87	\$6,426.87	\$0.00	\$0.00	\$0.00
FARMINGTON	\$4,019.67	\$4,019.67	\$0.00	\$0.00	\$0.00
FARMINGTON HILLS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FRASER	\$4,938.30	\$4,938.30	\$0.00	\$0.00	\$0.00
GARDEN CITY	\$6,115.35	\$6,115.35	\$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	\$1,177.05	\$1,177.05	\$0.00	\$0.00	\$0.00
GROSSE POINTE SHORES	\$679.68	\$679.68	\$0.00	\$0.00	\$0.00
GROSSE POINTE WOODS	\$2,646.15	\$2,646.15	\$0.00	\$0.00	\$0.00
HAMTRAMCK	\$8,311.92	\$8,311.92	\$0.00	\$0.00	\$0.00
HARPER WOODS	\$1,893.90	\$1,893.90	\$0.00	\$0.00	\$0.00
HARRISON TWP	\$3,240.87	\$3,240.87	\$0.00	\$0.00	\$0.00
HAZEL PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HIGHLAND PARK	\$1,798,063.16	\$8,076.51	\$4,069.23	\$4,053.30	\$1,781,864.12
HUNTINGTON WOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INDEPENDENCE (C-O) ADMIN	\$1,295.83	\$1,295.83	\$0.00	\$0.00	\$0.00
INKSTER	\$5,536.56	\$5,536.56	\$0.00	\$0.00	\$0.00
KEEGO HARBOR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LAKE ORION	\$800.04	\$800.04	\$0.00	\$0.00	\$0.00
LATHRUP	\$2,800.14	\$2,800.14	\$0.00	\$0.00	\$0.00
LENOX TOWNSHIP	\$971.73	\$647.82	\$323.91	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
LIVONIA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MACOMB TWP	\$410.64	\$410.64	\$0.00	\$0.00	\$0.00
MADISON HEIGHTS	\$18,954.93	\$18,954.93	\$0.00	\$0.00	\$0.00
MELVINDALE	\$3,501.06	\$3,501.06	\$0.00	\$0.00	\$0.00
NEW HAVEN	\$612.42	\$612.42	\$0.00	\$0.00	\$0.00
NORTHVILLE	\$1,773.54	\$1,773.54	\$0.00	\$0.00	\$0.00
NOVI	\$17,623.89	\$17,623.89	\$0.00	\$0.00	\$0.00
OAK PARK	\$7,221.60	\$7,221.60	\$0.00	\$0.00	\$0.00
OAKLAND TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ORCHARD LAKE VILLAGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ORION TOWNSHIP (C-O)	\$3,720.41	\$3,720.41	\$0.00	\$0.00	\$0.00
ORION TOWNSHIP (C-O) ADMIN	\$973.76	\$973.76	\$0.00	\$0.00	\$0.00
OXFORD TOWNSHIP	\$ (47.79)	\$ (47.79)	\$0.00	\$0.00	\$0.00
OXFORD VILLAGE	\$1,253.16	\$1,253.16	\$0.00	\$0.00	\$0.00
PLEASANT RIDGE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLYMOUTH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PLYMOUTH TOWNSHIP	\$272.58	\$272.58	\$0.00	\$0.00	\$0.00
REDFORD TOWNSHIP	\$12,490.89	\$12,490.89	\$0.00	\$0.00	\$0.00
ROCHESTER HILLS	\$18,590.31	\$18,590.31	\$0.00	\$0.00	\$0.00
ROMULUS	\$1,557.60	\$1,557.60	\$0.00	\$0.00	\$0.00
ROSEVILLE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROYAL OAK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROYAL OAK TOWNSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- IWC ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
SHELBY TOWNSHIP	\$14,729.94	\$14,729.94	\$0.00	\$0.00	\$0.00
SOUTHFIELD (E-F)	\$55,352.30	\$55,352.30	\$0.00	\$0.00	\$0.00
SOUTHFIELD (SEOC)	\$7,075.23	\$7,075.23	\$0.00	\$0.00	\$0.00
ST. CLAIR SHORES	\$12,089.10	\$12,089.10	\$0.00	\$0.00	\$0.00
STERLING HEIGHTS	\$31,925.49	\$31,925.49	\$0.00	\$0.00	\$0.00
TROY (E-F)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TROY (SEOC)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UTICA	\$3,035.55	\$3,035.55	\$0.00	\$0.00	\$0.00
VAN BUREN TOWNSHIP	\$2,039.04	\$2,039.04	\$0.00	\$0.00	\$0.00
VILLAGE OF FRANKLIN	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
WASHINGTON TOWNSHIP	\$1,513.35	\$1,513.35	\$0.00	\$0.00	\$0.00
WATERFORD TOWNSHIP DPW (ADMI	\$3,120.16	\$3,120.16	\$0.00	\$0.00	\$0.00
WAYNE	\$4,996.71	\$4,996.71	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP (E-F)	\$6,334.92	\$6,334.92	\$0.00	\$0.00	\$0.00
WEST BLOOMFIELD TWP. (C-O) P	\$243.39	\$243.39	\$0.00	\$0.00	\$0.00
WESTLAND	\$22,726.80	\$22,726.80	\$0.00	\$0.00	\$0.00
TOTAL IWC ACCOUNTS	\$2,275,398.83	\$484,482.93	\$4,998.48	\$4,053.30	\$1,781,864.12

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
3M COMPANY (MINNESOTA MINING	\$39.07	\$39.07	\$0.00	\$0.00	\$0.00
A & R PACKING CO., LLC	\$2,194.62	\$2,194.62	\$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	\$28.42	\$28.42	\$0.00	\$0.00	\$0.00
ADORING PET FUNERAL HOME	\$361.54	\$155.85	\$105.97	\$49.86	\$49.86
AEVITAS SPECIALITY SERVICES	\$766.96	\$766.96	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALEXANDER & HORNUNG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALL CHEM CORP, LLC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ALPHA STAMPING COMPANY	\$148.41	\$148.41	\$0.00	\$0.00	\$0.00
AMERICAN WASTE TECH INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AMERITI MFG. CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
APPLIED TECHNOLOGY INDUSTRIE	\$764.13	\$764.13	\$0.00	\$0.00	\$0.00
ATWATER IN THE PARK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AUTOMOTIVE FINISH	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AXLE BREWING COMPANY, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
B. NEKTAR MEADERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BAFFIN BREWING COMPANY	\$108.43	\$108.43	\$0.00	\$0.00	\$0.00
BARON INDUSTRIES	\$495.63	\$495.63	\$0.00	\$0.00	\$0.00
BARTZ BAKERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BATCH BREWING COMPANY	\$1,053.13	\$61.16	\$0.00	\$71.83	\$920.14
BAYS MICHIGAN CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
BEIRUT BAKERY, INC.	\$37.00	\$0.00	\$0.00	\$0.00	\$37.00
BETTER MADE SNACK FOOD	\$25,447.24	\$25,447.24	\$0.00	\$0.00	\$0.00
BLACK LOTUS BREWING CO.	\$61.25	\$0.00	\$0.00	\$0.00	\$61.25
BOZEK'S MARKET	\$103.92	\$103.92	\$0.00	\$0.00	\$0.00
BREW DETROIT	\$3,712.49	\$3,712.49	\$0.00	\$0.00	\$0.00
BROADWAY MKT CORNED BEEF	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BROOKS BREWING, LLC.	\$69.85	\$43.49	\$0.00	\$26.36	\$0.00
BROWN IRON BREWHOUSE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CADILLAC STRAITS BREWING CO.	\$27.68	\$27.68	\$0.00	\$0.00	\$0.00
CANTON BREW WORKS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CAPITAL REPRODUCTIONS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CF BURGER CREAMERY	\$12,983.50	\$12,983.50	\$0.00	\$0.00	\$0.00
CHILANGO'S BAKERY	\$2,002.82	\$21.60	\$10.23	\$10.23	\$1,960.76
CINTAS CORP. - MACOMB TWP.	\$23,395.27	\$23,395.27	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$8,953.88	\$8,953.88	\$0.00	\$0.00	\$0.00
CINTAS CORPORATION	\$8,076.11	\$8,076.11	\$0.00	\$0.00	\$0.00
CITY LAUNDRY, INC.	\$9.01	\$6.24	\$2.77	\$0.00	\$0.00
CLASSIC CONTAINER CORP.	\$6.95	\$6.95	\$0.00	\$0.00	\$0.00
COCA-COLA REFRESHMENTS USA,	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
COSTCO WHOLESALE STORE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
COUNTRY FRESH DAIRY CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CROSS CHEMICAL COMPANY, INC.	\$678.81	\$678.81	\$0.00	\$0.00	\$0.00
DARLING INGREDIENTS, INC.	\$6,588.45	\$6,588.45	\$0.00	\$0.00	\$0.00
DAVE'S SAUSAGE FACTORY 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DEARBORN BREWING	\$ (29.48)	\$0.00	\$0.00	\$0.00	\$ (29.48)
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 CO.	\$ (14.72)	\$0.00	\$0.00	\$0.00	\$ (14.72)
DETROIT LINEN SERVICE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT METRO WC AIRPORT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DETROIT RIVERTOWN BREWERY CC	\$665.05	\$665.05	\$0.00	\$0.00	\$0.00
DETROIT SAUSAGES CO INC	\$17.70	\$17.70	\$0.00	\$0.00	\$0.00
DETRONIC INDUSTRIES, INC.	\$32.23	\$32.23	\$0.00	\$0.00	\$0.00
DIFCO LABORATORIES, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DIVERSIFIED CHEM TECH. INC.	\$71.99	\$71.99	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$3,528.20	\$3,528.20	\$0.00	\$0.00	\$0.00
DOMESTIC UNIFORM RENTAL	\$1,512.66	\$1,512.66	\$0.00	\$0.00	\$0.00
DOWNEY BREWING COMPANY	\$53.72	\$23.83	\$0.00	\$29.89	\$0.00
E.W. GROBBEL'S SONS, INC.	\$3,455.77	\$3,455.77	\$0.00	\$0.00	\$0.00
EASTERN MARKET BREWING COMP?	\$81.91	\$81.91	\$0.00	\$0.00	\$0.00
ENVIROSOLIDS, L.L.C.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$4,520.05	\$4,520.05	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
EQ DETROIT, INC.	\$12,284.10	\$12,284.10	\$0.00	\$0.00	\$0.00
EQ DETROIT, INC.	\$233.42	\$139.90	\$77.63	\$15.89	\$0.00
EQ DETROIT, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ETON ST BREWERY- GRIFFIN CLF	\$1,613.39	\$1,613.39	\$0.00	\$0.00	\$0.00
EXTRUDE HONE CORPORATION	\$68.00	\$68.00	\$0.00	\$0.00	\$0.00
EXTRUDEHODE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
FARMINGTON BREWING COMPANY	\$0.22	\$0.22	\$0.00	\$0.00	\$0.00
FAYGO BEVERAGES, INC.	\$13,776.12	\$13,776.12	\$0.00	\$0.00	\$0.00
FIVES CINETIC CORP.	\$3,532.86	\$3,532.86	\$0.00	\$0.00	\$0.00
FOUNDERS BREWING COMPANY	\$22.36	\$22.36	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$588.67	\$588.67	\$0.00	\$0.00	\$0.00
FRESH-PAK	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GENERAL LINEN SUPPLY CO.	\$2,951.48	\$2,951.48	\$0.00	\$0.00	\$0.00
GLOBAL TITANIUM, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$38.93	\$18.52	\$0.00	\$20.41	\$0.00
GRANITE CITY FOOD & BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
GRANITE CITY FOOD & BREWERY	\$13.52	\$13.52	\$0.00	\$0.00	\$0.00
GREAT BARABOO BREWING CO.	\$83.03	\$83.03	\$0.00	\$0.00	\$0.00
HACIENDA MEXICAN FOODS	\$1,429.96	\$881.50	\$348.50	\$199.96	\$0.00
HENKEL CORPORATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
HOME STYLE FOOD INC.	\$1,689.17	\$1,689.17	\$0.00	\$0.00	\$0.00
HOMEGROWN BREWING COMPANY	\$37.35	\$37.35	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
HOODS CLEANERS	\$211.33	\$0.00	\$0.00	\$0.00	\$211.33
HOUGHTON INTERNATIONAL INC.	\$(150.86)	\$0.00	\$0.00	\$0.00	\$(150.86)
HOUGHTON INTERNATIONAL INC.	\$255.51	\$148.23	\$107.28	\$0.00	\$0.00
HOUGHTON INTERNATIONAL INC.	\$(7,047.69)	\$0.00	\$0.00	\$0.00	\$(7,047.69)
HUNTINGTON CLEANERS	\$287.69	\$287.69	\$0.00	\$0.00	\$0.00
IDP, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INDUSTRIAL METAL COATING	\$564.73	\$564.73	\$0.00	\$0.00	\$0.00
INTRASTATE DISTRIBUTORS	\$1,420.10	\$1,420.10	\$0.00	\$0.00	\$0.00
ISLAMIC SLAUGHTER HOUSE	\$744.93	\$744.93	\$0.00	\$0.00	\$0.00
ITALIAN BUTTER BREAD STICKS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
JAMEX BREWING CO.	\$46.13	\$21.09	\$0.00	\$25.04	\$0.00
KAR NUT PRODUCTS	\$919.40	\$919.40	\$0.00	\$0.00	\$0.00
KOWALSKI SAUSAGES, CO.	\$247.59	\$247.59	\$0.00	\$0.00	\$0.00
KUHNHENN BREWING	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$(14.35)	\$(14.35)	\$0.00	\$0.00	\$0.00
LA MICHOACANA FLOUR TORTILLA	\$(2.06)	\$(2.06)	\$0.00	\$0.00	\$0.00
LEAR CORPORATION DBA EAGLE C	\$2,743.38	\$2,743.38	\$0.00	\$0.00	\$0.00
LIBERTY STREET PROD. BREWERY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LIFE TECHNOLOGIES	\$424.22	\$424.22	\$0.00	\$0.00	\$0.00
LILY'S SEAFOOD GRILL & BREWE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
LIQUID ENVIRONMENTAL SOLUTIC	\$2,542.12	\$2,542.12	\$0.00	\$0.00	\$0.00
MACDERMID, INC.	\$1,540.37	\$1,540.37	\$0.00	\$0.00	\$0.00
MCCLURE'S PICKLES	\$526.01	\$526.01	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
MCNICHOLS POLISHING & ANODIZ	\$15.58	\$15.58	\$0.00	\$0.00	\$0.00
MELLO MEATS INC, - KUBISCH S	\$44.22	\$44.22	\$0.00	\$0.00	\$0.00
METROPOLITAN BAKERY	\$267.13	\$267.13	\$0.00	\$0.00	\$0.00
MIBA HYDRAMECHANICA CORP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MICHIGAN DAIRY	\$89,646.94	\$89,646.94	\$0.00	\$0.00	\$0.00
MICHIGAN PROD. MACHINING	\$1,943.49	\$1,943.49	\$0.00	\$0.00	\$0.00
MICHIGAN SOY PRODUCTS CO.	\$416.15	\$416.15	\$0.00	\$0.00	\$0.00
MIDWEST WIRE PRODUCTS, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MILANO BAKERY	\$329.05	\$329.05	\$0.00	\$0.00	\$0.00
MILTON CHILI CO.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MINNIE MARIE BAKERS, INC	\$1,750.28	\$1,750.28	\$0.00	\$0.00	\$0.00
MISTER UNIFORM & MAT RENTALS	\$ (3.03)	\$0.00	\$0.00	\$0.00	\$ (3.03)
MOTOR CITY BREWING WORKS	\$398.90	\$85.67	\$0.00	\$144.98	\$168.25
NATIONAL CHILI COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NEAPCO DRIVELINES	\$2,534.31	\$2,534.31	\$0.00	\$0.00	\$0.00
NORTH CENTER BREWING COMPANY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
NORTHERN LAKES SEAFOOD & MEA	\$18.11	\$18.11	\$0.00	\$0.00	\$0.00
OAKWOOD BAKERY	\$79.76	\$79.76	\$0.00	\$0.00	\$0.00
PARKER'S HILLTOP BREWER & SE	\$63.53	\$23.92	\$0.00	\$39.61	\$0.00
PELLERITO FOODS INC.	\$6.05	\$6.05	\$0.00	\$0.00	\$0.00
PEPSI COLA, INC.	\$33,562.96	\$33,562.96	\$0.00	\$0.00	\$0.00
PERDUE PREMIUM MEAT COMPANY	\$38,143.24	\$38,143.24	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
PERDUE PREMIUM MEAT COMPANY	\$13,068.71	\$13,068.71	\$0.00	\$0.00	\$0.00
PERDUE PREMIUM MEAT COMPANY	\$1,099.13	\$1,099.13	\$0.00	\$0.00	\$0.00
PERSONAL UNIFORM SERVICE, IN	\$23.52	\$23.52	\$0.00	\$0.00	\$0.00
PETRO ENVIRON TECH, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PINE TREE ACRES, INC.	\$24,153.78	\$24,153.78	\$0.00	\$0.00	\$0.00
PLATING SPEC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
POWER VAC OF MICHIGAN, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
PREMIER PLATING, LLC	\$1,612.66	\$1,612.66	\$0.00	\$0.00	\$0.00
PRODUCTION SPRING, LLC.	\$231.62	\$231.62	\$0.00	\$0.00	\$0.00
QUALA SERVICES, LLC	\$160.83	\$160.83	\$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	\$440.60	\$0.00	\$0.00	\$0.00	\$440.60
ROCHESTER MILLS BEER COMPANY	\$502.03	\$175.52	\$0.00	\$146.85	\$179.66
ROCHESTER MILLS PROD BREWERY	\$4,016.98	\$1,618.75	\$0.00	\$1,515.65	\$882.58
ROYAL OAK BREWERY	\$(183.95)	\$0.00	\$0.00	\$0.00	\$(183.95)
RTT	\$27,772.36	\$0.00	\$0.00	\$0.00	\$27,772.36
SEAFARE FOODS, INC.	\$51.26	\$51.26	\$0.00	\$0.00	\$0.00
SHERWOOD BREWING COMPANY	\$40.69	\$40.69	\$0.00	\$0.00	\$0.00
SMITH-WATKINS, LLC	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SPRAYTEK, INC.	\$14.52	\$0.00	\$0.00	\$0.00	\$14.52
SUPERNATURAL SPIRITS & BREWI	\$62.28	\$62.28	\$0.00	\$0.00	\$0.00
SWEETHEART BAKERY, INC.	\$302.78	\$111.87	\$57.48	\$40.03	\$93.40

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
TOM LAUNDRY CLEANERS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TRAFFIC JAM & SNUG	\$(31.16)	\$0.00	\$0.00	\$0.00	\$(31.16)
TURRI'S ITALIAN FOODS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TURRI'S ITALIAN FOODS	\$160,026.13	\$160,026.13	\$0.00	\$0.00	\$0.00
U-METCO, INC.	\$631.69	\$631.69	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$50,058.83	\$50,058.83	\$0.00	\$0.00	\$0.00
UNCLE RAYS SNACKS, LLC	\$3,215.10	\$3,215.10	\$0.00	\$0.00	\$0.00
UNIQUE LINEN SERVICES, INC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
UNITED FISH DISTRIBUTORS	\$1.84	\$1.84	\$0.00	\$0.00	\$0.00
UNITED LINEN SERVICE, LLC.	\$189.33	\$189.33	\$0.00	\$0.00	\$0.00
UNITED MEAT & DELI	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
URBANREST BREWING COMPANY	\$76.44	\$76.44	\$0.00	\$0.00	\$0.00
US ECOLOGY MICHIGAN	\$601.10	\$601.10	\$0.00	\$0.00	\$0.00
US ECOLOGY ROMULUS, INC.	\$1,710.40	\$1,710.40	\$0.00	\$0.00	\$0.00
USHER OIL SERVICES	\$2,871.68	\$2,871.68	\$0.00	\$0.00	\$0.00
VALICOR ENVIROMENTAL SERVICE	\$566.42	\$566.42	\$0.00	\$0.00	\$0.00
VAUGHAN INDUSTRIES, INC.	\$8.09	\$8.09	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS	\$5,316.34	\$5,316.34	\$0.00	\$0.00	\$0.00
VERNDALE PRODUCTS, INC.	\$1,591.28	\$1,591.28	\$0.00	\$0.00	\$0.00
VERNOR FOOD PRODUCTS	\$(36.26)	\$0.00	\$0.00	\$0.00	\$(36.26)
WIGLEY'S MEAT PROCESS	\$444.41	\$444.41	\$0.00	\$0.00	\$0.00
WINTER SAUSAGE MFG. CO.	\$921.98	\$921.98	\$0.00	\$0.00	\$0.00

GLWA Aged Accounts Receivable- POLLUTANT SURCHARGE ACCOUNTS

Balances as of 01/31/22

Customer Name	Total Due	Current	46 - 74 Days	75 - 104 Days	>105 Days
WINTER SAUSAGE MFG. CO.	\$148.13	\$148.13	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO	\$4,575.99	\$4,575.99	\$0.00	\$0.00	\$0.00
WOLVERINE PACKING CO.	\$1,969.99	\$1,969.99	\$0.00	\$0.00	\$0.00
WOODWARD AVENUE BREWERS	\$144.24	\$0.00	\$0.00	\$0.00	\$144.24
TOTAL POLLUTANT SURCHARGE ACCOUNTS	\$633,219.24	\$604,733.99	\$709.86	\$2,336.59	\$25,438.80

City of Highland Park Billings and Collections

	<u>Water</u>	<u>Sewer</u>	<u>IWC</u>	<u>Cumulative Total</u>
June 30, 2012 Balance	\$ -	\$ 10,207,956	\$ 852,987	\$ 11,060,943
FY 2013 Billings	485,887	4,987,635	154,444	5,627,966
FY 2013 Payments	<u>(65,652)</u>	<u>(2,206,211)</u>	<u>-</u>	<u>(2,271,863)</u>
June 30, 2013 Balance	\$ 420,235	\$ 12,989,380	\$ 1,007,431	\$ 14,417,046
FY 2014 Billings	1,004,357	6,980,442	161,951	8,146,750
FY 2014 Payments	<u>-</u>	<u>(1,612,633)</u>	<u>-</u>	<u>(1,612,633)</u>
June 30, 2014 Balance	\$ 1,424,592	\$ 18,357,189	\$ 1,169,382	\$ 20,951,163
FY 2015 Billings	1,008,032	5,553,123	165,739	6,726,894
FY 2015 Payments	<u>-</u>	<u>(1,444,623)</u>	<u>-</u>	<u>(1,444,623)</u>
June 30, 2015 Balance	\$ 2,432,625	\$ 22,465,689	\$ 1,335,121	\$ 26,233,435
FY 2016 Billings	1,157,178	5,612,167	106,431	6,875,776
FY 2016 Payments	<u>-</u>	<u>(2,022,335)</u>	<u>-</u>	<u>(2,022,335)</u>
June 30, 2016 Balance	\$ 3,589,803	\$ 26,055,521	\$ 1,441,551	\$ 31,086,875
FY 2017 Billings	1,245,267	5,802,000	101,999	7,149,265
FY 2017 Payments	<u>-</u>	<u>(2,309,186)</u>	<u>-</u>	<u>(2,309,186)</u>
June 30, 2017 Balance	\$ 4,835,070	\$ 29,548,335	\$ 1,543,550	\$ 35,926,954
FY 2018 Billings	1,277,179	5,657,101	80,472	7,014,752
FY 2018 Payments	<u>-</u>	<u>(4,108,108)</u>	<u>-</u>	<u>(4,108,108)</u>
June 30, 2018 Balance	\$ 6,112,248	\$ 31,097,327	\$ 1,624,022	\$ 38,833,597
FY 2019 Billings	1,238,797	5,617,100	51,220	6,907,117
FY 2019 Payments	<u>-</u>	<u>(5,241,583)</u>	<u>-</u>	<u>(5,241,583)</u>
June 30, 2019 Balance	\$ 7,351,045	\$ 31,472,844	\$ 1,675,243	\$ 40,499,132
FY 2020 Billings	1,182,639	5,665,400	47,097	6,895,136
FY 2020 Payments	<u>-</u>	<u>(3,026,117)</u>	<u>-</u>	<u>(3,026,117)</u>
June 30, 2020 Balance	\$ 8,533,684	\$ 34,112,127	\$ 1,722,340	\$ 44,368,151
FY 2021 Billings	1,185,506	5,702,000	47,423	6,934,929
FY 2021 Payments	<u>-</u>	<u>(2,783,552)</u>	<u>-</u>	<u>(2,783,552)</u>
June 30, 2021 Balance	\$ 9,719,190	\$ 37,030,575	\$ 1,769,763	\$ 48,519,528
FY 2022 Billings (7 Months)	733,048	3,157,300	28,300	3,918,648
FY 2022 Payments (7 Months)	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Balance as of January 31, 2022	<u>\$ 10,452,238</u>	<u>\$ 40,187,875</u>	<u>\$ 1,798,063</u>	<u>\$ 52,438,176</u>



Financial Services Audit Committee Communication

Date: April 22, 2022

To: Great Lakes Water Authority Audit Committee

From: Megan Savage, Vendor Outreach Coordinator

Re: Business Inclusion & Diversity Program Update

Background: On November 25, 2020, the GLWA Board of Directors approved an amendment to the Procurement Policy allowing for the formation of a new Business Inclusion & Diversity (B.I.D.) Program within the Financial Services' Procurement Group. The B.I.D. Program Team, which includes internal GLWA Team Members as well as external consultants, executed a Phase I launch of the program on February 1, 2021 and a Phase II launch on July 1, 2021.

Analysis: This month we present tables to recap B.I.D. Program activity from the date of the program launch on February 1, 2021 through March 31, 2022 for procurements budgeted to exceed \$1 million.

Table 1: B.I.D. Eligible Procurements as of March 31, 2022

Table 1 provides an overview of the total number of B.I.D. Program-eligible Procurements awarded, in evaluation, or advertised as active opportunities in GLWA's Bonfire Procurement Portal. Each vendor who submits a response to a B.I.D. Program-eligible procurement must also submit a Business Inclusion and Diversity Plan. The total number of Diversity Plans that GLWA has received for B.I.D.-eligible procurements that have been awarded and that are in evaluation is also provided.

	Awarded	In Evaluation Phase	Active (Advertised)	Total
Procurements Requiring B.I.D. Submittals	26	14	5	45
Total Number of Diversity Plans Submitted	77	38	n/a	115

Table 2: Scored Criteria for Awarded Procurements

Table 2 provides a breakdown of the percentage of B.I.D. Program-eligible procurements awarded thus far that met the B.I.D. Program scored criteria. The scored criteria is based on whether the vendor has a business presence in the state of Michigan, GLWA's Member Partner service area, or a disadvantaged municipality within GLWA's service area.

	Procurements Awarded Meeting B.I.D. Criteria as a % of Total Awards
Michigan Location	92%
Member Partner Service Area	85%
Disadvantaged Service Area Territory	54%

Table 3: Non-Scored Criteria - Disadvantaged, Minority-owned, Women-owned, and Small Businesses

Table 3 provides a breakdown of the percentage of B.I.D. Program-eligible procurements awarded thus far that met the B.I.D. Program Non-Scored Criteria. This Non-Scored Criteria refers to any diversity certifications that the vendor may hold as a Disadvantaged Business Enterprise (DBE), Minority-Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), or Small Business Enterprise (SBE).

	Procurements Awarded as a % of Total Awards
Awarded	65%

Table 4: Overall Contracts Awarded

Table 4 provides a breakdown of overall dollars awarded under the B.I.D. Program thus far, distinguishing between firms that met all four B.I.D. Program scoring criteria (including scored and non-scored criteria) and firms that met all three criteria (scored criteria only).

	Total Contract Count	Total Contract Amount (in millions)
Eligible Procurements	26	\$266.8
Firms that met four criteria	17	\$108.9
Firms that met three criteria	9	\$157.9

Other activities completed this month to expand awareness of the B.I.D. Program and to foster the development of effective diversity plans included the following.

- Preparing materials for a virtual presentation on GLWA's procurement process and B.I.D. Program to U.S. Small Business Administration (SBA) small business vendors on May 12, 2022.
- Continued attendance of the B.I.D. Program Liaison at all Pre-Bid and Pre-Proposal solicitation meetings to overview the B.I.D. Program requirements and answer any questions from vendors/contractors.
- Confirmed vendor registration and reporting capabilities within Bonfire to track identified criteria.

Additionally, the following tasks remain at the top of our priority list.

- Developing contract language for B.I.D. Program requirements.
- Continued evaluation of the insurance and bonding requirements for small, minority-owned, and disadvantaged business enterprises.
- Identifying meaningful reporting and performances measures.

Proposed Action: Receive and file this report.



Financial Services Audit Committee Communication

Date: April 22, 2022

To: Great Lakes Water Authority Audit Committee

From: William Baker, Professional Administrative Analyst, Construction Accounting & Financial Reporting

Re: FY 2022 Q2 Construction Work-in-Progress Report through December 31, 2021 (Unaudited)

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

Analysis: The attached documents summarize the FY 2022 Q2 CWIP positions and provides a detailed snapshot to inform decision makers and stakeholders.

Proposed Action: Receive and file this report.



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

As of December 31, 2021

For questions, please contact:

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April 22, 2022**To Our Stakeholders:**

The contents of this report represent the financial presentation of construction work-in-progress activity for the Great Lakes Water Authority (GLWA) as of December 31, 2021. The information in this report presents a detailed snapshot and is important as we track the execution of the FY 2022–2026 Capital Improvement Plan (CIP).

As we continue to refine this report to better communicate pertinent information to inform decision makers and stakeholders, content and formatting may be changed. With the summary of active projects now regularly being reported to the Capital Planning Committee the project highlights previously being reported have been removed from this report.

Report Contents and Organization

Construction Work-in-Progress (CWIP): Includes breakdown by jurisdiction which provides a summary of the planned and actual project activity by the jurisdictions identified within the FY 2022 – 2026 Board Approved CIP Plan, detailed CWIP rollforward, which lists all projects in the CIP along with financial activity. These tables may be used to revisit priorities, workload, and phasing. In addition, this section contains project amendment summaries which consider the award of CIP contracts and the related execution thereof may result in deviations from the amount and timing of project activity. Project amendments are prepared to fund the related increase or decrease with either an adjustment to Capital Reserve or Program / Allowance accounts to amend the board approved fiscal year CIP accordingly and to inform decision makers in the development of future Capital Improvement Plans.

Financial Information

All project amounts are unaudited. This means that direct contractor costs are generally included in these totals with most pay estimates entered through December 31, 2021. There may, however, be some pay estimates that lag. The totals do not include indirect overhead.

Budget vs. Plan

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

- ✓ The adopted **budget** relates to operations and maintenance expense, annual fixed commitments such as debt service, and incremental adjustments to reserves. The budget provides authority to spend within defined amounts. The budget is also referred to as the "revenue requirement" for the utility.
- ✓ After contracts are awarded at amounts variant from the CIP plan and more reliable anticipated spend data becomes available, the amended budget for the current fiscal year may increase or decrease by way of "Capital Reserve" budget amendments.
- ✓ The five-year capital improvement **plan** is a rolling plan that is updated at an administrative tracking level as projects move from estimated to actual bid numbers. An updated mid-cycle CIP would be presented to the Board for approval if the prioritization strategy was revised and/or the plan was in need of material revisions.
- ✓ In addition, the Board of Directors adopts a capital spending ratio assumption (SRA) which allows the realities of capital program delivery to align with the financial plan. The SRA is an analytical approach to bridge the total dollar amount of projects in the CIP with what can realistically be spent due to limitations beyond GLWA's control and/or delayed for nonbudgetary reasons. Those limitations, whether financial or non-financial, necessitate the SRA for budgetary purposes, despite the prioritization established.

Construction Work-in-Progress Quarterly Report

As of December 31, 2021

Executive Summary

The rate of spend is a key performance indicator. The development of the FY 2022-2026 and related CIP Plan for FY 2022 were based on anticipation of FY 2022 activity resulting in 75% of planned spend. The Water System spend for the period ending December 31, 2021, is 94.0% of the FY 2022 board approved CIP, 93.6% of the FY 2022 board approved CIP with project amendments, and 125.3% of the FY 2022 Capital Spending Rate Assumption (SRA). Detailed analysis of the projects for which FY 2022 Board Approved CIP was amended from \$179,210,481 to \$179,978,933 is provided in the subsequent Project Amendment Summary appendix of this report.

The Wastewater System spend for the period ending December 31, 2021, is 60.5% of the FY 2022 board approved CIP, 58.8% of the FY 2022 board approved CIP with project amendments, and 80.7% of the FY 2022 Capital Spending Rate Assumption (SRA). Detailed analysis of the projects for which FY 2022 Board Approved CIP was amended from \$106,050,041 to \$109,223,041 is provided in the subsequent Project Amendment Summary appendix of this report.

Water System Projects	FY 2021	FY 2021 Activity	FY 2021 Percentage	FY 2022	FY 2022 Prorated (Six Months)	FY 2022 Activity (Unaudited)	FY 2022 Percentage
FY 2021 Board Approved CIP	\$ 147,564,000	\$ 131,687,819	89.2%				
FY 2021 Board Approved CIP With Project Amendments	149,084,720	131,687,819	88.3%				
FY 2021 Capital Spend Rate Assumption (SRA)	110,673,000	131,687,819	119.0%				
FY 2022 Board Approved CIP				\$ 179,210,481	\$ 89,605,241	\$ 84,201,950	94.0%
FY 2022 Board Approved CIP With Project Amendments				179,978,933	\$ 89,989,467	84,201,950	93.6%
FY 2022 Capital Spend Rate Assumption (SRA)				134,407,861	\$ 67,203,930	84,201,950	125.3%
Wastewater System Projects	FY 2021	FY 2021 Activity	FY 2021 Percentage	FY 2022	FY 2022 Prorated (Six Months)	FY 2022 Activity (Unaudited)	FY 2022 Percentage
FY 2021 Board Approved CIP	\$ 110,638,000	\$ 85,051,935	76.9%				
FY 2021 Board Approved CIP With Project Amendments	110,180,582	85,051,935	77.2%				
FY 2021 Capital Spend Rate Assumption (SRA)	82,978,500	85,051,935	102.5%				
FY 2022 Board Approved CIP				\$ 106,050,041	\$ 53,025,020	\$ 32,105,290	60.5%
FY 2022 Board Approved CIP With Project Amendments				109,223,041	\$ 54,611,521	32,105,290	58.8%
FY 2022 Capital Spend Rate Assumption (SRA)				79,537,530	\$ 39,768,765	32,105,290	80.7%

A - Construction Work-in-Progress Rollforward Summaries by Jurisdiction

The purpose of the construction work-in-progress (CWIP) summary rollforward by jurisdiction is to provide a high-level overview of the financial status of the projects identified within the current board approved CIP by their jurisdiction. Within the FY 2022 – 2026 Board Approved CIP Plan, projects are identified and categorized as either City of Detroit, Wayne County - Outside Detroit, Lapeer County, Macomb County, Oakland County, Saint Clair County or Multiple Counties and reflected accordingly in this report.

\$271.1 million is in CWIP as of December 31st, 2021 as shown for the Water System in A1.

\$216.5 million is in CWIP as of December 31, 2021 as show for the Wastewater System in A2. The order of these appendices on the subsequent pages are in ascending by jurisdiction alphabetically.

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward Summary By Jurisdiction
Unaudited Activity For the Fiscal Quarter Ended December 31st, 2021

Jurisdiction	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	CWIP Balance December 31, 2021
City of Detroit	\$ 603,366,840	\$ 58,438,128	\$ 37,084,101	\$ 37,571,302	\$ 30,752,577	\$ 87,512,472
Lapeer County	5,937,124	1,154,458	3,962,267	3,962,267	175,127	1,329,585
Mutiple Counties	386,207,886	40,301,434	17,176,543	15,617,734	14,291,507	47,408,086
Oakland County	276,954,686	19,579,122	55,618,942	55,810,594	10,058,737	29,637,859
Saint Clair County	199,416,920	13,545,671	10,660,756	11,633,756	2,422,783	7,101,350
Wayne County - Outside Detroit	881,825,559	71,834,216	54,707,871	55,383,279	26,501,218	98,086,316
Grand Total	\$ 2,353,709,015	\$ 204,853,029	\$ 179,210,481	\$ 179,978,933	\$ 84,201,950	\$ 271,075,668

**Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2022 Rollforward Summary By Jurisdiction
Unaudited Activity For the Fiscal Quarter Ended December 31st, 2021**

Jurisdiction	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	CWIP Balance December 31, 2021
City of Detroit	\$ 1,311,840,369	\$ 165,620,802	\$ 73,893,106	\$ 78,066,106	\$ 23,925,700	\$ 183,868,459
Mutiple Counties	422,491,975	24,943,729	32,156,934	31,156,934	8,160,553	32,064,016
Wayne County - Outside Detroit	47,820,767	555,754	-	-	19,037	574,791
Grand Total	\$ 1,782,153,110	\$ 191,120,285	\$ 106,050,041	\$ 109,223,041	\$ 32,105,290	\$ 216,507,265

B - Construction Work-in-Progress Rollforwards

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

As part of our project life cycle review the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. Capitalization of project cost occurred in the FY 2022 2nd quarter for the following projects:

<u>Project</u>	<u>Contract</u>	<u>Description</u>
111007	1803823	LHWTP: Raw Sludge Clarifier & Pumping
112005	1901036	NEWTP: Steel Cover Replacement
122003	Land Acquisition	WWP to NE Transmission Main
212004	CON-238	Chlor/Dechlor Process Improvements
232002	Land Acquisition	Freud & Connor Creek Pump Station Improvements

\$271.1 million is in CWIP as of December 31, 2021, as shown for the Water System in B1.

\$216.5 million is in CWIP as of December 31, 2021, as shown for the Wastewater System in B2. The order of these appendices on the subsequent pages are in ascending order by CIP project number.

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date		Life to Date Activity Through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
							Capitalization / Expense through December 31, 2021	CWIP Balance December 31, 2021		
111001	Energy Management: Lake Huron Water Treatment Plant Low Lift Pumping Improvements	\$ 57,178,250	\$ 1,897,571	\$ 1,962,266	1,962,266	\$ 662,979	\$ -	\$ 2,560,550	\$ 2,560,550	4%
111002	LHWTP Backflow Replacement	\$ 8,705,313	\$ -	\$ -	\$ -	\$ -	\$ 8,717,768	\$ -	\$ 8,717,768	100%
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	3,892,689	-	-	-	-	3,892,299	-	3,892,299	100%
111006	Replacement of Filter Instrumentation and Raw Water Flow Metering Improvements at Lake	16,789,745	1,273,880	5,196,046	5,196,046	4,861	-	1,278,741	1,278,741	8%
111007	Lake Huron WTP-Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	9,181,107	8,448,408	184,222	184,222	418,696	8,867,103	-	8,867,103	97%
111008	LHWTP Architectural Programming - Lab	1,196,283	-	-	-	-	-	-	-	0%
111009	Lake Huron WTP-35 MGD HLP, Flow Meters	30,480,734	1,726,061	1,061,103	1,061,103	558,801	-	2,284,863	2,284,863	7%
111010	Lake Huron Water Treatment Plant - Filtration and Pretreatment Improvements	42,206,783	-	-	-	-	-	-	-	0%
111011	Lake Huron WTP Pilot Plant	3,247,998	198,694	1,719,487	1,719,487	639,883	-	838,577	838,577	26%
111012	LHWTP-Flocculation Improvements	26,538,016	1,057	537,632	1,510,632	137,563	-	138,620	138,620	1%
112002	Low Lift Pumping Plant Caisson Rehabilitation at Northeast WTP	1,172,880	-	-	-	-	1,169,962	-	1,169,962	100%
112003	NE WTP High Lift Pumping Electrical	71,545,621	223,875	173,058	173,058	214,895	-	438,769	438,769	1%
112005	Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits	1,088,655	937,879	4,892	4,892	-	937,879	-	937,879	86%
112006	Northeast Water Treatment Plant Flocculator Replacements	11,316,013	254,450	2,521,861	2,521,861	6,128	-	260,578	260,578	2%
113001	Southwest Water Treatment Plant, Sludge Treatment & Waste Wash water Treatment Facilit	-	-	-	-	6,300	171,079	6,300	177,379	0%
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	6,728,375	-	501,031	501,031	-	5,798,535	-	5,798,535	86%
113003	Replacement of Butterfly Valves	21,811,953	110	-	-	(110)	-	-	-	0%
113006	SW WTP Chloring Scrubber	7,330,660	204,126	4,683,170	2,805,737	384,905	-	589,031	589,031	8%

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date Capitalization / Expense through December 31, 2021	CWIP Balance December 31, 2021	Life to Date Activity Through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
113007	Architectural and Building Mechanical Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary	3,167,022	-	-	-	-	-	-	-	0%
114001	Facilities	80,828,071	-	-	-	-	99,764,892	-	99,764,892	123%
114002	Springwells Water Treatment Plant - Low Lift and High Lift Pump Station	224,221,541	12,944,042	16,546,006	16,546,006	6,664,355	-	19,608,397	19,608,397	9%
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP Springwells WTP Admin Building	8,155,919	0	-	-	1,048	8,167,884	1,048	8,168,932	100%
114005	Improvements	9,259,571	1,178,639	3,660,252	3,660,252	17,156	-	1,195,794	1,195,794	13%
114006	Replacement of Rapid Mix Units at Springwells WTP 1958 Process Train	-	10,674	-	-	-	1,021,039	10,674	1,031,712	0%
114007	Powder Activated Carbon Systems 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements at	4,020,591	-	-	-	-	-	-	-	0%
114008	Springwells WTP	13,923,254	11,142,286	2,484,952	2,484,952	54,434	-	11,196,720	11,196,720	80%
114010	Yard Piping Improvements	200,471,687	531,529	1,568,415	1,568,415	551,228	-	1,082,757	1,082,757	1%
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	25,540,354	18,464,648	5,373,516	5,373,516	4,599,238	249,118	22,814,768	23,063,886	90%
114012	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement	3,911,148	-	-	-	-	3,911,148	-	3,911,148	100%
114013	Springwells Reservoir Fill Line Improvements	4,923,914	-	-	-	-	4,706,751	-	4,706,751	96%
114016	Springwells Water Treatment Plant 1958 Settled Water Conduits Concrete Pavement Replacement	2,280,781	428,322	566,115	901,115	885,938	-	1,314,259	1,314,259	58%
114017	Springwells Water Treatment Plant Flocculator Drive Replacement	12,358,115	189,943	370,545	370,545	268,579	-	458,522	458,522	4%
114018	Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements	1,544,706	-	80,013	80,013	-	-	-	-	0%

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date Capitalization / Expense through December 31, 2021	CWIP Balance December 31, 2021	Life to Date Activity Through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
115001	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	54,815,232	5,749,771	6,321,527	6,808,728	3,671,177	-	9,420,948	9,420,948	17%
115003	Comprehensive Condition Assessment at Waterworks Park WTP	514,004	-	-	-	-	-	-	-	0%
115004	Water Works Park WTP Chlorine System Upgrade	6,892,656	9,563	-	-	-	6,957,032	9,563	6,966,596	101%
115005	WWP WTP Building Ventilation Improvements	4,923,595	563,444	522,778	522,778	174,776	-	738,219	738,219	15%
115006	Water Works Park Site/Civil Improvements	5,881,718	-	-	-	-	-	-	-	0%
115007	Water Works Park High Lift Pumping Station Modernization	88,946,247	-	280,105	280,105	-	-	-	-	0%
116002	Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements based on	94,880,203	25,947,664	8,359,585	8,359,585	11,351,470	4,685,231	37,299,134	41,984,366	44%
116005	Belle Isle Seawall Rehabilitation	1,831,677	-	318,843	318,843	702	-	702	702	0%
116006	Belle Isle Intake System Rehabilitation and Improvements	350,000	-	-	-	-	-	-	-	0%
122003	New Waterworks Park to Northeast Transmission Main	143,217,044	21,324,515	14,593,187	14,593,187	10,037,551	740,355	30,621,711	31,362,066	22%
122004	96-inch Main Relocation, Isolation Valves Installations, and New Parallel Main	144,852,077	9,673,781	2,576,909	2,576,909	2,549,392	-	12,223,173	12,223,173	8%
122005	Replacement Schoolcraft Watermain	15,325,893	6,260,526	7,606,560	7,606,560	7,562,052	-	13,822,578	13,822,578	90%
122006	Transmission System Water Main Work-Wick Road Parallel Water Main	22,419,614	17,132,964	4,773,529	5,322,561	3,799,709	-	20,932,674	20,932,674	93%
122007	Design and Construction of a new Newburgh Road 24" Main along Newburgh Road between Ch	22,154,359	1,805	26,909	26,909	(1,805)	-	-	-	0%
122011	Park-Merriman Water Main-Final Phase	9,600,066	295,202	7,836	7,836	404,976	6,435,948	700,177	7,136,125	74%
122012	36-inch Water Main in Telegraph Road	9,870,398	-	-	-	-	9,986,284	-	9,986,284	101%
122013	Lyon Township Transmission Main Extension Project	105,180,009	9,960,713	37,593,404	37,785,056	3,963,676	357,808	13,924,389	14,282,197	14%
122016	Downriver Transmission Loop	37,067,100	1,620,310	664,877	664,877	604,883	-	2,225,193	2,225,193	6%

**Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021**

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date Capitalization / Expense through December 31, 2021	CWIP Balance December 31, 2021	Life to Date Activity Through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	60,188,759	1,454,251	1,943,731	1,943,731	3,672,375	-	5,126,626	5,126,626	9%
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	54,102,536	-	1,530,061	1,530,061	336,050	-	336,050	336,050	1%
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	1,961,708	-	-	-	-	1,742,479	-	1,742,479	89%
132006	Pressure and Control Improvements at the Electric, Ford Road, Michigan, and West Chica	3,363,699	-	-	-	1,731	3,226,045	1,731	3,227,776	96%
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	5,187,314	927,112	3,962,267	3,962,267	175,127	-	1,102,240	1,102,240	21%
132008	Needs Assessment Study for all Water Booster Pumping Stations	1,675,441	-	-	-	-	-	-	-	0%
132010	West Service Center/Duval Rd Division Valve Upgrades	45,142,158	9,058,202	17,149,461	17,149,461	6,086,841	-	15,145,043	15,145,043	34%
132012	Ypsilanti PS Improvements	35,393,046	515,125	584,384	584,384	92,976	-	608,101	608,101	2%
132014	Adams Road Booster Pumping Improvements	52,864,694	83,262	203,019	203,019	-	-	83,262	83,262	0%
132015	Newburgh BPS	45,044,000	444,073	733,037	733,037	27,865	-	471,937	471,937	1%
132016	North Service Center BPS Improvements	68,255,116	363,478	673,058	673,058	8,221	-	371,700	371,700	1%
132018	Schoolcraft BPS	47,317	47,317	-	-	-	-	47,317	47,317	100%
132019	Wick Road BPS - Switchgear	9,358,231	56,912	-	-	-	-	56,912	56,912	1%
132020	Franklin BPS - Isolation Gate Valves	2,544,535	93,160	-	-	-	-	93,160	93,160	4%
132021	Imlay BPS - Replace VFDs, Pumps & Motors	749,810	227,346	-	-	-	-	227,346	227,346	30%
132022	Joy Road BPS - Replace Reservoir Pumps	39,613,214	71,380	276,909	276,909	-	-	71,380	71,380	0%
132025	Northwest Booster Station Yard Piping Improvements	-	20,306	-	-	-	-	20,306	20,306	0%
132026	Franklin Pumping Station Valve Replacement	1,006,467	-	-	-	-	975,327	-	975,327	97%
170102	Water Production Plant Flow Metering Improvements at NE, SP & SW WTP	372,374	373,640	-	-	-	-	373,640	373,640	100%

**Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021**

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date Capitalization / Expense through December 31, 2021	CWIP Balance December 31, 2021	Life to Date Activity Through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
170109	Inspection of Raw Water Intakes and Tunnels	1,656,069	-	-	-	-	-	-	-	0%
170120	Phosphoric Acid Feed System Improvements at Southwest WTP	1,625	-	-	-	-	634,509	-	634,509	39047%
170200	As Needed Construction Materials, Environmental Media and Special Allowance	1,427,227	-	146	146	-	-	-	-	0%
170300	Water Treatment Plant Automation Program	13,249,000	9,000	6,151,000	4,482,191	(9,000)	-	-	-	0%
170301	Water Plant Automation	-	1,755,142	-	-	-	-	1,755,142	1,755,142	0%
170302	SW WTP SCADA Improvements	9,000,000	74,413	3,605,928	5,274,737	576,808	-	651,220	651,220	7%
170303	WWP WTP Power Monitoring Installation	1,700,000	203,628	514,474	514,474	1,158,539	-	1,362,167	1,362,167	80%
170304	WWP WTP SCADA Upgrade	-	13,947	-	-	128,914	-	142,860	142,860	0%
170400	Water Transmission Improvement Program	33,171,211	-	1,033,961	1,033,961	-	-	-	-	0%
170401	Emergency Bypass Around Ypsilanti Station	1,661,231	-	-	-	-	2,633,282	-	2,633,282	159%
170500	Transmission System Valve Assessment and Rehabilitation/Replacement Program	5,350,164	-	232,066	42,066	-	-	-	-	0%
170502	Transmission System Valve Assessment and Rehabilitation/Replacement A	-	-	-	-	(1,048)	7,689,584	(1,048)	7,688,536	0%
170503	Transmission System Valve Assessment and Rehabilitation/Replacement B	10,071,663	2,110,241	1,304,975	1,304,975	(9,619)	-	2,100,621	2,100,621	21%
170504	Repair of WTM, Valves, & Priority Repair	-	-	-	190,000	6,852,140	-	6,852,140	6,852,140	0%
170600	Water Transmission Main Asset	8,438,215	-	24,218	24,218	-	-	-	-	0%
170800	Reservoir Inspection, Design and Rehabilitation Program	23,827,344	-	321,527	321,527	-	-	-	-	0%
170801	Reservoir Inspection, Design and Rehabilitation	15,090,049	11,457,639	463,000	573,000	3,320,178	7,184,856	7,592,962	14,777,817	98%
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement Program	40,718,957	-	1,159,000	1,159,000	-	-	-	-	0%

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date Capitalization / Expense through December 31, 2021	CWIP Balance December 31, 2021	Life to Date Activity Through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement	10,616,499	8,531,114	2,838,297	2,838,297	719,886	-	9,251,000	9,251,000	87%
170902	Brownstown Meter Pit Rehabilitation	1,245,254	219,873	593,887	593,887	-	-	219,873	219,873	18%
171500	Roof Replacement - Var Facilities Program	22,710,989	-	10,764	10,764	-	-	-	-	0%
171501	Roof Replacements - Var Facilities Program	3,484,352	-	-	-	-	3,354,843	-	3,354,843	96%
331003	Masonry Replacement and Rehabilitation	25,000,000	-	-	-	-	-	-	-	0%
341001	Security Infrastructure Improvements	9,169,807	8,139,352	567,392	567,392	868,531	1,138,691	9,007,883	10,146,574	111%
351001	Water Facility Lighting Renovations	699,523	6,667	37,632	37,632	-	-	6,667	6,667	1%
380600	General Engineering Services Allowance	55,126	-	-	-	-	-	-	-	0%
380700	As-needed Engineering Services for Concrete Testing, Geotechnical Soil Borings, other Testing Services, and Related Services Allowance	2,130,722	-	455,655	455,655	-	-	-	-	0%
381000	Energy Management: Electric Metering Improvement Program	2,623,926	-	-	-	-	-	-	-	0%
Grand Total		\$ 2,353,709,015	\$ 204,853,029	\$ 179,210,481	179,978,933	\$ 84,201,950	\$ 279,799,185	\$ 271,075,668	\$ 550,874,853	23%
					Project Amendments: \$	768,452				

Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan		FY 2022 Board		FY 2022		Life to Date		Life to Date Activity		Life to Date
		Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	Board Approved CIP	Approved CIP With Project Amendments	Activity through December 31, 2021	Capitalization / Expense Through December 31, 2021	CWIP Balance December 31, 2021	through December 31, 2021	Activity / Total Project Plan Estimate		
211001	Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	\$ 54,061,159	\$ -	\$ -	\$ -	\$ -	\$ 54,748,738	\$ -	\$ 54,748,738			101%
211002	Pump Station No. 2 Pumping Improvements	3,340,152	2,517,234	-	-	24,550	-	2,541,784	2,541,784			76%
211004	Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements	23,295,382	27,865,682	-	-	23,977	-	27,889,660	27,889,660			120%
211005	Pump Station No. 2 Improvements	13,797,096	2,176	-	-	-	-	2,176	2,176			0%
211006	Pump Station No. 1 Improvements	68,709,404	3,491,519	3,060,848	3,060,848	479,020	-	3,970,539	3,970,539			6%
211007	Replacement of Bar Racks and Grit Collection System at Pump Station No. 2	76,228,576	1,509,443	2,303,172	2,303,172	1,398,375	-	2,907,818	2,907,818			4%
211008	Rehabilitation of Ferric Chloride Feed systems at the Pump Station -1 and Complex B Sludge Lines	11,387,944	1,870,766	5,358,083	7,431,083	1,417,807	-	3,288,572	3,288,572			29%
211009	Rehabilitation of the Circular Primary Clarifier Scum Removal System	13,007,908	39,674	476,043	476,043	1,296	-	40,970	40,970			0%
211010	Rehabilitation of Sludge Processing Complexes A and B	13,934,471	94,270	-	-	67	-	94,337	94,337			1%
211011	WRRF PS1 Screening and Grit Improvements	93,303,153	-	-	-	-	-	-	-			0%
212003	Aeration System Improvements	14,643,450	-	-	-	-	16,524,875	-	16,524,875			113%
212004	ProjectChlorination/Dechlorination Process Equipment Improvements	5,742,203	5,642,328	-	-	8,173	5,652,101	(1,600)	5,650,501			98%
212006	PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	43,788,731	-	-	-	-	43,788,731	-	43,788,731			100%
212007	Rehabilitation of the Secondary Clarifiers	49,871,040	2,247	9,900	9,900	156	-	2,404	2,404			0%
212008	WRRF Rehabilitation of Intermediate Lift	81,931,310	583,363	2,566,737	2,566,737	163,795	-	747,158	747,158			1%
212009	WRRF Aeration Improvements 3 and 4	73,588,564	-	-	-	-	-	-	-			0%
212010	WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite	5,765,452	-	-	-	-	-	-	-			0%
213006	Improvements to Sludge Feed Pumps at Dewatering Facilities	4,489,934	194,357	342,468	342,468	58,272	-	252,628	252,628			6%

Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan Estimate from FY 2022-2026 CIP	CWIP Balance July 1, 2021	FY 2022 Board Approved CIP	FY 2022 Board Approved CIP With Project Amendments	FY 2022 Activity through December 31, 2021	Life to Date Capitalization / Expense Through December 31, 2021	CWIP Balance December 31, 2021	Life to Date Activity through December 31, 2021	Life to Date Activity / Total Project Plan Estimate
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	22,162,273	20,120,012	2,499,064	2,499,064	1,383,593	-	21,503,604	21,503,604	97%
213008	Rehabilitation of the Wet and Dry Ash Handling Systems	8,432,039	151,058	295,324	295,324	-	-	151,058	151,058	2%
214001	Relocation of Industrial Waste Division and Analytical Laboratory Operations	12,651,082	11,949,799	-	-	68,124	2,282,260	12,017,924	14,300,183	113%
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	6,645,397	3,070,854	75,940	75,940	994,032	-	4,064,886	4,064,886	61%
216006	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System	23,874,377	1,038,944	558,406	558,406	1,810,909	-	2,849,852	2,849,852	12%
216007	DTE Primary Electric 3rd Feed Supply Line to the WRRF	4,544,429	3,380,783	393,514	393,514	18,219	543,500	3,399,002	3,942,502	87%
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station	40,820,651	262,035	906,386	906,386	675,673	-	937,708	937,708	2%
216009	Logistics & Material Facility	164,904	-	-	-	-	-	-	-	0%
216010	WRRF Facility Optimization	10,270,771	-	57,420	57,420	-	-	-	-	0%
216011	WRRF Structural Improvements	12,333,080	-	2,051,568	2,051,568	7,342	-	7,342	7,342	0%
216012	WRRF Research Facility	-	-	-	-	3,173	3,173	-	3,173	0%
222001	Intercommunity Relief Sewer Modifications in Detroit Oakwood District	53,397,144	475,416	790,559	790,559	611,949	-	1,087,365	1,087,365	2%
222002	Detroit River Interceptor Evaluation and Rehabilitation	72,775,106	37,097,586	11,191,618	11,191,618	1,839,492	-	38,937,078	38,937,078	54%
222004	Collection System Valve Remote Operation Structures Improvements	-	4,246	-	-	-	-	4,246	4,246	0%
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	40,073,406	30,371,550	12,781,009	12,781,009	6,024,371	-	36,395,921	36,395,921	91%
232002	Freud and Connor Creek Pump Station Improvements	229,278,758	4,582,109	3,357,420	3,357,420	3,896,759	6,000,596	8,456,099	14,456,695	6%
232004	CONDITION ASSESSMENT AT BLUE HILL PUMP STATION	257,420	-	-	-	-	-	-	-	0%
233003	Rouge River In-system Storage Devices	46,317,488	-	-	-	-	-	-	-	0%
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	53,748,897	-	-	-	-	-	-	-	0%
260201	Conveyance System Interceptor Rehab	32,282,349	10,587,039	1,479,167	1,479,167	2,483,274	18,542,127	13,070,313	31,612,440	98%

Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan	CWIP Balance July 1, 2021	FY 2022	FY 2022 Board	FY 2022 Activity through December 31, 2021	Life to Date	CWIP Balance December 31, 2021	Life to Date Activity	Life to Date
		Estimate from FY 2022-2026 CIP		Board Approved CIP	Approved CIP With Project Amendments		Capitalization / Expense Through December 31, 2021		through December 31, 2021	Activity / Total Project Plan Estimate
260202	Conveyance System Interceptor Rehab	-	1,904	-	-	-	-	1,904	1,904	0%
	Energy Services for Rehabilitation of									
260204	Conveyance Sewer System	52,157,408	943,846	11,646,299	11,646,299	534,806	-	1,478,652	1,478,652	3%
260205	NWI Outfall Rehabilitation	10,937,891	267,139	5,045,936	5,045,936	48,127	-	315,267	315,267	3%
	Conveyance System Rehabilitation -									
260206	Interceptors	47,821,376	22,180	7,045,936	7,045,936	131,356	-	153,536	153,536	0%
	Rehabilitation of Woodward Sewer									
260207	System	-	1,229,440	-	-	209,616	-	1,439,056	1,439,056	0%
260500	CSO Outfall Rehab	5,000,000	-	832,953	832,953	-	-	-	-	0%
260504	Rehabilitation of Outfalls - Phase II	5,051,112	-	-	-	22,843	4,900,746	22,843	4,923,589	97%
260505	Rehabilitation of Outfalls - Phase IV	5,718,385	4,938,825	640,637	640,637	759,534	-	5,698,359	5,698,359	100%
260506	Pilot Regulator Orifice Expansion	-	78,641	-	-	-	-	78,641	78,641	0%
260508	B-39 Outfall Rehab	568,620	150,000	180,517	4,004,869	11,647	-	161,647	161,647	28%
260509	B-40 Outfall Rehab	88,500	77,621	-	-	4,687	-	82,308	82,308	93%
	Conveyance System Rehabilitation -									
260510	Outfalls	48,863,036	34,594	7,709,560	3,885,208	510,822	-	545,416	545,416	1%
260600	CSO Facilities Improvements	126,400,000	-	1,000,000	-	-	-	-	-	0%
260601	Oakwood Drain Valve Improvements	864,218	-	-	-	-	804,574	-	804,574	93%
260602	CSO Fire Alarm System Improvements	997,619	-	-	-	-	997,619	-	997,619	100%
260603	Conner Creek CSO Basin Rehab	7,898,362	7,518,411	-	-	116,547	-	7,634,958	7,634,958	97%
260606	Puritan Fenkell Roof Replacement	346,540	-	-	-	-	346,540	-	346,540	100%
260607	Lieb SDF Electrical Improvements	1,032,687	(0)	-	-	-	1,032,508	(0)	1,032,508	100%
260608	Seven Mile RTB - Roof Replacement	496,699	-	-	-	-	496,699	-	496,699	100%
260609	Seven Mile RTB - Parking Lot / Sitework	416,597	-	-	-	-	429,557	-	429,557	103%
260610	Baby Creek MAU Replacement	275,151	-	-	-	-	275,151	-	275,151	100%
260611	HVAC Improvements At Lieb SDF	395,615	-	-	-	-	412,590	-	412,590	104%
260613	Baby Creek HVAC Improvements	587,628	529,906	-	-	15,494	-	545,401	545,401	93%
260614	CSO Facilities Structural Improvements	13,794,118	2,352,725	4,422,021	4,422,021	1,736,953	50,855	4,038,822	4,089,677	30%
	PF & Lieb CSO Facilities Site & Drainage									
260615	Improvements	801,140	382,407	199,240	199,240	197,753	-	580,160	580,160	72%
	Baby Creek SCO Anchor & Wedge									
260616	Improvements	782,863	-	-	-	-	770,114	-	770,114	98%
	St. Aubin Chemical Disinfection									
260617	Improvements	6,966,364	417,052	387,420	387,420	742	-	417,795	417,795	6%
260618	Oakwood HVAC Improvements	3,966,512	370,525	3,235,005	5,335,005	772,172	-	1,142,697	1,142,697	29%
	Control System Upgrade At St. Aubin,									
260619	Lieb and 7 Mile	116,179	62,766	-	-	-	-	62,766	62,766	54%
260620	Baby Creek Roof Replacement	640,500	25,848	-	-	2,333	-	28,180	28,180	4%

Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2022 Rollforward
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021

Project	Project Name	Total Project Plan	CWIP Balance July 1, 2021	FY 2022	FY 2022 Board	FY 2022 Activity through December 31, 2021	Life to Date	CWIP Balance December 31, 2021	Life to Date Activity	Life to Date
		Estimate from FY 2022-2026 CIP		Board Approved CIP	Approved CIP With Project Amendments		Capitalization / Expense Through December 31, 2021		through December 31, 2021	Activity / Total Project Plan Estimate
260621	Connor Creek Berm Improvements	-	284,034	-	-	1,640,215	-	1,924,249	1,924,249	0%
	CSO Facilities Emergency Generator									
260622	Improvements	-	893	-	-	4,127	-	5,020	5,020	0%
260623	Baby Creek Screen Rehabilitation	-	-	-	-	774	-	774	774	0%
	Sewer System Infrastructure									
260700	Improvements & Pumping Stations	35,901,492	-	3,660,745	3,660,745	-	-	-	-	0%
	Conveyance System Infrastructure									
260701	Improvements	4,586,079	1,384,239	1,356,302	1,356,302	406,068	-	1,790,306	1,790,306	39%
260702	Pump Station Assets Updates	669,000	-	-	-	-	-	-	-	0%
260901	Rehab. Hazmat Facility at WRRF	-	131,014	-	-	56,247	-	187,261	187,261	0%
260902	WRRF Renovation of 4th Floor	-	49,160	-	-	-	-	49,160	49,160	0%
270001	Pilot CSO Netting Facility	9,573,092	235	13,420	13,420	-	-	235	235	0%
	Meldrum Sewer Diversion and VR-15									
270002	Improvements	5,839,631	-	8,580	8,580	-	-	-	-	0%
270003	Long Term CSO Control Plan	9,267,841	5,596	3,798,606	3,798,606	952,593	958,189	-	958,189	10%
270004	Oakwood Lieb CSO Facility Improvement	-	3,564	-	-	10,438	-	14,002	14,002	0%
	Hubbell Southfield CSO Facility									
273001	Improvement	-	-	-	-	1,210	-	1,210	1,210	0%
	Leib Improvements for Meldrum									
274001	Diversion	10,941,804	-	254,232	254,232	-	-	-	-	0%
277001	Baby Creek Outfall Improvements Project	18,825,761	19,228	1,807,420	1,807,420	39,429	31,222	27,435	58,657	0%
	Oakwood Improvements for NWI									
278001	Diversion	10,225,804	-	251,772	251,772	-	-	-	-	0%
	Roofing Systems Replacement at GLWA									
	Wastewater Treatment Plant, CSO									
	Retention Treatment Basins (RTB) and									
331002	Screening Disinfection Facilities (SDF)	8,888,476	-	1,276,569	1,276,569	-	1,123,056	-	1,123,056	13%
341002	Security Infrastructure Improvements	3,533,510	2,934,004	722,226	722,226	387,277	-	3,321,281	3,321,281	94%
Grand Total		\$ 1,782,153,110	\$ 191,120,285	\$ 106,050,041	\$ 109,223,041	\$ 32,105,290	\$ 353,542,906	\$ 216,507,265	\$ 570,050,171	32%
				Project Amendn	\$ 3,173,000					

C - Project Amendment Summaries

The purpose of the Project Amendment Summary is to illustrate the amendments to the current fiscal year board approved CIP for each project with an amendment resulting from the use of allowance and program funding for a specific amount necessitated by contract award.

The award of CIP contracts and the related execution thereof may result in deviation from the amount and timing of planned spend. Acknowledging the aforementioned deviation, project amendments are prepared to fund the related increase or decrease either to or from the Capital Reserve to amend the current fiscal year board approved Capital Improvement Plan accordingly and to inform decision makers in the development of future Capital Improvement Plans. Similar to the project amendments prepared for the Capital Reserve, project amendments are also prepared for contracts that are planned or funded by way of the CIP Program and Allowance accounts. As additional contracts are awarded, and other project information becomes available additional project amendments to and from the Capital Reserve will be prepared to amend the board approved FY 2022 Capital Improvement Plan.

\$768,482 of Capital Reserve project amendments have been prepared as of December 31, 2021, as shown for the Water System in C1 with project amendments detailing the assignment of funding within Program and Allowance accounts.

\$3,173,000 of Capital Reserve project amendments have been prepared as of December 31, 2021, as shown for the Wastewater system in C2 with project amendments detailing the assignment of funding within Program and Allowance accounts.

The order of these appendices on the subsequent pages are in ascending order by CIP project number.

Great Lakes Water Authority
Water System Project Amendment Summary
Unaudited Activity For the Fiscal Quarter Ended December 31st, 2021

Project	Project Name	Capital Reserve	Program / Allowance	Grand Total
111012	LHWTP-Flocculation Improvements	\$ 973,000		\$ 973,000
113006	SW WTP Chloring Scrubber	(1,877,433)		(1,877,433)
114016	Springwells Water Treatment Plant 1958 Settled Water Conduits Concrete Pavement Replacement	335,000		335,000
115001	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	487,201		487,201
122006	Transmission System Water Main Work-Wick Road Parallel Water Main	549,032		549,032
122013	Lyon Township Transmission Main Extension Project	191,652		191,652
170300	Water Treatment Plant Automation Program		(1,668,809)	(1,668,809)
170302	SW WTP SCADA Improvements		1,668,809	1,668,809
170500	Transmission System Valve Assessment and Rehabilitation/Replacement Program		(190,000)	(190,000)
170504	Repair of WTM, Valves, & Priority Repair		190,000	190,000
170801	Reservoir Inspection, Design and Rehabilitation	110,000		110,000
Grand Total		\$ 768,452	\$ -	\$ 768,452

**Great Lakes Water Authority
Wastewater System Project Amendment Summary
Unaudited Activity For the Fiscal Quarter Ended December 31, 2021**

Project	Project Name	Capital Reserve	Program / Allowance	Grand Total
211008	Rehabilitation of Ferric Chloride Feed systems at the Pump Station -1 and Complex B Sludge Lines	\$ 2,073,000		\$ 2,073,000
260508	B-39 Outfall Rehab		3,824,352	3,824,352
260510	Conveyence System Rehabilitation - Outfalls		(3,824,352)	(3,824,352)
260600	CSO Facilities Improvements		(1,000,000)	(1,000,000)
260618	Oakwood HVAC Improvements	1,100,000	1,000,000	2,100,000
Grand Total		\$ 3,173,000	\$ -	\$ 3,173,000



Welcome to the April edition of *The Procurement Pipeline*, a monthly newsletter designed to provide updates on doing business with the Great Lakes Water Authority (GLWA).

New! Coronavirus Update #159: GLWA Changing its Masking Practices for All Visitors

On March 28, 2022 GLWA released [Coronavirus Update #159](#) to the Vendor Community. This Update, which is available on the [GLWA Vendor Webpage](#), outlines changes to GLWA's masking practices for all Visitors to GLWA facilities and project worksites in alignment with the guidance issued by the U.S. Centers for Disease Control and Prevention (CDC) on February 25, 2022.

The CDC's guidance uses three [Community Levels](#) and associated colors to indicate whether mask wearing should be mandatory or optional for a community, given their identified level.

- **RED**: indicates that face masks are mandatory to help prevent the spread of COVID-19 transmission;
- **YELLOW**: indicates that mask wearing is recommended but not required for high-risk individuals, including those who have not been vaccinated; and
- **GREEN**: indicates that mask wearing is an optional precaution to help prevent COVID-19 transmission.

As of Thursday, March 24, 2022, the CDC showed that the Community Level for all GLWA staffed facilities and project worksites is "**GREEN**." **Therefore, beginning March 28, 2022, and until further notice, the wearing of masks at GLWA facilities and project worksites is optional.**

Please note that face masks **will** be required for all GLWA Visitors if any COVID-19 Community Level is "RED" where a staffed, GLWA facility or project worksite is located. Face masks will also be required, regardless of Community Level, if a Visitor has been exposed to, or tested positive for, COVID-19 within the past 10 days.

Should the status regarding GLWA's masking practice change, a notice will be issued by email to all Visitors [registered on Bonfire](#). Signs will also be placed at each GLWA facility or project worksite regarding the current masking standard. All GLWA Visitors are responsible for knowing whether face masks are required, adhering to GLWA's most up-to-date face masking practices and having a appropriate mask available

We appreciate the Vendor Community's cooperation with GLWA's Visitor COVID-19 Access Requirements and Safety Protocols as we strive to maintain workplace safety. Additional questions regarding these matters should be directed to [Michael Lasley](#) and [Megan Savage](#).

Virtual Vendor Introduction Meetings

If you are interested in learning more about doing business with GLWA, contact us at GLWAVendorOutreach@glwater.org to schedule a virtual vendor introduction meeting. Topics include information on submitting a competitive bid or proposal to a GLWA solicitation, as well as the requirements for GLWA's Business Inclusion and Diversity (B.I.D.) Program.

Where to Meet GLWA

GLWA attends vendor outreach events throughout Southeastern Michigan. We welcome you to visit us at the Michigan Public Purchasing Officers Association (MPPOA) Reverse Trade Fair on April 29, 2022. This event will be in Grand Rapids, MI from 10:30-3pm. Registration details [here](#).

What's Coming Down the Pipe?

Current Solicitations: Register in GLWA's [Bonfire Procurement Portal](#) for new solicitations and contract award information.

Upcoming Procurements: Next Three to Nine Months—See newsletter page 2.

Visit GLWA online!

To see the GLWA Vendor homepage, please visit www.glwater.org or contact us via email at procurement@glwater.org.

Upcoming Solicitations April 2022

Category	CIP #	Description/Project Title	Budget Estimate
Water System (next four to nine months)			
Construction	170802	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron WTP, Springwells WTP, and Southwest WTP	\$35,972,000
Construction	112003	Northeast WTP Medium Voltage Electrical System Improvements	\$20,000,000
Wastewater Systems (next four to nine months)			
Construction	211006	Pump Station #1 Screenings Building HVAC Improvements	\$1,000,000
Construction	260802	WRRF Roofing Improvements	\$1,600,000
Design	273001	Hubbell Southfield CSO Facility Improvements	\$9,893,364
Construction	232002	Freud Pump Station Improvements	\$75,000,000
Water System (next three months)			
Construction	114017	Springwells WTP Flocculator Drive Replacements	\$22,000,000
Materials & Equipment	114002E-G	Springwells WTP Pumping Unit Procurement Package (Contracts E thru G)	\$50,000,000
Materials & Equipment	114002H-J	Springwells WTP Process Valve Procurement Package (Contracts H thru J)	\$14,000,000
Wastewater (next three months)			
Construction	211006	WRRF Pump Station #1 Improvements	\$73,400,000
Construction	260903	WRRF Front Entrance Rehabilitation	\$3,300,000
Projects moved to Procurement Team (Preparing for solicitation on Bonfire)			
Design	260617, 270005, 270006	CSO Facility Control Improvements #2	\$3,002,500
Professional Services	O&M	SCADA System Professional Services	\$5,500,000
Professional Services	O&M	Elevator Preventative Maintenance	\$1,645,728
Engineering Services	260210	Rehabilitation of GLWA Sewers; Ashland Relief, Linwood, Lonyo, Second Avenue, and Shiawassee	\$6,900,000
Construction	114002B	Springwell's WTP Medium Voltage Electrical System Replacement	\$52,000,000
Construction	260901	HAZMAT (Hazardous Material) Building Renovation	\$2,000,000

Vendors should continue to monitor [Bonfire](#) for solicitation updates.

Acronyms		
WRRF: Water Resource Recovery Facility	CSO: Combined Sewer Overflow	WTP: Water Treatment Plant

Great Lakes Water Authority
Appendix to the April 22, 2022 Audit Committee Binder
Contents - Senior Manager Underwriter Proposals

Goldman Sachs and Co. LLC
Siebert Williams Shank & Co., LLC
Wells Fargo Corporate & Investment Banking

Proposal to Serve as Senior Managing Bond Underwriter

*Note: The underwriter
presentation starts on
PDF page 215.*

Great Lakes Water Authority



April 14, 2022



April 14, 2022

Ms. Joan Salwasser
Great Lakes Water Authority

Dear Ms. Salwasser:

Goldman Sachs & Co. LLC (“Goldman Sachs” or the “Firm”) is pleased to submit its response to the Great Lakes Water Authority (the “Authority” or “GLWA”) Request for Proposal to serve as Senior Managing Underwriter. We believe our experience with and understanding of GLWA, our recent, relevant and deep experience with large water and sewer utilities, our analytical and credit-intensive approach to marketing and execution, and strong Firm resources – capital and expertise – make us the best choice for the Authority.

- **Relevant Experience:** In addition to our experience with GLWA, we have directly related experience structuring and marketing transactions for similar issuers and transactions, including:
 - ✓ Large and/or complex water and sewer utilities;
 - ✓ State and local Michigan issuers;
 - ✓ Complex refunding transactions, (including an unparalleled number of tender/exchange buyback transactions); and
 - ✓ Sophisticated issuers on a positive credit trajectory.
- **Experienced Team and Firm Resources:** The core Goldman Sachs team that has served GLWA for many years and brings a wealth of institutional knowledge that can help streamline the credit strategy and financing process and allow GLWA to access the market quickly and efficiently. Beyond the core banking team, GLWA will have access to the full spectrum of Goldman Sachs’ credit, tax, quantitative and underwriting professionals within the group as well as the full breadth of the Goldman Sachs resources firmwide. This experience and depth of resources is even more critical given the volatile nature of the market we are experiencing in 2022.
- **Thoughtful & Analytical Approach:** Our goal as your senior manager will be to provide timely, thoughtful and accessible analytics to help you make informed decisions about the optimal plan of finance. Key areas of focus will be:
 - Creating a liquid and market friendly structure that will garner interest from a diverse array of investors and drive strong execution;
 - Using all available tools to generate the lowest option adjusted cost of funds, including bond insurance; and
 - Monitoring refunding opportunities and using innovative strategies to efficiently generate savings.
- **Financial Strength and Willingness to Commit Capital:** Goldman Sachs’ strong capital position and credit profile enable us to structure and lead large, innovative financings in all market conditions. This is particularly important in this time of extreme volatility and uncertainty in the markets. Our financial strength allows us the flexibility to aggressively underwrite bonds for our clients, when appropriate. For example, since 2016, we underwrote \$7 billion of unsold balances in negotiated municipal bond transactions.
- **Commitment to the Local Community in Michigan**
 - **10,000 Small Businesses:** The Firm has a \$500 million program to provide education, capital and business support to small businesses across the U.S., including over 580 business owners in Michigan.
 - **Support of CARES Act PPP:** In April 2020, as part of a \$1 billion commitment to COVID-19 relief globally, Goldman Sachs committed nearly \$20 million in loans for small businesses in Southeast Michigan to help them through the COVID-19 crisis.
 - **Goldman Sachs Gives (GS Gives):** Since 2010, Goldman Sachs Gives has granted more than \$2.2 million to 25 non-profit organizations located in the State of Michigan.
 - **Community TeamWorks:** Goldman Sachs Community TeamWorks is a global volunteering initiative that allows us to cultivate longstanding relationships with nonprofits and complete team-based projects that drive impact in the communities where we work and live. Since 2010, over 250 Goldman Sachs volunteers completed CTW projects across Michigan and contributed 1,400 hours of service to local communities.

We hope you find our proposal compelling and would be pleased to answer any questions you have. Notwithstanding the foregoing, the proposed fees for the services set forth in our Response shall remain for a period of six (6) calendar months from the date of our Response. Please feel free to contact Freda Wang at (212) 902-2892 or Mark Somers at (415) 249-7044.

Sincerely,

Handwritten signature of Freda Wang in black ink.

Freda Wang, *Managing Director*

Handwritten signature of Mark Somers in black ink.

Mark Somers, *Vice President*

B. Table of Contents

Response to Questions

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Goldman Sachs & Co. LLC (“Goldman Sachs”) is providing the information contained in this document for discussion purposes only in anticipation of serving as underwriter to the Great Lakes Water Authority (the “GLWA”). Goldman Sachs’ response to this RFP is being provided pursuant to the exemption from the definition of municipal advisor (as defined in Section 15B of the Securities Exchange Act of 1934 (the “Act”)) for responses to requests for proposals or qualifications for services in connection with a municipal financial product or the issuance of municipal securities. The primary role of Goldman Sachs, as an underwriter, is to purchase securities, for resale to investors, in an arm’s-length commercial transaction between the GLWA and Goldman Sachs and Goldman Sachs has financial and other interests that differ from those of the GLWA. Goldman Sachs is not acting as a municipal advisor, financial advisor or fiduciary to the GLWA or any other person or entity. The information provided is not intended to be and should not be construed as “advice” within the meaning of Section 15B of the Act. GLWA should consult with its own financial and/or municipal, legal, accounting, tax and other advisors, as applicable, to the extent it deems appropriate. If the GLWA would like a municipal advisor in this transaction that has legal fiduciary duties to the GLWA, then the GLWA is free to engage a municipal advisor to serve in that capacity. See our disclosures in Appendix B. Conflicts of Interest for other activities that Goldman Sachs may be engaged in during the course of this assignment. Nothing in Goldman Sachs's response to this RFP is an expressed nor an implied commitment by Goldman Sachs to act in any capacity contemplated by this RFP. Any such commitment to perform the services contemplated by this RFP shall only be set forth in a separate agreement, subject to further approvals including conflicts clearance. With respect to any trade data provided herein, this material has been prepared based upon information that Goldman Sachs believes to be reliable. However, Goldman Sachs does not represent that this material is accurate, complete or up to date and accepts no liability if it is not. Goldman Sachs is not obligated to update this material to correct any inaccuracies it may contain or to reflect any changes that may occur in the future.

Scope of Services: Please note the exclusion for underwriters from the definition of municipal advisor (as defined in Section 15B of the Securities Exchange Act of 1934 (the “SEC MA Rules”)) is limited to activities that are within the scope of an underwriting of a particular issuance of municipal securities. As such (absent another exemption or exclusion), if Goldman Sachs is engaged to be an underwriter for the Great Lakes Water Authority’s (the “GLWA”) issuance of municipal securities contemplated by the RFP (the “Offering”), any engagement would be limited to those services related to the Offering and deemed to be within the scope of the underwriter exclusion of the SEC MA Rules (see pgs. 165-166 of SEC Release No. 34-70462). In order to be able to provide services outside the scope of the underwriting exclusion, Goldman Sachs must be able to rely on the exemption to the MA Rules (the “IRMA exemption”) for entities that are represented by an independent registered municipal advisor with respect to the same aspects upon which Goldman Sachs provides any advice with respect to municipal financial products or the issuance of municipal securities; provided, that, any such services performed in reliance on the IRMA exemption would not alter the role of Goldman Sachs as an underwriter or the arm’s length nature of the relationship between the GLWA and Goldman Sachs. Further, the GLWA, its counsel and other advisors shall be responsible for the disclosure documents and other legal documents; provided, that, as an underwriter, Goldman Sachs will review the disclosure documents in accordance with, and as part of, its responsibilities to investors under the federal securities laws. The primary role of Goldman Sachs, as an underwriter, would be to purchase securities, for resale to investors, in an arm’s-length commercial transaction between the GLWA and Goldman Sachs and Goldman Sachs has financial and other interests that differ from those of the GLWA. Goldman Sachs would not be acting as a municipal advisor, financial advisor or fiduciary to the GLWA or any other person or entity in connection with the role and matters contemplated by the RFP. As noted in our proposal, nothing in Goldman Sachs's response to this RFP is an expressed nor an implied commitment by Goldman Sachs to purchase or place any securities, provide credit or liquidity or to act in any capacity contemplated by this RFP. Any such commitment to perform the services contemplated by this RFP shall only be set forth in a separate agreement. For information regarding the role of an underwriter, please see please see our disclosure in Appendix B- Conflicts of Interest.

C. Disclosure Statement

C.I-II. FIRM OVERVIEW

Goldman Sachs & Co. LLC (“Goldman Sachs” or the “Firm”) is headquartered in 200 West St, New York, NY 10282 and provides a leading platform of investment banking and securities services, as well as a full range of investing, advisory, and financing services to a substantial client base, including governments, corporations, financial institutions, and individuals worldwide. We currently employ over 40,000 workers worldwide, including approximately 16,000 in the U.S. The Firm maintains over 70 offices globally, including 23 locations across the United States, of which 7 are staffed with public finance banking personnel.

Effective April 28, 2017, Goldman, Sachs & Co., the entity through which the Firm had been in business since January 3, 1927, converted from a New York limited partnership to a New York incorporated limited liability company, Goldman Sachs & Co. LLC. The sole Class A member is The Goldman Sachs Group, Inc., and Class B members are non-GS entities holding de minimus non-voting non-participating membership interests. Goldman Sachs & Co. LLC has a board of managers. The Goldman Sachs Group, Inc., the parent company of Goldman Sachs & Co. LLC, is a bank holding company incorporated in Delaware that provides a leading platform of investment banking, securities services, and investment management under the primary regulatory supervision of the Federal Reserve.

C.III. EQUAL EMPLOYMENT OPPORTUNITY

The Firm is committed to providing equal employment opportunity (EEO). Although the laws may differ in the various locations in which we do business, our principles are the same worldwide. Concern for the personal dignity of each individual is an indispensable element of the standards we set for ourselves at Goldman Sachs. We focus our personnel decisions on merit and contribution to the Firm’s success. We do not tolerate any type of discrimination prohibited by law, including harassment. Goldman Sachs considers conduct that does not conform to these standards and to those set by applicable law to be a serious violation of its policies and will take appropriate disciplinary action against those who engage in such conduct. The Firm has a number of communications channels by which workplace concerns can be raised – for employees and applicants and a process for handling concerns with sensitivity.

We value diversity as an important asset that enhances our culture, helps us serve clients well and maximizes return for shareholders. For us to excel, we must create for our people an inclusive environment that welcomes and supports differences and encourages input from all perspectives. Diversity and inclusion is a top priority at Goldman Sachs. The Firm is dedicated to deploying capital and offering increasingly innovative programs to promote economic prosperity. A few immediate examples of our commitment to promoting inclusion, diversity, and equity include the following:

- [One Million Black Women](#), an initiative through which the Firm will invest \$10 billion and commit \$100 million in philanthropic capital for capacity-building grants over the next decade to narrow opportunity gaps for at least one million Black women in the US. The Firm has a 20-year history of investing significant capital in women and underserved communities, including through 10,000 Small Businesses, 10,000 Women and the Urban Investment Group, and we expect that this initiative will not only create meaningful opportunities for Black women, but also lead to sustainable economic growth across the country.
- Goldman Sachs’ has committed to \$1 billion of investment for Black, Latinx, women and other diverse entrepreneurs and investors through the Firm’s [Launch With GS program](#).
- In June 2020, we also created the Goldman Sachs Fund for Racial Equity to support the vital work of leading organizations addressing racial injustice, structural inequity and economic disparity. The \$10 million Fund for Racial Equity builds upon more than \$200 million Goldman Sachs has granted over the last decade to organizations serving communities of color. More recently, as part of the Goldman Sachs COVID-19 Relief Fund, the Firm deployed \$17 million to organizations supporting relief efforts in communities of color.

The firm’s Equal Employment Opportunities and Commitment to Diversity is [\(here\)](#)

Our Firm, People, and Culture is [\(here\)](#)

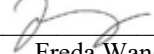
Diversity and Inclusion [\(here\)](#)

C.IV. LITIGATION & CONFLICTS

The firm assumes that the Great Lakes Water Authority primarily, is interested in proceedings relating to Goldman Sachs & Co. LLC’s (“Goldman Sachs”) role as managing underwriter of municipal offerings. Except as noted **Appendix B**, the firm’s Public Sector and Infrastructure Banking group is not involved in litigation arising out of its role as a managing underwriter of municipal offerings.

C.V. CONFLICTS OF INTEREST

oGoldman Sachs & Co. LLC reviews potential investment banking assignments through a centralized process to determine, among other things, whether they present an actual or potential conflict of interest in light of its other business activities. Goldman Sachs & C o. LLC has considered this potential assignment pursuant to this process and based on our review, we have concluded that, in our opinion, we have no conflict of interest that prevents us from accepting this assignment. For purposes of this response, the “GS Team” refers to Freda Wang, Mark Somers, Matthew Wang, and Joanne Chang. Additionally, for further disclosure regarding conflicts of interest, please refer to **Appendix B** Conflicts of Interest.

Signed: 
Freda Wang

D. Firm Background and Related Experience

D.I. FINANCIAL POSITION

Goldman Sachs has consistently maintained a strong financial position and is well-positioned to serve our clients through difficult environments. As of February 2022, Goldman Sachs & Co. LLC's Net Capital was \$23.5 billion and its Excess Net Capital was \$19.0 billion. Additionally, as an indicator of our long-term financial strength, we provide the table at right that shows the Firm's Total Capital, Net Capital and Excess Net Capital over the prior 5 fiscal years. The Firm has elected to compute uncommitted excess net capital in accordance with the

Goldman Sachs & Co. LLC Capital Position (\$mm)					
As of	Total Capital	Net Capital	Excess Net Capital	Eq. Capital	Total Debt
2022-Feb	\$ 0	\$ 45,927	\$ 37,021	\$ 0	\$ 0
FY 2020	34,494	22,381	18,448	11,994	22,500
FY 2020	34,494	22,381	18,448	11,994	22,500
FY 2019	31,937	20,880	18,152	13,437	18,500
FY 2018	29,017	17,449	15,002	10,517	18,500
FY 2017	29,514	15,574	13,154	11,014	18,500

“Alternative Net Capital Requirement,” as permitted by the Securities Exchange Commission (“SEC”) Rule 15c3-1. The Firm's 12-month average of excess net capital (uncommitted) was \$17.0 billion and the 24-month average was \$17.4 billion.

Goldman Sachs has a long track record of using our balance sheet to support our clients' offerings by underwriting unsold balances. Based on the SEC's Net Capital Rule, which would require 7% excess net capital for Municipal Securities, Goldman Sachs could underwrite up to \$270 billion into inventory (assuming no other demands have been made on the available Excess Net Capital as of February 2022). Our willingness and ability to commit capital are two of the cornerstones upon which our reputation and business model are based. As such, the Firm continues to assist our municipal clients in the current market by underwriting bonds and providing support to the secondary market. Our strong liquidity position enables Goldman Sachs to use its balance sheet and commit capital to support issues when appropriate. Unlike many firms, the Firm has no internal preset limits concerning the allocation of capital to our municipal underwriting and secondary-market activities. Moreover, there is no preset allocation of capital within PSI among negotiated and competitive underwriting and secondary-market activities.

D.II. EXPERIENCE WITH UTILITY REVENUE BONDS

The municipal bond market is a core business of the Firm, and we are committed to, and continue to invest in, the sector. From 2021-2022 YTD, Goldman Sachs was the #4 negotiated underwriter in the industry and #3 for negotiated deals greater than \$100 million. We

also have a long-standing and consistent focus on serving larger and more complex issuers. We have consistently ranked as the #1 underwriter for average transaction size, including again in 2021 (\$175mm/transaction). This focus allows us to dedicate more resources and attention to fewer, larger transactions producing better results for our clients. We have assisted our clients with development of: (i) plans of finance, (ii) new global marketing strategies, and (iii) credit and rating agency strategies and presentations. Moreover, we have been reappointed by a number of our clients for their successive transactions, demonstrating our consistent performance as well as commitment to providing long-term service to issuers. Our depth in municipal finance has allowed us to be at the forefront of continued innovations in the industry.

Working with municipal utilities is an area where we are especially active. **In the last 10 years, the Firm has served as senior manager on \$40 billion of municipal utility revenue bonds for transactions larger than \$100 million, making us the #3 underwriter in the period.** We provide a detailed list of our senior managed deal experience in **Appendix C**.

Our clients include the largest and most complex water and sewer utilities in the country, including the water and wastewater utilities in DC, Los Angeles, San Francisco, Atlanta, Philadelphia, New York, Dallas, Austin, Houston, Sacramento, New Orleans, Birmingham, Hartford, Phoenix and Jacksonville. Our regular involvement with utilities (specifically water and wastewater issuers) allows us to be in consistent dialogue with the key buyers of utility bonds, providing a real time understanding of investor preferences and concerns. We are confident our sector expertise, credit and tax resources, combined with the breadth of our retail and institutional distribution networks, will enable us to deliver strong results for GLWA. In addition to our robust municipal underwriting practice, we have extensive experience assisting municipal utilities on more innovative financings.

D.III. EXPERIENCE WITH UTILITIES IN MICHIGAN

Goldman Sachs is also a leading underwriter in Michigan, serving as a senior manager on over \$10,303 million of par, and co-manager on an additional \$6,088 million, since 2016, including for GLWA and Lansing Board of Water and Light. We provide a detailed list of our senior managed deal experience in **Appendix C**.

MUNICIPAL UTILITY EXPERIENCE IN MICHIGAN			
2012-YTD*	Total	Senior Manager	Co-Manager
Total Par (\$mm)	\$4,190	\$1,999	\$2,192
# Transactions	12	3	9

Source: Refinitiv SDC; 01/01/2012-04/06/2022

D.IV. CAPITAL COMMITMENT

As mentioned in Section D.I., Goldman Sachs' strong financial and liquidity position enables us to use the Firm's balance sheet and commit capital to support municipal issues when appropriate. We take seriously our role as market liquidity provider and the effect of this role on the efficient functioning of markets and, ultimately, on economic growth. Goldman Sachs has consistently maintained a solid financial position and today, with total capital of approximately \$37.9 billion as of December 2021, is well-positioned to serve our clients through whatever market environment we find ourselves in at pricing.

Below, we list transactions since January of 2021, where we have demonstrated our willingness and ability to use our balance sheet to support our clients' offerings by underwriting unsold balances. The amounts listed reflect unsold balances at the time of the written award. As we demonstrate in the case studies below, *our risk positions are often considerably higher at the time of the verbal award.*

In today's volatile and sometimes challenging market, it is more important than ever for GLWA to select an underwriter with a strong capital position who can support the Authority's issuance and provide secondary market liquidity. The extension of financial capital takes various forms, ranging from supporting transactions we underwrite in the primary market by taking down unsold balances, to committing large amounts of capital to provide investors' liquidity in secondary market trading. Two recent examples of how we have used our balance sheet to improve execution for our clients are discussed below.



OHIO WATER DEVELOPMENT AUTHORITY

On October 19, 2021, Goldman Sachs served as senior manager for OWDA's \$150 million of Fresh Water Series 2021 Bonds. The transaction priced during a period of significant Treasury market volatility, with Treasuries moving higher by 5 to 7 basis points during the day of pricing without a corresponding adjustment to MMD. The order book was just over half subscribed following the order period. Goldman Sachs worked with OWDA to restructure the transaction to move bonds where there was demand. While we were ultimately able to place all bonds with investors by the end of the day, *we committed to take down over \$40 million of bonds* to ensure the integrity of the sale at the time of the verbal award.

Pricing	Issuer	Ratings (M/S/F/K)	Par (\$000s)	U/W Bonds (\$000s)
02/18/21	RTD, CO	Aa2/AA+/AA	\$ 411,630	\$ 1,525
02/18/21	San Diego Unified School District	Aa2/AAA/AAA	117,835	3,680
04/20/21	State of California	Aa2/AA-/AA/NR	1,076,210	400
04/22/21	State of Connecticut	Aa3/A+/A+/AA+	886,795	1,965
04/20/21	MTA	NR/AA+/AA+/AA+	248,450	150
06/23/21	Sacramento Municipal Utility	NA/AA/AA	106,875	2,140
06/24/21	Montana Facility Finance Authority	NR/A/NR	56,895	1,690
07/15/21	State of Connecticut HEFA	Aa3/AA/NR	55,520	2,030
07/27/21	City of Philadelphia	A2/A/A-/NR	132,085	760
08/12/21	Windy Gap Firing Project	Aa2/AA/NR/NR	169,705	2,830
09/21/21	MTA	NR/AA+/AA+	853,628	90
10/20/21	Hudson Yards	Aa2/AA-/A+/	454,195	2,880
11/09/21	NY State EFC	Aaa/AAA/AAA/NR	144,540	1,310
12/01/21	Anaheim PFA	A2/AA/NA/AA+	250,250	6,985
12/08/21	MARTA	Aa2/AA+/NR/NR	60,950	215
02/02/22	7 WTC Project	Aaa/NR/NR/NR	8,310	5,085
02/09/22	NYC Housing	Aa2/NR/NR/NR	104,250	6,000
			\$ 5,138,123	\$ 39,735

As of 04/06/2022



CITY OF ANAHEIM

In December 2021, Goldman Sachs served as senior manager on the City of Anaheim's (the "City") Lease Revenue Bonds (Convention Center Refunding), Series 2021A (Federally Taxable). During the week leading up to pricing, there was significant market volatility due to uncertainty surrounding the spread of the Omicron variant, which was first flagged as a variant of concern in the week prior to pricing. There was also a large supply of taxable bonds expected to price the same week. Prior to pricing day, Goldman Sachs worked with the City to restructure the transaction to move bonds where there was investor feedback and demand, restructuring the transaction with the 2035 and 2036 serial bonds added to the 2041 term bond in order to optimize pricing results. *We eventually committed ~\$30 million of capital at the time of the verbal award* to support the transaction.

D.IV. FINANCING TEAM

GLWA'S CORE BANKING TEAM

Freda Wang, Managing Director, will be the team leader and primary point of contact for the Authority. Freda has been working with DWSD and now GLWA since 1997. Freda serves as the lead banker for several water and wastewater utilities around the country, including in the cities of Washington, D.C. Philadelphia, New York, Hartford and Atlanta. Most recently, Freda led a refunding transaction for DC Water, which closed last month, that included a tender & exchange strategy in combination with a taxable advance refunding as well as new money, including a series of green bonds.

Freda will be supported on a priority, full-time basis by **Mark Somers**, Vice President. Mark has covered GLWA and DWSD since 2010 and has led financings for many of GLWA's peers in southeast Michigan. Mark also has significant experience working on complex refunding transactions, including the largest tender and exchange transaction completed in the municipal market in recent years for the City of Chicago.

Matthew Webb, Associate and **Joanne Chang**, Analyst, will provide quantitative and execution support. Matthew recently joined Goldman Sachs from Morgan Stanley and brings several years of experience leading transactions for large issuers in the Midwest, including a number of water and wastewater issues. Joanne joined Goldman Sachs in 2018 and most recently worked on the City of Chicago and DC Water transactions with Mark and Freda.

TECHNICAL SPECIALISTS

Goldman Sachs also offers GLWA the technical and analytic expertise of a dedicated municipal credit analyst, **Stacy Lingamfelter**, Vice President; Tax, Legal, Liability Management and Quantitative Expert, **Arthur Miller**, Managing Director; and SRF Expert, **Dan Byrne**, Vice President. Goldman Sachs' in-house technical specialists are further detailed below in **Section E.V.** of this RFP response.

UNDERWRITER TEAM

The Goldman Sachs GLWA team is supported by market experts and leading underwriters that brings years of underwriting, investor marketing, and trading expertise. Our underwriting team is led by **Ed Droesch**, Managing Director, **Sam Denton-Schneider**, Vice President and **Ken Ukaiwe**, Vice President. Leading up to pricing, the underwriters will work with the banking team to provide market perspective during the development of financing plans, and will manage the marketing and underwriting process, coordinating with GLWA and its financial advisors for a clear and transparent process.

Another important resource on the Goldman Sachs team is **Petros Voulgaris**, Vice President, an 18-year veteran of the municipal market. Petros is Head of our Investor Marketing Group and sits on the trading desk within the Global Markets Division. Formerly a buy-side analyst at a major mutual fund, Petros offers a unique perspective on the structuring and marketing of credits, and serves as a bridge between the banking team and sales force in order to offer the investor perspective early during a transaction.

Finally, our underwriters work seamlessly with our Municipal Sales and Trading teams to ensure the success of GLWA’s financing. **Zach Ablon**, Managing Director, is the head of Municipal Sales and Trading at the Firm and will provide senior oversight to our municipal syndicate desk on managing investor relations and coordinating marketing efforts for GLWA – including tailoring investor marketing and leading the sales education effort. Zach is supported by **David McCann**, Vice President & Head of Municipal Sales. **Stephen DeMarco**, Managing Director and Head of Municipal Sales & Trading, serves as lead trader on our desk and will oversee the trading of GLWA’s bonds.

Detailed resumes can be found in **Appendix A**.

E. Key Financing Issues

E.I. CONSIDERATIONS FOR GLWA IN 2022

GLWA has made tremendous progress executing on the vision established by the Memorandum of Understanding in October 2014. This includes standing up a new organization, modernizing and professionalizing operations, investing in critical capital projects, improving the balance sheet, limiting rate increases and achieving an unprecedented string of rating agency upgrades. The planned 2022 transaction represents an opportunity to further consolidate GLWA’s gains and ensure the Authority is positioned to continue meeting the needs of its customers while minimizing rate increases. While related, we would break down the key strategic issues for GLWA to consider into (i) operating considerations and (ii) market considerations. We would also note that the financing provides an excellent opportunity for GLWA to reset the narrative on some of the challenges it has faced, including the wet weather events from last summer and the Highland Park situation, with ratings agencies, investors and the general public.

GLWA OPERATING CONSIDERATIONS

Over the last several years, GLWA has managed to continue investing in critical infrastructure and grow its cash reserve all without materially increasing leverage or annual debt service. While the accomplishment is mostly due to operational efficiencies and strong management practices, favorable market conditions have played a role. GLWA has been able to generate substantial debt service savings by executing several large refunding transactions. Indeed, GLWA’s current annual debt service is comparable to what it was in 2014, as shown in the chart.

While GLWA does have meaningful refunding opportunities, the amount of savings may be less than what GLWA was able to achieve in 2016, 2018 and 2020 due to the higher interest rate environment. In addition, as GLWA’s capital needs ramp up, incremental new debt will be necessary and in larger amounts than recent new money transactions in 2018 or 2020. The combination of these factors suggests that GLWA’s annual debt service will finally start to increase.

At the same time, we assume GLWA is facing many of the same inflationary pressures relating to salaries, materials and construction costs as utility peers and those in other sectors. While the hope is inflation will begin to subside as the Federal Reserve tightens monetary policy and supply chain issues resolve, GLWA is likely to face higher operating costs over the next several years.

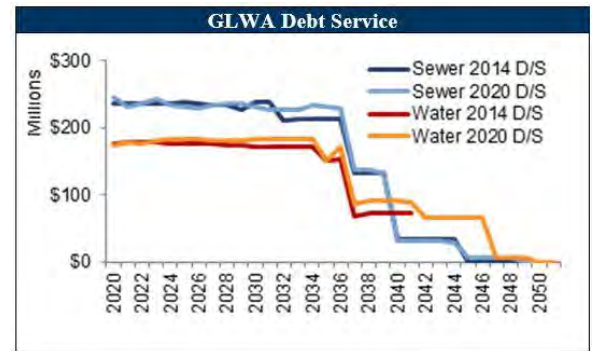
While there are some tailwinds (reduction in pension costs – even as the actual amounts remain subject to fluctuation – and higher investment earnings) the confluence of these factors suggests that GLWA may have a harder time meeting the “4% Promise”. We understand the revenue increase cap was intended to last for 10 years, which would mean that GLWA may no longer be subject to this parameter for too much longer. However, we would guess it is still a priority of GLWA to limit system revenue increases.

The good news is GLWA’s annual debt service begins to decline rather precipitously in 2037. Therefore, as we discuss further in **Section E.II**, GLWA may want to limit the amortization of new money bonds over the next 14 years to manage the increase in annual debt service. Notably, in the current market, the incremental cost of issuing bonds beyond 14 years is limited due to the unusually flat yield curve.

MARKET CONSIDERATIONS

After a highly favorable market for issuers for most of 2021, municipal market conditions through the first quarter this year have been in a far more fragile state, with inflation concerns, negative market returns, heightened outflows, and global turmoil and uncertainty diminishing demand for bonds while benchmark rates climb higher. Not only are rates rising, but credit spreads and ratios are higher with ratios close to the 10-year average after remaining near all-time lows for much of the last year. Lastly, as demand side technicals continue to weaken, investors’ liquidity needs have intensified with money leaving the marketplace over fear that negative returns will only increase outflows. Over the past several months we have witnessed the importance of remaining flexible during challenging market conditions, both in terms of timing and structure (when possible).

■ **Demand.** So much of the technical picture in the municipal market is driven by supply and demand, and municipal bond fund flows features prominently in this equation. Throughout much of 2020 and 2021, fund flows were robust, representing a near constant supply of fresh capital being injected into the market on a weekly basis. However, fund flows turned negative during the week ending



January 17th, and we have now seen outflows in 9 out of 10 weeks after 45 consecutive weeks of inflows dating back to March 3, 2021. This weakening demand dynamic has led to decreased market liquidity, which erodes investors' ability to generate cash and manage bond fund outflows.

- **Supply.** In light of the demand dynamic discussed above and the shift in rates we discuss below, issuers that have the ability to wait have stayed on the sidelines, while other issuers continue to advance transactions out of concerns over the rising rate environment. Over the course of 2022, weekly issuance has only matched the 2021 Weekly Average three weeks, and the 2022 Weekly Average is \$1.4 billion lower than 2021. While taxable supply had been a sizable portion of the municipal market over the past 12 months, it has been a relatively smaller portion of 2022 issuance and taxable issuance is down 49% compared to last year's pace.
- **Rates.** Tax-exempt rates have increased sharply to begin 2022, with 10-year MMD up 142 bps year to date. The market is demonstrating that borrowing costs will continue to rise, including both increased benchmark rates and widening credit spreads. Anticipating action of the Fed continues to be a focal point for investors, and the Fed has recently taken a much more hawkish tone, raising the fed funds rate by 25bps after its March meeting and preparing for an additional 6 hikes this year. In a remarkable statistic, 1-year MMD has risen from 0.14% on January 1 to 1.69% on April 6th, which is higher than what 30-year MMD was on January 1 (at 1.49%).
- **Ratios.** MMD/UST ratios are an indicator of the strength of the municipal market. Low ratios suggest the municipal market is outperforming UST rates, and vice-versa. YTD MMD-UST Ratios have increased towards all tenors of the curve.

While the market is clearly challenged, we are hopeful that conditions will begin to normalize this summer when GLWA plans to be in the market. Indeed, we are already starting to see non-traditional municipal buyers take advantage of the relative value provided by the tax-exempt market, which has improved liquidity and execution for new issues. *In light of the volatile market conditions, it will be important for GLWA to remain flexible, particularly as it relates to a potential refunding transaction, and structure bonds that garner interest from a broad array of potential investors. As we discuss below, this may entail specific coupon structures, obtaining bond insurance or issuing more bonds on the senior lien.*

A good example of how we help our issuing clients navigate volatile markets is a taxable refunding transaction we led for the University of Michigan (Aaa/AAA) last week. The University issued \$2 billion of new money bonds (led by another firm) on March 9th at higher spreads than anticipated. This meant the refunding transaction we were leading no longer met the University's savings thresholds. While Treasury rates continued to increase, credit spreads in the taxable market began to improve, particularly for more liquid structures. In addition, the yield curve began to invert. To take advantage of this unusual circumstance, we worked with the University to term up additional maturities and take advantage of the fact that the 30 year UST was lower than the 10 year UST. We opportunistically accessed the market and locked in pricing within a matter of days, helping the University to achieve its refunding targets.

E.II. / E.III PLAN OF FINANCE AND ENHANCEMENTS

While the above operating and market considerations help to inform our recommended plan of finance, there are several more technical structuring issues the Authority will need to navigate in its upcoming financing.

- **Debt Structure.** The base case for structuring new money for our water and sewer utility clients, including GLWA, is often 30-year level debt service. This approach is consistent with the long useful life of the assets typically financed and provides a sustainable capital structure with steady debt retirement over time. Some entities, with New York Water being the most prominent example, focus on an *aggregate* level debt service profile. While this results in a slower pay down of debt, the annual cost of debt is spread more evenly from generation to generation. For entities like GLWA that have gone through significant transformations to their business, legacy capital structures can create unusual debt service patterns. This is clearly the case for GLWA, with the significant reduction in debt service starting in FY37 for water and FY38 for sewer. The main reason for the drop off is that DWSD funded capital expenditures almost exclusively with debt while GLWA has used much more equity, or revenue-financed capital. Due to the operational and market factors discussed above, we believe GLWA should consider a structure whereby it amortizes little or no bonds until the drop off in debt service in FY37 for water and FY38 for sewer. This will not only reduce pressure on GLWA's operations over the next several years, but create a smoother and more consistent long-term debt service profile.
- **Pre-Funding.** Due to the flatness of today's yield curve, GLWA may want to consider financing additional projects before the funds are needed. We note that the borrowing amounts in the RFP are higher than what was outlined in the February board materials, suggesting the Authority may already be prefunding a portion of its capital needs. The cost of carry to issue earlier than funds are needed can be thought of as a "forward premium" to lock in today's interest rates. The cost to hold onto funds is increasingly mitigated by the short-term interest earnings on the proceeds during that time. For example, if the Authority were to issue funds two years early and earn 2.51% (current 2-year Treasury rate), the cost of carry would be 14 basis points, well within the realm of potential rate movements during this timeframe.

Years Before Spent	Earnings Rate	All-in TIC on New Money	Cost of Carry	Breakeven All-in TIC
1	1.85%	4.10%	11 bps	4.21%
2	2.51%	4.10%	14 bps	4.24%

- **Debt Service Reserve Funds.** If GLWA's is able to secure an upgrade from Moody's or Fitch to Aa3 or AA-, respectively, it will be able to eliminate the reserve requirement as part of the planned transaction (although it will also need to ensure that a release does not cause a downgrade – namely at Moody's). Given that Moody's recently affirmed the Authority's A1 senior rating, it is very unlikely Moody's will move GLWA to Aa3. We are also fairly confident removing the reserve (should Fitch upgrade water or sewer to AA-) would not reduce GLWA's Moody's ratings. Therefore, we expect the ability to trigger the amendment comes down to obtaining an upgrade from Fitch, which we discuss in detail in Section E.VI. If the Authority is unable to secure the upgrade, it

will need to comply with existing reserve requirements. Between refunding opportunities and toggling between the senior and second liens, GLWA should be able to avoid contributions and hopefully secure sizeable releases, particularly from the Sewer system. Either way, we think it is only a matter of time before GLWA reaches the AA category from Moody's and Fitch. Therefore, while it is important to minimize any new contributions and maximize releases, we do not believe it should drive the plan of finance.

- **Borrowing Liens.** As noted above, the ability to minimize contributions and maximize DSRF releases may require optimizing new money issuance on GLWA's various borrowing liens. This strategy must be weighed against (i) the cost differential between senior and second lien bonds in today's market, (ii) the importance of marketing a liquid structure and (iii) preserving GLWA's dual lien structure. We estimate that second lien bonds will price about 10 bps higher than senior lien bonds. While still modest, the spread differential is slightly elevated in light of more challenged market conditions. For example, it was probably closer to 5 to 7.5 bps last year. Another factor to consider is the size and structure of the proposed amortization. Larger and more liquid structures are better received in the current market, particularly when issuing taxable bonds. A final consideration is maintaining GLWA's lien structure on the long end of the yield curve where there are no bonds. To the extent GLWA would like to preserve its dual lien structure, it may want to take a more deliberate approach to the proceeds raised on each lien (so, for example, 50/50 or 75/25).
- **Tax-Exempt Couponing.** 5% coupons for tax-exempt bonds after the call date have historically been market standard, as investors generally prefer (1) the coupon protection against rising rates, and (2) increased liquidity. Last year and early this year, we saw market demand for lower coupon bonds increase and spreads narrowing. As the market continues to be volatile with interest rates increasing, demand continues to shift for different couponing options. From a structural point of view, the issuance of lower coupon bonds results in an additional reduction in near-term annual debt service (and MADS) as well as higher PV and cash flow savings from any tax-exempt refundings. Ultimately, investor demand, relative pricing and option value considerations will have to be considered for what the best couponing structure will be, but as GLWA's front-loaded debt profile creates the greatest cashflow and coverage constraints over the next 15 years, reducing near-term debt service can be valuable. Given that, while higher coupons issued today could potentially result in a lower cost of capital once taking into account future refundings, those future refundings will occur only after GLWA has managed through the next 10 years. The lower debt service associated with lower coupon bonds may be more valuable to GLWA today than the potential additional future refunding savings in later years when the cash flow need is presumably less acute.
- **Savings Pattern.** While the amount of refunding savings is market dependent, it will be an important component to consider for the plan of finance. GLWA has historically structured refunding savings to be generally uniform over the life of the bonds being refunded. While this is a prudent approach (and Board approval is required to frontload savings), GLWA can consider structuring savings into certain years where there is a need (or reducing savings in certain years where there is not a need). Given inflationary headwinds and the size of the capital program, we recommend the Authority consider concentrating savings through 2036, when debt service is highest.
- **Timing Considerations.** There are myriad factors to consider when deciding when to come to market. Given the speed at which market conditions can change (and hopefully improve!), we recommend pressing forward with kicking off a working group. It will likely take 6-8 weeks, at minimum, to be in a position to access the market, which suggests that GLWA could issue bonds as soon as June. Bond fund redemptions are at their highest in the summer months, which should provide some much needed liquidity in the market. The first half of June includes a number of important economic data releases (employment on June 3rd and CPI on June 8th) and there is a Fed meeting on June 14-15th. These will be closely watched given the market's heightened focus on inflation and could lead to market volatility. We would continue to closely monitor market conditions as we approach pricing, and keep the Authority and PFM apprised of all factors relevant to transaction timing.

NEW MONEY STRUCTURE

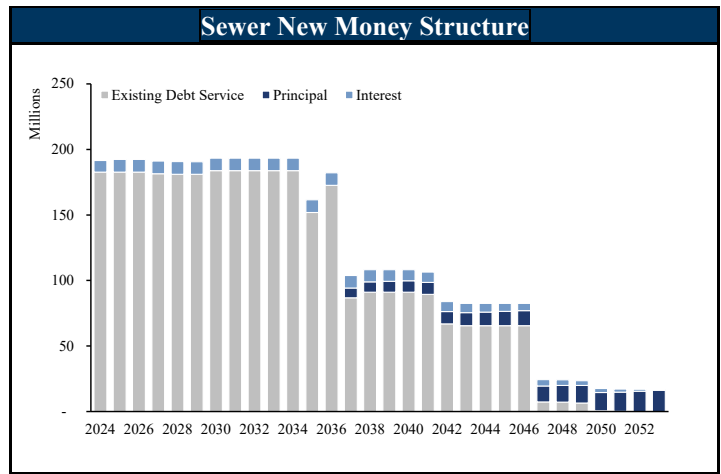
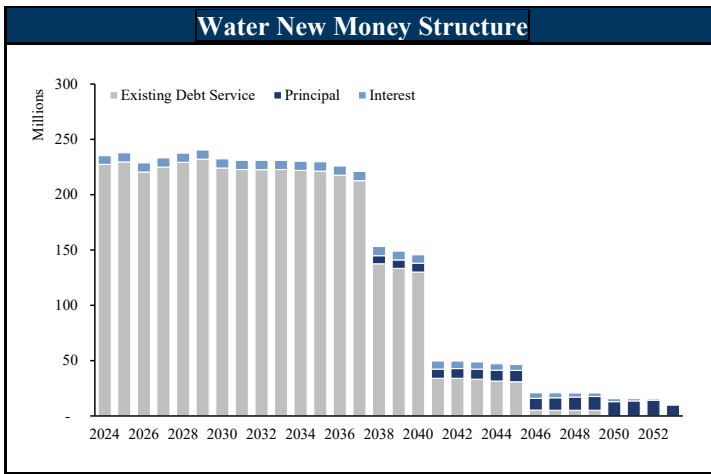
As outlined in the RFP, we understand GLWA is considering a new money borrowing that generates \$200 million of proceeds for the water supply system and \$175 million of proceeds for the sewer disposal system. Given the considerations discussed above and in part E.I, we recommend no amortization until FY37 for water and FY38 for sewer, followed by level debt service through 2052. We have assumed 5% coupons, a standard ten-year par call, rates as of 4/6/2022, an 8/1/2022 settlement, and costs of issuance of \$5/bond. To maximize reserve fund releases, while also creating liquid and marketable structures for each lien and preserving the Authority's dual-lien structure in years where there is little or no debt, we recommend the breakdown of bonds by lien as shown in the chart. The resulting reduction in the reserve requirement and cash releases are detailed to the right for each lien.

As you can see, our proposed approach should enable the Authority to release all remaining cash on the sewer second lien and release a meaningful amount of what remains in the sewer senior lien. The approach for water is based on avoiding the need for a contribution to the senior lien and maximizing releases on the second lien. We would note that the outcome of the rating agency process plus the size and scope of any refunding transaction could materially impact the optimal lien strategy. In general, we recommend structuring each lien with at least \$50 million of bonds to create a liquid and marketable structure and preserve GLWA's dual lien capital structure.

Based on the above approach the following charts and tables outline pro-forma debt service and key new money financing statistics.

	Lien Assumption and Reserve Releases			
	Bond Par	Reduction in		
		Reserve Requirement	Cash Reserves Available	Reserve Release ¹
Water Senior	\$ 133,955,000	\$ 146,258	\$ 1,575,413	\$ 146,258
Water Second	57,910,000	760,114	2,934,922	760,114
Total Water	191,865,000	906,373	4,510,335	906,373
Sewer Senior	52,825,000	4,622,680	14,350,467	4,622,680
Sewer Second	114,120,000	16,671,728	6,292,854	6,292,854
Total Sewer	\$ 166,945,000	\$ 21,294,408	\$ 20,643,321	\$ 10,915,534

¹DSRF release subject to counsel review



Water	Senior	Second	Total
Par	\$133,955,000	\$57,910,000	\$191,865,000
Project Fund	\$140,000,000	\$60,000,000	\$200,000,000
All-In TIC	4.09%	4.14%	4.10%
Average Life	23.07	23.07	23.07

Sewer	Sewer Senior	Sewer Second	Total
Par	\$52,825,000	\$114,120,000	\$166,945,000
Project Fund	\$55,000,000	\$120,000,000	\$175,000,000
All-In TIC	4.08%	4.16%	4.13%
Average Life	22.82	23.44	23.25

We recognize the decision to amortize no debt until FY37 for water and FY38 for sewer is a departure from past practice. We would be pleased to work with GLWA and its advisor to explore other structures, including a more traditional 30-year level debt service approach. As a point of comparison, the following tables compare the all-in costs and different levels of annual debt service that would result from each approach.

	Water	
	Deferred Amort	30Y Level
All-in TIC	4.10%	3.93%
Average Life	23.07	18.97
Annual D/S before FY38	\$ 9,593,250	\$ 12,238,500
Annual D/S on and after FY38	\$ 17,018,250	\$ 12,239,250
Aggregate D/S PV (@ 4%)	\$ 218,849,130	\$ 210,328,638

	Sewer	
	Deferred Amort	30Y Level
All-in TIC	4.13%	3.95%
Average Life	23.25	18.74
Annual D/S before FY37	\$ 8,347,250	\$ 10,791,000
Annual D/S on and after FY37	\$ 15,622,250	\$ 10,795,750
Aggregate D/S PV (@ 4%)	\$ 190,576,127	\$ 184,479,528

REFUNDING STRATEGY

We have analyzed GLWA’s debt portfolio for refunding opportunities, utilizing a variety of strategies we have discussed with the Authority in the past. Given the current market conditions described above, we recommend GLWA include the following three strategies in its planning and stay flexible to take advantage of market windows as appropriate. For the first two strategies, we recommend the Authority target the Water and Sewer Bonds that are callable in 2024 and 2025, which is nearly \$1.2Bn of outstanding debt. The third is an innovative opportunity that GLWA can capitalize on to realize savings that it otherwise may not be expecting to receive on some of its outstanding taxable bonds.

- Taxable Advance Refunding** – The recent dramatic rise in rates has significantly reduced the taxable advance refunding opportunities we have been discussing with GLWA since last year. Having said that, we recommend continuing to monitor these opportunities while preparing to enter the market for new money. As we described in **Section E.I.** regarding our experience this month with the University of Michigan, market conditions – especially in the taxable market affecting both borrowing rates and investment rates – can quickly change to provide attractive savings opportunities.
- Tender/Exchange in Conjunction with Sale** – As we have discussed in detail with GLWA, running a tender and/or exchange (i.e., a “buyback strategy”) in conjunction with a planned offering (either new money alone or with a taxable advance refunding) can significantly enhance savings to GLWA, close to the economics of a tax-exempt advance refunding, and enable GLWA to retain the attractive call optionality available in the tax-exempt market. As GLWA is pursuing a new money transaction already, the tender/exchange will simply enhance the transaction. If taxable market conditions improve as discussed, GLWA can also refund targeted bonds not tendered or exchanged.
- Tax-Exempt Advance Refunding of Taxable Bonds** – As discussed in the past, taxable advance refunding bonds become eligible for tax-exempt advance refunding starting 90 days before the underlying escrow matures. The table at right shows that the Sewer Series 2020AB and Water 2020C Bonds have all become eligible as of April 1. While the savings will not necessarily

Refunding Series	Refunded Bonds	Refunded Par	Escrow Maturity Date
Sewer 2020A	2012A	\$419.8 mm (2026-39)	1-Jul-22
	2014C-1	\$123.2 mm (2044)	1-Jul-22
	2014C-2	\$27.5 mm (2044)	1-Jul-22
Sewer 2020B	2005A	\$31.8 mm (2035)	1-Jul-21
	2006B	\$27.5 mm (2044)	1-Jul-21
Water 2020C	2011A	\$289.6 mm (2027-41)	1-Jul-21
	2011B	\$2.3 mm (2033)	1-Jul-21
	2011C	\$74.1 mm (2023-41)	1-Jul-21

be large, this represents a potential opportunity to generate unexpected savings (potentially even from non-callable bonds) as well as potentially significantly more option value on the refunding bonds.

In addition to the above strategies, we recommend refunding the \$18 million of currently callable Senior Sewer 2012A Bonds. While the savings are modest, the bonds will become a “wasting asset” beyond the call date. In **Appendix D**, we provide a maturity-by-maturity analysis of the aforementioned refunding opportunities of GLWA’s refunding candidates based on market conditions as of April 6, 2022. Below we provide a summary and more detailed discussion of the strategies.

Taxable Advance Refunding Candidates

Below is a summary of GLWA’s taxable advance refunding candidates, based on market conditions as of April 6, 2022. We have summarized two universes of candidates: all bonds that generate savings and all bonds generating at least 2.5% per maturity. (We note that depending on how GLWA implements the refunding criteria of its debt policy, the first universe does not meet 2.5% aggregate savings.) As you can see, the savings that GLWA can achieve in a taxable advance refunding are modest and not particularly efficient. As your senior manager, we would closely monitor GLWA’s portfolio leading up to pricing.

(\$mm)	Water Senior		Water Second		Sewage Senior		Sewage Second	
	PV Savings >0%	PV Savings >2.5%	PV Savings >0%	PV Savings >2.5%	PV Savings >0%	PV Savings >2.5%	PV Savings >0%	PV Savings >2.5%
Par Refunded	\$ 351,010	\$ 82,820	\$ 4,595	\$ -	\$ 345,425	\$ 57,230	\$ 31,205	\$ -
PV Savings	5,923	2,565	47	-	6,464	1,735	427	-
Pv Savings (%)	1.69%	3.10%	1.02%	-	1.87%	3.03%	1.37%	-
Efficiency	40.3%	55.8%	27.1%	-	42.2%	54.7%	33.8%	-

Notes: Rates as of 04/06/2022; Assumes 08/01/2022 closing; COI equal to 0.5%; 10-year par call for taxable refunding bonds.

Tender/Exchange (Buyback)

As previously discussed with GLWA, running a tender and/or exchange in conjunction with a taxable advance refunding can significantly enhance savings, close to the economics of a tax-exempt advance refunding. Most issuers pursuing tenders/exchanges are able to increase PV savings by 5-8% of refunded par relative to that available from a taxable advance refunding. We note the tender results below and in **Appendix D** represent 100% participation, which is highly unlikely to occur, but illustrate the relative economics. As mentioned, in light of the significant potential economics, and the fact that GLWA can effectively dictate the desired level of savings, we recommend GLWA include a buyback in its planned financing.

- If GLWA has determined the taxable refunding results are attractive and wishes to proceed, the tender/exchange will simply enhance the available savings and bonds not tendered can simply be refunded on a taxable basis.
- Alternatively, GLWA could leverage the disclosure being prepared for a new money issuance to run an “opportunistic tender” process, whereby GLWA solicits offers on bonds that would not otherwise be refunded.

Earlier this year, we executed this exact strategy with DC Water. When DCW first kicked off its transaction last year, the taxable advance refunding was solidly “in the money” and the tender/exchange was primarily pursued as an enhancement; as the market began to evolve, DCW decided to take a hybrid approach and execute a smaller taxable advance refunding with a tender/exchange enhancement coupled with a larger “opportunistic” tender to capture attractive potential savings via a tax-exempt refunding. As the market continued to sell off through the buyback and pricing process, DCW nevertheless achieved over \$33.5 million in gross cashflow savings (~\$25.5 million present value, or 14.4% of refunded par), increasing savings by \$6.7 million compared to a taxable refunding of the targeted bonds via this combination strategy. (*See case study in Section E.VIII.*)

We recommend GLWA target bonds with call dates in 2024 and 2025, and potentially 2026, for a buyback. As shown in the table below a tender/exchange can improve the economics of an advance refunding by nearly \$59mm of PV savings (assuming 100% participation for analytical purposes) versus the taxable refunding, generating PV savings averaging over 6-7% and as high as 11%. In addition, and as noted above, we recommend refunding the \$18 million of currently callable Sewer Senior 2012A Bonds also summarized below.

Credit	Outstanding Debt				Taxable AR (Callable)			Tender			Current Refunding	
	Series	Lien	Callable (\$000s)	Call Date	PV Savings (\$000s)	Efficiency %		PV Savings (\$000s)	Efficiency %		PV Savings (\$000s)	Efficiency %
Sewage	2012A	Senior	\$ 17,985	7/1/2022							\$ 322	1.8%
	2014C3	Senior	\$ 303,570	7/1/2024	\$ 5,051	1.97%	45%	\$ 14,839	5.8%	61%	\$ 27,618	9.1%
	2014C6	Senior	88,900	7/1/2024	1,413	1.59%	33%	8,175	9.2%	68%	13,499	15.2%
	2014C7	Junior	44,065	7/1/2024	47	1.02%	34%	2,164	5.5%	59%	4,109	9.3%
	2015C	Junior	197,160	7/1/2025	0	0.00%	n/a	15,424	8.0%	72%	26,239	13.3%
	Total			\$ 651,680		\$ 6,510	1.73%		\$ 40,602	7.0%		\$ 71,787
Water	2014D1	Senior	\$ 44,190	7/1/2024	0	0.00%	n/a	\$ 4,754	10.8%	73%	\$ 7,319	16.6%
	2014D2	Senior	136,925	7/1/2024	1,248	1.16%	39%	2,309	2.2%	39%	7,282	5.3%
	2014D4	Senior	209,360	7/1/2024	4,426	2.11%	43%	15,468	7.4%	48%	27,514	13.1%
	2014D6	Junior	43,690	7/1/2024	47	1.02%	27%	2,590	6.7%	50%	5,993	13.7%
	2015D1	Senior	69,275	7/1/2025	249	0.73%	19%	3,366	5.1%	44%	8,109	11.7%
	2015D2	Junior	37,235	7/1/2025	0	0.00%	n/a	2,406	6.5%	56%	5,222	14.0%
Total			\$ 540,675		\$ 5,970	1.68%		\$ 30,893	5.7%		\$ 61,438	11.4%

Notes: Rates as of 04/06/2022; Assumes 08/01/2022 closing; COI equal to 0.5%; 10-year par call for taxable refunding bonds; 4% tax-exempt refunding bonds with a 10-year par call; tender price 25bps on pre-re yield assuming 100% participation.

Tender Process. While there are numerous approaches GLWA could take with the tender, we think the most effective would be an offer to purchase targeted bonds at a fixed dollar price. The price GLWA is willing to offer will drive not only the economics of the tender, but also its success. At a minimum, GLWA will need to offer some concession off either the “pre-re” price (the price of a pre-

refunded, or escrowed, bond) or the market price to incentivize bondholders to participate. If purely opportunistic, the price offered to investors would be priced off the market price instead of the pre-re price, with best success having a concession in the 1.5-3.0% range, depending on specific circumstances such as ownership profile and market conditions. The specific price offered to investors, which will be determined by GLWA, will be a function of the savings levels GLWA would be comfortable achieving.

The goal of these buybacks is to reduce the Authority’s interest rate risk and future refunding concentration, especially in light of the potential for rates to continue to increase. Incorporating a buyback into GLWA’s plan of finance is an opportunistic refinancing alternative with little downside, as the Authority does not have to accept any offers should they not meet its financing goals. This strategy does not require significant additional effort nor time since GLWA would already be in the market with the new money issuances and would already be communicating to the market. From a marketing and execution perspective, the size of the tax-exempt issuance would simply change depending on the results of the tender.

The outcomes of a tender/exchange strategy depend on market conditions, the economics of the bonds being refunded, the goals of the issuer and the composition of the holders of those bonds – each transaction is unique. Goldman Sachs has been a leader in these buyback strategies in par targeted as well as par participated, but most importantly in the number of transactions completed. Of the 17 successful tender/exchanges completed since the beginning of 2021, Goldman Sachs served as a dealer manager on 9, including the last closed tender/exchange in the market -- for DC Water (which settled on March 23, 2022) and, as referenced above, contained both a taxable advance refunding tender enhancement as well as an opportunistic tender of bonds that would otherwise be left outstanding. The core GLWA banking team personally have significant and recent experience with tenders and exchanges.

We note that a tender/exchange process does add some complexity (mostly managed by the underwriter/FA) and added decision making to the transaction. However, part of the benefit of Goldman Sachs having led so many buybacks in the past year is that we have been able to greatly streamline the process and better understand all the nuances of investor preferences in continually changing market conditions. Please see **Appendix D** for our full maturity-by-maturity refunding analysis.

Tender for Series 2020 Taxable Bonds

A final refinancing strategy involves GLWA’s opportunity to convert some of its taxable Sewer Series 2020AB and Water 2020C Bonds back to tax-exempt. The IRS allows issuers to use tax-exempt bonds to refund taxable advance refunding bonds **once they are within 90 days of the refunding escrow being extinguished**. The value of this trade is not driven by the absolute level of rates but instead by 1) tax-exempt to taxable ratios, and 2) tax-exempt credit spreads.

In order to redeem the outstanding 2020 taxable bonds, GLWA has the option to 1) exercise the MWC option on the taxable bonds, 2) fund an escrow to the lesser of the maturity date or, if applicable, the par call date, **or 3) offer a cash tender for the taxable bonds**. When assuming a tender of Sewer Series 2020AB and Water Series 2020C with rates and market pricing as of 4/6/2021, a tender concession of 2-3 points to market prices, and 100% participation in the tender, GLWA could achieve over \$23.9 million of PV savings or 2.4% of par redeemed, generating meaningful savings with no opportunity costs to GLWA.

The current economics are not insignificant, with approximately \$984.3mm of bonds generating savings. While savings might look small relative to a standard current refunding, it is “found” savings **that GLWA would not otherwise be able to realize, since the optional redemption on its taxable debt is not an economic one for the most part**. Additionally, any candidates redeemed beyond 10 years would also carry an economic 10-year par call on the tax-exempt debt that generates additional future value and potential savings.

In sum, we recommend GLWA, in conjunction with the tender/exchange of the 2024 and 2025 call dates, “flip” a portion of the Sewer 2020AB and Water Series 2020C taxable bonds back to tax-exempt utilizing a tender and to take advantage of “found” savings from bonds that were not expected to generate additional savings.

Tax Flip Summary (PV Savings > 0.0%)					
	Series	Outstanding Par (\$)	Refunded Par (\$)	PV Savings (\$)	PV Savings (%)
Sewage	Senior 2020A	\$ 594,930,000	\$ 569,825,000	\$ 14,518,012	2.55%
	Second 2020B	\$ 81,850,000	\$ 66,525,000	\$ 3,112,607	4.68%
Water	Senior 2020C	\$ 375,645,000	\$ 347,910,000	\$ 6,308,440	1.81%
Total		\$ 1,052,425,000	\$ 984,260,000	\$ 23,939,059	2.43%

BOND INSURANCE

While demand for bond insurance has not been particularly deep in recent years, especially for highly rated issuers like GLWA, this dynamic is beginning to shift as the market landscape has been changing this year. Additionally, insurance can provide value by bringing in incremental investors – especially in the taxable market. For GLWA’s anticipated financing, we recommend requesting formal pricing and capacity from both Assured Guaranty and Build America Mutual (“BAM”). We requested indicative quotes from both companies and received positive feedback about their capacity for bond insurance and sureties and willingness to work with GLWA.

Lien		Assured (basis points)	BAM (basis points)
Senior	Bond Insurance	30-35	15-25
	Surety Bond	200-250	200-250
Second	Bond Insurance	40-45	20-30
	Surety Bond	250-275	250-350

We believe that in today’s market, Assured and BAM would provide a roughly 10-12 basis point pricing benefit across the yield curve (potentially a bit more for Assured and a bit less for BAM). For the purposes of our insurance benefit analysis, we have assumed a preliminary 20 and 25 basis point cost of the insurance for the senior and second lien, respectively, and a 10 basis point pricing benefit. Based on these levels, GLWA receives between 1-7 basis points of yield benefit (depending on maturity and lien) from insurance. A detailed insurance savings analysis is in **Appendix E**. In addition, given new money proceeds are financing system improvements, we believe such bonds would also qualify for BAM’s Green star, which is their third-party designation of Green Bonds (there’s no additional charge, but it is only offered to issuers that use BAM insurance and/or a surety).

E.IV. SCALES

Please see our indicative taxable and tax-exempt scales for Water Supply and Sewer Disposal System Senior and Second Lien bonds below with rates as of 04/06/2022 in the adjacent table.

		Tax-Exempt Scales (5% Coupon)														
		Water & Sewer Senior Lien			Water & Sewer Second Lien			Water & Sewer Senior Lien			Water & Sewer Second Lien					
(07/01)	Intrpl	5% Coupon			5% Coupon			Callable			Callable					
Maturity	MMD	Spread	YTC	YTM	Spread	YTC	YTM	Bench.	UST	Spread	YTM	Spread	YTM			
1	2023	1.740%	0.280%	2.020%	0.380%	2.120%		CT2	2.50%	0.200%	2.70%	0.320%	2.82%			
2	2024	1.910%	0.330%	2.240%	0.430%	2.340%		CT2	2.50%	0.500%	3.00%	0.620%	3.12%			
3	2025	2.020%	0.380%	2.400%	0.480%	2.500%		CT3	2.68%	0.600%	3.28%	0.720%	3.40%			
4	2026	2.080%	0.430%	2.510%	0.530%	2.610%		CT5	2.70%	0.750%	3.45%	0.870%	3.57%			
5	2027	2.110%	0.480%	2.590%	0.580%	2.690%		CT5	2.70%	0.800%	3.50%	0.920%	3.62%			
6	2028	2.130%	0.510%	2.640%	0.610%	2.740%		CT7	2.70%	0.850%	3.55%	0.970%	3.67%			
7	2029	2.200%	0.540%	2.740%	0.640%	2.840%		CT7	2.70%	1.030%	3.73%	1.150%	3.85%			
8	2030	2.250%	0.570%	2.820%	0.670%	2.920%		CT10	2.61%	1.150%	3.76%	1.270%	3.88%			
9	2031	2.290%	0.600%	2.890%	0.700%	2.990%		CT10	2.61%	1.300%	3.91%	1.420%	4.03%			
10	2032	2.330%	0.630%	2.960%	0.730%	3.060%		CT10	2.61%	1.450%	4.06%	1.570%	4.18%			
11	2033	2.370%	0.650%	3.020%	0.750%	3.120%	3.253%	CT10	2.61%	1.600%	4.21%	1.720%	4.33%			
12	2034	2.400%	0.670%	3.070%	0.770%	3.170%	3.407%	CT10	2.61%	1.750%	4.36%	1.870%	4.48%			
13	2035	2.430%	0.690%	3.120%	0.790%	3.220%	3.539%	CT10	2.61%	1.850%	4.46%	1.970%	4.58%			
14	2036	2.440%	0.710%	3.150%	0.810%	3.250%	3.637%									
15	2037	2.460%	0.730%	3.190%	0.830%	3.290%	3.731%									
16	2038	2.480%	0.730%	3.210%	0.830%	3.310%	3.799%									
17	2039	2.500%	0.730%	3.230%	0.830%	3.330%	3.860%									
18	2040	2.510%	0.730%	3.240%	0.830%	3.340%	3.908%									
19	2041	2.520%	0.730%	3.250%	0.830%	3.350%	3.951%									
20	2042	2.540%	0.730%	3.270%	0.830%	3.370%	3.995%									
21	2043							OLB	2.63%	1.920%	4.55%	2.040%	4.67%			
22	2044															
23	2045															
24	2046															
25	2047	2.620%	0.750%	3.370%	0.850%	3.470%	4.168%									
26	2048															
27	2049															
28	2050															
29	2051															
30	2052	2.670%	0.750%	3.420%	0.850%	3.520%	4.264%	OLB	2.63%	2.000%	4.63%	2.120%	4.75%			

E.V. ANALYTICAL CAPABILITIES

The Firm is able to provide a wide array of resources to our clients. We also have a history of using sophisticated technical resources to empower our clients to make key decisions on the size, structure and timing of financings. A few examples are listed below.

ANALYTICAL TOOLS

We would be pleased to make the following analytical tools available to GLWA both during and outside of this transaction, much like we have done for many years.

- **Optimization Software – What’s Best:** One of the modeling tools that Goldman Sachs employs on behalf of our clients is What’s Best, a linear optimization Excel-based modeling tool. The tool, which allows issuers to optimize a refunding among several competing fiscal goals, has been useful in the context of optimizing a number of our issuer’s financings.
- **Proprietary Software – Interest Rate Modeling:** Another tool we have used with many clients analyzing whether or not to pursue an advance refunding is a proprietary interest rate simulation to determine those scenarios where an issuer is better off refunding now. Our model creates 5,000 potential interest rate forecasts based on market inputs, correcting for convexity and term premium problems inherent in interest rate forwards.
- **Proprietary Software – Asset/Liability Modeling:** For clients who are considering incorporating additional variable rate debt into their portfolio, we use asset/liability modeling to help guide the appropriate amount.
- **External Databases and Resources:** The team has full access to the myriad external databases and resources used by the industry, including Bloomberg, Thomson Reuters Emaxx (bondholder database), and Moody’s MFRA (credit database).

IN-HOUSE EXPERTS

Perhaps even more important than the models and databases are the human resources that supplement the core banking team. As briefly mentioned in Section D.V., GLWA will be supported by our technical specialists throughout GLWA’s financing process. These experts will be especially critical in navigating the proposed plan of finance, most notably:

- **PSI Tax, Legal and Liability Management Expert:** Arthur Miller, a Managing Director in PSI, is a nationally recognized expert in municipal tax law and municipal law, in general. Arthur’s presence has historically proved helpful in a number of ways, including complex refundings, change of use issues, issues related to the optimal deployment of unspent or other available funds, project financings, and other topics. Of particular relevance for the proposed transaction is his in-depth knowledge of and unparalleled experience in implementing tender and exchange transactions – including intricacies related to investor tax considerations and motivations which have proven invaluable in developing effective strategies for the tender/exchange offer. Arthur’s breadth of knowledge and experience is nearly unparalleled and has been a critical “secret weapon” for numerous clients.
- **PSI Municipal Credit Group:** Goldman Sachs has a specialized Municipal Credit Group dedicated to helping our issuing clients evaluate their ratings vis-à-vis peers as well as develop rating agency presentations and analyses. Stacy Lingamfelter, who previously worked at a rating agency and on the buy-side at Goldman Sachs, will work directly with GLWA, as she has in the past to craft a rating strategy and investor messaging strategy. She has considerable experience with all our major water and sewer

clients, including GLWA, over the past several years on rating agency analysis, strategy and communication. Her vast credit experience will be helpful in positioning GLWA's credit with not only rating agencies but also investors.

- **SRF Expertise:** Dan Byrne has over 25 years of experience leading SRF financings and spearheading innovations in the sector. He also has extensive experience with non-SRF pooled financings including utility securitizations and pooled energy efficiency loans and can provide his quantitative and structuring expertise to the GLWA team if needed.

OTHER RESOURCES

In addition to the technical resources discussed above, Goldman Sachs provides a variety of other services that may be helpful to the City, including our

- **Investment Banking Strategies Group:** These strategists can help GLWA evaluate a number of strategic decisions, including asset/liability management (i.e., determining the optimal fixed/floating mix for liabilities, given balance sheet assets), strategies related to new issue timing, interest rate simulations, fixed income and energy derivative strategies.
- **Research Coverage:** Our Global Investment Research division, which is separate from Investment Banking division, provides our clients with research based on public information about major private sector utilities and associated companies.
- **Legislative Policy:** The Firm's Washington, D.C. office has employees focused on government affairs, providing us with perspective on policy, political, legislative and industry issues surrounding the municipal, utility and airport sectors.
- **Sustainable Finance Group:** The Sustainable Finance Group is responsible for partnering with the Firm's businesses to drive sustainability-related commercial activity and to assist our clients addressing two significant long-term priorities: climate transition and inclusive growth. This group has worked closely with PSI teams for many of our ESG designated bond offerings and can assist in honing an issuer's ESG message and identifying strategies to engage investors (and stakeholders) focused on sustainability.

E.VI. CREDIT STRATEGY

The 2022 financing provides an important opportunity for the Authority to make further progress on its goal of achieving AA category credit ratings. Both S&P and Fitch have not recently published a report on the Authority. This provides a great opportunity for GLWA to seek positive rating action in light of the Authority's accomplishments over the last two years. Given Moody's just released a credit opinion in late March, the prospects for an immediate positive outlook or upgrade are slim. However, it will still be important to engage Moody's and try to understand what steps are needed to make the jump to the Aa category.

Another important objective will be to reset the narrative on a few challenges the Authority has/is facing, including the wet weather events last summer and the Highland Park litigation. Putting both challenges in context and outlining the steps the Authority is taking to resolve them will be important not only to allay the concerns of the rating agencies, but also investors and the public. Investors are likely to have seen headlines in the local news and financial press (e.g. *Debtwire*) about both issues. While the Highland Park situation is politically contentious and the wet weather events were personally devastating to a small number of residents in GLWA's service area, we do not believe either are material to GLWA's overall credit profile.

In addition to detailing the Authority's accomplishments over the last two years and addressing the challenges faced by the Authority, it will also be important to lay out the Authority's strategic vision and how this will impact its financial metrics going forward. As we discuss below, future upgrades are likely to hinge on further deleveraging. This is clearly achievable and part of the plan for the sewer system. As it relates to the water system, this need not be a reduction in the nominal amount of debt outstanding, but improvements to leverage metrics such as debt to operating revenue and debt to capitalization. We believe this will help set the stage for further upgrades and enable GLWA to more convincingly argue that rating upgrades are warranted.

In our view, the focus, and greatest likelihood of success, in the near-term, is with Fitch. The goal over the next 1-2 years will be to achieve a one notch upgrade, to match GLWA's S&P ratings and enable the Authority to eliminate its debt service reserve fund requirements. Building off of the Authority's robust liquidity and strong operations, we will work with you to make the best possible argument.

Below, we analyze GLWA's credit ratings for each agency and discuss specific strategies the Authority can employ to achieve its goals.

MOODY'S

After a string of upgrades in 2016, 2018 and 2020, Moody's has kept the Authority's senior ratings at A1 with a stable outlook for the last two years. Given that Moody's released a credit opinion on March 23, 2022, the chances of receiving an upgrade or positive outlook this summer are remote. The Moody's upgrades GLWA achieved in 2020 were reflective of the significant improvements in GLWA's operational and fiscal management, coupled with noteworthy improvements to the Authority's financial strength. Based on Moody's latest credit opinion, GLWA continues to get high marks for (i) its commitment to annual revenue enhancements to support sound debt service coverage and liquidity and (ii) strong management. Moody's cites declining water usage, high leverage and extreme wet weather events as credit challenges. As we noted at the outset, a major focus with all of the agencies, including Moody's, will be to put the wet weather events in context and

Water				
Factors:	Weighting	Score Input	Score	Rationale
1. System Characteristics	30%			
Asset Condition	10.00%	0.30	A	Net Fixed Assets/Annual Depreciation = 17yrs Service Wealth Area as % of US Median = 96.8% \$164,995
Service Area Wealth	12.50%	0.25	Aa	
System Size	7.50%	0.08	Aaa	
2. Financial Strength	40%			
Annual DSC	15.00%	0.45	A	1.4x
Days Cash on Hand	15.00%	0.15	Aaa	920 days
Debt to Op. Rev	10.00%	0.30	A	5.5x
3. Management	20%			
Rate Management	10.00%	0.20	Aa	Strong rate-setting record; little political, practical, or regulatory limits on rate increases Moderate violations with adopted plan to address issues; maintains manageable 5-yr CIP
Reg Compliance	10.00%	0.30	A	
4. Legal Provisions	10%			
Rate Covenant	5.00%	0.15	A	1.2x
DSRF	5.00%	0.10	Aa	Funded at lesser of standard 3 prong
Calculated Score	100%	2.28	Aa3	
Implied Notching				1. Demographic weaknesses in the service area
Final Rating			A1	

also detail the steps GLWA is taking to mitigate risks related to future storms. As it relates to leverage, debt outstanding has declined, particularly for the sewer system, and despite the planned issuance of new money, will continue to decline. GLWA is now paying down over \$150 million of principal per year across water and sewer through regularly scheduled amortization.

Another area of focus is how GLWA scores under Moody’s municipal utility revenue scorecard. Moody’s scores utility issuers on the basis of four main factors: (1) System Characteristics – 30%, (2) Financial Strength – 40%, (3) Management – 20%, and (4) Legal Provisions – 10%. Each of these factors has 2-3 subfactors which are

scored and then summed up to get the issuer’s scorecard indicated outcome, which can then be notched a full rating upward or downward based on a list of 19 qualitative notching adjustments. As such, the Authority’s goal should be to get the best indicated score, and then to minimize as much as possible notching downward and maximize notching upward.

Using Moody’s own calculations and the information in the 2022 credit opinion, we replicated GLWA’s scorecard. We estimate that the Authority has an indicated rating of Aa3, and is being notched down due to one of the qualitative notching adjustments. The notching factors that are likely to be in play include (1) significant customer concentration, and (2) demographic weaknesses in the service area. Under the circumstances, financial strength is likely to be the most important factor the Authority should focus on in a discussion surrounding an upgrade. Financial strength accounts for 40% of the total score thus any improvements to the Authority’s finances greatly affects the overall rating. This plays in the Authority’s favor since many of their notable improvements fall under this rating factor.

Sewer					
Factors:		Weighting		Score Input	Rationale
1. System Characteristics	30%				
	Asset Condition	10.00%	0.30	A	Net Fixed Assets/Annual Depreciation = 19yrs Service Wealth Area as % of US Median = 96.8% \$255,908
	Service Area Wealth	12.50%	0.25	Aa	
	System Size	7.50%	0.08	Aaa	
2. Financial Strength	40%				
	Annual DSC	15.00%	0.45	A	1.3x
	Days Cash on Hand	15.00%	0.15	Aaa	512 days
	Debt to Op. Rev	10.00%	0.30	A	5.2x
3. Management	20%				
	Rate Management	10.00%	0.20	Aa	Strong rate-setting record; little political, practical, or regulatory limits on rate increases Moderate violations with adopted plan to address issues; maintains manageable 5-yr CIP
	Reg Compliance	10.00%	0.30	A	
4. Legal Provisions	10%				
	Rate Covenant	5.00%	0.15	A	1.2x
	DSRF	5.00%	0.10	Aa	Funded at lesser of standard 3 prong
Calculated Score	100%		2.28	Aa3	
	Implied Notching				1. Demographic weaknesses in the service area
Final Rating				A1	

S&P

In September 2018, S&P raised its ratings on the Authority’s senior lien water credit to AA- and the senior lien sewer credit to A+. In March 2020, S&P brought the senior lien sewer credit to AA-, meeting the Authority’s goal of AA category. The upgrades directly followed several impressive achievements in the short period since GLWA’s inception and is especially reflective of the strong oversight, management and governance. While Detroit’s economy continues to put downward pressure on the utility system, GLWA has delivered solid operational and financial results and is generally expected to maintain solid performance.

S&P made clear in 2020 that it does not anticipate further positive rating action, noting that “we believe that both current and projected financial performance and service base characteristics are consistent with the current rating level.” In light of this statement, and the financial factors S&P evaluates in its wholesale and retail criteria, obtaining additional positive action may be challenging. The ratings process will, however, be very important to reinforce S&P’s favorable views of the Authority’s operational and financial management assessments. This means, among other things, highlighting the steps the Authority is taking to address some of the challenges of the last few years (wet weather events, Highland Park and the retirement of Sue McCormick).

FITCH

Goldman Sachs believes that Fitch currently under-rates both the water system and the sewer system at A+. In March 2020, shortly before releasing the criteria they use now, Fitch analysts upgraded both GLWA systems and assigned a stable outlook to each. Since then, analysts affirmed the water system rating, using the new criteria, but do not appear to have published a report on the sewer system. Nonetheless, the water system analysis provides good insight into how Fitch view both systems and where they are overly conservative.

As GLWA knows, Fitch’s water and sewer analyses comprise of three ‘ratings drivers’. In two of them, Revenue Defensibility and Operating Risks, the Authority’s water system achieved the highest possible assessment of ‘aa’. In the third, Financial Profile, Fitch assigned the water system an assessment of ‘a’. The criteria explicitly avoid assigning any sort of weighting to the three drivers, allowing analysts to give more credence to whichever they believe to be most important to any particular credit profile. It is in how they balance Revenue Defensibility, Operating Risks and Financial Profile that we disagree with Fitch: we believe that not only are both Revenue Defensibility and Operating Risks “aa”, they are particularly strong even within the highest category. We believe the particular strength, especially in the Operating Risk assessment, should allow Fitch the latitude to qualitatively adjust the rating result upward.

Revenue Defensibility: As a wholesale provider to a significant portion of the State of Michigan, both systems start in a strong position. As Fitch notes, the suburban customers offer a strong customer base, while revenues and operations within the City are proving reliable. GLWA’s rate setting mechanisms ensure that Fitch’s Revenue Defensibility will remain solidly aa for the next several years.

Operating Risk: GLWA reports notably very low operating burdens and has a very well established plan to meet capital needs over the next five years, which is the period over which Fitch looks. Indeed, the criteria places any system that spends less than \$6,500/mg into the ‘aa’ category – more than twice what GLWA’s water authority spends. Additionally, a lifecycle ratio of 45% or lower is also consistent with the strongest category, a little less than twice the Water System’s. We believe GLWA’s exceptionally strong performance especially in this area merits added consideration from Fitch analysts when considering the interplay between the three ratings drivers.

Financial Profile: Fitch’s Financial Profile assessment rests heavily on their leverage calculation. Fitch reports the water system’s leverage to be consistently in the range of 11.6x, which was the 2020 calculation. Absent other factors, the criteria indicate that a range of 10.0x-14.0x is consistent with an A-category rating for issuers with “aa” Operating Risk and Revenue Defensibility scores. To achieve an upgrade, GLWA would have to either improve the leverage ratio, as calculated by Fitch, or seek what Fitch calls a variation from the criteria.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their impact on the rating where appropriate. A variation can be approved by a ratings committee where the risk, feature or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

Fitch US Water and Sewer Rating Criteria, April 2020

In Fitch's 2021 US Water and Sewer Peer Review, Fitch lists the leverage calculation for most of their rated water and sewer credits. We noted four credits rated in the AA-category with leverage cited between 10.0x-14.0x, or, the range for A-category credits. While circumstances differ for each of the four, they do establish a precedent for considering factors beyond just the guidance and the possibility of a rating that exceeds the ranges provided. We believe that GLWA's exceptional operating cost burden, which appeared to be among the best 10-12 in Fitch's portfolio in 2021, can form the basis of that argument for the water authority. The continued, exceptionally strong liquidity may also play a role, depending on GLWA's ultimate choices with pay-go capital and reserve maintenance.

An upgrade can be difficult to achieve from a stable outlook, which both the water and the sewer authority have at present. We believe that GLWA's best path to an upgrade is to seek a positive outlook in the next rating committee and look to leverage the positive outlook into an upgrade in the next 12-24 months. The most recent budget for the sewer system, in particular, reflects a steadily decreasing debt-to-operating revenue ratio consistent with the decline in outstanding debt. That positive momentum can certainly help support our argument for upward movement – both the outlook change and a subsequent upgrade - over the time horizon. We would look forward to working with the Authority in developing a detailed strategy for both formal and informal discussion with Fitch, and pursuing a second set of AA-category ratings for GLWA.

E.VII. ALTERNATIVE FINANCINGS

Goldman Sachs' Municipal Solutions Group (MSG) is structured to assist our public and private clients find "solutions" to a broad range of challenges they face in the municipal market. MSG is focused on utilizing the experience and expertise of PSI's bankers, product experts and the underwriting desk to help our clients solve problems through the use of innovative ideas, structures and capital. Some of these "solutions" may use Goldman Sachs balance sheet and capital where appropriate and cost-effective; other solutions may entail serving in an agency role. Among other things, we would analyze a range of products including private placements, directly placed/purchased forwards, bridge loans or securitizing revenue streams away from the public markets.

E.VIII. MARKETING AND INVESTOR OUTREACH ENHANCEMENTS

Beginning with GLWA's inaugural financing, which we were honored to have taken a primary role in helping the Authority craft its credit messaging to rating agencies and investors, GLWA has conducted a thoughtful well-orchestrated investor outreach strategy. This outreach has both been in conjunction with transactions via presentations, meetings and calls, as well as away from transactions including providing online transparency and investor information as well as meetings and site visits (to which Goldman Sachs has also participated). Continuing this clear and open communication is critical to cultivating and, ultimately, expanding the Authority's investor base.

As we have discussed with GLWA in the past, a key to de-risking a transaction is to utilize targeted investor outreach with the goal of securing anchor orders in advance of formal pricing. To do this, we utilize a targeting analysis that includes the Authority's current top holders, holders of other highly rate Michigan bonds, holders of other similarly rated utilities, and those investors with a dedicated Michigan bond fund. However, we believe that GLWA can further their investor reach – especially in times of market volatility. As senior manager, Goldman Sachs will work closely with the Authority and its financial advisor to design and execute a tailored and comprehensive marketing plan with the core objective to develop, maintain, and grow the pool of investors with credit approval and appetite to own GLWA bonds.

Another strategy that can help to diversify the investor base is to consider product/structural offerings – term, structure, coupon-type, tax status, block size, credit enhancement – that are geared toward differing investor segments. Along these lines, we discuss one final strategy below.

ESG CONSIDERATIONS

One additional consideration we have discussed with GLWA to further deepen GLWA's investor reach is a focus on environmental, social, and governance issues ("ESG"). Understanding, differentiating, tracking and even rating/ranking issuers on ESG topics is becoming increasingly important to investors globally and across sectors, including the municipal sector. While the US municipal market has been evolving, understandably, in a different fashion than the taxable global markets, ESG is nonetheless at the forefront of the minds of a larger and larger swath of municipal investors. A recent *Bond Buyer* survey found that two-thirds of municipal market respondents said it is very important or critical for issuers to disclose ESG risks and opportunities.

From a financing standpoint, the ESG financing market is large and growing rapidly. The municipal bond market has absorbed \$3.4 billion of ESG-designated issuance YTD as of April 11, 2022, representing 3.1% of the total \$108.8 billion municipal issuance for the same period. This compares to \$7.1 billion of ESG issuance (6.1% of total municipal issuance) for the same period in 2021, and \$42.6 billion of ESG-designated issuance (9.3% of total municipal issuance) for full year 2021.

Although a modest pricing benefit has been demonstrated for ESG designated bonds sold in taxable bond markets, there has yet to be clear evidence of a consistent pricing benefit for tax-exempt bonds. Because so much of the municipal market has a natural ESG purpose, the growth of ESG dedicated money in the tax-exempt municipal space has been slower to materialize than in other asset classes.

As discussed, we are seeing investors increasingly place a higher value on ESG factors, however, even if not for a specific ESG certified/labeled bond. For example, some SMAs and high net worth investors are marketing their portfolios to evaluate ESG credentials.

In February 2021, the *Bond Buyer* reported that rating agencies all placed meaningful weight on ESG metrics from issuers *in part because the investor community has been requesting it*. When considering much of the rating agency literature, it is overwhelmingly clear that at least the major three rating agencies place a significant emphasis on sustainability themes and issuance metrics.

There are many issues to discuss related to GLWA and ESG but we focus here on the key steps for GLWA to most effectively engage investors – both existing and new: (1) crafting GLWA’s ESG message and brand; (2) developing meaningful disclosure and potentially metrics that can be consistently updated and tracked; and (3) determining avenues to access the ESG-financing market (e.g., designated bonds or Sustainability-Linked Bonds) to amplify the GLWA ESG story.

While many issuers have decided to issue ESG-designated bonds (Green Bonds, Sustainability Bonds and Social Bonds) and we think this is a viable option for GLWA to consider, we believe the first step is cataloging and developing the Authority’s ESG message. ESG is inherently imbued in GLWA’s core mission, philosophy, practices and purpose. As we discussed with GLWA, creating a message and determining the on-going reporting (not 15(c)2-12 reporting) GLWA is comfortable with will elevate the Authority in the minds of investors.

Once the ESG branding has been developed, GLWA is well-suited to access the ESG financing markets. In doing so, GLWA will be able to amplify its message and specifically market to investors with ESG mandates. The various essential projects that are financed by GLWA are a good match for the rapidly growing ESG investor base, falling under the “Environmental” category (ie, Green Bonds). Additionally, as we mentioned to GLWA, we believe GLWA can go further than a project-based Green Bond and instead issue a Sustainability Linked Bond (“SLB”) that actually ties GLWA’s designated-outcomes to the cost of the financing. In other words, with a properly structured bond, GLWA could achieve below-market funding cost assuming it meets the environmental or social KPI-targets it sets for itself pursuant to the SLB. We would be pleased to work with GLWA to determine appropriate metrics for an SLB that would be meaningful for investors.

Goldman Sachs continues to be a leader and innovator in the social, sustainability, and Green bond space, having successfully structured and executed numerous ESG bonds for our clients. Our team of Municipal ESG experts is available to help GLWA implement disclosure and ongoing compliance best practices, whether for an ESG issuance or more generally. We can help reconcile existing disclosure and the roadshow presentation. In addition, our Syndicate desk knows the importance of flagging and emphasizing the ESG label for labeled bonds. Ahead of the issuance, we stress the ESG label to our sales team while also occasionally doing teach-ins for sales as necessary. Lastly, our Buyside Investing Analysts within our Municipal Distribution Platform also work with funds, insurance companies, and SMA platforms with ESG investing mandates. Our analysts’ understanding of their specific credit and bond structuring preference will allow GLWA for a more strategic targeting of potential ESG investors. ***As of April 11, 2022, Goldman ranks as the #2 bookrunning manager for ESG bonds.***



\$439,658,000

District of Columbia Water and Sewer Authority (“DC Water or the “Authority”)

Public Utility Subordinate Lien Revenue, Series 2022B (Green Bond), 2022C and 2022D

Most recently, on February 24, 2022, Goldman Sachs served as the bookrunning senior manager and sole tender and exchange dealer manager for District of Columbia Water and Sewer (“DC Water” or the “Authority”), Series 2022BCD fixed rate transaction concurrently with a fixed price tender and exchange of outstanding bonds.

DC Water issued \$439.66 million of table and tax-exempt fixed rate bonds to (1) raise new money for the Authority’s Clean Rivers Project, federal Washington Aqueduct project, and on-going capital improvement program, (2) redeem \$25 million of Commercial Paper that was used to refinance the Authority’s 2016 Environmental Impact Bond (completed with Goldman Sachs as lead investor), (3) pay for tendered bonds (and exchange for exchanged bonds), and (4) advance refund outstanding bonds. The Bonds carried ratings of Fitch AA (stable), Moody’s Aa2 (stable), and Standard & Poor’s AA+ (stable), as well as an independent green bond certification for Series 2022B (Green Bond). This transaction was also the first transaction for DC Water since the launch of their comprehensive ESG report, the first of its kind for a municipal utility, which Goldman Sachs had provided input on in conjunction with DC Water’s Financial Advisor and ESG consultants.

Goldman Sachs worked with DC Water and its Financial Advisors to craft and execute a plan of finance to achieve refinancing savings and fund new money needs, including a \$100mm Green Bond offering to fund the Clean Rivers program. Goldman Sachs worked closely with DC Water in crafting the messaging for the rating agencies and investors regarding uncertainties surrounding the operations post-COVID and increased CIP needs as well as the keen focus on ESG issues and the Authority’s Blueprint 2.0 Strategic Plan. Of particular relevance to GLWA was the refinancing plan discussed in Section E.II. that incorporated a taxable advance refunding along with a tender/exchange enhancement to the refunding as well as an opportunistic tender/exchange for additional savings. Despite the extremely volatile market, which created a great deal of uncertainty around the tender/exchange process – the first that was executed fully in a timeframe where the market had completely changed since 2021 – the Authority was able to refinance \$177 million of bonds and generate over 14% PV savings.

On the day of pricing, despite an unprecedented market reacting to Russia invading Ukraine between the first and second day of the taxable pricing and the night before the tax-exempt pricing, Goldman Sachs was able to successfully navigate the market to build a \$1.7 billion order book for the transaction – reflecting significant oversubscription by a wide variety of investors including SMAs, bond funds, insurance companies, and hedge funds the Authority to reprice the tax-exempt bonds at lower yields and achieve over \$33.5 million in gross cashflow savings.

E.IX. SERIES 2006D LIBOR FLOATERS

As discussed in our most recent update to GLWA in March 2022 regarding the LIBOR transition and its impact on the Series 2006D floaters (and summarized further below), the Adjustable Interest Rate Act was signed into law, which should ensure a smooth transition from LIBOR to SOFR for the Series 2006D bonds.

While the legislation eliminates an external deadline that might have otherwise pressured GLWA to act, we still think the Authority should regularly evaluate the bonds to ensure they provide value and are competitive with market-based alternatives. ***Our view is that in the current market, the Series 2006D structure provides value and should be left outstanding.*** It represents GLWA's only source of variable rate debt and – even in a rising rate environment – provides reasonably attractive costs. The bonds also provide asset-liability matching that helps to offset the variability in the Authority's investment earnings on cash reserves. While the 60bp spread over the index is higher than what GLWA could achieve on conventional SIFMA floaters with a put date in 3 to 5 years, the fact that the bonds do not have a put date and the spread is fixed to maturity is valuable and something GLWA could not replicate in the public market at comparable spreads. With that said, as GLWA approaches the sinking fund maturities starting in 2026, it can consider fixing out the bonds. Variable rate debt generally provides less value on the shorter-end of the yield curve where there is more certainty and less of a term premium. We worked with Massachusetts on a similar refinancing for their long-term LIBOR floaters. Shorter sinking funds were refunded and longer maturities were left outstanding.

ADJUSTABLE INTEREST RATE (LIBOR) ACT

On March 15, 2022, the President signed into law the Consolidated Appropriations Act of 2022 within which was embedded a section entitled the "Adjustable Interest Rate (LIBOR) Act." The LIBOR Act has four purposes:

1. To mandate the replacement of LIBOR with SOFR in contracts that do not provide for a clearly defined replacement benchmark rate for LIBOR;
2. To preclude litigation on any such contracts not providing for a replacement benchmark rate or replacement mechanism;
3. Conversely, to allow contracts that do have provisions for a clearly defined replacement benchmark to operate according to their terms; and
4. To address various LIBOR references in Federal law.

The mandated conversion of LIBOR to SOFR will be effective July 1, 2023, unless the Federal Reserve Board selects a different date on which LIBOR ceases to be published. The conversion is subject to a "tenor spread adjustment" based upon the prior LIBOR reference rate. The adjustment for a 3-month LIBOR index is 0.26161 percent. Of note, the Act expressly preempts (overrides) any state or local "law, statute, regulation, or standard" relating to the selection of a benchmark replacement or limiting the matter of calculating interest on a Federal Reserve Board-selected replacement benchmark and any conforming changes required.

As we have discussed with you, the 2006D sewer bonds do not expressly provide for a fallback replacement rate in the event that LIBOR ceases to be published. As a result, and based on our read of the Act, it will mandate conversion to a SOFR-based rate (with the 3-month adjustment) on July 1, 2023. The Act does not mandate any particular mechanism for such a conversion. Therefore, GLWA will need to work with the trustee to implement the conversion in advance.

F. References

F.I. REFERENCES

District of Columbia Water and Sewer	City of Chicago	Philadelphia Water Department
Matthew T. Brown <i>Executive VP & CFO</i> Telephone: (202) 787-2714 matthew.brown@dcwater.com	Jack Brofman <i>Deputy CFO</i> Telephone: (312) 744-5042 jack.brofman@cityofchicago.org	Melissa La Buda <i>Deputy Commissioner</i> Telephone: (215) 685 6177 melissa.labuda@phila.gov

F.II. DISSOLUTION

During the normal course of Goldman Sachs' municipal finance business activities, the firm has been involved in transactions, which have been terminated or which have resulted in the loss of a client. Notwithstanding the foregoing, to the best of our knowledge, the municipal finance business has not been removed as an underwriter within the last five years on any municipal securities underwriting assignment for which Goldman Sachs had entered into a purchase agreement or other similar contract due to Goldman Sachs failure to perform as required under the agreement the trustee to implement the conversion in advance.

G. Proposal Presentation

Goldman Sachs' proposal presentation has been uploaded to the Bonfire site as instructed in the solicitation.

Appendix A. Project Team and Key Individuals

Key Individuals - Provide staff resumes for all individuals assigned to this project.

Team Member	Role	Experience	Location	Experience
GLWA Banking Team				
Freda Wang <i>Managing Director</i>	Team Leader	25+ Years	New York City	<p>Ms. Wang has over 25 years of experience in the public finance industry. She joined Goldman Sachs in July 2008 from UBS, where she was a Managing Director and led a group focused primarily on infrastructure clients, development finance, and unique structured financings. Nationally, she has completed well over \$25 billion of senior managed financings, and has particular experience in creating and marketing new revenue credits and project financings involving a variety of security sources. She has also had extensive senior manager experience for water and wastewater utilities in the East and Midwest, as well as state revolving funds in Colorado and Connecticut. She currently serves as a lead banker to the States of Michigan, Connecticut, Massachusetts, the District of Columbia, and the cities of Detroit, Philadelphia and Atlanta, as well as a variety of utility and transportation agencies in the Northeast and the Midwest.</p> <p>Ms. Wang graduated from Columbia University with a BA in Urban Studies.</p>
Mark Somers <i>Vice President</i>	Co-Team Leader	13 Years	San Francisco	<p>Mr. Somers is focused on assisting Midwest entities with their financing needs, including state and local governments, municipal utilities and unique structured credits. Since joining Goldman Sachs in 2009, Mr. Somers has completed over \$25 billion of senior managed financings, including \$15 billion in the Midwest. Mr. Somers is currently a senior banker to many of the largest issuers in Illinois, Michigan, Ohio and Massachusetts. Mr. Somers has worked on numerous complex new money and refunding transactions for these issuers including for the State of Ohio, Ohio Water Development Authority, City of Chicago, Illinois State Toll Highway Authority, Chicago Public Schools, Michigan Finance Authority, and Great Lakes Water Authority. Most recently, he served as the lead banker on OWDA's Fresh Water Series 2021 transaction.</p> <p>Mr. Somers earned a BA in Economics from Stanford University and a MBA from the Yale School of Management.</p>
Matthew Webb <i>Associate</i>	Analytics and Execution	4Y Years	Chicago	<p>Mr. Webb recently joined Goldman Sachs' PSI group after four years of experience at another municipal investment banking firm. Mr. Webb has \$8 billion of financing experience for municipal issuers nationwide, including nearly \$1.5 billion for water and wastewater issues. He will provide deal execution and quantitative support for any financing the Authority contemplates. His recent water and wastewater experience includes transactions for the Northeast Ohio Regional Sewer District, Philadelphia Water Department, Texas Water Development Board, Houston Combined Utility System, and Greater City of Cincinnati Waterworks, among others.</p> <p>Mr. Webb received a B.A. in economics from Harvard University.</p>
Joanne Chang <i>Analyst</i>	Analytics and Execution	<1 Years	New York City	<p>Ms. Chang is the newest member of our PSI Banking team. She joined Goldman Sachs' PSI Group in June 2021 from another area of Goldman Sachs and covers a number of infrastructure clients across the Northeast and Midwest. She will be providing deal execution and quantitative support to the infrastructure banking team. Her most recent financing experience include DC Water Series 2022BCD financing, Ohio Water Development Authority's Fresh Water SRF loans, and City of Chicago's GO and STSC Series 2021.</p> <p>Ms. Chang received a BA in economics from New York University.</p>
Credit Strategist				
Stacy Lingamfelter <i>Vice President</i>	Credit Expertise	14 Years	New York City	<p>Previously an analyst at Moody's Investors' Service, Ms. Lingamfelter joined Goldman Sachs in 2005 and moved to the Public Sector & Infrastructure Banking department in 2014. Today, she works directly with banking clients to tailor credit strategies and help issuers achieve their ratings targets. Ms. Lingamfelter has worked extensively with water and sewer issuers, including previous GLWA transactions, Philadelphia Water Department, Bay Area Water Supply and Conservation Agency, and San Diego County Water Authority.</p> <p>Ms. Lingamfelter earned a BA in Economics and International Relations from Tufts University and graduate degrees in Public Policy and Business Administration from the University of Chicago's Booth School of Business</p>
Quantitative and Tax Expertise				
Arthur Miller <i>Managing Director</i>	Tax and Structuring Expertise	36 Years	New York City	<p>Formerly a tax lawyer at Mudge Rose Guthrie Alexander & Ferdon, Mr. Miller has been with the firm since 1985 and is considered one of the leading industry experts in arbitrage, rebate and advance refundings, as well as in tax law and tax reform. Mr. Miller has served as Chairman of the American Bar Association's Task Force on Advance Refundings, and on the Bond Market Association's Market and Public Policy Analysis Committee. In addition, he has served on an advisory committee to the US Treasury to help simplify the arbitrage and rebate rules. Over 32 years of experience in the municipal finance business, with prior service at a major law firm.</p> <p>Mr. Miller is a graduate of New York University School of Law (LLM Taxation), Duke University School of Law (JD), University of North Carolina (MA History), and Princeton University (BA).</p>

Daniel Byrne <i>Vice President</i>	SRF Expertise	25 years	New York City	<p>Mr. Byrne joined Goldman Sachs in 1998. He works primarily on tax-exempt structured financings, including SRF programs. Mr. Byrne has been involved in over \$12 billion of SRF and pooled financings including bond issues for EFC, the Ohio Water Development Authority, Connecticut Clean Water Fund, Massachusetts Water Pollution Abatement Trust, Virginia Resources Authority, Indiana Finance Authority, and the Texas Water Development Board.</p> <p>Prior to joining Goldman Sachs, Mr. Byrne worked at Lamont Financial Services Corporation, a municipal financial advisory services firm. The firm advised municipalities on complex structured financings and specialized in state revolving funds. At both Lamont and Goldman Sachs, Mr. Byrne has developed and augmented extensive SRF models, including default tolerance, loan recycling, and loan and bond structuring models. He has worked on over \$20 billion of financings for utility issuers such as MEAG Power, LIPA, LCRA, CPS Energy, SMUD, LADWP, and PMPA among others.</p> <p>Mr. Byrne has a BS in Physics and a MBA from the State University of New York at Albany.</p>
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Underwriting & Marketing

Ed Droesch <i>Managing Director, Co-Head of Municipal Syndicate</i>	Lead Underwriter	30+ Years	New York City	<p>Mr. Droesch rejoined Goldman Sachs in 2007 after serving as Managing Director and Head of the Municipal Syndicate Desk, at another prominent investment bank. He has over 30 years of experience in the municipal bond business and prior to working as an underwriter, from 1987 to 1996, Mr. Droesch was a Vice President at Goldman Sachs, where he ran the competitive underwriting desk and traded intermediate municipal bonds.</p> <p>Mr. Droesch has unparalleled experience in the municipal markets, having underwritten over \$100 billion of new issuance over the past 25 years. His underwriting experience includes many well-known issuers.</p> <p>Mr. Droesch is a member of the Municipal Bond Club of New York as well as the Securities Industry and Financial Markets Association. He graduated from Hartwick College in 1982 with a BA in Management.</p>
Bervan Yeh <i>Managing Director, Co-Head of Municipal Syndicate</i>	Lead Underwriter	20+ Years	New York City	<p>Mr. Yeh joined Goldman Sachs in 1997 and has over 20 years of experience as an underwriter. Prior to being an underwriter, Mr. Yeh was an investment banker and specialized in the development of innovative financing structures for tax-exempt clients. As a banker, he completed over \$5.5 billion of senior managed fixed and floating rate financings. Mr. Yeh also worked in the Municipal Capital Markets Group for three years and served in that capacity as a liaison to municipal issuers for both derivative and short-term debt instruments.</p> <p>Mr. Yeh received a BS in Accounting from the City University of New York at Albany.</p>
Sam Denton-Schneider <i>Vice President</i>	Underwriter	10+ Years	New York City	<p>Mr. Denton-Schneider is a Vice President on the Municipal Underwriting Syndicate. Previously, he worked as an Investment Banker in the San Francisco and Los Angeles offices. Mr. Denton-Schneider's recent financing experience includes offerings for the University of California, the State of California, the California State Public Works Board, California DWR, California Earthquake Authority, LADWP, Southern California Public Power Authority, State of Utah, State of Idaho, Riverside County Transportation Board, and Los Angeles International Airport. Mr. Denton-Schneider earned a B.A. in Economics from Williams College.</p>
Ken Ukaigwe <i>Vice President</i>	Underwriter	7+ Years	New York City	<p>Mr. Ukaigwe joined Goldman Sachs in 2018 and has seven years of public finance experience as a member of banking and syndicate teams. He joined our Syndicate Desk from our PSI Banking team and leverages his relationships with investors to help issuers prepare for investor inquiries. He highlights investor-specific credit concerns based on prior transactions, builds investor profiles for issuers, and obtains specific investor questions ahead of 1x1 calls.</p> <p>Mr. Ukaigwe graduated from Bentley University with a double major in Corporate Finance and Accounting.</p>
Petros Voulgaris <i>Vice President</i>	Underwriter	18+ Years	New York City	<p>Mr. Voulgaris joined Goldman Sachs in April of 2018, bringing with him 18 years of experience and credit insight at his two previous institutional investment management firms. As a key member of the Firm's Investor Marketing Group (IMG), Mr. Voulgaris helps lead a dedicated team of experienced credit and market analysts that work with the Firm's syndicate and salesforce to develop marketing and investor targeting strategies, with a particular focus on bringing new credits to market.</p> <p>Mr. Voulgaris graduated from Merrimack College with a quadruple concentration in International Business, Finance, Economics, and Marketing.</p>

Project Team - Summarize the roles and pertinent experience of each key individual and indicate the percentage of time planned for them to be dedicated to this project using the following format in Table 2 below:

Part 1 Summary of contractor's current involvement with all projects:					
	Contract No.	Client Name	Involvement Time	Contract Title	Type of Involvement

Involvement time for this project	2200290	Great Lakes Authority "GLWA"	Resources are fully available at the need of GLWA.	GLWA Procurement Solicitation	Bond Underwriting Services
Other Projects	N/A	N/A	N/A	N/A	N/A

Part 2 Explain how the commitments listed under part 1 will impact performance on this project.

Jeffrey Scruggs, Managing Director and Head of Goldman Sachs' Public Sector and Infrastructure Group ("PSI") will ensure that GLWA receives fully commitment of resources from PSI.

Part 3 Explain how the project manager or consultant representatives allocated percentage of time to this contract will be utilized.

Goldman Sachs' Public Sector and Infrastructure Group ("PSI") GLWA Banking Team will work to address the financial needs for GLWA and aid through the debt issuance process.

Staff Experience - Identify by name and title the individuals the vendor considers to be key to the successful completion of this project using the format in Table 3 below.

No.	Staff Name	Employer Name	Total Years of Related Exp.	Related Projects	Project Role
1	Freda Wang, Managing Director	Goldman Sachs	25Y+	Great Lakes Water Authority, Massachusetts Water Resources Authority, District of Columbia Water and Sewer, Philadelphia Water Department, Metropolitan District Commission (Hartford), Connecticut SRF, New York Water	Team Leader
2	Mark Somers, Vice President	Goldman Sachs	13Y	Great Lakes Water Authority, City of Columbus, City of Chicago, Ohio Water Development Authority, Massachusetts Water Resources Authority	Co-Team Leader
3	Matthew Webb, Associate	Goldman Sachs	4Y+	Northeast Ohio Regional Sewer District, Philadelphia Water Department, Texas Water Development Board, Houston Combined Utility System, Greater City of Cincinnati Waterworks	Analytical and Executional Support
4	Joanne Chang, Analyst	Goldman Sachs	<1Y	Water/Wastewater, City of Chicago, Ohio Water Development Authority, Citizens Energy Group, District of Columbia Water and Sewer	Analytical and Executional Support

Appendix B. Legal Disclosure and Conflict of Interest Disclosure

The firm assumes that the Great Lakes Water Authority primarily, is interested in proceedings relating to Goldman Sachs & Co. LLC's ("Goldman Sachs") role as managing underwriter of municipal offerings. Except as noted below, the firm's Public Sector and Infrastructure Banking group is not involved in litigation arising out of its role as a managing underwriter of municipal offerings.

From time to time, the firm, its managing directors and employees are involved in proceedings and receive inquiries, subpoenas and notices of investigation relating to various aspects of its business. These include requests for information by the Securities and Exchange Commission and certain other federal and state agencies and authorities arising out of publicly reported events in the municipal securities arena. As reported in the press, there has been recent regulatory and governmental focus on various aspects associated with municipal offerings, including pricing, transaction expenses, and municipal derivative products. The firm is willing to provide information regarding such matters upon request. In the normal course of business, the firm keeps regulatory inquiries, subpoenas, notices of investigation and other similar regulatory matters confidential, except as those that the firm has publicly disclosed in Form BD and the

periodic reports filed by the firm electronically with the Securities and Exchange Commission. For additional information on matters that are required to be publicly reported, which may include updates to the information set forth herein, please also refer to the firm's various regulatory filings under applicable laws and regulations, including Form BD and periodic filings pursuant to the Exchange Act.

The City of Philadelphia, the Mayor and City Council of Baltimore, and the Board of Directors of the San Diego Association of Governments, acting as the San Diego County Regional Transportation Commission, purporting to sue on behalf of VRDO issuers between February 1, 2008 and June 30, 2016, filed an antitrust class action in February 2019 in New York federal court focused on alleged collusion by certain dealers (including Goldman Sachs) in resetting rates on VRDOs. The plaintiffs' complaint contains few specific allegations about Goldman Sachs including to reference and quote a remarketing agreement entered into with the San Diego County Regional Transportation Commission and to note the names of two traders on its municipal trading desk. Plaintiffs' complaint largely relies on economic analyses to support its claims. (Similar allegations about alleged improprieties in setting rates are the subjects of at least 4 pending whistleblower cases in which the firm is not named). Discovery is underway in this matter after the court largely denied the dealers' motion to dismiss the plaintiffs' claims. Plaintiffs' class certification motion is due in October 2022.

Goldman Sachs & Co. LLC is among a number of financial services firms named in qui tam actions. A qui tam action is pending in New York state court, and related qui tam actions in New Jersey and California state courts were dismissed with leave to replead. Amended qui tam complaints were filed in New Jersey and California state courts in October 2018. Related actions in Illinois state court and New York federal court were voluntarily dismissed. The actions allege that numerous financial institutions made misrepresentations in connection with underwritings for the relevant bond offerings when they allegedly promised to obtain the best price possible for the bonds. The actions seek unspecified damages equal to the interest the States allegedly overpaid on the bonds, as well as treble damages and civil penalties. GS is also named in certain matters related to Puerto Rico's ongoing debt crisis in connection with its role as an underwriter in certain debt issuances by the government of Puerto Rico.

On June 18, 2015, the Securities and Exchange Commission ("SEC") announced settlements with 36 firms (collectively, the "Settlement Participants"), including Goldman Sachs, relating to the SEC's Municipalities Continuing Disclosure Cooperation Initiative, a voluntary self-reporting program. The SEC alleged that between 2010 and 2014 Goldman Sachs and the other Settlement Participants violated federal securities laws by selling municipal bonds using offering documents that contained materially false statements or omissions about the bond issuers' compliance with continuing disclosure obligations. Additionally, the SEC alleged that the Settlement Participants failed to conduct adequate due diligence to identify the misstatements and omissions before offering and selling the bonds to their customers. As part of its settlement, Goldman Sachs agreed, without admitting or denying the SEC's allegations, to cease and desist from committing or causing any violations and any future violations of Section 17(a)(2) of the Securities Act of 1933, pay a civil penalty of \$500,000 and retain an independent consultant to review our policies and procedures on due diligence for municipal securities underwriting.

On December 27, 2012, the Financial Industry Regulatory Authority ("FINRA") announced settlements with five firms, including Goldman Sachs, regarding the reimbursement of California Public Securities Association ("Cal PSA") fees as underwriting expenses in connection with California municipal and state bond offerings between February 2006 and December 2010. FINRA alleged that Goldman Sachs and the other four firms violated fair dealing and supervisory rules of the Municipal Securities Rulemaking Board ("MSRB") by obtaining reimbursement for the Cal PSA payments. As part of its settlement, Goldman Sachs agreed, without admitting or denying FINRA's allegations, to be censured, pay a fine, pay restitution to certain issuers in California and to implement any necessary revisions to its supervisory procedures and systems to ensure compliance with MSRB Rule G-27.

On September 27, 2012, the Securities and Exchange Commission and the Commonwealth of Massachusetts announced settlements with Goldman Sachs relating to the unauthorized political activities of a former employee, Neil Morrison, from 2008 until 2010 in connection with the former Massachusetts Treasurer. The firm detected Morrison's unauthorized activities in the Fall of 2010, promptly reported them to the relevant regulators and terminated Morrison's employment. As part of the SEC settlement, which found that Morrison's unauthorized activities were attributable to Goldman Sachs, the firm agreed, without admitting or denying any findings or allegations, to be censured and to cease and desist from violating Section 15B(c)(1) of the Exchange Act as well as MSRB Rules G-8, G-9, G-17, G-27 and G-37. The firm also agreed to make payments pursuant to the settlements totaling roughly \$14.6 million.

Goldman Sachs (along with, in some cases, other financial services firms) is named by municipalities, municipal-owned entities, state-owned agencies or instrumentalities and non-profit entities in a number of FINRA arbitrations and federal court cases based on Goldman Sachs' role as underwriter of the claimants' issuances of an aggregate of approximately \$1.9 billion of auction rate securities from 2003 through 2007 and as a broker-dealer with respect to auctions for these securities, most of which have been concluded either through settlements or dismissal. The claimants generally allege that Goldman Sachs failed to disclose that it had a practice of placing cover bids in auctions, and/or failed to inform the claimant of the deterioration of the auction rate market beginning in the fall of 2007, and that, as a result, the claimant was forced to engage in a series of expensive refinancing and conversion transactions after the failure of the auction market in February 2008. Certain claimants also allege that Goldman Sachs advised them to enter into interest rate swaps in connection with their auction rate securities issuances, causing them to incur additional losses. The claims include breach of fiduciary duty, fraudulent concealment, negligent misrepresentation, breach of contract, violations of the Exchange Act and state securities laws, and breach of duties under the rules of the Municipal Securities Rulemaking Board and the NASD. Certain of the arbitrations have been enjoined in accordance with the exclusive forum selection clauses in the transaction documents.

As reported in the firm's most recent Annual Report on Form 10-K, the firm is subject to a number of investigations and reviews by, and in some cases have received subpoenas and requests for documents and information from, various governmental and regulatory bodies and self-regulatory organizations relating to transactions involving municipal securities, including wall-cross procedures and conflict of interest disclosure with respect to state and municipal clients, the trading and structuring of municipal derivative instruments

in connection with municipal offerings, political contribution rules, municipal advisory services and the possible impact of credit default swap transactions on municipal issuers. The firm is cooperating with the investigations and reviews. For further information, please refer to the firm's various regulatory filings under applicable laws and regulations, including Form BD and periodic filings pursuant to the Exchange Act.

While the civil action did not in any way relate to the municipal securities business or the firm's role as underwriter of municipal offerings, please note that on April 16, 2010, the Securities and Exchange Commission brought a civil action in the U.S. District Court for the Southern District of New York against Goldman Sachs and one of its employees in connection with a single collateralized debt obligation transaction made in early 2007, and subsequently, on July 15, 2010, Goldman Sachs agreed to a settlement with the Securities and Exchange Commission to resolve this action against the firm. For further information about this matter, please refer to the firm's various regulatory filings under applicable laws and regulations, including Form BD, periodic filings pursuant to the Exchange Act, and www.gs.com.

On September 4, 2008, Goldman Sachs' parent, The Goldman Sachs Group Inc., was named as a defendant, together with numerous other financial services firms, in two complaints filed in the U.S. District Court for the Southern District of New York alleging that the defendants engaged in a conspiracy to manipulate the auction securities market in violation of federal antitrust laws. The actions were filed, respectively, on behalf of putative classes of issuers of and investors in auction rate securities and seek, among other things, treble damages in an unspecified amount. Defendants' motion to dismiss was granted on January 26, 2010. On March 1, 2010, the plaintiffs appealed from the dismissal of their complaints.

On August 21, 2008, Goldman Sachs entered into settlement agreements in principle with the Office of Attorney General of the State of New York and the Illinois Securities Department (on behalf of the North American Securities Administrators Association) regarding auction rate securities. Under the agreements, Goldman Sachs, among other things, without admitting or denying any wrongdoing, offered (i) to repurchase at par the outstanding auction rate securities that were held by its Private Wealth Management clients and were purchased through the firm prior to February 11, 2008, with the exception of those auction rate securities where auctions are clearing, (ii) to continue to work with issuers and other interested parties, including regulatory and governmental entities, to expeditiously provide liquidity solutions for institutional investors, and (iii) to pay a \$22.5 million fine. On June 3, 2009, Goldman Sachs entered into a final settlement with the Office of Attorney General of the State of New York pursuant to the agreement in principal. In connection with this final settlement, Goldman Sachs, without admitting or denying any wrongdoing, agreed to pay a civil penalty of \$22,500,000, of which \$1,952,439.67 was paid to the State of New York. The remainder of the civil penalty will be paid to those states and territories that enter administrative or civil consent orders approving the terms of the North American Securities Administrators Association settlement. On March 19, 2010, Goldman Sachs entered into a final settlement with the Illinois Securities Department. In addition, as of September 10, 2012, Goldman Sachs has entered into final settlements with 49 jurisdictions (including New York and Illinois).

On May 31, 2006, the U.S. Securities and Exchange Commission (the "SEC") announced that it had settled with 15 firms, including Goldman Sachs that participate in the auction rate securities market regarding their respective practices and procedures in this market. The SEC alleged in the settlement that the firms had managed auctions for auction rate securities in which they participated in ways that were not adequately disclosed or that did not conform to disclosed auction procedures. As part of the settlement, a number of firms, including Goldman Sachs had each agreed to pay civil money of \$1,500,000. In addition, without admitting or denying the SEC's allegations, Goldman Sachs agreed to be censured, to cease and desist from violating certain provisions of the securities laws, to provide to customers written descriptions of its material auction practices and procedures, and to implement procedures reasonably designed to detect and prevent any failures to conduct the auction process in accordance with disclosed procedures.

On June 27, 2006, as part of a multi-firm settlement relating to transactions in municipal securities below the minimum denominations set by the issuers of those securities, the NASD censured Goldman Sachs, assessed a fine and required the firm to adopt and implement policies and procedures to ensure compliance with those MSRB rules.

The firm's Public Sector and Infrastructure Banking group activities are the subject of the following lawsuit: in August 2004, several purchasers of Michigan Strategic Fund Resource Recovery Limited Obligation Revenue Bonds (Central Wayne Energy Recovery Limited Partnership Project) brought a lawsuit against Goldman Sachs, as underwriter, and R.W. Beck, as feasibility consultant, in Michigan state court alleging negligent and innocent misrepresentation in connection with the issuance of the bonds in 1998. In March 2005, these claims were dismissed and the plaintiffs were permitted to file an amended complaint alleging fraud in connection with the issuance of the bonds. In July 2005, the Michigan amended complaint was dismissed on forum non conveniens grounds and the plaintiffs have appealed that decision. Shortly thereafter, the plaintiffs served a similar fraud complaint in New York, which Goldman Sachs has moved to for summary judgment following the completion of discovery. In January 2009, a settlement was entered into on the basis of a dismissal of all claims and mutual releases. No payments were made pursuant to this settlement agreement.

Disclosure on Conflicts of Interest

Goldman Sachs is a full service firm engaged in trading, underwriting, investment banking, commercial banking, financial advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services for various persons and entities.

Goldman Sachs has in place policies and procedures designed to prevent the unauthorized disclosure of confidential information from its investment banking division, including the Public Sector and Infrastructure Banking group ("PSI"), to its sales and trading, investment research and investment management divisions. In reliance on these policies and procedures, business units outside of PSI may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments (each, an "Instrument") for our own account or for the accounts of our customers. Our sales and trading, investment research and investment management divisions may also communicate independent investment recommendations, market

color or trading ideas and/or publish or express independent research views in respect of such Instruments, and may at any time recommend or otherwise communicate to clients that they should acquire long and/or short positions (including, for example, by buying and/or selling credit protection against default by an issuer) in such Instruments. The investment and trading activities and communications described in this paragraph are conducted in business units outside of PSI and may relate to or involve the issuer or Instruments of the issuer or persons or entities with relationships with the issuer, and may be, or appear to be, inconsistent with the interests of the issuer. Goldman Sachs, including PSI, may also provide investment banking, commercial banking, underwriting, financial advisory services and other services to persons and entities with relationships with the issuer.

Goldman Sachs has considered this assignment through our centralized conflicts clearance process it uses to evaluate potential new investment banking assignments. Based on our review, we do not believe that there are any activities in which the firm is currently engaged that would present an actual conflict that would prevent us from accepting a mandate from you or from executing fully the roles and responsibilities that are the subject of this Request for Proposal. Please be assured that, in the event we are selected to act as an underwriter in connection with the offerings contemplated by this Request for Proposal, we will follow the same robust conflict clearance process with respect to potential future investment banking assignments and, if we believe that any such assignment would present an actual conflict that would prevent us from executing fully the roles and responsibilities that are the subject of this Request for Proposal, at such time that we are not otherwise able to resolve, we will, to the extent we are permitted to do so, notify you of such conflict and endeavor to work with you to resolve such conflict to our mutual satisfaction.

Appendix C. Goldman Sachs Senior Managed Experience

Sale Date	Issuer	Series	Issue Description	State	Taxable Code	Security Type	Par (\$MM)	Role of GS
01/26/2012	Jacksonville Electric Authority (JEA)	2012 Series A	Water & Sewer Sys Rev & Sub Bonds	FL	E	RV	354.875	LEAD
02/28/2012	Platte River Power Authority	Series II	Power Revenue Bonds	CO	E	RV	65.475	LEAD
03/21/2012	Energy Northwest	Series 2012 B	Electric Revenue Refunding Bonds	WA	E	RV	71.615	LEAD
03/21/2012	Energy Northwest	Series 2012 C	Electric Revenue Refunding Bonds	WA	T	RV	85.735	LEAD
03/21/2012	West Basin Municipal Water Dt	Series 2012 A	Refunding Revenue Bonds	CA	E	RV	50.325	LEAD
04/12/2012	Salt River Proj Agric Imp & Pwr Dt	2012 Series A	Electric System Ref Rev Bonds	AZ	E	RV	236.185	LEAD
04/18/2012	No Wasco Co Peoples Utility Dt	Series 2012 A	Revenue Refunding Bonds	OR	E	RV	7.520	LEAD
04/18/2012	No Wasco Co Peoples Utility Dt	Series 2012 B	Revenue Refunding Bonds	OR	T	RV	12.215	LEAD
04/26/2012	Central Plains Energy Project	Series 2012	Gas Project Revenue Bonds	NE	E	RV	608.675	LEAD
06/12/2012	Burke Co Development Authority	Second Series 2012	Pollution Control Revenue Bonds	GA	E	RV	100.000	SOLE RA
06/20/2012	Detroit City-Michigan	Series 2012 A	Swg Disposal Sys & Sr Lien Bonds	MI	E	RV	659.780	LEAD
06/20/2012	So California Metro Water Dt	2012 Series C	Water Revenue Refunding Bonds	CA	E	RV	190.600	LEAD
06/27/2012	Long Island Power Authority	Series 2012 A & B	Electric Sys Gen Revenue Bonds	NY	E	RV	502.000	LEAD
06/27/2012	So California Metro Water Dt	2012 Series E 1-3	Water Revenue Refunding Bonds	CA	E	RV	89.460	LEAD RA
07/12/2012	Austin City-Texas	Series 2012	Wtr & Wstwr Sys Rev Ref Bonds	TX	E	RV	336.820	LEAD
08/23/2012	Lakeland City-Florida	Series 2012	Var Rate Energy System Ref Bonds	FL	E	RV	100.000	SOLE
09/19/2012	California Dept of Wtr Resources	Series AN	Water System Revenue Bonds	CA	E	RV	49.525	LEAD
09/19/2012	California Dept of Wtr Resources	Series AO	Water System Revenue Bonds	CA	T	RV	317.505	LEAD
09/21/2012	Omaha Public Power Dt (OPPD)	2012 Series A & B	Electric Sys Revenue Bonds	NE	E	RV	499.370	LEAD
10/11/2012	Los Angeles Dept Wtr & Pwr (LADWP)	2012 Series C	Power System Revenue Bonds	CA	E	RV	300.000	LEAD
10/17/2012	NYS Environmental Facs Corp	Series 2012 F	State Revolving Fund Rev Bonds	NY	T	RV	33.465	LEAD
10/17/2012	NYS Environmental Facs Corp	Series 2012 E	State Revolving Funds Rev Bonds	NY	E	RV	98.640	LEAD
01/25/2013	Jacksonville Electric Authority (JEA)	Ser Three 2013 A & B	Electric Sys & Sub Revenue Bonds	FL	E	RV	203.255	LEAD
01/31/2013	Bay Area Wtr Supply & Conserv Agcy	Series 2013 B	Revenue Bonds	CA	T	RV	94.305	LEAD
01/31/2013	Bay Area Wtr Supply & Conserv Agcy	Series 2013 A	Revenue Bonds	CA	E	RV	241.475	LEAD
03/20/2013	Sacramento City-California	Series 2013	Water Revenue Bonds	CA	E	RV	215.195	LEAD
03/22/2013	Eastern Municipal Water Dt	Series 2013 A	Water & Sewer Revenue Ref Bonds	CA	E	RV	54.575	SOLE RA
03/28/2013	Santa Clara City-California	Series 2013 A	Electric Revenue Refunding Bonds	CA	E	RV	64.380	LEAD
05/14/2013	Tacoma City-Washington	Series 2013 A	Electric System Rev & Ref Bonds	WA	E	RV	181.610	LEAD
05/22/2013	Los Angeles Dept Wtr & Pwr (LADWP)	2013 Series C	Power System Revenue Bonds	CA	T	RV	27.855	SOLE
05/22/2013	Los Angeles Dept Wtr & Pwr (LADWP)	2013 Series B	Power System Revenue Bonds	CA	E	RV	452.145	LEAD
06/05/2013	Tacoma City-Washington	Series 2013 B	Electric System Revenue Ref Bonds	WA	E	RV	35.620	LEAD
06/19/2013	So California Metro Water Dt	2013 Series E	Special Var Rte Water Ref Bonds	CA	E	RV	104.820	SOLE RA
07/31/2013	Lehigh Co Authority	Series 2013 C	Water and Sewer Revenue Bonds	PA	T	RV	18.735	SOLE
07/31/2013	Lehigh Co Authority	Series 2013 B	Water and Sewer Revenue Bonds	PA	E	RV	43.359	SOLE
07/31/2013	Lehigh Co Authority	Series 2013 A	Water and Sewer Revenue Bonds	PA	E	RV	245.590	SOLE
08/08/2013	SC Pub Svc Au (Santee Cooper)	Series 2013 C	Revenue Obligations	SC	T	RV	250.000	LEAD
08/08/2013	SC Pub Svc Au (Santee Cooper)	Ser 2013 A & Ref B	Revenue Obligations	SC	E	RV	641.385	LEAD
08/20/2013	SC Pub Svc Au (Santee Cooper)	Series 2013 D	Revenue Obligations	SC	T	RV	450.000	LEAD
08/28/2013	Atlanta City-Georgia	Series 2013 B	Water & Wastewater Rev Ref Bonds	GA	E	RV	200.140	LEAD
10/30/2013	Nebraska Public Power Dt	2013 Series A	General Revenue Bonds	NE	E	RV	118.270	LEAD
12/12/2013	NYS Utility Debt Securitization Auth	Series 2013 T	Restructuring Bonds	NY	T	RV	482.934	LEAD
12/12/2013	NYS Utility Debt Securitization Auth	Series 2013 TE	Restructuring Bonds	NY	E	RV	1,539.390	LEAD
02/12/2014	So California Metro Water Dt	2014 Series C 1-3	Water Revenue Refunding Bonds	CA	E	RV	30.335	LEAD RA
02/12/2014	So California Metro Water Dt	2014 Series A	Water Revenue Refunding Bonds	CA	E	RV	95.935	LEAD
03/13/2014	So California Pub Pwr Au (SCPAA)	2014 Series A	Revenue Bonds	CA	E	RV	151.880	LEAD
03/13/2014	So California Pub Pwr Au (SCPAA)	2014 Series B	Revenue Bonds	CA	T	RV	166.980	LEAD
03/18/2014	Phoenix City Civic Imp Corp	Series 2014	Jr Lien Wstwr Sys Rev Ref Bonds	AZ	E	RV	127.810	LEAD
03/19/2014	NYS Environmental Facs Corp	Series 2014 A	St Clean & Drink Wtr Rev Bonds	NY	E	RV	347.385	LEAD
03/28/2014	Indiana Finance Authority	Series 2014 A	State Revolving Fund Prog Bonds	IN	E	RV	18.575	LEAD
03/28/2014	Indiana Finance Authority	Series 2014 B	State Revolv Fund Prog Ref Bonds	IN	E	RV	68.350	LEAD
06/13/2014	Houston City-Texas	Series 2014 D	Comb Utility Sys 1st Ln Rev & Ref	TX	E	RV	547.980	LEAD
06/18/2014	New Orleans City-Louisiana	Series 2014	Water Revenue & Refunding Bonds	LA	E	RV	103.525	LEAD
06/18/2014	New Orleans City-Louisiana	Series 2014	Sewerage Service Rev & Ref Bonds	LA	E	RV	158.990	LEAD
07/10/2014	District of Columbia Wtr & Swr Au	Series 2014 A	Public Utility Senior Lien Bonds	DC	T	RV	350.000	LEAD
10/21/2014	District of Columbia Wtr & Swr Au	Series 2014 C	Public Utility Sub Lien Ref Bonds	DC	E	RV	377.700	LEAD
02/26/2015	Atlanta City-Georgia	Series 2015	Water & Wastewater Rev Ref Bonds	GA	E	RV	1,237.405	LEAD
02/26/2015	Jacksonville Electric Authority (JEA)	Series Three 2015 A	Electric System Revenue Bonds	FL	E	RV	83.325	LEAD
03/18/2015	Kentucky Municipal Pwr Agcy (KMPA)	Series 2015 A	Power System Revenue Ref Bonds	KY	E	RV	210.600	LEAD
04/23/2015	Connecticut	2015 Series A	State Revolving Fund Rev Bonds	CT	E	RV	250.000	LEAD
05/13/2015	Austin City-Texas	Series 2015 B	Elec Utility Sys Rev Ref Bonds	TX	T	RV	81.045	LEAD
05/13/2015	Austin City-Texas	Series 2015 A	Elec Utility Sys Rev Ref Bonds	TX	E	RV	327.845	LEAD
05/15/2015	Salt River Proj Agric Imp & Pwr Dt	2015 Series A	Electric System Revenue Bonds	AZ	E	RV	172.035	LEAD
05/15/2015	Salt River Proj Agric Imp & Pwr Dt	2015 Series A	Electric System Revenue Bonds	AZ	E	RV	752.455	LEAD

Sale Date	Issuer	Series	Issue Description	State	Taxable Code	Security Type	Par (\$MM)	Role of GS
06/09/2015	Kentucky Municipal Pwr Agcy (KMPA)	Series 2015 B	Power Sys Revenue Ref Bonds	KY	E	RV	36.035	SOLE
06/29/2015	California Municipal Fin Auth	Series 2015 B	Revenue Refunding Bonds	CA	E	RV	92.865	LEAD
07/15/2015	Brownsville City-Texas	Series 2015	Utilities System Revenue Ref Bonds	TX	E	RV	94.770	LEAD
07/15/2015	San Antonio City-Texas	New Series 2015	Electric & Gas Sys Rev Ref Bonds	TX	E	RV	320.530	LEAD
10/20/2015	Orlando Utilities Commission (OUC)	Series 2015 B	Utility System Rev Ref Bonds	FL	E	RV	115.090	SOLE RA
10/30/2015	NYS Power Authority	Series 2015 A	Revenue Bonds	NY	E	RV	69.020	LEAD
11/17/2015	District of Columbia Wtr & Swr Au	Series A	Commercial Paper Notes	DC	E	RV	100.000	SOLE
12/01/2015	Colorado Springs City-Colorado	Series A & B	Utilities System CP Notes	CO	E	RV	150.000	LEAD
01/21/2016	Lakeland City-Florida	Series 2016	Energy System Rev & Ref Bonds	FL	E	RV	138.650	LEAD
01/26/2016	Nebraska Public Power Dt	2016 Series A & B	General Revenue Bonds	NE	E	RV	139.225	LEAD
01/27/2016	Kentucky Municipal Pwr Agcy (KMPA)	Series 2016 A	Power System Revenue Ref Bonds	KY	E	RV	71.235	LEAD
02/09/2016	Missouri Joint Municipal Electric Utility Comm	Series 2016 A	Power Project Revenue Ref Bonds	MO	E	RV	252.745	LEAD
02/23/2016	Lower Alabama Gas Dt	Series 2016 A	Revenue Bonds	AL	E	RV	599.350	LEAD
05/24/2016	Paducah Electric Plant Board	Series 2016 A	Refunding Revenue Bonds	KY	E	RV	103.375	SOLE
06/08/2016	Lower Colorado River Authority (LCRA)	Series 2016	Transmission Contract Ref Bonds	TX	E	RV	190.040	LEAD
06/15/2016	NYS Environmental Facs Corp	Series 2016 A	State Clean & Drinking Wtr Bonds	NY	E	RV	500.955	LEAD
06/23/2016	Dallas City-Texas	Series 2016 B	Wtrwrks & Sewer Sys Rev Ref Bonds	TX	T	RV	170.245	LEAD
06/23/2016	Dallas City-Texas	Series 2016 A	Wtrwrks & Sewer Sys Rev Ref Bonds	TX	E	RV	370.100	LEAD
08/16/2016	Irvine Ranch Water Dt	Series 2016	Certificates of Participation	CA	E	RV	116.745	SOLE
08/23/2016	Birmingham City Water Works Board	Series 2016-C	Subordinate Water Rev Ref Bonds	AL	T	RV	34.110	LEAD
08/23/2016	Birmingham City Water Works Board	Series 2016-A & B	Senior & Sub Water Rev Ref Bonds	AL	E	RV	435.390	LEAD
08/23/2016	Northern Illinois Muni Pwr Agcy	Series 2016 A	Power Project Revenue Ref Bonds	IL	E	RV	260.215	LEAD
09/13/2016	California Dept of Wtr Resources	Series 2016 P	Power Supply Revenue Bonds	CA	T	RV	283.615	LEAD
09/13/2016	California Dept of Wtr Resources	Series 2016 P	Power Supply Revenue Bonds	CA	T	RV	283.615	LEAD
09/20/2016	Wisconsin	2016 Series 1	Petroleum Inspection Fee Bonds	WI	E	RV	62.445	LEAD
09/28/2016	Anaheim Hsg & Pub Imp Auth	Series 2016 B	Revenue Refunding Bonds	CA	T	RV	69.780	LEAD
09/28/2016	Anaheim Hsg & Pub Imp Auth	Series 2016 A	Revenue Bonds	CA	E	RV	219.285	LEAD
10/14/2016	Great Lakes Water Auth (GLWA)	Series 2016 B & C	Sewage Disposal Sys Rev Ref Bonds	MI	E	RV	421.295	LEAD
10/14/2016	Great Lakes Water Auth (GLWA)	Series 2016 A B C D	Wtr Supply Sys Rev & Ref Bonds	MI	E	RV	917.805	LEAD
10/14/2016	Long Island Power Authority	Series 2016 B	Electric System Gen Revenue Bonds	NY	E	RV	407.675	LEAD
01/31/2017	District of Columbia Wtr & Swr Au	Series 2017 A	Public Utility Sr Lien Rev Bonds	DC	E	RV	100.000	LEAD
01/31/2017	District of Columbia Wtr & Swr Au	Series 2017 B	Public Utility Sr Lien Rev Bonds	DC	E	RV	200.000	LEAD
03/08/2017	Gainesville City-Florida	Series C	Utilities System CP Notes	FL	E	RV	5.000	SOLE RA
04/05/2017	Philadelphia City-Pennsylvania	Series 2017 A	Water & Wastewater Revenue Bonds	PA	E	RV	279.865	LEAD
04/05/2017	San Antonio City-Texas	New Series 2017	Elec & Gas Sys Rev & Ref Bonds	TX	E	RV	308.005	LEAD
05/02/2017	California Dept of Wtr Resources	Series 1	Water Rev Commercial Paper Notes	CA	E	RV	300.000	LEAD RA
05/02/2017	California Dept of Wtr Resources	Series 2	Water Rev Commercial Paper Notes	CA	E	RV	500.000	LEAD RA
06/02/2017	San Francisco City/Co Public Util Comm	Series A1- A-6	Commercial Paper Notes	CA	E	RV	750.000	LEAD
06/29/2017	Los Angeles Dept Wtr & Pwr (LADWP)	2017 Series C	Power System Revenue Bonds	CA	E	RV	375.000	LEAD
07/24/2017	Washington Econ Dev Fin Auth	Series 2017 A	Environmental Facilities Rev Bond	WA	A	RV	133.600	SOLE
08/01/2017	Austin City-Texas	Series 2017	Water & Wstwr Sys Rev Ref Bonds	TX	E	RV	311.100	LEAD
08/15/2017	Tacoma City-Washington	Series 2017	Electric System Revenue Bonds	WA	E	RV	70.575	LEAD
08/30/2017	So California Pub Pwr Au (SCPFA)	Series 2017-1	Refunding Revenue Bonds	CA	E	RV	107.525	SOLE RA
09/27/2017	Southern Minnesota Muni Pwr Agcy	Series 2017 A	Power Supply System Revenue Bonds	MN	E	RV	23.810	LEAD
10/05/2017	Austin City-Texas	CP Sub-Series	Combined Utility Systems Notes	TX	T	RV	75.000	SOLE RA
10/05/2017	Austin City-Texas	CP Sub-Series	Combined Utility Systems Notes	TX	E	RV	400.000	SOLE RA
10/25/2017	Gainesville City-Florida	2017 Series A	Utilities System Revenue Bonds	FL	E	RV	415.920	LEAD
10/27/2017	Tennessee Energy Acquisition Corp	Series 2017 A	Revenue Bonds	TN	E	RV	678.250	LEAD
11/09/2017	Salt River Proj Agric Imp & Pwr Dt	2017 Series A	Electric System Revenue Bonds	AZ	E	RV	735.240	LEAD
11/15/2017	Grant Co Public Utility Dt #2	Series 2017 N	Electric System Revenue Ref Bonds	WA	E	RV	49.865	SOLE
11/30/2017	Grant Co Public Utility Dt #2	Series 2017-O	Electric System Revenue Ref Bonds	WA	E	RV	64.545	LEAD
12/06/2017	California Dept of Wtr Resources	Series AY	Water System Revenue Bonds	CA	T	RV	140.825	LEAD
12/06/2017	California Dept of Wtr Resources	Series AX	Water System Revenue Bonds	CA	E	RV	350.670	LEAD
12/06/2017	Sacramento MUD (SMUD)	2017 Series E	Electric Revenue Refunding Bonds	CA	E	RV	202.500	LEAD
12/07/2017	Central Plains Energy Project	Series 2017 B	Gas Proj Crossover Ref Rev Bonds	NE	T	RV	32.000	SOLE
12/07/2017	Central Plains Energy Project	Series 2017 A	Gas Proj Crossover Ref Rev Bonds	NE	E	RV	471.315	SOLE
12/12/2017	Anaheim Hsg & Pub Imp Auth	Series 2017-A & B	Revenue Refunding Bonds	CA	E	RV	237.745	LEAD
12/14/2017	Jacksonville Electric Authority (JEA)	Ser 3 2017 B & B	Electric System & Sub Rev Bonds	FL	E	RV	41.075	LEAD
12/14/2017	Jacksonville Electric Authority (JEA)	Series 3 2017 B & B	Electric System & Sub Rev Bonds	FL	E	RV	342.765	LEAD
12/28/2017	Oregon Business Development Comm	Series 248-A	Sr Economic Development Rev Bonds	OR	E	RV	109.880	SOLE RA
12/28/2017	Oregon Business Development Comm	Series 248-B & C	Sub & Sr Economic Dev Rev Bonds	OR	T	RV	135.395	SOLE RA
03/01/2018	Black Belt Energy Gas Dt	Series 2018 A	Gas Prepay Revenue Bonds	AL	E	RV	23.300	SOLE
03/01/2018	Black Belt Energy Gas Dt	Series 2018 A	Gas Prepay Revenue Bonds	AL	E	RV	313.555	SOLE RA
03/01/2018	Black Belt Energy Gas Dt	Ser 2018 B-1 & B-2	Gas Prepay Revenue Bonds	AL	E	RV	350.000	SOLE
03/27/2018	Kentucky Municipal Pwr Agcy (KMPA)	Series 2018 A	Power System Revenue Ref Bonds	KY	E	RV	36.985	SOLE RA
04/17/2018	District of Columbia Wtr & Swr Au	Series 2018 A	Public Utility Sr Lien Rev Bonds	DC	E	RV	100.000	LEAD
04/17/2018	District of Columbia Wtr & Swr Au	Series 2018 B	Public Utility Sr Lien Rev Bonds	DC	E	RV	200.000	LEAD
04/25/2018	Putnam Co Dev Auth	Series 2018 A & B	Pollution Control Rev Ref Bonds	FL	E	RV	113.960	LEAD
05/03/2018	Southeast Alabama Gas Dt	Series 2018 A	Gas Supply Revenue Bonds	AL	E	RV	54.430	LEAD
05/03/2018	Southeast Alabama Gas Dt	Series 2018 B & C	Gas Supply Revenue Bonds	AL	E	RV	81.000	LEAD RA
05/03/2018	Southeast Alabama Gas Dt	Series 2018 A	Gas Supply Revenue Bonds	AL	E	RV	586.350	LEAD RA
06/20/2018	Arkansas River Power Authority	Series 2018 B	Power Supply Sys Rev Ref Bonds	CO	T	RV	19.900	SOLE
06/20/2018	Arkansas River Power Authority	Series 2018 A	Power Supply Sys Rev Ref Bonds	CO	E	RV	99.355	SOLE
07/17/2018	Lubbock City-Texas	Series 2018	Electric Light & Pwr Sys Rev Bond	TX	E	RV	93.925	LEAD
08/14/2018	Tennessee Energy Acquisition Corp	Series 2018	Revenue Bonds	TN	E	RV	17.725	SOLE
08/14/2018	Tennessee Energy Acquisition Corp	Series 2018	Revenue Bonds	TN	E	RV	499.060	SOLE RA
09/13/2018	Eastern Municipal Water Dt	Series 2018 B	Water & Wastewater Rev Ref Bonds	CA	E	RV	53.485	SOLE
11/16/2018	Central Plains Energy Project	Series 2018 A	Gas Project Revenue Bonds	NE	E	RV	535.235	SOLE
11/28/2018	Santa Clara City-California	Series 2018 A	Electric Revenue Refunding Bonds	CA	E	RV	48.800	SOLE
12/10/2018	Northern California Energy Auth (NCEA)	Series 2018	Commodity Supply Revenue Bonds	CA	E	RV	16.825	SOLE
12/10/2018	Northern California Energy Auth (NCEA)	Series 2018	Commodity Supply Revenue Bonds	CA	E	RV	522.790	SOLE RA
12/13/2018	Georgia Muni Electric Au (MEAG)	2018 Series HI & A	General & Power Revenue Bonds	GA	E	RV	242.935	LEAD
01/17/2019	Los Angeles Dept Wtr & Pwr (LADWP)	2019 Series A	Power System Revenue Bonds	CA	E	RV	345.845	LEAD
01/30/2019	Pennsylvania Infras Inv Auth	Series 2019	Extendable Commercial Paper Notes	PA	E	RV	75.000	LEAD RA
02/06/2019	Riverside City-California	Issue of 2019 A	Refunding Electric Rev Bonds	CA	E	RV	283.325	LEAD
02/14/2019	Main Street Natural Gas Inc	Series 2019 A	Gas Supply Revenue Bonds	GA	E	RV	695.595	LEAD
04/25/2019	Los Angeles Dept Wtr & Pwr (LADWP)	2019 Series B	Power System Revenue Bonds	CA	E	RV	308.875	LEAD
05/07/2019	Mesa City-Arizona	Series 2019 C	Utility Systems Rev Ref Bonds	AZ	E	RV	79.335	SOLE
05/22/2019	Contra Costa Water Dt	Series V	Water Revenue Refunding Bonds	CA	E	RV	41.040	SOLE
05/22/2019	Iowa Pub Energy Fac (PEFA Inc)	Series 2019	Revenue Bonds	IA	E	RV	1.560	SOLE
05/22/2019	Iowa Pub Energy Fac (PEFA Inc)	Series 2019	Revenue Bonds	IA	E	RV	612.895	SOLE RA
06/13/2019	Orange Co Water Dt	Series 2019 B	Rev Certificates of Participation	CA	E	RV	6.505	SOLE
06/13/2019	Orange Co Water Dt	Series 2019 A	Rev Certificates of Participation	CA	E	RV	135.000	SOLE
07/30/2019	Austin City-Texas	Series 2019 C	Elc Util Sys Rev Ref & Imp Bonds	TX	T	RV	104.775	LEAD
07/30/2019	Austin City-Texas	Series 2019 B	Electric Util Sys Rev Ref Bonds	TX	E	RV	169.850	LEAD
08/06/2019	Philadelphia City-Pennsylvania	Series 2019 B	Water & Wastewater Revenue Bonds	PA	E	RV	250.660	LEAD
08/21/2019	San Antonio City-Texas	New Series 2019	Electric & Gas Sys Rev Ref Bonds	TX	E	RV	114.685	LEAD
09/20/2019	Georgia Muni Electric Au (MEAG)	Series 2019 B	Revenue Bonds	GA	E	RV	266.975	LEAD
09/20/2019	Georgia Muni Electric Au (MEAG)	Series 2019 A	Revenue Bonds	GA	E	RV	445.635	LEAD
09/24/2019	Turlock Irrigation Dt	Series 2019	Revenue Refunding Bonds	CA	E	RV	92.655	LEAD
09/24/2019	Turlock Irrigation Dt	Series 2020	Refunding Revenue Bonds	CA	E	RV	137.150	LEAD
09/24/2019	Walnut Energy Center Authority	2019 Series A	Revenue Refunding Bonds	CA	E	RV	61.315	LEAD

Sale Date	Issuer	Series	Issue Description	State	Taxable Code	Security Type	Par (\$MM)	Role of GS
11/05/2019	Garland City-Texas	New Series 2019 A	Electric Utility System Rev Ref	TX	E	RV	140.790	LEAD
11/08/2019	Georgia Muni Electric Au (MEAG)	Series 2019 A	Subordinated Revenue Bonds	GA	E	RV	252.385	LEAD
12/03/2019	Orange Co Water Dt	Series 2019 D	Refunding Revenue Bonds	CA	T	RV	59.135	SOLE
12/03/2019	Orange Co Water Dt	Series 2019 C	Refunding Revenue Bonds	CA	E	RV	99.065	SOLE
01/17/2020	Lower Alabama Gas Dt	Series 2020	Revenue Bonds	AL	E	RV	634.200	LEAD
03/03/2020	Middle Fork Project Fin Auth	Series 2020	Revenue Refunding Bonds	CA	E	RV	64.280	SOLE
03/04/2020	Vernon City-California	2020 Series A	Electric System Revenue Bonds	CA	E	RV	71.990	SOLE
04/15/2020	So California Pub Pwr Au (SCPPA)	Series 2020-1	Refunding Revenue Bonds	CA	E	RV	81.100	LEAD
04/23/2020	Sacramento City-California	Series 2020	Water Revenue Refunding Bonds	CA	T	RV	188.390	LEAD
04/28/2020	So California Pub Pwr Au (SCPPA)	2020 Series A	Refunding Revenue Bonds	CA	E	RV	54.675	SOLE
04/29/2020	NYS Power Authority	Series 2020 B	Revenue Bonds	NY	T	RV	114.020	LEAD
04/29/2020	NYS Power Authority	Series 2020 A	Revenue Bonds	NY	E	RV	328.990	LEAD
04/29/2020	NYS Power Authority	Series 2020 A	Revenue Bonds	NY	E	RV	791.620	LEAD
06/03/2020	Atascosa Co Industrial Dev Corp	Series 2020	Pollution Control Ref Rev Bonds	TX	E	RV	62.540	SOLE
06/18/2020	Sacramento City-California	Series 2020	Wastewater Revenue Ref Bonds	CA	T	RV	27.970	SOLE
07/28/2020	Colorado Springs City-Colorado	Series 2020 A-C	Utilities Sys Imp & Ref Rev Bonds	CO	E	RV	337.140	LEAD
08/05/2020	Long Island Power Authority	Series 2020 C	Electric System Gen Rev Bonds	NY	T	RV	22.360	LEAD
08/05/2020	Long Island Power Authority	Series 2020 C	Electric System Gen Rev Bonds	NY	T	RV	91.615	LEAD
08/05/2020	Long Island Power Authority	Series 2020 A	Electric System General Rev Bonds	NY	E	RV	237.975	LEAD
08/05/2020	Long Island Power Authority	Series 2020 B	Electric System Gen Rev Bonds	NY	E	RV	250.000	LEAD RA
08/13/2020	Hartford Co Metropolitan Dt	2020 Series A	Revenue Bonds	CT	E	RV	55.010	LEAD
08/13/2020	Hartford Co Metropolitan Dt	2020 Series B	Refunding Revenue Bonds	CT	T	RV	76.065	LEAD
08/18/2020	Grant Co Public Utility Dt #2	Series 2020-R	Electric System Rev Ref Bonds	WA	E	RV	47.190	LEAD RA
08/18/2020	Grant Co Public Utility Dt #2	Series 2020-S	Electric System Rev Ref Bonds	WA	E	RV	48.045	LEAD RA
09/10/2020	So California Pub Pwr Au (SCPPA)	2020 Series B	Refunding Revenue Bonds	CA	T	RV	70.075	LEAD
09/10/2020	So California Pub Pwr Au (SCPPA)	2020 Series C	Refunding Revenue Bonds	CA	E	RV	88.245	LEAD RA
09/10/2020	So California Pub Pwr Au (SCPPA)	2020 Series A	Refunding Revenue Bonds	CA	E	RV	112.995	LEAD
09/15/2020	Roseville Finance Authority	Series 2020	Electric System Rev Ref Bonds	CA	T	RV	34.770	SOLE
10/01/2020	Lower Colorado River Authority (LCRA)	Series 2020 A	Transmission Contract Ref Bonds	TX	E	RV	145.485	LEAD
10/07/2020	San Francisco City/Co Public Util Comm	2020 Sub Ser FGH	Water Revenue Bonds	CA	T	RV	322.960	LEAD
10/07/2020	San Francisco City/Co Public Util Comm	2020 Sub Ser E	Water Revenue Bonds	CA	T	RV	341.435	LEAD
10/29/2020	Georgia Muni Electric Au (MEAG)	Series 2020 A	General Resolution & Sub Bonds	GA	E	RV	252.810	LEAD
10/29/2020	Nebraska Public Power Dt	2020 Series A	General Revenue Bonds	NE	E	RV	125.825	LEAD RA
11/18/2020	Georgia Muni Electric Au (MEAG)	Series 2020 A	Revenue Bonds	GA	E	RV	77.390	LEAD
12/08/2020	Los Angeles Dept Wtr & Pwr (LADWP)	2020 Series C	Water Sytem Revenue Bonds	CA	E	RV	242.570	LEAD
01/25/2021	Texas Muni Gas Acq & Supply Corp III	Series 2021	Gas Supply Revenue Ref Bonds	TX	E	RV	1,061.060	LEAD
02/24/2021	Nebraska Public Power Dt	2021 Series A & B	General Revenue Bonds	NE	E	RV	127.605	LEAD
04/16/2021	Florida Municipal Pwr Agcy (FMPPA)	Series 2021 A	Revenue Bonds	FL	E	RV	36.720	SOLE
04/16/2021	Florida Municipal Pwr Agcy (FMPPA)	Series 2021 B	Subordinated Revenue Bonds	FL	T	RV	100.495	SOLE
04/20/2021	Southeast Energy Authority	Series 2021 A	Commodity Supply Rev Bonds	AL	E	RV	420.190	LEAD
06/09/2021	Tennessee Energy Acquisition Corp	Series 2021 A	Revenue Bonds	TN	E	RV	28.420	LEAD
06/09/2021	Tennessee Energy Acquisition Corp	Series 2021 A	Revenue Bonds	TN	E	RV	437.990	LEAD RA
06/23/2021	Sacramento MUD (SMUD)	2021 Series I	Electric Revenue Refunding Bonds	CA	E	RV	106.875	LEAD
07/09/2021	Georgia Muni Electric Au (MEAG)	Series 2021 A	Revenue Bonds	GA	E	RV	64.010	LEAD
07/09/2021	Georgia Muni Electric Au (MEAG)	Series 2021 A	Revenue Bonds	GA	E	RV	83.000	LEAD
07/09/2021	Georgia Muni Electric Au (MEAG)	Series 2021 A	Revenue Bonds	GA	E	RV	150.350	LEAD
08/03/2021	Contra Costa Water Dt	Series W	Water Revenue Refunding Bonds	CA	E	RV	90.380	LEAD
08/12/2021	Windy Gap Firm Proj Wtr Act Enterprise	Series 2021	Senior Revenue Bonds	CO	E	RV	169.705	LEAD
09/14/2021	Nebraska Public Power Dt	2021 Ser C&D	General Revenue Bonds	NE	E	RV	137.155	LEAD
09/16/2021	Black Belt Energy Gas Dt	2021 Series B	Gas Project Revenue Bonds	AL	E	RV	25.625	LEAD
09/16/2021	Black Belt Energy Gas Dt	2021 Series B	Gas Project Revenue Bonds	AL	E	RV	697.320	LEAD RA
09/30/2021	Georgia Muni Electric Au (MEAG)	Series 2021 B	Subordinated Bonds	GA	T	RV	125.195	LEAD
09/30/2021	Georgia Muni Electric Au (MEAG)	Series 2021 A	Subordinated Bonds	GA	E	RV	178.720	LEAD
10/19/2021	Ohio Water Development Authority	Series 2021	Water Development Rev Bonds	OH	E	RV	150.000	LEAD
10/21/2021	Bay Area Wtr Supply & Conserv Agcy	Series 2023 A	Refunding Revenue Bonds	CA	E	RV	134.310	LEAD
11/10/2021	NYS Environmental Facs Corp	Series 2021 B	State Revolving Funds Rev Bonds	NY	E	RV	144.540	LEAD
11/15/2021	California Comm Choice Fin Auth	Series 2021 A	Revenue Bonds	CA	E	RV	9.405	SOLE
11/15/2021	California Comm Choice Fin Auth	Series 2021 A	Revenue Bonds	CA	E	RV	593.250	SOLE RA
12/01/2021	Black Belt Energy Gas Dt	Series 2021 C-2	Gas Project Revenue Bonds	AL	E	RV	300.000	LEAD
12/01/2021	Black Belt Energy Gas Dt	2021 Series C-1	Gas Project Revenue Bonds	AL	E	RV	704.660	LEAD
12/07/2021	Vernon City-California	2022 Series A	Electric System Revenue Bonds	CA	E	RV	52.070	SOLE
12/07/2021	Vernon City-California	2021 Series A	Electric System Revenue Bonds	CA	E	RV	183.815	SOLE
02/10/2022	Black Belt Energy Gas Dt	2022 Series A	Gas Project Revenue Bonds	AL	E	RV	492.545	LEAD RA
02/24/2022	Black Belt Energy Gas Dt	2022 Series B-2	Gas Project Revenue Bonds	AL	E	RV	133.000	LEAD RA
02/24/2022	Black Belt Energy Gas Dt	2022 Series B-1	Gas Project Revenue Bonds	AL	E	RV	390.370	LEAD RA
02/24/2022	District of Columbia Wtr & Swr Au	Series 2022B	Public Utility Sub Lien Rev Bonds	DC	E	RV	79.585	LEAD
02/24/2022	District of Columbia Wtr & Swr Au	Series 2022D	Pub Utility Sub Lien & Ref Bonds	DC	T	RV	148.925	LEAD
02/24/2022	District of Columbia Wtr & Swr Au	Series 2022C	Pub Utility Sub Lien & Ref Bonds	DC	E	RV	206.730	LEAD
03/29/2022	Los Angeles Dept Wtr & Pwr (LADWP)	2022 Series B	Power System Revenue Bonds	CA	E	RV	360.000	LEAD
04/05/2022	NYS Power Authority	Series 2022A	Revenue Bonds	NY	E	RV	608.310	LEAD

Appendix D. Maturity by Maturity Analysis

Notes: Rates as of 04/06/2022; Assumes 08/01/2022 closing; COI equal to 0.5%.; 10-year par call for taxable refunding bonds; 4% tax-exempt refunding bonds with a 10-year par call; tender price +2pt on BVALs, assuming 100% participation. Breakeven represents the theoretical increase in interest rates on a current refunding that would lead GLWA to be PV neutral between a refunding today and one when the call option will be exercised assuming no change in rates. Subtotals include all candidates that generate positive PV savings.

Water

CALLABLE						TAXABLE ADVANCE REFUNDING (CALLABLE)				TENDER				CURRENT REFUNDING	
Lien	Series	Maturity	Par	Coupon	Call Date	PV Savings (\$)	PV Savings %	Efficiency %	B/E to Current (bp)	PV Savings (\$)	PV Savings %	Efficiency %	B/E to Current (bp)	PV Savings (\$)	PV Savings %
Senior	2014D1_S	7/1/2035	20,020	5.000 %	7/1/2024	(55)	(0.3)%	n/a	n/a	2,044	10.2 %	71.6 %	75	3,269	16.3 %
Senior	2014D1_S	7/1/2037	24,170	5.000 %	7/1/2024	(187)	(0.8)%	n/a	n/a	2,710	11.2 %	74.7 %	68	4,050	16.8 %
Senior	2014D2_S	7/1/2025	29,525	5.000 %	7/1/2024	(151)	(0.5)%	n/a	n/a	(370)	(1.3)%	n/a	n/a	694	2.3 %
Senior	2014D2_S	7/1/2026	50,370	5.000 %	7/1/2024	186	0.4 %	17.2 %	228	381	0.8 %	18.4 %	208	2,357	4.7 %
Senior	2014D2_S	7/1/2027	34,340	5.000 %	7/1/2024	506	1.5 %	44.0 %	187	907	2.6 %	43.2 %	146	2,297	6.7 %
Senior	2014D2_S	7/1/2028	22,690	5.000 %	7/1/2024	556	2.4 %	55.4 %	166	1,021	4.5 %	56.2 %	111	1,935	8.5 %
Senior	2014D4_S	7/1/2029	47,265	5.000 %	7/1/2024	1,151	2.4 %	51.4 %	173	2,427	5.1 %	53.9 %	115	4,842	10.2 %
Senior	2014D4_S	7/1/2030	54,305	5.000 %	7/1/2024	1,739	3.2 %	57.6 %	164	3,631	6.7 %	61.1 %	100	6,480	11.9 %
Senior	2014D4_S	7/1/2031	28,515	5.000 %	7/1/2024	826	2.9 %	52.3 %	167	2,218	7.8 %	63.8 %	89	3,746	13.1 %
Senior	2014D4_S	7/1/2032	18,950	5.000 %	7/1/2024	441	2.3 %	44.4 %	173	1,653	8.7 %	65.7 %	82	2,703	14.3 %
Senior	2014D4_S	7/1/2034	60,325	5.000 %	7/1/2024	270	0.4 %	11.4 %	186	5,541	9.2 %	65.8 %	85	9,742	16.1 %
Senior	2015D1_S	7/1/2027	3,175	5.000 %	7/1/2025	(12)	(0.4)%	n/a	n/a	(22)	(0.7)%	n/a	n/a	145	4.6 %
Senior	2015D1_S	7/1/2028	8,250	5.000 %	7/1/2025	50	0.6 %	20.3 %	217	186	2.3 %	38.9 %	158	539	6.5 %
Senior	2015D1_S	7/1/2029	9,270	5.000 %	7/1/2025	52	0.6 %	16.5 %	216	235	2.5 %	34.2 %	162	771	8.3 %
Senior	2015D1_S	7/1/2030	5,085	5.000 %	7/1/2025	67	1.3 %	31.0 %	196	194	3.8 %	43.0 %	141	508	10.0 %
Senior	2015D1_S	7/1/2031	5,660	5.000 %	7/1/2025	56	1.0 %	22.6 %	203	283	5.0 %	48.7 %	129	658	11.6 %
Senior	2015D1_S	7/1/2032	5,985	5.000 %	7/1/2025	23	0.4 %	9.4 %	206	358	6.0 %	52.5 %	115	765	12.8 %
Senior	2015D1_S	7/1/2033	6,405	5.000 %	7/1/2025	(29)	(0.5)%	n/a	n/a	399	6.2 %	52.8 %	115	888	13.9 %
Senior	2015D1_S	7/1/2034	18,915	5.000 %	7/1/2025	(294)	(1.6)%	n/a	n/a	1,262	6.7 %	54.7 %	112	2,810	14.9 %
Senior	2015D1_S	7/1/2035	6,530	5.000 %	7/1/2025	(150)	(2.3)%	n/a	n/a	449	6.9 %	54.8 %	110	1,024	15.7 %
Second	2014D6_J	7/1/2025	2,870	5.000 %	7/1/2024	(25)	(0.9)%	n/a	n/a	(104)	(3.6)%	n/a	n/a	65	2.2 %
Second	2014D6_J	7/1/2026	1,895	5.000 %	7/1/2024	(2)	(0.1)%	n/a	n/a	(32)	(1.7)%	n/a	n/a	85	4.5 %
Second	2014D6_J	7/1/2027	1,930	5.000 %	7/1/2024	17	0.9 %	30.0 %	197	7	0.4 %	6.1 %	217	123	6.4 %
Second	2014D6_J	7/1/2032	2,210	5.000 %	7/1/2024	28	1.3 %	28.6 %	177	145	6.6 %	52.6 %	102	298	13.5 %
Second	2014D6_J	7/1/2033	455	5.000 %	7/1/2024	2	0.3 %	9.3 %	184	32	7.0 %	54.5 %	100	66	14.4 %
Second	2014D6_J	7/1/2034	1,215	5.000 %	7/1/2024	(10)	(0.8)%	n/a	n/a	91	7.5 %	56.7 %	95	185	15.2 %
Second	2014D6_J	7/1/2036	33,115	5.000 %	7/1/2024	(797)	(2.4)%	n/a	n/a	2,314	7.0 %	50.3 %	105	5,171	15.6 %
Second	2015D2_J	7/1/2034	37,235	5.000 %	7/1/2025	(1,040)	(2.8)%	n/a	n/a	2,406	6.5 %	56.2 %	104	5,222	14.0 %

Sewer

CALLABLE						TAXABLE ADVANCE REFUNDING (CALLABLE)				TENDER				CURRENT REFUNDING	
Lien	Series	Maturity	Par	Coupon	Call Date	PV Savings (\$)	PV Savings %	Efficiency %	B/E to Current (bp)	PV Savings (\$)	PV Savings %	Efficiency %	B/E to Current (bp)	PV Savings (\$)	PV Savings %
Senior	2012A	7/1/2023	17,985	5.000 %	7/1/2022									322	1.8 %
Senior	2014C3_S	7/1/2025	47,045	5.000 %	7/1/2024	(240)	(0.5)%	n/a	n/a	(590)	(1.3)%	n/a	n/a	1,106	2.3 %
Senior	2014C3_S	7/1/2026	40,375	5.000 %	7/1/2024	149	0.4 %	17.2 %	228	305	0.8 %	18.4 %	208	1,889	4.7 %
Senior	2014C3_S	7/1/2027	45,895	5.000 %	7/1/2024	677	1.5 %	44.0 %	187	1,213	2.6 %	43.2 %	146	3,070	6.7 %
Senior	2014C3_S	7/1/2028	24,075	5.000 %	7/1/2024	590	2.4 %	55.4 %	166	1,083	4.5 %	56.2 %	111	2,053	8.5 %
Senior	2014C3_S	7/1/2029	15,770	5.000 %	7/1/2024	384	2.4 %	51.4 %	173	925	5.9 %	61.5 %	99	1,616	10.2 %
Senior	2014C3_S	7/1/2030	25,285	5.000 %	7/1/2024	810	3.2 %	57.6 %	164	1,806	7.1 %	65.3 %	91	3,017	11.9 %
Senior	2014C3_S	7/1/2031	31,945	5.000 %	7/1/2024	926	2.9 %	52.3 %	167	2,653	8.3 %	68.1 %	81	4,197	13.1 %
Senior	2014C3_S	7/1/2032	50,515	5.000 %	7/1/2024	1,175	2.3 %	44.4 %	173	4,693	9.3 %	70.0 %	74	7,206	14.3 %
Senior	2014C3_S	7/1/2033	22,665	5.000 %	7/1/2024	341	1.5 %	32.0 %	179	2,161	9.5 %	69.9 %	77	3,465	15.3 %
Senior	2014C6_S	7/1/2032	9,100	5.000 %	7/1/2024	212	2.3 %	44.4 %	173	808	8.9 %	66.9 %	80	1,298	14.3 %
Senior	2014C6_S	7/1/2033	79,800	5.000 %	7/1/2024	1,201	1.5 %	32.0 %	179	7,367	9.2 %	67.7 %	81	12,201	15.3 %
Second	2014C7_J	7/1/2025	5,025	5.000 %	7/1/2024	(43)	(0.9)%	n/a	n/a	(74)	(1.5)%	n/a	n/a	113	2.2 %
Second	2014C7_J	7/1/2026	4,945	5.000 %	7/1/2024	(5)	(0.1)%	n/a	n/a	22	0.4 %	11.1 %	215	221	4.5 %
Second	2014C7_J	7/1/2027	5,260	5.000 %	7/1/2024	47	0.9 %	30.0 %	197	117	2.2 %	38.2 %	151	336	6.4 %
Second	2014C7_J	7/1/2028	5,480	5.000 %	7/1/2024	97	1.8 %	44.6 %	175	218	4.0 %	52.3 %	115	446	8.1 %
Second	2014C7_J	7/1/2029	5,460	5.000 %	7/1/2024	90	1.6 %	39.5 %	180	287	5.3 %	58.1 %	102	533	9.8 %
Second	2014C7_J	7/1/2030	275	5.000 %	7/1/2024	6	2.3 %	47.2 %	170	18	6.4 %	62.2 %	94	31	11.3 %
Second	2014C7_J	7/1/2031	280	5.000 %	7/1/2024	5	1.9 %	40.1 %	172	21	7.5 %	65.3 %	83	35	12.5 %
Second	2014C7_J	7/1/2032	14,450	5.000 %	7/1/2024	181	1.3 %	28.6 %	177	1,217	8.4 %	67.3 %	76	1,952	13.5 %
Second	2014C7_J	7/1/2034	1,595	5.000 %	7/1/2024	(13)	(0.8)%	n/a	n/a	142	8.9 %	67.7 %	78	243	15.2 %
Second	2014C7_J	7/1/2035	910	5.000 %	7/1/2024	(14)	(1.6)%	n/a	n/a	85	9.3 %	69.4 %	74	140	15.4 %
Second	2014C7_J	7/1/2036	385	5.000 %	7/1/2024	(9)	(2.4)%	n/a	n/a	38	9.9 %	71.1 %	70	60	15.6 %
Second	2015C_JR	7/1/2026	3,620	5.000 %	7/1/2025	(70)	(1.9)%	n/a	n/a	(6)	(0.2)%	n/a	n/a	80	2.2 %
Second	2015C_JR	7/1/2027	7,065	5.000 %	7/1/2025	(67)	(0.9)%	n/a	n/a	115	1.6 %	44.8 %	150	309	4.4 %
Second	2015C_JR	7/1/2028	7,415	5.000 %	7/1/2025	(6)	(0.1)%	n/a	n/a	252	3.4 %	61.7 %	106	462	6.2 %
Second	2015C_JR	7/1/2032	5,955	5.000 %	7/1/2025	(41)	(0.7)%	n/a	n/a	473	7.9 %	74.0 %	72	722	12.1 %
Second	2015C_JR	7/1/2033	21,165	5.000 %	7/1/2025	(343)	(1.6)%	n/a	n/a	1,725	8.2 %	73.2 %	76	2,777	13.1 %
Second	2015C_JR	7/1/2034	74,125	5.000 %	7/1/2025	(2,071)	(2.8)%	n/a	n/a	6,228	8.4 %	73.0 %	78	10,395	14.0 %
Second	2015C_JR	7/1/2035	72,815	5.000 %	7/1/2025	(2,632)	(3.6)%	n/a	n/a	6,304	8.7 %	73.1 %	78	10,756	14.8 %
Second	2015C_JR	7/1/2035	5,000	5.000 %	7/1/2025	(181)	(3.6)%	n/a	n/a	326	6.5 %	55.1 %	104	739	14.8 %

Appendix E. Insurance Analysis

Date (07/01)	Senior Lien Insurance Savings				Second Lien: Insurance Savings			
	Net Yield Difference		% of Par		Net Yield Difference		% of Par	
	Maturity	Call	Maturity	Call	Maturity	Call	Maturity	Call
2023	(0.13)		(0.12)		(0.18)		(0.17)	
2024	(0.01)		(0.03)		(0.04)		(0.08)	
2025	0.02		0.06		0.00		0.01	
2026	0.04		0.15		0.02		0.09	
2027	0.05		0.24		0.04		0.18	
2028	0.06		0.33		0.04		0.26	
2029	0.06		0.41		0.05		0.34	
2030	0.06		0.49		0.05		0.41	
2031	0.07		0.57		0.06		0.49	
2032	0.07		0.64		0.06		0.56	
2033	0.06	0.07	0.63	0.63	0.05	0.06	0.54	0.54
2034	0.06	0.07	0.61	0.61	0.05	0.06	0.53	0.53
2035	0.05	0.06	0.60	0.60	0.05	0.06	0.51	0.51
2036	0.05	0.06	0.59	0.59	0.04	0.05	0.49	0.49
2037	0.05	0.06	0.57	0.57	0.04	0.05	0.48	0.48
2038	0.04	0.06	0.56	0.56	0.04	0.05	0.46	0.46
2039	0.04	0.06	0.55	0.55	0.03	0.05	0.45	0.45
2040	0.04	0.06	0.54	0.54	0.03	0.05	0.44	0.44
2041	0.04	0.06	0.53	0.53	0.03	0.05	0.42	0.42
2042	0.03	0.06	0.52	0.52	0.03	0.05	0.41	0.41
2043	0.03	0.06	0.50	0.50	0.03	0.04	0.39	0.39
2044	0.03	0.05	0.49	0.49	0.02	0.04	0.38	0.38
2045	0.03	0.05	0.48	0.48	0.02	0.04	0.36	0.36
2046	0.03	0.05	0.47	0.47	0.02	0.04	0.35	0.35
2047	0.03	0.05	0.46	0.46	0.02	0.04	0.34	0.34
2048	0.03	0.05	0.44	0.44	0.02	0.04	0.32	0.32
2049	0.02	0.05	0.43	0.43	0.02	0.03	0.31	0.31
2050	0.02	0.05	0.42	0.42	0.02	0.03	0.30	0.30
2051	0.02	0.05	0.41	0.41	0.02	0.03	0.28	0.28
2052	0.02	0.04	0.40	0.40	0.01	0.03	0.27	0.27



GLWA
Great Lakes Water Authority

Presentation to the Great Lakes Water Authority

Regarding Potential 2022 Bond Transactions

April 22, 2022

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The Goldman Sachs Team Has a Long-Standing Commitment to GLWA and Highly Relevant Experience



Freda Wang



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Title	Managing Director	Vice President	Associate	Analyst	Managing Director; Co-Head of Municipal Syndicate	Vice President	Managing Director
Role	Team Leader; Day-to-Day Financing	Co-Team Leader; Day-to-Day Financing	Day-to-Day Analytics; Execution	Day-to-Day Analytics; Execution	Syndicate; Underwriting	Credit Expertise	Tax and Quantitative Expertise
Years of Experience	25Y+	13Y+	4Y+	1Y+	30Y+	17Y+	35Y+
Prior GLWA Experience	✓	✓			✓	✓	✓
Utility Experience	✓	✓	✓	✓	✓	✓	✓
Tender & Exchange	✓	✓		✓	✓		✓

Dedicated Team

- Highly experienced team with decades of experience working with GLWA and its peers across the country
 - Played an active role on GLWA's inaugural financing in 2016
- Significant experience structuring and marketing relevant financings, including recent tender and exchange for DC Water
- Deep bench of technical experts in tax, structuring, credit and ESG

Supported by a Strong Firm

- 60+ years serving as underwriter to public sector issuers
- Strong capital position allows us the flexibility to support our clients in a variety of ways
 - Since 2016 we have underwritten \$7 billion of unsold balances in negotiated municipal bond transactions
- Commitment to Michigan with local presence, investing, philanthropy and *10,000 Small Businesses*

Goldman Sachs Has Broad Experience in the Sectors Relevant to GLWA

National Negotiated Transactions >=\$100 mm (2021-2022 YTD)

Rank	Firm	Par (\$mm)	Mkt. Share	Num. of Issues
1	BoA	\$ 47,637	15	269
2	Citi	37,933	12	171
3	Goldman Sachs	31,423	9.9	159
4	JP Morgan	28,058	8.9	149
5	Morgan Stanley	24,014	7.6	126
6	RBC Capital Markets	21,915	6.9	141
7	Jefferies	19,942	6.3	81
8	Barclays	17,600	5.6	104
9	Wells Fargo	16,061	5.1	82
10	Raymond James	10,567	3.3	60

Michigan Transactions >=\$100 mm (2021-2022 YTD)

Rank	Firm	Par (\$mm)	Mkt. Share	Num. of Issues
1	BoA	\$ 2,153	31.6	14.0
2	Barclays	1,988.9	29.1	5.0
3	Citi	880.7	12.9	4.0
4	Goldman Sachs	745.1	10.9	5.0
5	Siebert	357.1	5.2	3.0
6	Morgan Stanley	250.0	3.7	1.0
7	Loop	200.0	2.9	2.0
8	JP Morgan	149.5	2.2	1.0
9*	Truist Financial	50.0	.7	1.0
9*	TD Securities	50.0	.7	1.0

Midwest Utility Transactions >=\$100 mm (2021-2022 YTD)

Rank	Firm	Par (\$mm)	Mkt. Share	Num. of Issues
1	Citi	1,740.6	29.0	9.0
2	BoA	1,079.9	18.0	8.0
3	RBC Capital Markets	902.2	15.0	4.0
4	JP Morgan	500.0	8.3	3.0
5	Morgan Stanley	498.0	8.3	2.0
6	Goldman Sachs	330.4	5.5	3.0
7	Wells Fargo	219.5	3.7	1.0
8	Colliers Securities	180.0	3.0	1.0
9	Huntington	125.0	2.1	1.0
10	Jefferies	120.3	2.0	2.0

Michigan Experience



GLWA



Michigan State Building Authority



University of Michigan



Trinity Health



City of Detroit



Lansing Board of Power and Light



Wayne County, Michigan



Michigan State University

Water/Utility Experience



DC Water



Environmental Facilities Corporation

NY State Environmental Facilities Corporation



Philly Water



Ohio Water Development Authority



LA Department of Water and Power



JEA



San Francisco Public Utilities Commission



City of Chicago

Goldman Sachs is the Market Leader in Buybacks

Goldman Sachs has served as dealer manager on 9 of the 17 tenders and exchanges conducted since 2021, leading many of the largest and most innovative transactions

The majority of issuers that have pursued tenders and exchanges are large and sophisticated revenue credits that share similarities with GLWA

Tender and Exchange League Table

#	Dealer Manager	Number of Deals	Lead Dealer Manager	Secondary Dealer Manager	Full Credit to Lead (\$mm)	Average Deal Size (\$mm)	Average Participation
1	GS	9	7	2	\$ 7,319	\$ 1,046	44%
2	BofA	5	4	1	3,301	825	35%
3	CITI	1	1	0	175	175	21%
4	Wells	2	2	0	725	362	8%
5	JPM	5	2	3	990	495	58%
6	UBS	1	1	0	85	85	64%
7	Loop	1	0	1	-	-	-
7	Siebert	1	0	1	-	-	-

Precedent Transactions

Issuer	Settlement Date	Par Targeted (\$mm)	Par Tendered (\$mm)	Par Exchanged (\$mm)	% of Par Participating	Opportunistic Tender/Exchange
Foothill/Eastern TCA	2/9/2021	\$692	\$30	\$505	77%	
City of LA	3/4/2021	121	N/A	67	56%	
Denver RTD	3/11/2021	475	89	N/A	19%	
SD County Trans	3/25/2021	140	18	-	13%	
OK Muni Power	7/1/2021	256	68	13	31%	
WA Conv Ctr	8/25/2021	914	11	354	40%	✓
KY Transportation	10/7/2021	175	<1m	36	21%	
Riverside Co Trans	10/14/2021	124	36	12	39%	
DASNY / SUNY	12/2/2021	223	96	10	48%	
Wise Health	12/15/2021	85	24	31	64%	✓
MARTA	12/16/2021	352	60	35	27%	
Oregon Health & Science University	12/21/2021	75	63	12	100%	
City of Chicago	12/22/2021	2,895	390	211	21%	✓
San Joaquin TCA	12/22/2021	988	87	428	52%	
Louisiana State Bond Commission	1/27/2022	585	22	-	4%	
Santee Cooper	2/23/2022	2,697	943	262	45%	✓
DC Water	3/23/2022	425	105	4	26%	✓

Representing transactions closed from January 1, 2021-April 14, 2022. Highlighted transactions in "Precedent Transactions" denotes where GS served as Dealer Manager.

District of Columbia Water and Sewer Authority ("DC Water")


\$435,240,000 Public Utility Subordinate Lien Revenue, Series 2022BCD

Transaction Highlights

In March 2022, DC Water **captured over \$25mm in PV savings (14% of refunded par)** via a taxable advance refunding and tax-exempt tender and exchange of outstanding Bonds

- **Bespoke Complex Finance Plan:** Goldman Sachs worked with DC Water and its Financial Advisors to craft and execute a plan of finance to achieve refinancing savings and fund new money needs, including a \$100mm **Green Bond** offering to fund the Clean Rivers program
 - Goldman Sachs developed a tailored financing strategy that allowed DC Water to evaluate and select refunding candidates based on its internal savings thresholds and the relative economics between the taxable refunding and tender/exchange offer
- **Tender and Exchange:** \$425 million of outstanding bonds were targeted for a tender/exchange, of which \$109 million was accepted (26% participation). Over \$104mm of bonds were tendered and \$4.4mm was exchanged, which allowed DC Water to refinance these bonds on a tax-exempt basis
 - The tender/exchange offer was open to and saw participation from both institutional and retail investors

Key Terms

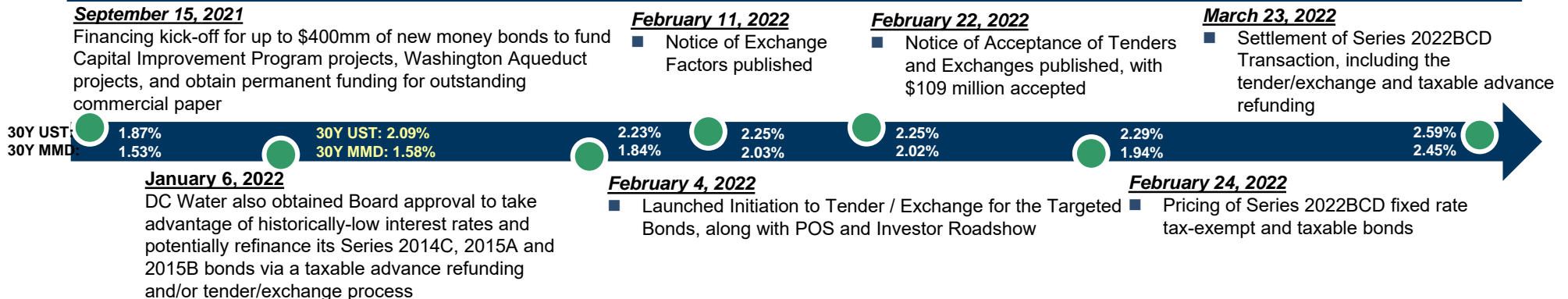
Issuer	 District of Columbia Water and Sewer Authority			
GS Role	Sole Dealer-Manager for the Tender/Exchange Offer and Bookrunning Senior Manager for the Bond Offering			
Pricing Date	February 24, 2022			
Rating (M/S/F)	Aa2 / AA+ / AA			
Series	Series 2022B (Green Bonds)	Series 2022C-1	Series 2022C-2¹	Series 2022D
Tax Status	Tax-Exempt			Taxable
Total Par	\$79,585,000	\$206,730,000	\$4,418,000	\$148,925,000
Interest Payment	Semi-annually on April 1 and October 1, commencing October 1, 2022			
Final Maturity	10/01/2047	10/01/2051	10/01/2040	10/01/2044
Optional Redemption	Beginning 04/01/2032 @ Par			Beginning 04/01/2032 @ Par with MWC prior to 04/01/2032

¹ For exchange only.

Key Results:

- Tender & Exchange increased savings by \$6.7mm compared to a taxable refunding of the targeted bonds
- Russia invaded Ukraine the evening before pricing, leading to increased volatility on the day of pricing, Goldman Sachs was able to successfully navigate the market to build a robust order book for the transaction – reflecting significant oversubscription by a wide variety of investors including SMAs, bond funds, insurance companies, and hedge funds
- DC Water achieved over \$33.5 million in gross cashflow savings (~\$25.5 million present value, or 14.4% of refunded par)

Transaction Timeline



Our Approach to Crafting a Plan of Finance Begins with Understanding GLWA's Goals

GLWA Goals

- Remain at or below the 4% Promise
- Achieve AA category ratings
- Generate refinancing savings
- Develop an ESG strategy
- Manage other balance sheet risks (e.g. 2006D)
- Reduce leverage, particularly for sewer
- Limit execution risk
- Expand investor base

Financing Considerations

- Interest rates have increased
- The yield curve has flattened
- Market is volatile
- Inflation may pressure operating and capital costs
- Annual debt service declines significantly in FY37 and FY38 for water and sewer, respectively
- A taxable advance refunding is not attractive in the current market

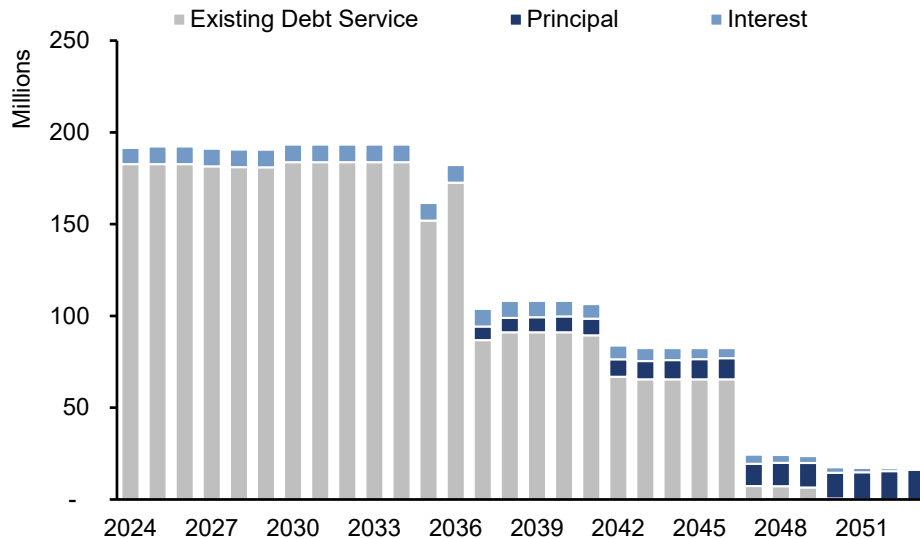
GS Recommendation

- Aggressively advocate for credit upgrades now and in the future
- Structure new money after the decline in debt service in ~15 years
- Pursue a tender & exchange to generate refinancing savings
- Consider other opportunistic strategies to reduce costs (e.g. taxable to tax-exempt flip, lower coupons)
- Maintain flexibility to accommodate quickly changing markets
- Leverage GLWA's ESG strategy in the marketing process

New Money Approach

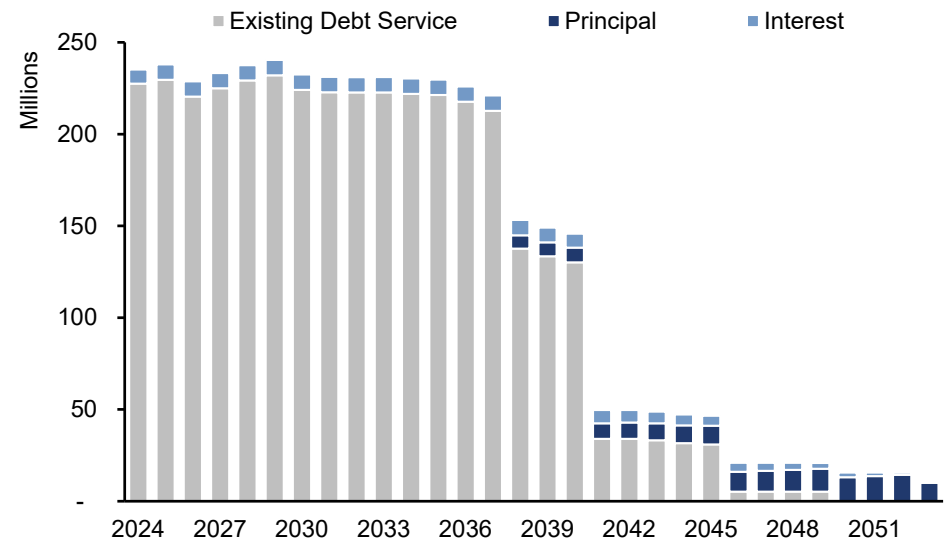
Provide Operating Cushion and Take Advantage of the Flat Yield Curve

Water Pro-Forma Debt Service



	Water Senior	Water Second	Total
Par	\$133,955,000	\$57,910,000	\$191,865,000
Project Fund	\$140,000,000	\$60,000,000	\$200,000,000

Sewer Pro-Forma Debt Service



	Sewer Senior	Sewer Second	Total
Par	\$52,825,000	\$114,120,000	\$166,945,000
Project Fund	\$55,000,000	\$120,000,000	\$175,000,000

Deferred Amort vs. 30-Year Level Debt Service

	Deferred Amort	30Y Level
All-in TIC	4.10%	3.93%
Average Life (yr)	23.07	18.97
Annual D/S before FY38	\$ 9,593,250	\$ 12,238,500
Annual D/S on and after FY38	\$ 17,018,250	\$ 12,239,250
PV (@4%)	\$ 218,849,130	\$ 210,328,638

Deferred Amort vs. 30-Year Level Debt Service

	Deferred Amort	30Y Level
All-in TIC	4.13%	3.95%
Average Life (Yr)	23.25	18.74
Annual D/S before FY37	\$ 8,347,250	\$ 10,791,000
Annual D/S on and after FY37	\$ 15,622,250	\$ 10,795,750
PV (@4%)	\$ 190,576,127	\$ 184,479,528

(1) Rates as of April 6, 2022; Assumes August 1, 2022 closing; COI equal to 0.5%

Refunding Approach

Monitor Market Conditions and Use All Available Tools

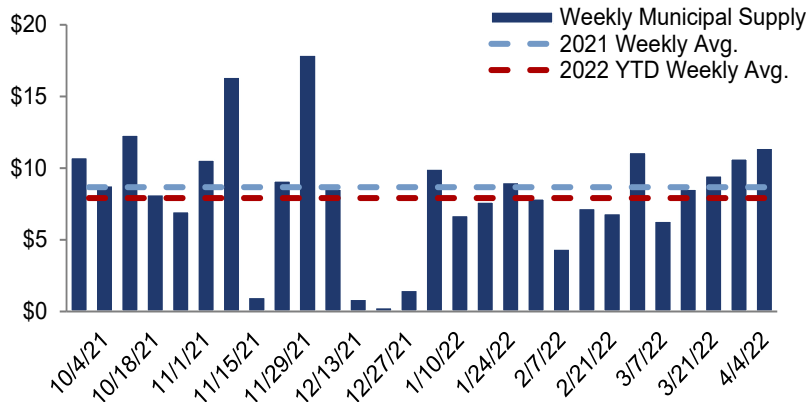
Credit	Outstanding Debt				Taxable AR (Callable)			Tender		
	Series	Lien	Callable	Call	PV Savings		Efficiency	PV Savings		Efficiency
			(\$000s)	Date	(\$000s)	%	%	(\$000s)	%	%
Sewage	2014C3	Senior	\$ 303,570	7/1/2024	\$ 5,051	1.97%	45%	\$ 14,839	5.8%	61%
	2014C6	Senior	88,900	7/1/2024	1,413	1.59%	33%	8,175	9.2%	68%
	2014C7	Junior	44,065	7/1/2024	47	1.02%	34%	2,164	5.5%	59%
	2015C	Junior	197,160	7/1/2025	0	0.00%	n/a	15,424	8.0%	72%
	Total			\$ 651,680		\$ 6,510	1.73%		\$ 40,602	7.0%
Water	2014D1	Senior	\$ 44,190	7/1/2024	0	0.00%	n/a	\$ 4,754	10.8%	73%
	2014D2	Senior	136,925	7/1/2024	1,248	1.16%	39%	2,309	2.2%	39%
	2014D4	Senior	209,360	7/1/2024	4,426	2.11%	43%	15,468	7.4%	48%
	2014D6	Junior	43,690	7/1/2024	47	1.02%	27%	2,590	6.7%	50%
	2015D1	Senior	69,275	7/1/2025	249	0.73%	19%	3,366	5.1%	44%
	2015D2	Junior	37,235	7/1/2025	0	0.00%	n/a	2,406	6.5%	56%
Total			\$ 540,675		\$ 5,970	1.68%		\$ 30,893	5.7%	



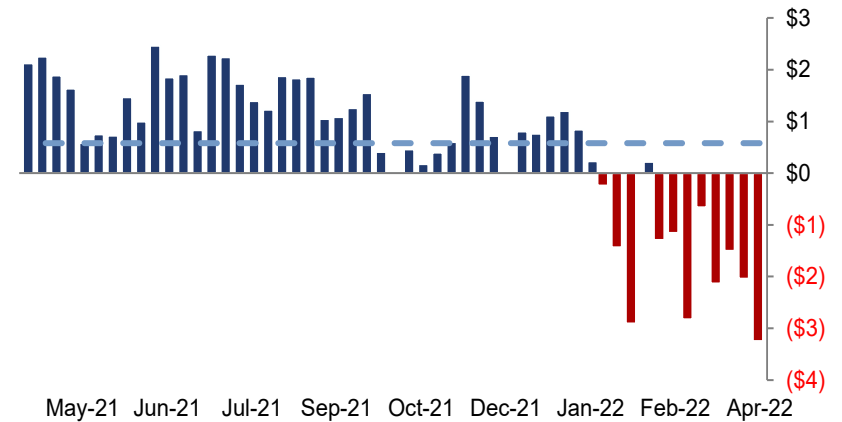
- Current refund the Sewer 2012A Senior Bonds callable July 1, 2022 even though savings are modest (currently 1.8%) as it becomes a “wasting asset”
- ***A tender and exchange is an attractive alternative to a taxable advance refunding***
 - Generally provides PV savings 5-8% of refunded par higher than a taxable advance refunding
 - GLWA can dictate its desired results by setting the price and determining which bonds to accept
 - Mechanics have been streamlined, adding minimal additional issuer staff time beyond typical bond offering
- We recommend targeting GLWA’s bonds with call dates in 2024, 2025 and potentially 2026

Market Technicals and Global Events Create Volatility but Issuers can Achieve Successful Financings by Remaining Nimble

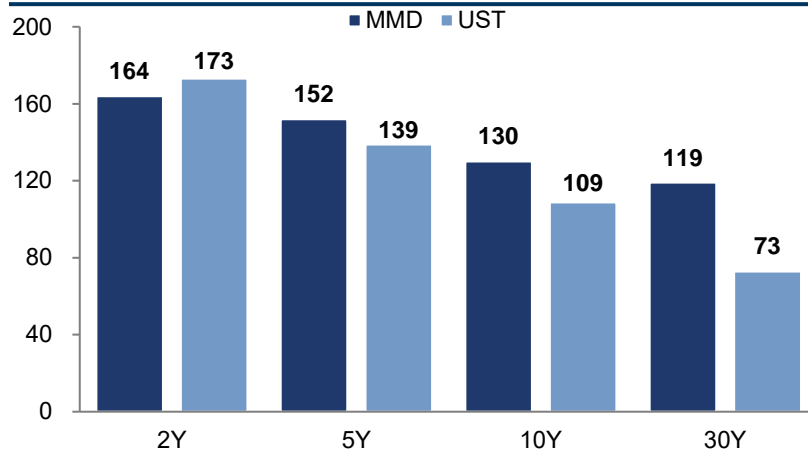
2022 Supply is Approaching 2021 Issuance Levels (\$bn)



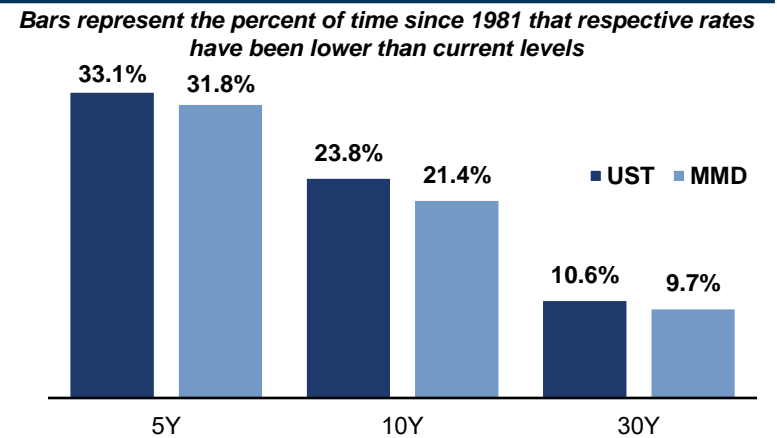
Outflows in 11 Out of 12 Weeks after 45 Straight Weeks of Inflows



YTD Change in MMD & UST (bps)



Rates are Still Historically Low but Short-Term UST Pressure Persists



Source: Lipper Funds, Refinitiv, GS Internal

Note: Municipal supply as of the week ending April 8, 2022 and Fund Flows data as of April 6, 2022. Taxable supply percentages do not include corporate CUSIPs.

Positioning the Credit Will Be a Key Element of the Marketing Plan

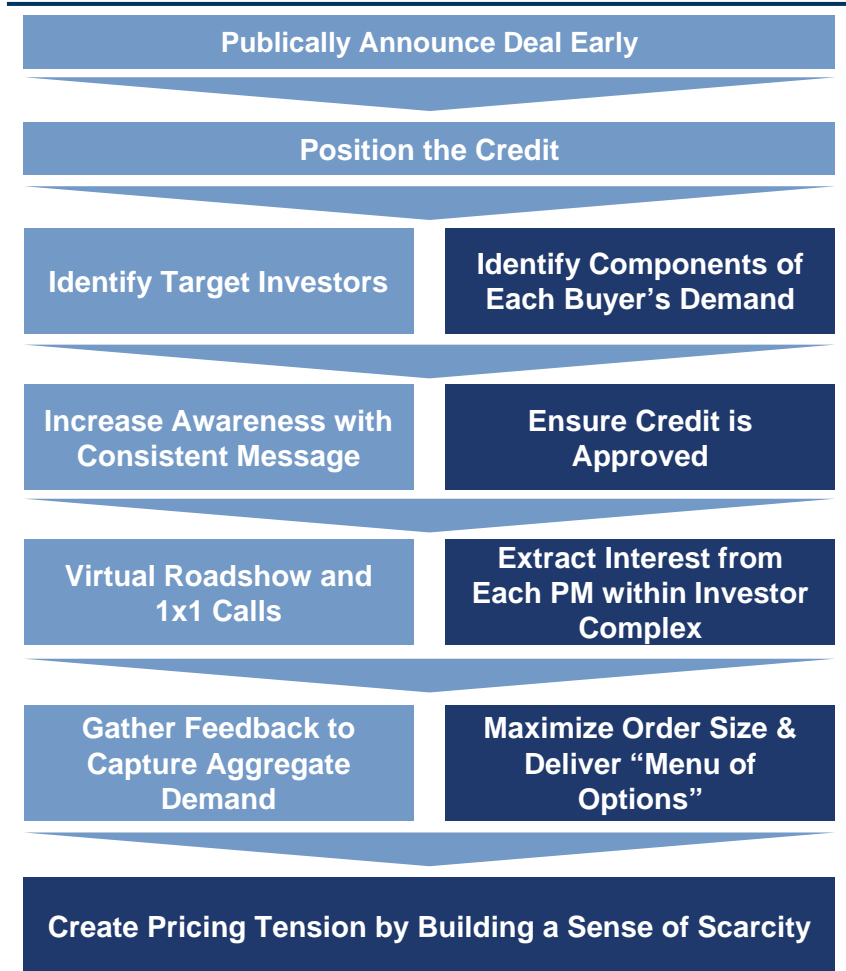
Marketing Plan Objectives

- Keep investors focused on GLWA's strong credit profile and upward credit trajectory
 - Update the market on GLWA's recent accomplishments and strategic plans
 - Reset the narrative and put the headlines around wet weather events and Highland Park in context
- Be in a position to talk openly with the market as early as possible and seek investor feedback
- Take an analytic approach to investor targeting and outreach

Investor Targets



Marketing Process



We will take a customized approach to position GLWA's credit and achieve best execution

We Strive to Provide Clear, Transparent and Timely Information Throughout the Pricing Process

Throughout the marketing process, we target investors intentionally, leverage buyer profiles, and provide detailed feedback to the Authority

Tax-Exempt Investor Feedback / Interest

Performance Trust
Looking at maturities 2036 – 2048

Northern Trust
Looking at \$3.25mm of 2026 maturity with 1% coupon

Pine River
Looking at maturities 2036 – 2040 as 4% coupon at +50bp

State Farm
Looking for 3% and 4% coupons at maturities 2033 – 2044 (4% coupon at +15-20bps wider than 5%)

Taxable Investor Feedback – Pass Reasoning

Credit too High Quality / Looking for More Yield

- Plans for the fall & early
- International students
- Expense cuts & revenue

Capital Planning

- Current and future costs
- Management
- Preparation for long term

Size (Maturities too Small)

- MetLife
- Whitehaven

Breckenridge
Looking in the 5-10

Washington Cross
Looking for \$1mm c

Nuveen
Looking at maturities \$3-5mm in 2042 – 2

Investor Reachout Feedback to the Authority

Name	Company
Darren Fago	ALM First
Xiaolei Guo	American International Group, Inc.
Kristen Pinchera	Cigna
Samantha Henry	Conning
Maureen Grover	Credit Suisse Group
Isaac Fine	Fidelity Investments
Hannah Davidson	Fidelity Investments
Luis Toro	Franklin Templeton
Emilio Acosta	Guggenheim Partners, LLC
Will Cleland	Guggenheim Partners, LLC
Tom Schuette	Gurtin Fixed Income Management, LLC
Jeffrey Devine	GW&K Investments
Gilles Marchand	Knights of Columbus
Christopher Hesselthaler	JP Morgan
David Kiefer	Macquarie Investment Management
Jeffrey Sayman	Mellon Investments Corporation
Ryan Lim	Mellon Investments Corporation
Vincent DelVecchio	MetLife Investments
Robert Moore	MetLife Investments
Eric Espino	Morgan Stanley
Paul Charbonneau	Neuberger Berman Group LLC
Dan Simpson	Northern Trust
Kristen Dejong	Nuveen Investments
Samuel Allen	Old Orchard Capital
Suma J Haque	Payden And Rygel
James Faunce	Penn Mutual
Kaltrina Smelaj	Piper Jaffray
Mark Schweig	Summit Securities Group
Max Dunford	Sun Life Capital Management
Arfan Rashid	Wells Fargo
Kim Nakahara	Wells Fargo
Lisa Phan	Wells Fargo
Kathryn Montgomery	Western Asset Management
Thomas Dunleavy	Whitehaven Asset Management

Investor Profile: AIG

INVESTMENT BANKING DIVISION

Key Statistics

- Location: New York, NY
- Founded: 2009
- Account Type: Investment Manager
- Reported Total AUM (\$bn):
- Key contact: Michael McDevitt
 - SUNY Oneonta (BA) & S

AIG's Higher Ed Holdings

Issuer	Amt Held (\$mm)	Increase / Decrease	Position
University of California	\$141.7	Hold	
Washington University	\$80.6	Hold	

Key Areas of Focus When Approving Credit

- COVID-19
 - Plans for the fall & early
 - International students
 - Expense cuts & revenue
- Capital Planning
 - Current and future costs
 - Management
 - Preparation for long term

Our investor outreach program takes a deep approach

INVESTMENT BANKING DIVISION

Top-Down Investor Approach – Individual Bond Funds

- Our top-down approach to institutional investors focuses on individual funds' characteristics such as existing holdings, target durations, and capacity, for example, Nuveen, which is a top holder of municipal bond funds, summarized below

Management Company: Nuveen Investments
Credit Approach: Mully Shellfish (Credit: Aaa/aa)

Investor Profile: We

INVESTMENT BANKING DIVISION

Key Statistics

- Location: San Francisco, CA
- Founded: 1852
- Account Type: Bank
- Reported Total AUM (\$bn): \$518.0
- Key contact: Jed Bruss
 - Based in Monomono Falls, WI
 - UW Milwaukee (BS) & UW Milwaukee

Key Areas of Focus When Approving Credit

- COVID-19
 - Impact to
 - Refunds to
 - Internatio
 - Online cl
- Endowment
 - impact fro
 - Portfolio c
- Capital plan

Goldman Sachs takes a methodical and quantitative approach to investor targeting

INVESTMENT BANKING DIVISION

Investor Targeting for SBA Bonds

Firm Name	Bank	Bank	High Quality	High Quality	Amount Issued	STA of Issuance	Bank
Vanguard Group	4	8	✓	✓	\$81,335	1	
Fidelity Management & Research	2	6	✓	✓	\$6,323	6	
New England Asset Management	3	32	✓	✓	73,409	5	
Nuveen Asset Management	4	7	✓	✓	122,200	2	
BlackRock	5	9	✓	✓	117,574	3	
American Century Investment Managers	6	21	✓	✓	6,500	21	
Deutsche Asset Management	7	49	✓	✓	11,528	15	
Franklin Advisers	8	59	✓	✓	82,855	4	
Hartford Investment Management Company	9	88	✓	✓			
Merrill Lynch	10	10	✓	✓			
Wellington Management	11	27	✓	✓	12,805	13	
Nationwide Insurance	12	12	✓	✓	11,790	14	
Prudential Investments	13	10	✓	✓	48,135	7	
J.P. Morgan Asset Management	14	29	✓	✓	4,809	26	
Stanish Mellon Asset Management	15	83	✓	✓	8,327	17	
Conning	16	81	✓	✓	7,854	19	
Lincoln Albrit & Co	17	82	✓	✓			
Balston Capital Management	18	19	✓	✓	3,000	33	
BNY Mellon	19	19	✓	✓	17,400	10	
Johnson Investment Counsel	20		✓	✓			
Albion Investments	21	26	✓	✓			
Van Eck Associates	22	39	✓	✓	1,905	48	
AllianceBernstein	23	71	✓	✓	10,000	16	
Federated Investment Management	24	78	✓	✓	3,000	32	
The Chubb Corporation	25	60	✓	✓	6,175	23	

Investor Targeting for SBA Bonds (continued)

University	Amount	Position
University of Missouri	\$15.5	Increase
University of Washington	\$7.3	Hold
University of Nebraska	\$5.0	Hold
University of California	\$3.4	Decrease

Key Areas of Focus When Approving Credit

- COVID-19
 - Expense cuts and declines
 - Fall semester preparation
 - Revenue impact
- Capital plan status
 - New projects and current projects
- Endowment

Recent Higher Education Deal Participation

- University of Missouri – tax-exempt, middle of curve
- Harvard University – tax-exempt, middle of curve
- Indiana University – tax-exempt, middle of curve
- University of Michigan – tax-exempt, middle of curve

Average order size of \$25M

Note: Shown for illustrative purposes only.

Why Is Goldman Sachs the Right Firm for GLWA? Goals Set. Goals Met.

GLWA Requires (Goals Set)

Relevant Knowledge

Experienced Team

Strong Advocate

Leadership in Navigating Challenging Markets

Recent Applicable Experience

Goldman Sachs Delivers (Goals Met)

- Comprehensive understanding of GLWA
 - Banker to numerous peer agencies nationwide
 - Top 3 senior manager for municipal utilities over the last decade
- Core team has 125 years combined experience in the industry
 - Focus on large complex transactions, #1 in average deal size
 - Deep bench of experts in tax, credit, quantitative modeling, ESG
 - Broad resources of the Firm augments the team's experience
- Led rating process for GLWA's inaugural issuance
 - Routinely leads client rating process and achieves desired outcomes on new credits, re-positioning credits or addressing difficult discussions
- Financial strength and stability coupled with willingness to commit capital
 - University of Michigan example week of April 4th exemplifies our nimbleness and creativity
- Leader in buyback strategies having served on over 50% of the transactions since January 2021
 - Directly comparable utility experience with DC Water closed in late March

Goldman Sachs places tremendous value on its relationship with GLWA and would be greatly honored to serve as senior manager



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

Vendor Certifications Regarding Debarment, Equal Opportunity, Non-Collusion and Agreement to Contract Terms and Conditions

I, the undersigned, am a representative of Goldman Sachs & Co. LLC, (“Vendor”), and affirm that I am authorized to make the following certifications on behalf of Vendor, its owners, and principals. Vendor acknowledges that the below certifications are material to this solicitation and any contract or purchase order (collectively, “Contract”) resulting therefrom and will be relied on by the Great Lakes Water Authority (“GLWA”) in awarding the Contract. Vendor acknowledges that any fraud, misrepresentation, or falsification in these certifications is and shall be treated as fraudulent concealment from GLWA of the true facts relating to the submission of Vendor’s offer and subject Vendor to certain penalties, including loss of the Contract or debarment, as further stated herein.

Part I. Debarment Certification

A. Debarment Pursuant to Federal Law.

Vendor certifies, to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in transactions under federal non-procurement programs by any federal department or agency;
2. Have not, within the three-year period preceding Vendor’s offer on this solicitation, had one or more public transactions (federal, state, or local) terminated for cause or default; and
3. Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) and have not, within the three-year period preceding Vendor’s offer on this solicitation, been convicted of or had a civil judgment rendered against it:
 - a. For the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction (federal, state, or local) or a procurement contract under such a public transaction;
 - b. For the violation of federal or state antitrust statutes, including those proscribing price fixing between competitors, the allocation of customers between competitors, or bid rigging; or
 - c. For the commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property.

Vendor understands that a false statement on this Debarment Certification may be grounds for the rejection of Vendor’s offer under this solicitation or the termination of an award thereunder. In addition, under 18 U.S.C. §1001, a false statement may result in a fine or imprisonment for up to five years, or both.



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

B. Debarment Pursuant to GLWA Procurement Policy.

Vendor certifies that:

1. It has read and understands the GLWA Procurement Policy (“Policy”) located at glwater.org/vendors, and in particular, Section 13 – Vendor Suspension/Debarment.
2. No federal, state, or local government entity has found Vendor (as defined in footnote 2 of the Policy) in violation of Section 13.1(a) through (p) in the past three (3) years.

Vendor is unable to certify to all the above statements. Attached is Vendor’s explanation.

Part II. Equal Opportunity Certification

1. Vendor makes this Equal Opportunity Certification (“EOC”) with GLWA, effective upon the execution of a Contract between Vendor and GLWA resulting from this solicitation, obligating Vendor and all sub-contractors on the Contract to not discriminate against any employee or applicant for employment, training, education, or apprenticeship connected directly or indirectly with the performance of the Contract, with respect to their hire, promotion, job assignment, tenure, terms, conditions or privileges of employment because of race, color, religious beliefs, public benefit status, national origin, age, marital status, disability, sex, sexual orientation, or gender identity or expression.
2. Vendor shall ensure that all potential sub-contractors on the Contract are reported to GLWA and that each such sub-contractor has executed its own EOC prior to working on the Contract.
3. Furthermore, Vendor understands that this EOC is valid for the duration of the Contract and that a breach of this EOC shall be deemed a material breach of the Contract.

Part III. Non-Collusion Certification

Vendor certifies that:

1. The prices in and amount of this offer have been arrived at independently and without consultation, communication, or agreement with any other vendor or potential vendor.
2. Neither the prices nor the amount of this offer, and neither the approximate prices nor the approximate amount of this offer, have been disclosed to any other firm or person that is a vendor or potential vendor to this solicitation, and the same shall not be disclosed before bid opening.
3. No attempt has been made or will be made to induce any firm or person to refrain from offering on this solicitation, or to submit a cost higher than this offer, or to submit any intentionally high or noncompetitive offer or other form of complementary offer.
4. The offer of Vendor is made in good faith and fair dealing and not pursuant to any agreement or discussion with, or inducement from, any firm or person.



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

5. Vendor, its affiliates, subsidiaries, principals, officers, directors, partners, members, and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable in any jurisdiction for any act prohibited by state or federal law involving conspiracy or collusion with respect to public contracting, except as follows:
See below*
-

Accordingly, Vendor, by its authorized signature below, acknowledges its agreement with the foregoing certifications.

Goldman Sachs & Co. LLC

(Vendor):

Print Name: Freda Wang

Title: Managing Director

Dated: 4/13/2022

Signature: 

*This certification is limited to the knowledge of the GS Team (as defined below), after due inquiry. For further disclosure regarding certain litigation and regulatory matters, please refer to the firm's various regulatory filings under applicable laws and regulations, including Form BD and periodic filings pursuant to the Securities Exchange Act of 1934. Additionally, please see Appendix B for disclosure related to certain litigation and regulatory matters concerning Goldman Sachs & Co. LLC's role as underwriter of municipal offerings.

During the normal course of Goldman Sachs' municipal finance business activities, the firm has been involved in transactions, which have been terminated or which have resulted in the loss of a client. Notwithstanding the foregoing, to the best of our knowledge, the municipal finance business has not been terminated as an underwriter within the last three years on any material governmental contract due to the gross negligence or willful misconduct of the municipal finance business.

The firm is committed to seeking and retaining business on the basis of merit, not through collusion. No member of the GS Team has colluded with any party for the purpose of receiving an unfair competitive advantage in connection with the procurement process associated with this RFP. For purposes of this response, the GS Team is comprised of Freda Wang, Mark Somers, Matthew Webb, Joanne Chang, Ed Droesch, Stacy Lingamfelter, and Arthur Miller.



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Business Inclusion and Diversity (B.I.D.) Program

In accordance with GLWA’s Procurement Policy, amended on November 25, 2020, all vendors responding to solicitations budgeted at \$1 million or greater will be required to submit a Business Inclusion and Diversity Plan. Please note that this requirement is applicable to all vendors whether certified as small, disadvantaged, minority-owned, women-owned, or other.

The goal of the vendor’s Diversity Plan is to demonstrate how they presented and maximized economic opportunities for qualified small, minority-owned, and economically disadvantaged business enterprises within the Great Lakes Water Authority’s service territory area.

Under the awarded contract, the plan will become part of the executed contract and may be negotiated during contract finalization. Vendor performance and B.I.D. Program compliance monitoring will be assessed during the length and completion of the contract.

B.I.D. Program Submission Requirements

1.1. B.I.D. Diversity Plan (Pass/Fail Requirement)

1.1.1. Proposed Diversity Plan — Each vendor shall provide their method for maximizing opportunities for inclusion and diversity participation for this solicitation. Good faith efforts in reporting will include the firms contacted and why they declined as well as firms recommended for award and other pertinent information.

Please complete the form included at the end of this document and attach all supporting documentation.

1.1.2. Certification Review and Assessment — Vendors must submit a copy of any certifications that they currently hold. If a vendor has certified subcontractors, then submit the subcontractor’s certifications as well.

The following certifications from a federal agency, the state of Michigan, or a Michigan local unit of government (including certifications upon which those entities might rely) will be accepted and must be submitted with the vendor’s plan. This list is not exclusive, and vendors may include other types of diversity certifications.

DBE - Disadvantaged Business Enterprise	MBE - Minority Business Enterprise
WBE- Woman Business Enterprise	SBE - Small Business Enterprise

1.1.3. Small Business Directory Resources/Registrations —

U.S. SBA - https://web.sba.gov/pro-net/search/dsp_search-help.cfm

State of Michigan - <https://sigma.michigan.gov/webapp/PRDVSS2X1/AltSelfService>

Michigan United Certification Program - www.michigan.gov/mucp

MDOT Certification Program - www.michigan.gov/mdotdbe



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1.2. Economic Equity (Scored Categories) — To receive the economic equity credit, complete the B.I.D. questionnaire in Bonfire and submit with your solicitation response. A maximum of 3% points can be added to the vendor’s overall score based on the requirements below.

1.2.1. **Business Presence in the State of Michigan — 1%** — A business presence in the State of Michigan means that a business is eligible to be a Certified Michigan Based Business as defined by the state of Michigan law: a) files a Michigan single business tax return; b) has a Michigan income tax return statement showing income generated in, or attributed to, the state of Michigan or c) withheld Michigan income tax from compensation paid to the vendors/owners and remitted the tax to the Michigan Department of Treasury. (MCL 18.1268).

1.2.2. **Business Presence in a GLWA Service Territory Area — 1%** — GLWA is a regional utility that serves communities in as many as eight counties. A business presence in a GLWA Service Territory Area indicates that the vendor’s business is located in one of the following GLWA Service Territory Areas.

Community	County
City of Flint	Genesee
Village of Almont	Lapeer
Imlay Township	Lapeer
City of Imlay City	Lapeer
City of Lapeer	Lapeer
Mayfield Township	Lapeer
Bruce Township	Macomb
City of Center Line	Macomb
Chesterfield Township	Macomb
Clinton Township	Macomb
City of Eastpointe	Macomb
City of Fraser	Macomb
Harrison Township	Macomb
Lenox Township	Macomb
Macomb Township	Macomb
Village of New Haven	Macomb
Village of Romeo	Macomb
City of Roseville	Macomb
Shelby Township	Macomb
City of St Clair Shores	Macomb



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Community	County
City of Sterling Heights	Macomb
City of Utica	Macomb
City of Warren	Macomb
Washington Township	Macomb
Ash Township	Monroe
Berlin Township	Monroe
Village of South Rockwood	Monroe
Village of Carleton	Monroe
Village of Estral Beach	Monroe
Commerce Township	Oakland
City of Farmington	Oakland
City of Farmington Hills	Oakland
City of Ferndale	Oakland
City of Hazel Park	Oakland
City of Keego Harbor	Oakland
City of Madison Heights	Oakland
City of Novi	Oakland
City of Oak Park	Oakland
Royal Oak Township	Oakland
City of Sylvan Lake	Oakland
City of Troy	Oakland
City of Walled Lake	Oakland
West Bloomfield Township	Oakland
City of Wixom	Oakland
Village of Lake Orion	Oakland
City of Rochester Hills	Oakland
City of Auburn Hills	Oakland
Orion Township	Oakland
City of Pontiac	Oakland
City of Rochester	Oakland
City of Berkley	Oakland
Village of Beverly Hills	Oakland
Village of Bingham Farms	Oakland
City of Birmingham	Oakland



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Community	County
Bloomfield Township	Oakland
City of Bloomfield Hills	Oakland
City of Clawson	Oakland
City of Huntington Woods	Oakland
City of Lathrup Village	Oakland
City of Pleasant Ridge	Oakland
City of Royal Oak	Oakland
City of Southfield	Oakland
Southfield Township	Oakland
City of Orchard Lake Village	Oakland
Burtchville Township	St. Clair
Greenwood Township	St. Clair
Augusta Township	Washtenaw
Pittsfield Township	Washtenaw
Superior Township	Washtenaw
York Township	Washtenaw
City of Ypsilanti	Washtenaw
Ypsilanti Township	Washtenaw
City of Allen Park	Wayne
City of Belleville	Wayne
Brownstown Township	Wayne
Canton Township	Wayne
City of Dearborn	Wayne
City of Dearborn Heights	Wayne
City of Detroit	Wayne
City of Ecorse	Wayne
City of Flat Rock	Wayne
City of Garden City	Wayne
City of Gibraltar	Wayne
Grosse Ile Township	Wayne
City of Grosse Pointe Park	Wayne
City of Grosse Pointe Shores	Wayne
City of Grosse Pointe Woods	Wayne
City of Hamtramck	Wayne



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Community	County
City of Harper Woods	Wayne
City of Highland Park	Wayne
Huron Township	Wayne
City of Inkster	Wayne
City of Lincoln Park	Wayne
City of Livonia	Wayne
City of Melvindale	Wayne
Northville Township	Wayne
City of Northville	Wayne
City of Plymouth	Wayne
Plymouth Township	Wayne
Redford Township	Wayne
City of River Rouge	Wayne
City of Riverview	Wayne
City of Rockwood	Wayne
City of Romulus	Wayne
City of Southgate	Wayne
Sumpter Township	Wayne
City of Taylor	Wayne
City of Trenton	Wayne
Van Buren Township	Wayne
City of Wayne	Wayne
City of Westland	Wayne
City of Woodhaven	Wayne



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1.2.3. Business Presence in an Economically Disadvantaged GLWA Service Territory Area — 1% — A business presence in an Economically Disadvantaged Service Territory Area means the vendor is in a municipality designated as having one of the five lowest median household incomes in that respective county as defined by the U.S. Census Bureau every five years.

Community
Center Line
Roseville
Eastpointe
Lapeer
Imlay
Flint
Royal Oak Charter Township
Pontiac
Hazel Park
Keego Harbor
Oak Park
Hamtramck
River Rouge
Ecorse
Detroit
Ypsilanti
Ypsilanti Charter Township
Superior Charter Township



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Please complete the following form and attach all supporting documentation.

A. Prime Vendor: Name and Contact Information (mandatory)

1. Vendor Name(s):

Goldman Sachs & Co. LLC

2. Vendor Mailing Address(es):

200 West, New York, NY 10282

3. Contact Person(s) and Title(s):

Freda Wang, Managing Director

4. Contact Email(s):

freda.wang@gs.com

5. Contact Phone/Cell:

212-902-2892

B. Prime Vendor: Diversity Certifications (if applicable)

Vendor Name	Certifying Organization	Certifying Public Agency (if applicable)	Date of Certification
N/A			

C. Prime Vendor: Diversity and Inclusion Efforts Summary (mandatory)

Instructions: Provide a summary of diversity and inclusion efforts undertaken or strategies employed to maximize opportunities for small, minority-owned, and disadvantaged subcontractors on the specific GLWA solicitation to which you are responding.

Goldman Sachs and PSI, strives to provide minority and veteran-owned businesses with the opportunity to compete on a fair and equal basis for business, and ideally to expand and grow their businesses while working with us. Goldman Sachs has proactively undertaken MWBE joint ventures and found ways to encourage MWBE firms, as detailed below:

- Michigan Finance Authority (County of Wayne, MI), Second Lien Distributable State Aid Revenue and Revenue Refunding Bonds, Series 2020 – Goldman Sachs served as senior manager (lead left) with Siebert, Cisneros Shank & Co. in October 2020. * Goldman Sachs was tasked with pricing and financial analysis while Siebert was primarily responsible for the rating process. The Goldman Sachs team worked in close coordination with Siebert and collaborated on optimal structuring parameters for the client throughout the process. The teams worked closely with the client's financial advisor to craft a marketable structure and generate optimal savings. The team effort provided for a successful refunding transaction for the County.
- Over a multi-year period, Goldman Sachs & Co. LLC and Siebert Williams Shank, a certified women-owned and minority-owned enterprise, collaborated on proposals to the Port Authority of New York and New Jersey (the "Port") on the refinancing of the Port's outstanding debt associated with 1 World Trade Center. The team developed multiple refinancing options, including strategies that explored ways to leverage the building's cashflows, as well as the LEED certification of the building. This process culminated in the sale of new green bonds to refinance outstanding Port debt associated with the building, through a syndicate joint led by Siebert and Goldman. Siebert has also participated as a syndicate member on multiple transactions led by Goldman Sachs, including those involving 3 World Trade Center, 4 World Trade Center and 7 World Trade Center. Our partnership with Siebert illustrates one way Goldman Sachs has prioritized working with a diverse syndicate on significant transactions and our ability to work collaboratively, share duties, and alternate roles.
- In December 2021, the City of Chicago and the Sales Tax Securitization Authority priced a series of bond deals to refinance \$1.8 billion of the City's debt obligations. As part of the financing, the City targeted \$4.3 billion of bonds for a tender or exchange, of which \$876 million were accepted for purchase or exchange. Goldman Sachs served as joint bookrunner and joint dealer manager with Loop Capital, a Black-led investment bank, brokerage, and advisory firm, sharing responsibilities on all aspects of the financing. The Goldman and Loop teams were fully integrated, both among the banking team and syndicate desk, providing seamless service to the City.



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D. Prime Vendor: Targeted Outreach Efforts Summary (mandatory)

Instructions: Provide a summary of the targeted outreach efforts undertaken or strategies employed to encourage participation by small, minority-owned, and disadvantaged subcontractors on the specific GLWA solicitation to which you are responding.

At Goldman Sachs, a wide array of goods and services are needed to support our business operations, and we work hard to ensure that we partner with the best businesses available to achieve our objectives.

Our Vendor Diversity Program gives us a platform to engage with small and diverse enterprises around the world. We strive to engage vendors that reflect the diversity of the communities where we live and work and of the clients we serve, and we look for vendors that can bring a range of perspectives to help us discover creative, effective solutions. Our Vendor Diversity Program aims to help break down barriers to market access for small and diverse enterprises and unlock commercial opportunities with Goldman Sachs. We seek vendors that can continuously drive competitiveness and innovation in our supply chain. We also recognize the wider economic impact of partnering with small and diverse enterprises and supporting them in their growth. To further support business owners around the world, the firm provides access to education, networks and capital through our One Million Black Women, 10,000 Small Businesses, 10,000 Women and Launch With GS initiatives. We have also committed to increasing our spend with diverse vendors by 50% by 2025.

In 2020, Goldman Sachs bought goods and services worth over \$265mm from small and diverse vendors globally, representing 5% of our addressable spend. 70% was with Minority-Women-Owned Businesses and 30% with Small Businesses. 28% of our overall spend was Tier 2. We remain committed to our goal to increase spend with small and diverse vendors by 50% by 2025.

More details on our Goldman Sachs vendor diversity, people and culture can be found at the following web address: <https://www.goldmansachs.com/our-firm/people-and-culture/> Goldman Sach is not utilizing subcontractors in our response to the GLWA solicitation.

E. Prime Vendor: Targeted Outreach Communications Log (mandatory)

Subcontractor Name	Certifying Organization	Date of Outreach	Subcontractor Response (bid, no bid, and why)
See response above			



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F. Prime Vendor: Resources Utilized (*mandatory*)

Instructions: Please note the resources used to identify small, minority-owned, and disadvantaged subcontractors (e.g., Federal or Michigan-based databases, certification programs, websites, listservs, or advertisements).

Our Vendor Diversity Program began in North America in 2000 before expanding to Europe in 2005 and Asia Pacific in 2009. In partnership with our vendors, we have introduced initiatives that aim to positively impact our employees, on-site construction workers and the community at large. The following major real estate projects reflect our commitment to working with diverse vendors across the world. We continue to partner with industry associations and work to leverage relationships developed through our initiatives. We are members and active participants of the following vendor diversity organizations:

- Disability:IN - <https://disabilityin.org/>
- National LGBT Chamber of Commerce (NGLCC) - <https://www.nglcc.org/>
- National Minority Supplier Development Council (NMSDC) - <http://www.nmsdc.org/>
- Women's Business Enterprise National Council (WBENC) - <https://www.wbenc.org/>
- WEConnect International - <https://weconnectinternational.org/en/>
- Financial Services Roundtable for Supplier Diversity (FSRSD) - <https://fsrsd.org/>

G. Prime Vendor: Additional Diversity and Inclusion Efforts Summary (*optional*)

Instructions: Please describe or summarize below any additional diversity and inclusion efforts undertaken (as related to the specific GLWA solicitation to which you are responding) that are not addressed in the above fields.

- 10,000 Small Businesses: The Firm has a \$500 million program to provide education, capital and business support to small businesses across the U.S., including over 580 business owners from across Michigan.
- Support of CARES Act PPP: In April 2020, as part of a \$1 billion commitment to COVID-19 relief globally, Goldman Sachs committed nearly \$20 million in loans for small businesses in Southeast Michigan to help them through the COVID-19 crisis.
- Goldman Sachs Gives (GS Gives): Since 2010, Goldman Sachs Gives has granted more than \$2.2 million to 25 non-profit organizations located in the State of Michigan.
- Community TeamWorks: Goldman Sachs Community TeamWorks is a global volunteering initiative that allows us to cultivate longstanding relationships with nonprofits and complete team-based projects that drive impact in the communities where we work and live. Since 2010, over 250 Goldman Sachs volunteers completed CTW projects across Michigan and contributed 1,400 hours of service to local communities.

H. Prime Vendor: Internal Diversity and Inclusion Efforts Summary (*optional*)

Instructions: Please describe below any inclusion and diversity efforts, programs, initiatives, professional associations, or awards that your organization has undertaken, belonged to, or won.

- On March 10, 2021, Goldman Sachs announced the launch of One Million Black Women, an initiative through which the firm will invest \$10 billion and commit \$100 million in philanthropic capital for capacity-building grants over the next decade to narrow opportunity gaps for at least one million Black women in the US. The firm has a 20-year history of investing significant capital in women and underserved communities, including through 10,000 Small Businesses, 10,000 Women and the Urban Investment Group, and we expect that this new initiative will not only create meaningful opportunities for Black women, but also lead to sustainable economic growth across the country. A distinguished advisory council of Black leaders from leading corporations, government and nonprofit organizations will play a critical role in driving this initiative forward.
- Following our One Million Black Women announcement, on March 18, 2021 Goldman Sachs announced an additional \$500 million investment in diverse businesses and funds through our Launch With GS program which was initiated in June 2018. This brings our total commitment to Black, Latinx, women and other diverse entrepreneurs and investors through Launch with GS to \$1 billion.
- Effective July 1, 2020, Goldman Sachs only underwrites Initial Public Offerings ("IPOs") in the United States and Europe for private companies that have at least one diverse board member. We are the only major Firm to have made this commitment. Beginning July 2021, the Firm has raised this target to two diverse candidates for each of our IPO clients in the US and Europe. This decision is rooted in our conviction that companies with diverse leadership perform better. In addition to the real commercial benefits, it is clear that changing the stereotypes associated with corporate decision-making will have many positive effects for society as a whole.
- Awards include: Equileap Top 100 Globally for Gender Equality (March 2022), Bloomberg Gender-Equality Index (January 2022), Hispanic Network Magazine's Best of the Best (November 2021), Euromoney's 2021 Global Awards for Excellence (September 2021) - Best Bank for Diversity & Inclusion, among others



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I. Proposed Subcontractor(s) Information (mandatory)

Subcontracted Goods and/or Services	Subcontractor Name	Certifying Organization
Goldman Sachs is not proposing the use of subcontractors in connection with this solicitation.		

J. Supporting Documentation (mandatory)

Instructions: Provide a short description of any supporting or supplemental documentation included with this form.

Document No.	Description
1.	The firm's Equal Employment Opportunities and Commitment to Diversity - https://www.goldmansachs.com/careers/statements/diversity-global.html
2.	Our Firm, People, and Culture - https://www.goldmansachs.com/our-firm/people-and-culture/
3.	Diversity and Inclusion - https://www.goldmansachs.com/our-commitments/diversity-and-inclusion/racial-equity/
4.	
5.	
6.	

B.I.D. Program - Executive Summary

INTERNAL DIVERSITY AND INCLUSION EFFORTS BROADLY ACROSS THE FIRM

Goldman Sachs operates from a set of 14 core business principles. One of these principles states: “For us to be successful, our men and women must reflect the diversity of the communities and cultures in which we operate. That means we must attract, retain and motivate people from many backgrounds and perspectives. Being diverse is not optional; it is what we must be.” Goldman Sachs is constantly striving towards a more diverse workplace, both for the benefit of the Firm and in order to more successfully meet the needs of our clients. While there has been progress in recent years on women’s representation and ethnic and racial diversity, there is still significant progress to be made.

Over the years, the Firm’s diversity efforts have evolved from raising broader awareness and delivering an array of programs to a more deliberate, data-driven and targeted approach. We have made some progress, but we have significant work to do. To drive progress for our Firm towards our aspirational goals, we have a range of initiatives in place to increase diverse representation at all levels and foster inclusion.

In 2019, the Firm set forth aspirational goals and a comprehensive action plan to increase diverse representation at all levels. The positive results we have achieved since, including more diverse representation for our 2020 campus analyst class – which comprises a majority of women for the first time, and our highest representation of Black talent in the Americas and Asian talent globally – and the Managing Director Class of 2021 – our most diverse to date – demonstrate the power of setting aspirational goals and holding ourselves accountable.

However, we have more work to do, and will keep up our efforts to reach the aspirational goals we established last year. In addition, in coordination with the Global Inclusion and Diversity Committee and Human Capital Management, we have identified two additional important areas of focus where we have now set new aspirational goals – enhancing the diverse representation of our vice president population and significantly increasing our hiring of Black analysts.

We are aiming to achieve, by 2025, representation in our vice president population of 40 percent women globally; 7 percent Black professionals in the Americas and the UK; and 9 percent Hispanic/Latinx professionals in the Americas. For entry-level analysts and associates, we aim to achieve over time representation of 50% women globally, 11% Black and 14% Hispanic/Latinx professionals in the Americas, and 9% Black professionals in UK. Building on these existing aspirational goals for entry-level analysts and associates – and continuing our long-term relationships with Historically Black Colleges and Universities (HBCUs) – we will double the number of campus analyst hires in the US recruited from HBCUs by 2025.

This will mean bolstering existing initiatives and launching new ones across hiring, development, promotion and retention focused on these populations, while sustaining our existing programs focused on other diverse populations. To be clear, these goals do not limit our ambition to be an employer of choice for all diverse professionals. We continue to focus on using a data-driven and targeted approach to identify actions across all diverse communities to drive progress. It is important for our business, our clients, our people and to us. Fundamental change takes time, but if we’re rigorous in our execution of incremental change, we will make it happen. We are committed to that.

FIRM DIVERSITY AND INCLUSION EFFORTS SPECIFIC TO GLWA’S SOLICITATION

As described in our response to the solicitation, the Firm’s Public Sector Infrastructure (PSI) team is charged with coverage of GLWA and houses the Authority’s primary banking team. The PSI team is equally and firmly committed to meeting the goals articulated by the firm. We support the firm’s goals through the following: diverse recruiting, an internal Social Justice Committee, working with issuers to serve their diverse populations, supporting ESG issuances, and working with MWBE firms on important initiatives / transactions.

Goldman Sachs and PSI, strives to provide minority and veteran-owned businesses with the opportunity to compete on a fair and equal basis for business, and ideally to expand and grow their businesses while working with us. Goldman Sachs has proactively undertaken MWBE joint ventures and found ways to encourage MWBE firms, as detailed below:

- In September 2021, Goldman Sachs Asset Management, along with four other investment firms and JUST Capital, announced the Municipal Issuer Racial Equity & Inclusion Engagement Framework. The group developed a voluntary framework for issuers regarding racial equity and inclusion and is working with two MWBE underwriters, Loop Capital Markets and Siebert Williams Shank & Co, to inform issuers about the questionnaire and how to complete it. The working group aims to put information on publicly available sites. The stated purpose of the Framework is “to open a constructive and voluntary dialogue with municipal issuers on critical issues surrounding racial equity and inclusion...The Framework put forth supports increased engagement and disclosure that can help stakeholders make more informed investment decisions.” The questionnaire asks, among other things, about policing policies, efforts to combat race-based inequality, social services and the demographic breakdown of the government’s workforce.
- Over a multi-year period, Goldman Sachs & Co. LLC and Siebert Williams Shank, a certified women-owned and minority-owned enterprise, collaborated on proposals to the Port Authority of New York and New Jersey (the “Port”) on the refinancing of the Port’s outstanding debt associated with 1 World Trade Center. The team developed multiple refinancing options, including strategies that explored ways to leverage the building’s cashflows, as well as the LEED certification of the building. This process culminated in the sale of new green bonds to refinance outstanding Port debt associated with the building, through a syndicate joint led by Siebert and Goldman. Siebert has also participated as a syndicate member on multiple transactions led by Goldman Sachs, including those involving 3 World Trade Center, 4 World Trade Center and 7 World Trade Center. Our partnership with Siebert illustrates one way Goldman Sachs has prioritized working with a diverse syndicate on significant transactions and our ability to work collaboratively, share duties, and alternate roles.
- In December 2021, the City of Chicago and the Sales Tax Securitization Authority priced a series of bond deals to refinance \$1.8 billion of the City’s debt obligations. As part of the financing, the City targeted \$4.3 billion of bonds for a tender or exchange, of which \$876 million were accepted for purchase or exchange. Goldman Sachs served as joint bookrunner and joint dealer manager with Loop Capital, a Black-led investment bank, brokerage, and advisory firm, sharing responsibilities on all aspects of the financing. The Goldman and Loop teams were fully integrated, both among the banking team and syndicate desk, providing seamless service to the City. The range of perspectives and partnership from Loop and Goldman delivered an effective outcome for the City in the largest liability management transaction in the municipal market in several years.
- Michigan Finance Authority (County of Wayne, MI), Second Lien Distributable State Aid Revenue and Revenue Refunding Bonds, Series 2020 – Goldman Sachs served as senior manager (lead left) with Siebert, Cisneros Shank & Co. in October 2020. Goldman Sachs was tasked with pricing and financial analysis while Siebert was primarily responsible for the rating process. The Goldman Sachs team worked in close coordination with Siebert and collaborated on optimal structuring parameters for the client throughout the process. The teams worked closely with the client’s financial advisor to craft a marketable structure and generate optimal savings. The team effort provided for a successful refunding transaction for the County.
- Port Authority of New York and New Jersey Consolidated Bonds 212th – 216th Series – Goldman Sachs served as Joint Bookrunner (lead left) with Siebert, Cisneros Shank & Co. in August 2019. Goldman Sachs was tasked with pricing and marketing while Siebert was primarily responsible for analysis. The Goldman Sachs team worked in close coordination with Siebert and shadowed their analyses throughout the process. When Goldman Sachs identified a structuring optimization that would allow the Port Authority to sell larger (more liquid) blocks of bonds, we worked closely with Siebert and the Port Authority’s financial advisor to recraft the financing to allow for a more marketable structure. The team effort provided for a successful refunding and new money transaction

for the Port Authority and demonstrates the Firm's ability to execute transactions effectively with a diverse syndicate.

As evidenced in the experience above, Goldman Sachs has a longstanding history of seamlessly working with MWBE Firms, driving favorable outcomes for clients. Our banking and syndicate team welcomes the opportunity to again work with MWBE Firms for any of GLWA's contemplated financings.

FIRM DIVERSITY AND INCLUSION EFFORTS WITH OUTSIDE VENDORS

In addition, we recognize the wider economic impact of partnering with small and diverse enterprises and supporting them in their growth. At Goldman Sachs, we make the active decision to a wide array of goods and services are needed to support our business operations, and we work hard to ensure that we partner with the best businesses available to achieve our objectives. Our Vendor Diversity Program gives us a platform to engage with small and diverse enterprises around the world. We strive to engage vendors that reflect the diversity of the communities where we live and work and of the clients we serve, and we look for vendors that can bring a range of perspectives to help us discover creative, effective solutions.

In 2020, Goldman Sachs bought goods and services worth over \$265mm from small and diverse vendors globally, representing 5% of our addressable spend. 70% was with Minority-Women-Owned Businesses and 30% with Small Businesses. 28% of our overall spend was Tier 2. We remain committed to our goal to increase spend with small and diverse vendors by 50% by 2025.

To further support business owners around the world, the Firm provides access to education, networks and capital through our various programs such as the 10,000 Small Businesses and 10,000 Women.

We have been investing both capital and resources in minority-owned businesses for over a decade, through our 10,000 Small Businesses program and Urban Investment Group. Now, we are harnessing our expertise and deep relationships with Community Development Financial Institutions and other mission-driven lenders to swiftly deploy targeted capital towards communities of color. We created the Goldman Sachs Fund for Racial Equity to support the vital work of leading organizations addressing racial injustice, structural inequity and economic disparity. The \$10 million Fund for Racial Equity builds upon more than \$200 million Goldman Sachs has granted over the last decade to organizations serving communities of color.

More recently, as part of the Goldman Sachs COVID-19 Relief Fund, the Firm deployed \$17 million to organizations supporting relief efforts in communities of color. These donations will help us lay the groundwork for efforts we can make to support the Black community. They are also connected to the deeper conversations happening within our organization about how we can support our Black colleagues, clients, customers, and communities. These discussions also include how we can become better listeners and better allies and the concrete steps we will take to embed inclusion into everything we do.

Through Launch With GS, Goldman Sachs aims to increase access to capital and facilitate connections for women, Black, Latinx and other diverse entrepreneurs and investors. Despite the numbers, only a small percentage of U.S. venture capital goes to diverse teams. Additionally, only a small amount of global private equity assets are managed by diverse teams. This market imbalance, coupled with our belief that diverse teams outperform, is the catalyst behind Launch With GS. We invest capital in companies with diverse and gender-balanced leadership through GS Growth. We also partner with clients to invest in investment managers with at least one diverse General Partner across venture capital, growth equity, and private equity strategies.

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Quantity Required	Numeric	
					\$\$ Per Bond	Total Cost
Not Bidding	No Bid	#0-1	Management Fee	1		-
Not Bidding	No Bid	#0-2	Risk Fee \$\$ Per Bond (if applicable)	1		-
Not Bidding	No Bid	#0-3	Other Fee \$\$ Per Bond (if applicable)	1		-

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Numeric	Text	Numeric	Total Cost
				Quantity anticipated	Expense Description	Unit Price	
Success: All values provided	Bid	#0-1	Expense	1	Underwriter's Counsel Fee	\$ 80,000.00	\$ 80,000.00
Success: All values provided	Bid	#0-2	Expense	43	CUSIP Fee (43 CUSIPs)*	\$ 52.83	\$ 2,271.50
Success: All values provided	Bid	#0-3	Expense	1	Ipreo Fees (including tax)*	\$ 19,059.72	\$ 19,059.72
Success: All values provided	Bid	#0-4	Expense	2	DTC*	\$ 800.00	\$ 1,600.00
Success: All values provided	Bid	#0-5	Expense	1	Internet Roadshow	\$ 2,500.00	\$ 2,500.00
Success: All values provided	Bid	#0-6	Expense	1	Continuing Disclosure Review	\$ 1,088.75	\$ 1,088.75
Success: All values provided	Bid	#0-7	Expense	1	GS Out of Pocket Expenses	\$ 5,000.00	\$ 5,000.00
Not Bidding	No Bid	#0-8	Expense				-
Not Bidding	No Bid	#0-9	Expense				-
Not Bidding	No Bid	#0-10	Expense				-

* Preliminary; subject to change based on transaction structure

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-1	Uninsured \$ per Bond	1	Per Bond	\$ 2.50	\$ 2.50
Success: All values provided	Bid	#0-2	Uninsured \$ per Bond	2	Per Bond	\$ 2.50	\$ 5.00
Success: All values provided	Bid	#0-3	Uninsured \$ per Bond	3	Per Bond	\$ 2.50	\$ 7.50
Success: All values provided	Bid	#0-4	Uninsured \$ per Bond	4	Per Bond	\$ 2.50	\$ 10.00
Success: All values provided	Bid	#0-5	Uninsured \$ per Bond	5	Per Bond	\$ 2.50	\$ 12.50
Success: All values provided	Bid	#0-6	Uninsured \$ per Bond	6	Per Bond	\$ 2.50	\$ 15.00
Success: All values provided	Bid	#0-7	Uninsured \$ per Bond	7	Per Bond	\$ 2.50	\$ 17.50
Success: All values provided	Bid	#0-8	Uninsured \$ per Bond	8	Per Bond	\$ 2.50	\$ 20.00
Success: All values provided	Bid	#0-9	Uninsured \$ per Bond	9	Per Bond	\$ 2.50	\$ 22.50
Success: All values provided	Bid	#0-10	Uninsured \$ per Bond	10	Per Bond	\$ 2.50	\$ 25.00
Success: All values provided	Bid	#0-11	Uninsured \$ per Bond	11	Per Bond	\$ 2.50	\$ 27.50
Success: All values provided	Bid	#0-12	Uninsured \$ per Bond	12	Per Bond	\$ 2.50	\$ 30.00
Success: All values provided	Bid	#0-13	Uninsured \$ per Bond	13	Per Bond	\$ 2.50	\$ 32.50
Success: All values provided	Bid	#0-14	Uninsured \$ per Bond	14	Per Bond	\$ 2.50	\$ 35.00
Success: All values provided	Bid	#0-15	Uninsured \$ per Bond	15	Per Bond	\$ 2.50	\$ 37.50

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-16	Uninsured \$ per Bond	16	Per Bond	\$ 2.50	\$ 40.00
Success: All values provided	Bid	#0-17	Uninsured \$ per Bond	17	Per Bond	\$ 2.50	\$ 42.50
Success: All values provided	Bid	#0-18	Uninsured \$ per Bond	18	Per Bond	\$ 2.50	\$ 45.00
Success: All values provided	Bid	#0-19	Uninsured \$ per Bond	19	Per Bond	\$ 2.50	\$ 47.50
Success: All values provided	Bid	#0-20	Uninsured \$ per Bond	20	Per Bond	\$ 2.50	\$ 50.00
Success: All values provided	Bid	#0-21	Uninsured \$ per Bond	21	Per Bond	\$ 2.50	\$ 52.50
Success: All values provided	Bid	#0-22	Uninsured \$ per Bond	22	Per Bond	\$ 2.50	\$ 55.00
Success: All values provided	Bid	#0-23	Uninsured \$ per Bond	23	Per Bond	\$ 2.50	\$ 57.50
Success: All values provided	Bid	#0-24	Uninsured \$ per Bond	24	Per Bond	\$ 2.50	\$ 60.00
Success: All values provided	Bid	#0-25	Uninsured \$ per Bond	25	Per Bond	\$ 2.50	\$ 62.50
Success: All values provided	Bid	#0-26	Uninsured \$ per Bond	26	Per Bond	\$ 2.50	\$ 65.00
Success: All values provided	Bid	#0-27	Uninsured \$ per Bond	27	Per Bond	\$ 2.50	\$ 67.50
Success: All values provided	Bid	#0-28	Uninsured \$ per Bond	28	Per Bond	\$ 2.50	\$ 70.00
Success: All values provided	Bid	#0-29	Uninsured \$ per Bond	29	Per Bond	\$ 2.50	\$ 72.50
Success: All values provided	Bid	#0-30	Uninsured \$ per Bond	30	Per Bond	\$ 2.50	\$ 75.00

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-31	Insured \$ per Bond	1	Per Bond	\$ 2.50	\$ 2.50
Success: All values provided	Bid	#0-32	Insured \$ per Bond	2	Per Bond	\$ 2.50	\$ 5.00
Success: All values provided	Bid	#0-33	Insured \$ per Bond	3	Per Bond	\$ 2.50	\$ 7.50
Success: All values provided	Bid	#0-34	Insured \$ per Bond	4	Per Bond	\$ 2.50	\$ 10.00
Success: All values provided	Bid	#0-35	Insured \$ per Bond	5	Per Bond	\$ 2.50	\$ 12.50
Success: All values provided	Bid	#0-36	Insured \$ per Bond	6	Per Bond	\$ 2.50	\$ 15.00
Success: All values provided	Bid	#0-37	Insured \$ per Bond	7	Per Bond	\$ 2.50	\$ 17.50
Success: All values provided	Bid	#0-38	Insured \$ per Bond	8	Per Bond	\$ 2.50	\$ 20.00
Success: All values provided	Bid	#0-39	Insured \$ per Bond	9	Per Bond	\$ 2.50	\$ 22.50
Success: All values provided	Bid	#0-40	Insured \$ per Bond	10	Per Bond	\$ 2.50	\$ 25.00
Success: All values provided	Bid	#0-41	Insured \$ per Bond	11	Per Bond	\$ 2.50	\$ 27.50
Success: All values provided	Bid	#0-42	Insured \$ per Bond	12	Per Bond	\$ 2.50	\$ 30.00
Success: All values provided	Bid	#0-43	Insured \$ per Bond	13	Per Bond	\$ 2.50	\$ 32.50
Success: All values provided	Bid	#0-44	Insured \$ per Bond	14	Per Bond	\$ 2.50	\$ 35.00
Success: All values provided	Bid	#0-45	Insured \$ per Bond	15	Per Bond	\$ 2.50	\$ 37.50
Success: All values provided	Bid	#0-46	Insured \$ per Bond	16	Per Bond	\$ 2.50	\$ 40.00
Success: All values provided	Bid	#0-47	Insured \$ per Bond	17	Per Bond	\$ 2.50	\$ 42.50
Success: All values provided	Bid	#0-48	Insured \$ per Bond	18	Per Bond	\$ 2.50	\$ 45.00
Success: All values provided	Bid	#0-49	Insured \$ per Bond	19	Per Bond	\$ 2.50	\$ 47.50

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-50	Insured \$ per Bond	20	Per Bond	\$ 2.50	\$ 50.00
Success: All values provided	Bid	#0-51	Insured \$ per Bond	21	Per Bond	\$ 2.50	\$ 52.50
Success: All values provided	Bid	#0-52	Insured \$ per Bond	22	Per Bond	\$ 2.50	\$ 55.00
Success: All values provided	Bid	#0-53	Insured \$ per Bond	23	Per Bond	\$ 2.50	\$ 57.50
Success: All values provided	Bid	#0-54	Insured \$ per Bond	24	Per Bond	\$ 2.50	\$ 60.00
Success: All values provided	Bid	#0-55	Insured \$ per Bond	25	Per Bond	\$ 2.50	\$ 62.50
Success: All values provided	Bid	#0-56	Insured \$ per Bond	26	Per Bond	\$ 2.50	\$ 65.00
Success: All values provided	Bid	#0-57	Insured \$ per Bond	27	Per Bond	\$ 2.50	\$ 67.50
Success: All values provided	Bid	#0-58	Insured \$ per Bond	28	Per Bond	\$ 2.50	\$ 70.00
Success: All values provided	Bid	#0-59	Insured \$ per Bond	29	Per Bond	\$ 2.50	\$ 72.50
Success: All values provided	Bid	#0-60	Insured \$ per Bond	30	Per Bond	\$ 2.50	\$ 75.00

April 14, 2022



Note: The underwriter presentation starts on PDF page 284.



Siebert Williams Shank & Co., LLC Response:
Great Lakes Water Authority
Request for Proposal (RFP) for Bond Underwriting Services
RFP-2200290



Disclaimer

Siebert Williams Shank & Co., LLC ("SWS" or the "Firm") is providing this information to the recipient (the "Recipient") in response to the Recipient's Request for Proposals to serve as an underwriter for a prospective transaction (the "RFP"). Pursuant to the RFP, SWS submits this response for the Recipient's consideration in anticipation of the Firm serving as a prospective underwriter only, and not as a municipal advisor. The information contained herein is not advice being provided by a municipal advisor but instead is being provided solely in direct response to the RFP. Please see the important disclosures at the end of this document for further information about SWS' role, the nature of the information provided in this RFP response, and the duties owed and not owed to the Recipient by SWS.

Disclosures About SWS' Role as Underwriter, Not as Municipal Advisor

SWS is providing the information contained in this document for discussion purposes only as prospective underwriter or in anticipation of serving as underwriter on a future transaction in response to the RFP, and not as financial advisor or municipal advisor. Should it be chosen to serve as an underwriter as a result of its response to the RFP, the primary role of SWS, as underwriter, will be to purchase securities with a view toward distribution and/or for resale to investors in an arm's-length commercial transaction with the Recipient. As an underwriter, SWS would have financial and other interests that differ from those of the Recipient. An underwriter is required to deal fairly at all times with both issuers and investors. An underwriter has a duty to purchase securities from an issuer at a fair and reasonable price, but must balance that duty with its duty to sell municipal securities to investors at prices that are fair and reasonable. SWS, as underwriter, will review any official statement for the Recipient's securities in accordance with, and as part of, its responsibilities to investors under the federal securities laws, as applied to the facts and circumstances of the transaction.

This RFP response is an effort by SWS to be selected as an underwriter. SWS is not acting or seeking to act as a municipal advisor to the Recipient. Rather, as an underwriter acting for its own interest and unlike a municipal advisor, SWS will not have or owe a fiduciary duty to the Recipient pursuant to Section 15B of the Securities Exchange Act of 1934, as amended (the "Act"), and, therefore, is not required by federal law to act in the best interests of the Recipient without regard to its own financial or other interests. The Recipient should consult with its own financial and/or municipal, legal, accounting, tax and other advisors, as applicable, to the extent it deems appropriate before acting on any information or material contained in this RFP response. If the Recipient would like a municipal advisor in this transaction and does not have one that owes fiduciary duties to it, then the Recipient is free to engage a municipal advisor to serve in that capacity.

No Recommendations or Advice

SWS is not recommending any action to the Recipient except as in direct response to the RFP. Unless otherwise expressly stated herein, the information provided consists of general information that is factual in nature and may incorporate certain hypothetical information based on the facts and assumptions described in the RFP. In order to properly respond to the RFP, SWS has presented structuring and marketing recommendations that meet the needs of the Recipient as set forth in the RFP. Such information, hypotheticals, facts and assumptions are not intended to be or to imply a recommendation or to be construed as "advice" within the meaning of Section 15B of the Act. Rather they are presented in direct response to the RFP.

This RFP response is prepared solely for the benefit of and consideration by the Recipient based on the parameters set forth in the RFP. No other person or entity should rely on the information set forth herein.

Additional Disclosures and Disclaimer

All information contained in this document was obtained from sources believed to be reliable and in good faith, but no representation or warranty, express or implied, is made as to its accuracy or completeness. All information, hypotheticals, facts and assumptions (including prices, rates, yields and other calculations) are current only as of the date of this report, and are subject to change without notice. Any estimations or hypothetical results based on market conditions or the occurrence of future events are based upon the best judgment of SWS from publicly available information as of the date of this report.

THERE IS NO GUARANTEE THAT ANY OF THESE ESTIMATES OR HYPOTHETICALS WILL BE ACHIEVED.

Member FINRA, MSRB, and SIPC

April 14, 2022

150 West Jefferson Street, 13th Floor
Detroit, MI 48226
Phone: (313) 496-4500
Fax: (313) 496-4550

Ms. Joan Salwasser
Procurement Management Professional
Great Lakes Water Authority
Submission through Bonfire

Dear Ms. Salwasser:

Siebert Williams Shank & Co., LLC ("SWS" or "Firm") is pleased to respond to the Great Lakes Water Authority (the "Authority") Request for Proposals for Bond Underwriting Services ("RFP"). As required in the RFP, our proposal shall remain valid for a period of six (6) months from April 14, 2022 and thereafter unless withdrawn by SWS. We believe our extensive relevant experience, strong finance team along with our deep-rooted local and Michigan presence make us best suited to serve as book-running senior manager on the Authority's proposed 2022 financing. Below, please find highlights of our proposal and capabilities.

Municipal Industry Leadership. SWS has served as underwriter on over \$1.7 trillion in municipal bond transactions since 1996 serving as book-running manager for transactions from \$3 million to \$1.75 billion in par amount. We were the **#3 ranked senior manager based on largest average deal size from 2019 to 2021** and among the top-10 senior managers by par in several industry segments within public finance. Further, the Firm's leaders are actively engaged in advancing policy that has a beneficial impact on the public finance sector and issuers, including present or past roles with SIFMA, the Municipal Securities Rulemaking Board ("MSRB"), and advisory roles with Just Capital and the Robert Wood Johnson Foundation on social equity within the municipal bond market. SWS has played a leading role in the significant growth of the municipal ESG bond market, **receiving the Bond Buyer Deal of the Year Award in the ESG Category two out of three years since the category has been in existence.** Overall, the Firm has a rich history of leadership within the public finance industry that we will bring to the Authority's upcoming financing.

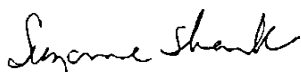
Leader in Water and Wastewater Utility Financings. SWS has emerged as a leader in structuring wastewater and water utility financings nationwide. **In 2020, SWS ranked 2nd in senior managed water and sewer utility financings. From 2020 to 2022YTD, SWS ranked 4th in combined senior and co-manager water and sewer utility financings, with a 29% market share, per SDC.** Our water and wastewater utility financing experience includes senior managed financings across the nation for issuers such as NYC Municipal Water Finance Authority, Broward County Florida, Kansas City, Phoenix, Memphis, Chicago, Atlanta, Northeast Ohio Regional Sewer District, Houston Combined Utility System, Philadelphia, Dallas, Cleveland, and Los Angeles Department of Water and Power, among others. Our recent experience leading financings for the largest and most complex wastewater and water issuers amidst the volatile pandemic market environment demonstrates our capacity to serve as senior manager for the Authority.

Commitment to Michigan. SWS is certified as a Detroit Based Business ("DBB") by the City of Detroit and has maintained an office in Detroit since the Firm's inception in 1996 with SWS' President and CEO and the Head of the Midwest Region both based in Detroit. Our Firm has long been deeply entrenched in local community efforts through our philanthropy and volunteerism. Since inception, SWS has served as a managing underwriter on 277 negotiated transactions for issuers within Michigan totaling \$57.7 billion in par amount and has senior managed 66 of those transactions for a total par amount of \$12.7 billion. Since inception, the Firm ranks in the top 10 for negotiated senior managed transactions for Michigan issuers.

Pricing During Volatile Markets. SWS delivers powerful marketing and distribution capabilities which ensures aggressive pricings for our clients. Our institutional sales team for municipal bonds is one of the largest and most robust among our competitors, including those of many bulge-bracket firms. Given the recently volatile markets, it is particularly important for the Authority's underwriter to demonstrate strong pricing acumen and have consistently demonstrated the ability to commit capital in all market environments. SWS priced the first sizeable transaction (\$500 million) after the market shutdown during the Financial Crisis for the State of Connecticut, priced the first major airport transaction after the onset of the pandemic for the DFW Airport (\$392 million), and priced one of the first transactions impacted by market volatility for the Port Authority of New York and NJ (\$638 million) in December 2020. The Firm frequently risks its capital in the primary market to ensure pricing integrity for our clients, seamlessly providing the underwriting commitment necessary to underwrite unsold balances in our senior managed transactions when and if necessary.

Thank you for the opportunity to respond to this RFP. We look forward to the opportunity to work with the Authority on this important financing. Please do not hesitate to contact us with any questions.

Sincerely,



Suzanne Shank
President & CEO
sshank@siebertwilliams.com



Sean Werdlow
Head of Midwest Region
swerdlow@siebertwilliams.com

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Disclosure Statement

Provide a disclosure statement that includes specific answers to each question below and bears a signature of an authorized officer of your firm:
State your firm's name and address.

Siebert Williams Shank & Co., LLC
150 West Jefferson Street, 13th Floor
Detroit, MI 48226

ii. Describe your firms' organizational structure (i.e., partnership, corporation, etc.) and list any controlling stockholder, general partners, or principals.

Firm Organizational Structure. SWS is a full-service investment banking Firm that serves municipal and corporate issuers throughout the U.S. The Firm is organized as a Limited Liability Company that is 100% owned by Shank Williams Cisneros, LLC. The Firm's principal partners are Suzanne Shank, President & CEO, Christopher Williams, Chairman, and Henry Cisneros, Vice-Chairman each of whom are deeply engaged in the Firm as controlling shareholders. The Firm currently has 136 employees, of which 49 are municipal bankers and 33 are underwriting, sales and trading professionals, across 19 offices nationally, including 6 trading desks. SWS has firmly established itself as a top national Firm – ranking 13th nationally as senior manager and 1st nationally among M/WBEs in 2021. SWS has been the **top-ranked M/WBE senior manager for a record 23 years, including in 2021.**

iii. Briefly describe your firms' equal employment opportunity policies and programs.

Commitment to Diversity. SWS has developed an Affirmative Action Plan and Equal Employment Opportunity Policy with the objective of achieving genuine equal employment opportunity for all qualified individuals, to ensure its practices, personnel policies, and programs are in complete accord with applicable federal and state equal employment opportunity laws, forbidding any type of unlawful discrimination against its employees or job applicants. SWS' Affirmative Action Plan and Equal Employment Opportunity Policy can be found in the Executive Summary (separately attached) as part of the B.I.D. requirements.

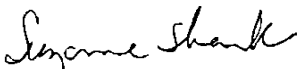
SWS is also especially proud of our long history as a M/WBE and the Firm is particularly sensitive to providing equal opportunities for minority, women and other historically disadvantaged individuals and firms. SWS has various programs to create professional opportunities for women and minority persons. These programs include an internship program, involvement in local mentoring programs, written procurement policies to foster relations with other MBE and WBE firms, as well as diversity policies for hiring within the Firm. **At SWS, 64% of our workforce are women or minorities, and we are 92% owned by minorities and 61% owned by women.** As the **#1 M/WBE non-bank financial entity in the U.S. and the #1 M/WBE senior manager in the municipal finance sector**, SWS is in a leadership position that can help enact positive change in the securities industry. SWS is proud to have contributed significantly in both time and donations to organizations that strive to eliminate discrimination, promote fair and equal employment practices, and foster workplace diversity and inclusion. As the country has worked to address racial inequality in the past few years and into 2022, SWS created a matching donation program for its employees' donations to organizations that strive to eliminate the impacts of racial inequality. As an M/WBE firm primarily focused on municipal finance and public infrastructure, SWS commits to showing up as both a leader and an ally in the fight for social justice and promoting diversity.

iv. Indicate any jurisdictions where your firm or officer, director, principal or partner thereof is or has been the subject of any pending or anticipated investigation or inquiry by the Securities & Exchange Commission (SEC), Municipal Securities Rulemaking Board (MSRB), or other securities regulatory body related to your municipal bond practice since January 1, 2017. Provide the status of any such engagement or inquiry. Detailed information may be provided in an appendix and not included in the page count limitation. However, a brief summary of the information should be included in the body of the proposal.

Neither the Firm nor any officer, director, principal or partner thereof is or has been the subject of any pending or anticipated investigation or inquiry by the Securities & Exchange Commission (SEC), Municipal Securities Rulemaking Board (MSRB), or other securities regulatory body related to the Firm's municipal bond practice since January 1, 2017.

v. Indicate any conflicts or potential conflicts your firm may have in serving as a bond underwriting firm for GLWA.

SWS is not aware of any actual or potential conflicts of interest that exist at this time.



Suzanne Shank
President & CEO

sshank@siebertwilliams.com

Firm Background and Related Experience

- i. Detail your firm credit ratings and other relevant financial information, such as net capital position and underwriting capacity and/or limitations. Additionally, provide electronic links to your firm’s most recent annual report and financial statements. If no public financial statements are available, the responding firm must include an electronic copy of the most recent annual report or financial statements as an electronic file with the submission.

Strong Capital Position. SWS regularly leverages its capital to support issuers in both the primary and secondary markets. The Firm’s capital position is shown in the adjacent table, including access to a \$25 million credit commitment from our clearing firm, National Financial Services. As of December 31, 2021, **our total available capital allows SWS to serve as sole senior managing underwriter on a transaction of about \$1.2 billion in par amount and can serve as senior manager with 50% liability on an approximately \$2.3 billion transaction** under the SEC’s net Capital Rule 15c3-1 for “when as and if issued” transactions (excess net capital 7%). As noted, the strength of our capital position has allowed SWS to routinely senior manage deals over \$1 billion of par in all market environments with market leading execution for our clients, evidenced by our perennial ranking among the top book-running senior managers by average deal size. SWS does not maintain publicly available electronic financial statements and does not have credit ratings. Please see the link to the Firm’s most recent 12/31/2021 Annual Financial Report ([SWS Annual Report](#)).

SWS Capital as of:	12/31/2021
Total Capital (\$)	67,113,791
Equity Capital (\$)	42,908,314
Net Capital (\$)	57,733,637
Excess Net Capital (\$)	57,399,531
Line of Capital Available (\$)	25,000,000
Total Capital Avail for UW	82,399,531
UW Capacity (Sole)	1,177,136,157
UW Capacity (Lead at 50%)	2,354,272,314

- ii. Describe your firm's experience with municipal utility revenue bonds.

Commitment to Water and Wastewater Sector. SWS’ underwriting and distribution expertise has allowed us to emerge as a leader in water and wastewater utility financings nationwide. **From 2020 to 2022YTD, SWS ranked 4th in combined senior and co-manager water and sewer utility financings, with a 29% market share, per SDC.** The graphic depicts select examples of recent senior managed water and wastewater utility financings along with upcoming deals. Additionally, as a testament to the Firm’s service, our water and wastewater utility financing experience includes numerous major issuers around the U.S. that SWS has worked with on a repeat basis.

Select SWS Senior Managed Sewer/Water Negotiated Underwriting Experience

 <p>Los Angeles Department of Water and Power Senior Manager \$325* million Expected Jun. 2, 2022</p>	 <p>NYC Muni Water Finance Auth Senior Manager \$500 million Priced Feb. 3, 2022</p>	 <p>Broward Co, FL, Water & Sewer Senior Manager \$199 million Priced Feb. 2, 2022</p>	 <p>Kansas City, MO, Water and Sanitary Sewer System Senior Manager \$171 million Priced Oct. 13/14, 2021</p>	 <p>City of Phoenix Senior Manager \$469 million Priced May 18, 2021</p>	 <p>Santa Clara Valley Water District Senior Manager \$216 million Priced Sep. 30, 2020</p>
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Select Listing of Repeat Sewer & Water Utility Underwriting Experience

<p>NY City Muni. Water Fin. Auth. - 85 deals: \$38.01 billion</p> <p>Miami Water & Sewer - 14 deals: \$5.66 billion</p> <p>King County, WA Sewer System - 22 deals: \$4.03 billion</p> <p>Philadelphia Water & Wastewater - 17 deals: \$3.41 billion</p> <p>Phoenix Water & Wastewater - 13 deals: \$2.71 billion</p> <p>Jefferson County, AL Sewer Sys. - 3 deals: \$1.79 billion</p> <p>East Baton Rouge Sewerage Com - 8 deals: \$1.66 billion</p>	<p>LADWP - 64 deals: \$16.63 billion</p> <p>Atlanta Water & Wastewater - 17 deals: \$5.56 billion</p> <p>Chicago Water & Wastewater - 17 deals: \$3.67 billion</p> <p>DC Water & Sewer - 14 deals: \$3.26 billion</p> <p>Los Angeles Wastewater System - 11 deals: \$2.40 billion</p> <p>San Diego PFA Water & Sewer - 5 deals: \$1.77 billion</p> <p>San Antonio Water System - 13 deals: \$1.62 billion</p>	<p>New York State Enviro. Facil. Corp. - 56 deals: \$11.79 billion</p> <p>MWD of Southern California - 39 deals: \$4.76 billion</p> <p>CA Dept. of Water Resources - 13 deals: \$3.45 billion</p> <p>SFPUC - 8 deals: \$3.00 billion</p> <p>Greater Chicago Metro Water Red - 9 deals: \$2.29 billion</p> <p>Greater Lakes Water Authority - 5 deals: \$1.75 billion</p> <p>Dallas Waterworks & Sewer Sys. - 6 deals: \$1.60 billion</p>	<p>Detroit Water & Sewer - 22 deals: \$6.17 billion</p> <p>Houston Combined Utility System - 10 deals: \$4.17 billion</p> <p>MA Water Pollution Ab. Tr - 9 deals: \$3.41 billion</p> <p>Texas Water Development Board - 36 deals: \$2.88 billion</p> <p>State of Connecticut State Rev. Fd. - 17 deals: \$2.05 billion</p> <p>Baltimore Water & Sewer - 7 deals: \$1.74 billion</p> <p>East Bay Municipal Utility District - 8 deals: \$1.60 billion</p>
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- iii. Describe your firm’s experience with municipal utility financings in Michigan.

Commitment to Michigan Utility Sector. Since inception, SWS has served as a managing underwriter on 44 negotiated transactions for utility issuers within Michigan totaling \$11.9 billion in par amount. SWS senior managed 13 of those transactions for a total par amount of \$4.54 billion. Since inception, the Firm ranks 2nd for negotiated senior managed water and wastewater transactions for Michigan issuers.

In 2021, SWS served on two Utility transactions for the State of Michigan including a \$120 million Co-Managed transaction for the **Michigan Finance Authority** and \$603 million Co-Senior Managed transaction for the **Michigan Strategic Fund** in connection with the Flint Water Crisis settlement. Additionally, in 2020, SWS served as Co-Senior Manager for the **Great Lakes Water Authority** on a combined \$1.2 billion Water and Sewer transaction. The tombstones highlight some of SWS’ select transactions within the State. In addition, SWS has served as manager on approximately \$6 billion in par for the Detroit Water and Sewerage Department. Of this, SWS senior managed approximately \$3.4 billion in par.

 <p>Michigan Finance Authority Drinking Water Revolving Fund Co-Manager \$120 million Priced Nov. 16, 2021</p>	 <p>Michigan Strategic Fund Water & Sewer LORBs Co-Senior Manager \$603 million Priced Jun. 22, 2021</p>	 <p>Great Lakes Water Authority Water & Sewer System Co-Senior Manager \$1.2 billion Priced Apr. 30/June 4, 2020</p>	 <p>Michigan Finance Authority Clean Water Revolving Fund Co-Manager \$138 million Priced Dec. 12, 2018</p>	 <p>Great Lakes Water Authority Water & Sewer System Co-Manager \$413 million Priced Sep. 18, 2018</p>	 <p>Michigan Finance Authority Clean Water Revolving Fund Co-Manager \$151 million Priced Oct. 27, 2016</p>
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iv. Indicate your firm’s current ability and willingness to underwrite bonds and hold bonds in inventory. Provide specific examples since January 1, 2021, through today, where your firm underwrote bonds and held bonds in inventory for municipal issuers.

Willingness to Commit Capital. SWS has consistently demonstrated willingness to take bonds into inventory to support an issuer’s pricing levels over the years. Market conditions in most of 2021 were stable and quite favorable such that deals were routinely oversubscribed at record low interest rate levels. Market volatility reemerged in January 2022, such that MMD has increased an average of 114 basis points across the yield curve and taxable U.S. treasury rates have increased an average of 95 basis points across the yield curve. The table contains select examples of the Firm’s recent underwriting engagements in which SWS has taken bonds into inventory to support our client’s financings.

Select Examples of SWS’ Recent Capital Commitments										
Issuer	Sale Date	Par (\$mm)	SWS Inventory (\$mm)	SWS Inventory (%)	Issuer	Sale Date	Par (\$mm)	SWS Inventory (\$mm)	SWS Inventory (%)	
Regents of the University of Michigan	3/30/2022	56	0.5	0.84	State of Mississippi	9/14/2021	3	1.4	46.64	
Michigan Strategic Fund	3/15/2022	83	2.3	2.74	Dallas Independent School District	8/31/2021	69	2.1	3.12	
Arlington Independent School District	3/3/2022	176	1.1	0.62	City of Cleveland	7/28/2021	56	1.7	3	
Los Angeles Department of Airports	1/20/2022	347	17.3	4.97	State of New York Mortgage Agency (SONYMA)	7/21/2021	50	5.4	10.67	
City of Atlanta, Georgia	12/23/2021	3	0.5	15.64	Deer Park Independent School District	6/29/2021	22	0.3	1.14	
Indianapolis Local Public Improvement Bond Bank	12/14/2021	36	5	13.91	Wayne County Airport Authority	6/23/2021	151	0.7	0.46	
Oakland Unified School District	11/3/2021	120	1.2	1.02	City of Mission Texas	4/20/2021	24	1.8	7.48	
The Metropolitan District of Hartford County	11/3/2021	66	4	6.06	City of Pittsburgh	3/25/2021	46	0	0.05	
County of Los Angeles Public Works Financing Authority	10/28/2021	260	5	1.92	New York City Municipal Water Finance Authority	3/18/2021	246	1.8	0.71	
Bexar County	9/23/2021	24	1.9	8.25	San Patricio County	1/28/2021	105	6.6	6.34	

v. Financing Team: In a brief narrative, provide a 'description of the team you plan to assign to work with GLWA and the responsibilities of each team member. In an appendix, provide a brief resume for each team member.



Dedicated Great Lakes Financing Team. SWS has assembled a team of highly experienced bankers in addition to the industry’s most seasoned underwriting and sales professionals to serve the Authority. Our team is anchored by **Suzanne Shank, President and CEO**, who will be actively engaged in the account and will ensure that all the resources of the Firm are readily available to the Authority.

Sean Werdlow, Head of the Midwest Region, Senior Managing Director and **John Carter, Senior Managing Director**, will serve as the co-lead bankers for the Authority. **Laura McGraw, Senior Vice President**, will manage the credit and rating agency strategy. Should the Authority determine to designate projects as ESG eligible, **Jamiyl Flemming** will spearhead our efforts in this area.

Additional banking support will be provided by **Phong Pham, CPA, Senior Vice President**, **Anthony Piccinich, Vice President**, **Olivia Nelson, Associate**, and **Sean Conway, Analyst**.

Offering timely market information and advice on the cost-effectiveness of structuring and pricing for the Authority will be led by **Drew Gurley** and **Cindy Ashmore**, both *Managing Directors*, who together have over 50 years of combined experience. Refer to **Appendix A** for full resumes.

Dedicated Authority Finance Team		
Team Member / Role	Location & Experience	
 SUZANNE SHANK <i>President and CEO</i> Project Manager / Resource Allocation	<ul style="list-style-type: none"> ▪ Detroit, MI ▪ Firm Tenure (yrs.): 25+ ▪ Industry Tenure (yrs.): 30+ 	
 SEAN WERDLOW <i>Senior Managing Director / Head of Midwest Region</i> Co-Lead Banker	<ul style="list-style-type: none"> ▪ Detroit, MI ▪ Firm Tenure (yrs.): 17+ ▪ Industry Tenure (yrs.): 30+ 	
 JOHN CARTER <i>Senior Managing Director</i> Co-Lead Banker	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 17+ ▪ Industry Tenure (yrs.): 30+ 	
 LAURA MCGRAW <i>Senior Vice President</i> Credit Specialist / Day-to-Day Banker	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 1.5+ ▪ Industry Tenure (yrs.): 15+ 	
 PHONG PHAM, CPA <i>Senior Vice President</i> Regional / Day-to-Day Banker	<ul style="list-style-type: none"> ▪ Grand Rapids, MI ▪ Firm Tenure (yrs.): 3+ ▪ Industry Tenure (yrs.): 18+ 	
 JAMIYL FLEMMING <i>Senior Vice President</i> ESG SPECIALIST	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 2+ ▪ Industry Tenure (yrs.): 15+ 	
 ANTHONY PICCINICH <i>Vice President</i> Support Banker	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 5+ ▪ Industry Tenure (yrs.): 5+ 	
 OLIVIA NELSON <i>Associate</i> Support Banker	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 3+ ▪ Industry Tenure (yrs.): 3+ 	
 SEAN CONWAY <i>Analyst</i> Support Banker	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 0.75+ ▪ Industry Tenure (yrs.): 0.75+ 	

Underwriting, Sales & Trading		
Team Member	Location & Experience	
 DREW GURLEY <i>Managing Director</i> Taxable Underwriter / Co-Head Sales	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 12+ ▪ Industry Tenure (yrs.): 30+ 	
 CINDY ASHMORE <i>Managing Director</i> Tax-Exempt Underwriter	<ul style="list-style-type: none"> ▪ New York, NY ▪ Firm Tenure (yrs.): 3+ ▪ Industry Tenure (yrs.): 20+ 	

Key Financing Issues

Please respond to the following questions incorporating your views and/or any comments on GLWA key financial issues. Be specific in all responses.

i. Identify and discuss the strategic issues to be considered by GLWA in the implementation of its potential refunding and new money transaction(s). Address the key challenges that GLWA will encounter for its financing plans in 2022 and how to mitigate these challenges.

SWS has prepared a detailed new money and refunding plan of finance analysis for the Authority’s consideration that takes into account the Authority’s debt outstanding as well as its current financial needs and future capital plan. Based on this review, SWS has developed a comprehensive plan of finance for both Water and Sewer credits that strives to take into account (but balance) the following factors:

- **Future Capital Plan Considerations:** We have evaluated resultant debt service structures after new money and refunding transactions
- **Lien Considerations:** We have evaluated the utilization of Senior Lien versus Second Lien for new money and refunding purposes
- **DSRF Considerations:** We have sought to minimize DSRF requirements, maximize cash releases, eliminate new DSRF deposits, and consider expiring surety policies
- **Refunding Savings Considerations:** We have evaluated refunding candidates against various selection criteria
- **Market/Investor/ESG Considerations:** We have examined current market conditions and projected interest rates, prospective investors and ESG considerations for GLWA

Long-Term Capital Improvement Plan. SWS has closely reviewed the Authority’s overall 10-year capital plan when developing our 2022 plan of finance. SWS notes that the long-term capital plan for the Water System is significantly larger than the Sewer System (source: The Foster Group - GLWA Financial Forecast Update Memorandum dated October 14, 2021 “Foster Group Report”) and that the Sewer System will largely use System-generated cash as a source of funding, particularly in 2030 and beyond. The Authority forecasts bonding needs through FY32 for the Water and Sewer System to equal approximately \$1.259 billion and \$422.9 million, respectively. Although bonding capacity and strategies for both Systems should be carefully evaluated and developed, future bonding capacity for the Water System should be a particularly key consideration for the Authority as it seeks to implement its overall 2022 financing plan given the more sizeable CIP for the Water System and the heavier reliance on debt for this System. However, overall, we believe there is ample room under both Water liens to accommodate substantial future borrowing required by the System. Additional considerations in planning for the further bonding include:

Projected Minimum Coverage: Included in the Foster Group Report are projected coverage amounts through FY32, which remain strong across both credits and are boosted by “preliminary FY22 recommendations” of a 4.1% increase in Water System rates and a 3.1% increase for Sewer System rates (reflects reinstatement of Highland Park’s bad debt adjustment). The Foster Group Report also states that the Sewer System will utilize “Pay-Go” for all projected capital improvements beginning in FY30.

Decline in Legacy Pension Obligations Beginning in FY24. SWS would also note that the Authority and DWSD’s annual Legacy Pension Obligation payments will be reduced from \$45.4 million to \$11.0 million beginning in FY24. This expense reduction and additional cash flow beyond FY24 can potentially serve to free up additional debt service capacity to be used in future bond issuances if needed.

Lien Strategy. Credit spreads are very compressed in the current market and there is only approximately **5-7 basis points** in differential between the Authority’s Senior and Second Liens for its Water and Sewer credits. Taking this into account, our lien strategies for both Systems are as follows:

Water New Money Lien Strategy. We began our Lien strategy for Water new money purposes by starting with a 50%/50% split between liens in order to strike a balance between lien usage. We then determined that a more optimal mix of Senior and Second Lien debt could be achieved that would preserve substantial borrowing capacity under both liens but also maximize DSRF cash releases by decreasing the Authority’s DSRF requirement (see DSRF Strategies below). Our optimal strategy would result in a senior/second lien split of approximately 60%/40%, an amount which also increases cash released from the combined DSRF’s to \$3.534 million from \$1.959 million under a 50%/50% lien strategy and also lowers the TIC to 3.927% from 3.931%. SWS believes that this 60%/40% mix of Senior and Second lien debt continues to strike a balance in lien usage and preserve borrowing capacity under both liens while also maximizing DSRF cash releases and minimizing overall borrowing cost for the upcoming transaction, particularly on Water where debt service coverage is a consideration. Given the rising interest rate environment, this split between liens allows for the Authority to preserve some senior lien capacity for future Water System capital needs, especially if credit spreads widen between the Authority’s Senior and Second Liens. As such we would recommend this 60%/40% lien split as the most appropriate at this time.

	Water System		Sewer System		
	50/50 Split	60/40 Split	50/50 Split	40/60 Split	
<i>Decrease in Res Req Senior</i>	8,909,700	7,457,600	<i>Decrease in Res Req Senior</i>	12,874,378	14,193,677
<i>Cash Release Senior</i>	1,488,052	1,488,052	<i>Cash Release Senior</i>	12,874,378	14,193,677
<i>Decrease in Res Req Second</i>	471,069	2,046,156	<i>Decrease in Res Req Second</i>	8,708,709	7,705,913
<i>Cash Release Second</i>	471,069	2,046,156	<i>Cash Release Second</i>	6,043,348	6,043,348
Aggregate All-In TIC	3.931%	3.927%	Aggregate All-In TIC	3.921%	3.925%
Total DSRF Release	1,959,121	3,534,208	Total DSRF Release	18,917,726	20,237,025
TIC Diff. from 50/50 (bps)		-0.45	TIC Diff. from 50/50 (bps)		0.44

Sewer New Money Lien Strategy. Our lien strategy for Sewer is similar, and SWS also began with a 50%/50% split between senior and second liens for Sewer System new money capital needs. For the Sewer System, however, we determined that a move to a 40%/60% senior/second lien split would increase the DSRF cash release from \$18.917 million to \$20.237 million while only increasing the overall borrowing TIC by 0.44 basis points. For Sewer, where there is more DSRF cash to be released and coverage is not as much of a consideration, we believe that this approach maintains the balance between the two liens and also optimizes the DSRF cash release.

Refunding Lien Strategy. For both credits, we used Senior Lien bonds to refund Senior lien candidates and Second Lien bonds to refund Second Lien candidates.

Debt Service Reserve Fund (“DSRF”) Strategies. The Authority’s Water System has the following DSRF requirement for both the Senior and Second liens: the DSRF requirement is the lesser of (1) Maximum Annual Debt Service (2) 10% of Par Amount or (3) 125% of Average Annual Debt Service. The Sewer System has the same requirements, except that the third component of the Authority’s Sewer Second Lien requirement is 100% of average annual debt service, not 125%. The average annual debt service test serves as the key determinant of DSRF requirement for both the Water and Sewer Systems based on current and projected outstanding aggregate debt service for both liens. The addition of new debt service for the Water System in 2050-2052 and in 2049-2052 for Sewer, where there is currently no debt service serves to substantially lower the DSRF requirement calculation because the lesser of the three-prong test is based on average annual debt service, a factor which decreases significantly when three to four additional

years of lower debt service are averaged into the equation. Resultant optimized DSRF cash releases based on various lien strategies have been discussed in full above and are shown in the table above.

Additional DSRF Considerations - Surety Policies and Terminations. The majority of the Authority's existing debt service reserve funds are funded with various surety policies expiring at different dates over the next 15 years. Approximately \$29 million in available surety policies expire on July 1, 2027 for the Water System bonds. Approximately \$24.8 million in available surety policies expire on July 1, 2029 for the Sewer System bonds. Depending on the Authority's ratings and DSRF requirement at the time of each termination, existing reserve funds may need to be replenished with cash or additional surety policies to meet the minimum requirements. Because the "Average Annual debt service" component of the DSRF requirement will be the DSRF requirement determinant, SWS believes that the Authority will have a fallback for DSRF sizing if it does not meet the "Double A by two rating agencies" criteria prior to surety policy expiration. ***Structuring a small maturity size in a long final maturity is a technique that could be used to substantially reduce the DSRF requirement by increasing the number of years over which debt service is averaged, thereby reducing the overall average.***

Refunding Savings Considerations - Evaluating Optimal Refunding Thresholds. Although increases in current market interest rates have substantially reduced refunding savings opportunities for the Authority, we would still recommend that the Authority proceed with a refunding, particularly on the Water credit. We believe that refunding savings levels are still meaningful and could be applied to elevate debt service coverage levels in the early years for the Water System. If the Authority is concerned about the low refunding savings level, we would recommend that the Authority consider proceeding with a refunding on the Water transaction (where savings can be applied to increase debt service coverage), but potentially not proceed with a refunding on the Sewer System where there are far less pressing financial needs and a greater tolerance for the risk of waiting to refund. A final recommendation on a refunding transaction would occur at actual time of pricing depending on market conditions at that time. A more comprehensive analysis of refunding candidates and criteria is contained below in our response to Question ii.

Market Considerations: We have analyzed our plan of finance based on current market conditions and the current market scale as per the requirements of the RFP. In addition, we have analyzed investor considerations and the impact of ESG considerations on investor demand in our response to Question viii below. We have also analyzed different maturity structures and believe that a 30-year final maturity is optimal at this time.

Long Dated Maturities. SWS has also asked our sales desk to evaluate market appetite for long-dated maturity structures (i.e. beyond 30 years and up to 40 years). Although we believe that sufficient market demand exists for this long-dated structure, we also note that there is a drop off in investor interest beyond thirty (30) years as well as a considerable yield curve increase beyond thirty years of approximately 10 additional basis points for a 35-year maturity and an additional 10 basis points for a 40-year maturity. Given that both the 30-year bond and the 35 or 40-year bond would have a 10-year par call provision and likely a 5% coupon, the Authority would have to make the decision as to whether the increase in yield to the call date (at which point both bonds would likely be refunded) is justified versus the yield upside protection offered by the 5% coupon. SWS is available to discuss this maturity option with the Authority and its Municipal Advisor but for the moment we have assumed a final maturity of thirty (30) years for our recommendations as we believe it provides the highest efficiency and most favorable execution.

- ii. For a potential new money and refunding transaction in 2022, provide your recommendations for the plan of finance (including a recommended universe of refunding candidates and selection criteria) and structural features including its advantages, disadvantages, or any alternatives GLWA should consider to ensure a cost effective borrowing. Assume a new money borrowing size of \$200 million for the Water Supply System and \$175 million for the Sewage Disposal System. Detail the timing considerations associated with the potential transaction.

New Money Structuring Recommendations. In addition to the lien split strategies discussed above, our recommended new money structures are a 30-year level debt service structure for both liens on both Systems, with the exception of the Water System where we would recommend that amortization not commence until 2026 and then be level from 2026 through 2052. This minor structuring element would serve to enhance the Water System overall debt service coverage in 2023 through 2025. We did also evaluate a more back-loaded wrap-around debt structure for the Water System that would concentrate the debt levelly in maturities of 2037 and beyond. While this structuring technique does improve coverage modestly prior to 2037 and has only a modest increase in TIC (approximately 14 basis points), it is also a somewhat more aggressive amortization structure from a rating agency perspective and is further afield from the structures that the Authority has used on its new money financings since 2018 (primarily level debt service); as such this is a structure that we would want to have dialogue with the Authority and its Municipal Advisor prior to recommending an implementation. We would not recommend the use of this structure for the Sewer System because of the more robust coverage overall on that system and also the reduced future borrowing needs there.

Refunding Recommendations. Recent Market Impact on Refunding Opportunities. As a result of interest rate increases, available present value savings have declined substantially for both Water and Sewer credits and across the Senior and Second Liens. As of January 13th, combined present value savings across both credits and liens totaled \$103.2 million assuming a minimum 5% savings threshold of bonds callable in 2024 and 2025; these savings resulted from a \$444.590 million Water System refunding and a \$518.205 million Sewer System refunding. As of the April 6th scale date requested by the Authority, no candidates currently meet a 5% savings threshold; instead, SWS' current analysis now assumes a minimum 2.5% savings threshold for all callable bonds, generating combined overall present value saving of approximately \$6.3 million, from a \$101.770 million Water System refunding and a \$134.830 million Sewer System Refunding. Despite the substantial decrease in savings, we still believe that these candidates remain viable for refunding for the following reasons: all of these candidates have relatively short maturities (2030-2032); no new option purchase is necessary on the refunding bonds given their short maturity dates; and the time between option exercise date (7/1/2024) and final maturity (2030-2032) is relatively short, a factor which substantially limits the time value of this option. Additionally, the Authority would be refunding only approximately \$225 million of its total callable bond position of approximately \$3.3 billion, still leaving it with a substantial option position to harvest in the future.

We would especially recommend that the Authority capitalize on this opportunity for the Water System, as these refunding savings can be concentrated into the years in which debt service coverage is the lowest and improve results in those years. The candidates do have a relatively high breakeven rate (i.e., they can tolerate a tax-exempt market interest rate increase of 1.75% and still produce the same current refunding results on the call date) and as such, the Authority may want to refund its Water candidates now as there is a need for and use of savings but defer refunding the Sewer System candidates. However, we have continued to include a refunding in our base cases for both systems.

Advance Refunding Candidate Pool and Selection Criteria. SWS has undertaken a rigorous screening of the Authority’s available refunding candidates for both liens under both Systems. Our recommended pool of candidates consists of all bonds that are callable and have individual present value savings in excess of 2.5%. Per GLWA’s Debt Management Policy, it is the Authority’s practice to maintain a minimum of 2.5% savings for refunding transactions when possible. Our recommended pool of candidates and the aggregate refunding results are shown in the following table:

Credit		Total Refunded Par		PV Savings (\$)			PV Savings (%)					
Water – Senior Lien		\$101.77 million		\$2.7 million			2.67%					
Sewer – Senior Lien		\$134.83 million		\$3.6 million			2.69%					
System	Series	Maturity	Coupon	Principal	Call Date	Call Price	Taxable Advance Refunding			Future Current Refunding		Break Even(bps)
							Savings \$	Savings %	Savings Eff.	Savings \$	Savings %	
Water	2014D_D4	7/1/2032	5.00%	18,950,000	7/1/2024	100	548,752	2.90%	50.00%	2,977,608	15.71%	172
Water	2014D_D4	7/1/2031	5.00%	28,515,000	7/1/2024	100	745,157	2.61%	48.27%	4,097,019	14.37%	178
Water	2014D_D4	7/1/2030	5.00%	54,305,000	7/1/2024	100	1,402,430	2.58%	49.73%	7,069,320	13.02%	181
Water Total				101,770,000								
Sewer	2014E_C6	7/1/2032	5.00%	9,100,000	7/1/2024	100	263,517	2.90%	50.00%	1,429,881	15.71%	172
Sewer	2014C_C3	7/1/2032	5.00%	50,515,000	7/1/2024	100	1,462,807	2.90%	50.00%	7,937,408	15.71%	172
Sewer	2014C_C3	7/1/2031	5.00%	31,945,000	7/1/2024	100	834,790	2.61%	48.27%	4,589,839	14.37%	178
Sewer	2014C_C3	7/1/2030	5.00%	25,285,000	7/1/2024	100	652,987	2.58%	49.73%	3,291,552	13.02%	181
Sewer	2012A*	7/1/2023	5.00%	17,985,000	7/1/2022	100	N/A	N/A	N/A	463,109	2.57%	N/A
Sewer Total				134,830,000								

* The 2023 maturity of the Sewer Series 2012A bonds is a tax-exempt current refunding candidate and savings reflect such

Interest Rate Sensitivity. Given the increase in interest rates since January 2022 and the expectations rates will continue to rise, SWS believes it would be in the Authority’s best interest to lock-in refunding savings available to the Authority at this time on these candidates (especially for the Water System discussed further herein), as SWS has calculated that less than 50 additional basis points in market deterioration would erode savings altogether.

Movement (bps)	Water System - Taxable Advance Refunding					Sewer System - Combined Refunding				
	-100 bps	-50 bps	0 bps	50 bps	100 bps	-100 bps	-50 bps	0 bps	50 bps	100 bps
Refunded Par	101,770,000	101,770,000	101,770,000	101,770,000	101,770,000	134,830,000	134,830,000	134,830,000	134,830,000	134,830,000
All-In TIC	2.97%	3.47%	3.97%	4.47%	4.97%	2.99%	3.49%	3.99%	4.49%	4.99%
Net PV Savings	10,774,133	6,662,630	2,721,717	-1,056,054	-4,678,263	13,612,684	8,507,636	3,623,945	-1,048,801	-5,520,989
% Savings	10.59%	6.55%	2.67%	-1.04%	-4.60%	10.10%	6.31%	2.69%	-0.78%	-4.09%

Optionality Analysis. Because the Authority will be refunding these candidates with non-callable bonds, there will be no new option purchase on the refunding bonds to evaluate in conjunction with a refunding decision. However, on the refunded bonds, SWS has estimated that the original price that the Authority actually paid to purchase the call options on the refunded bonds was minimal; thus, the present value refunding savings gain is substantial in comparison to the original option purchase price and results in a very high return on investment for the original option purchase transaction. As such, the refunding decision is economically justified at the *present time* despite the possibility that there could be a larger gain in the future – there could also be a larger loss in the future; the ability to lock in a high ROI and eliminate all risk on the option position is economically favorable despite what could possibly happen in the future.

Current Refunding Opportunity. SWS would also recommend that the Authority currently refund on a tax-exempt basis the Sewer System’s Senior Lien Series 2012A 2023 maturity, which is callable on 7/1/2022, especially given the declining option value for this maturity, which if not refunded or defeased, will mature in 2023 and the option will expire unused and worthless. SWS has structured all refunding transactions to have a matched maturity uniform savings structure.

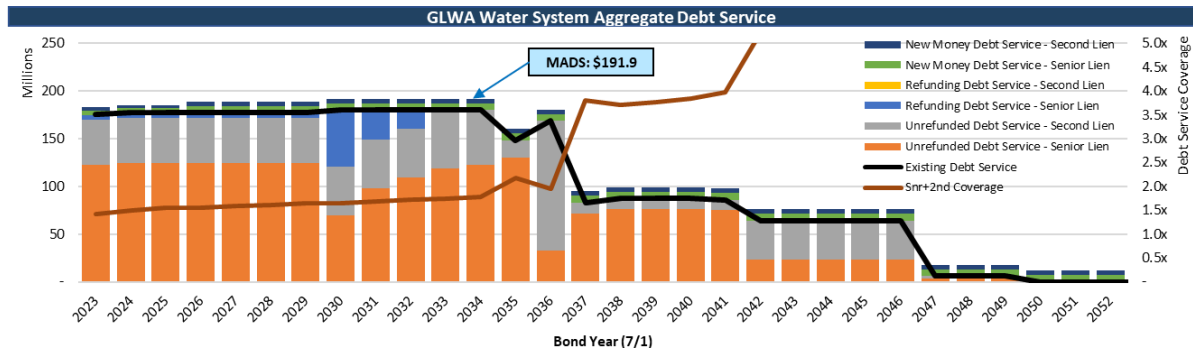
Refunding Transaction Structuring. In addition to our methodology stated above of refunding bonds into the same lien, SWS started with a base case refunding savings pattern to be for level savings. We have kept this pattern as our recommended structure for the Sewer System refunding but we could potentially modify this savings for the Water System by also refunding non-callable bonds that mature in 2023 and 2024 as a way of accelerating the refunding savings into 2023 and 2024 so as to maximize the coverage benefit in those two years. This type of accelerated savings structure could raise the minimum debt service coverage for the Water System to 1.45x and 1.50x in 2023 and 2024. SWS can discuss this structuring alternative with the Authority and its Municipal Advisor upon request.

Water System – Combined Financing Scenarios. SWS’ recommended combined new money and refunding scenario takes into consideration the **Key Financing Issues** as described in detail in our response to Question i above. For the Authority’s Water System, SWS would recommend structuring the Senior and Second Lien new money issuances with level debt service and a 30-year final maturity. All refunding opportunities for Water were structured for uniform savings, although these savings could be accelerated into 2023 and 2024 in order to maximize debt service coverage in those years. Furthermore, SWS did not structure any new money principal payments from 2023 through 2025 in order to alleviate upfront pressure on debt service coverage. Our overall structure consists of serial bonds from 2026 through 2042 and term bonds in 2047 and 2052, all with 5% coupons. SWS also focused on maximizing DSRF cash releases (and decreasing overall reserve requirements) by striking a balance between Senior and Second Lien new money issuance amounts, which results in a senior/second lien split of approximately 60%/40%. This optimized split allows for the full release of \$1.488

million out of a total available DSRF cash amount of \$1.488 million from the Senior Lien and \$2.046 million out of an available \$4.961 million for the Second Lien. This strategy preserves some senior lien capacity while still striking a balance in minimizing overall borrowing cost on the upcoming transaction.

Sources	Senior Lien			Second Lien		Aggregate		
	2022A New Money	2022C Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Par Amount	104,920,000	105,305,000	210,225,000	68,530,000	68,530,000	173,450,000	105,305,000	278,755,000
Premium/OID	15,503,246	-	15,503,246	9,701,560	9,701,560	25,204,806	-	25,204,806
DSRF Release	-	424,042	424,042	-	-	-	424,042	424,042
DSRF Release	-	1,488,052	1,488,052	2,046,156	2,046,156	2,046,156	1,488,052	3,534,208
Total	120,423,246	107,217,094	227,640,340	80,277,717	80,277,717	200,700,963	107,217,094	307,918,056

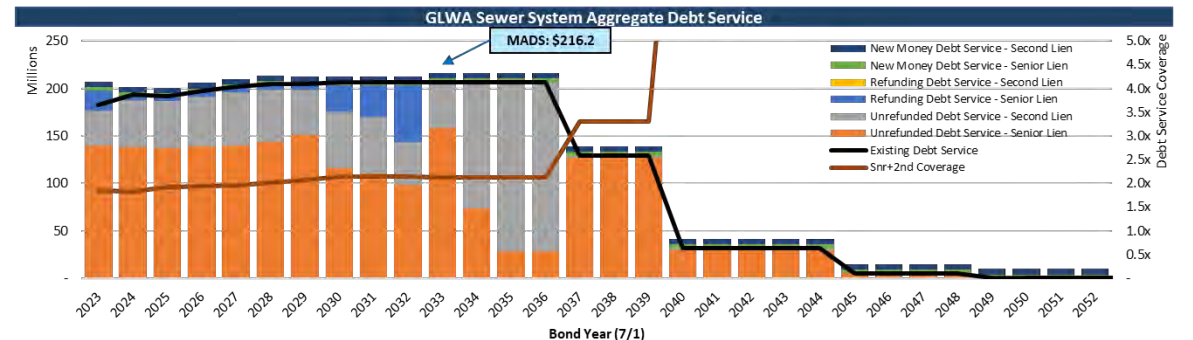
Uses	Senior Lien			Second Lien		Aggregate		
	2022A New Money	2022C Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Deposit to Escrow Fund	-	106,792,642	106,792,642	-	-	-	106,792,642	106,792,642
Deposit For New Money	120,000,000	-	120,000,000	80,000,000	80,000,000	200,000,000	-	200,000,000
DSRF Deposit	-	-	-	-	-	-	-	-
UWD	209,840	210,610	420,450	137,060	137,060	346,900	210,610	557,510
COI	209,840	210,610	420,450	137,060	137,060	346,900	210,610	557,510
Contingency	3,566	3,232	6,798	3,597	3,597	7,163	3,232	10,394
Total	120,423,246	107,217,094	227,640,340	80,277,717	80,277,717	200,700,963	107,217,094	307,918,056



Sewer System – Combined Financing Scenarios. For the Authority’s Sewer System, SWS would recommend structuring the Senior and Second Lien new money issuances with level debt service and a 30-year final maturity. All refunding opportunities would be structured for uniform savings. SWS focused on maximizing DSRF cash releases (and decreasing overall reserve requirements) by striking a balance between Senior and Second Lien new money issuance amounts, which results in a Senior/Second lien split of approximately 40%/60%. This optimized split allows for almost a full release of \$14.193 million out of a total available DSRF cash amount of \$14.235 million from the Senior Lien and the full release of \$6.043 million of available cash from the Second Lien. This strategy preserves some senior lien capacity for future use while still striking a balance in minimizing overall borrowing cost on the upcoming transaction. Our overall structure consists of serial bonds from 2023 through 2042 and term bonds in 2047 and 2052, all with 5% coupons.

Sources	Senior Lien			Second Lien		Aggregate			
	2022A New Money	2022C Refunding	2022E Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Par Amount	61,455,000	110,270,000	15,705,000	187,430,000	87,330,000	87,330,000	148,785,000	125,975,000	274,760,000
Premium/OID	8,794,395	-	450,105	9,244,500	11,977,726	11,977,726	20,772,121	450,105	21,222,226
DSRF Release	-	486,854	-	486,854	-	-	-	486,854	486,854
DSRF Release*	-	12,300,380	1,893,297	14,193,677	6,043,348	6,043,348	6,043,348	14,193,677	20,237,025
Total	70,249,395	123,057,234	18,048,403	211,355,032	105,351,074	105,351,074	175,600,469	141,105,637	316,706,106

Uses	Senior Lien			Second Lien		Aggregate			
	2022A New Money	2022C Refunding	2022E Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Deposit to Escrow Fund	-	122,611,636	17,985,002	140,596,638	-	-	-	140,596,638	140,596,638
Deposit For New Money	70,000,000	-	-	70,000,000	105,000,000	105,000,000	175,000,000	-	175,000,000
DSRF Deposit	-	-	-	-	-	-	-	-	-
UWD	122,910	220,540	31,410	374,860	174,660	174,660	297,570	251,950	549,520
COI	122,910	220,540	31,410	374,860	174,660	174,660	297,570	251,950	549,520
Contingency	3,575	4,518	581	8,674	1,754	1,754	5,329	5,099	10,428
Total	70,249,395	123,057,234	18,048,403	211,355,032	105,351,074	105,351,074	175,600,469	141,105,637	316,706,106



*Split proportionately between Tax-Exempt and Taxable Refunding given Refunded Par Amount

Impact on Minimum Debt Service Coverages. Shown below are updated pro forma minimum coverage levels for both liens under both credits. SWS notes that the long-term capital plan for the Water System is significantly larger than the Sewer System, and thus, future capacity for the Water System should be a consideration for the Authority as it implements its overall 2022 financing plan. **Despite the uptick in interest rates, we believe that minimum pro-forma debt service coverage remains sufficient across both systems and liens for the proposed Series 2022 issuance and future planned capital needs.**

Financing Scenario	Water System		Sewer System	
	Senior	Senior + Second	Senior	Senior + Second
Recommended Case	1.95x	1.41x	2.39x	1.84x

Timing Considerations. SWS believes there are various concerns and uncertainties over the near term that could potentially impact the Authority’s anticipated pricing in July. This proposed timing of the transaction provides the Authority with sufficient lead-time for document preparation and transaction approvals. Although we anticipate that interest rate and volatility concerns will remain elevated over the near term, we believe the Authority will benefit from the health of the State’s financial condition and the resilience of the Michigan economy which will continue to bolster the State’s finances – all of which are credit positives. SWS’ banking and underwriting team will promptly notify the Authority and its Municipal Advisor of events that may impact the timing and pricing of the Authority’s proposed transaction.

- iii. Provide examples of innovative financing techniques, financial products, structures, suggestions, or ideas that would be relevant to GLWA and how they would be specifically applied to GLWA.

Although the increase in market interest rates has significantly decreased the savings available from a conventional taxable advance refunding, SWS has identified two highly viable alternative transaction structures that would both serve to dramatically increase refunding savings and could have substantial economic impact for the Authority. Both of these alternative structures are detailed below:

Tender/Exchange Refunding. SWS has analyzed a hypothetical tender/exchange for the taxable advance refunding candidates identified above. Under a tender/exchange, the Authority would solicit interest from existing holders of the refunding candidates to either tender their bonds to the Authority or agree to surrender their current bonds in exchange for a new series of tax-exempt refunding bonds. Unlike a taxable advance refunding, a tender or exchange has the potential to allow for a tax-exempt current refunding and produce savings well beyond what is available via a traditional taxable advance refunding. SWS calculates that there are potentially over \$14.3 million of incremental PV savings across both Systems for a tender/exchange versus a taxable refunding at a 100% participation rate. Ultimately, however, the actual level of incremental PV savings realized would be dependent upon both the tender/exchange price agreed upon as well as the actual participation rate of investors in the tender/exchange process, an outcome that is very difficult to predict. SWS has determined that a substantial number of the holders of both the Water and Sewer refunding candidates under consideration can be identified. As such and given the substantial incremental increase in present value savings potentially available, SWS would work with the Authority and its Municipal Advisor to determine the feasibility of issuing a Voluntary EMMA Notice that would then allow SWS to initiate discussions with investors to gauge interest in a tender or exchange transaction and therefore further fine-tune expectations and projections of incremental savings. The potential economic benefits of the tender/exchange process are detailed in the table below:

Transaction Type	Taxable Advance Refunding (10-Year Par Call)			Tender/Exchange (\$1.50 Premium) (100% Participation)			Incremental Savings
	Refunded Par (\$)	PV Savings (\$)	PV Savings (%)	Refunded Par (\$)	PV Savings (\$)	PV Savings (%)	
Water System - Senior Lien	\$101,770,000	2,785,113	2.74%	\$101,770,000	9,086,052	8.93%	6,300,939
Sewer System - Senior Lien	116,845,000	3,189,609	2.73%	116,845,000	11,221,681	9.60%	8,032,072
Total	\$218,615,000	\$5,974,722	2.73%	\$218,615,000	\$20,307,733	9.29%	\$14,333,011

Cash Optimization. A Cash Optimization transaction is also a very efficient way to substantially lower borrowing costs and create economics similar to a tax-exempt advance refunding transaction. A cash optimization could potentially enhance the Authority’s refunding economics by approximately \$20.5 million. Under a Cash Optimization structure, the Authority would use its cash on hand that has been earmarked for pay-go projects in the I&E Funds to instead defease the outstanding refunding candidates discussed above; the Authority would then conduct a tax-exempt new money transaction separated by 15 days from the cash defeasance transaction in order to replenish its cash for capital projects. SWS previously served as senior manager for a transaction of this nature implemented by the Delaware River Joint Toll Bridge Commission in 2018. SWS has calculated that the Authority has approximately \$145.31 million in pay-go cash for the Water System (33.1% of total cash allocated to the I&E Fund) and \$113.48 million in pay-go cash for the Sewer System (25.5% of total cash allocated to the I&E Fund) on hand as detailed in the Authority’s Cash and Investment Report as of 12/31/2021 which was included with the March 25, 2022 Audit Committee Meeting materials. Given the substantial incremental savings potentially available to the Authority combined with the Authority’s pay-go cash projections, we believe that this alternative should be given a full evaluation by the Authority, its Municipal Advisor, and its Bond Counsel. We also believe that this alternative is superior to a tender/exchange structure because it provides substantially superior economic results and does not rely on the participation of existing bondholders. It is necessary to note that one risk feature contained in this strategy is the market risk inherent in the 15-day separation between the two transactions. However, we believe that the incremental savings available in this technique justify this market risk and also provide substantial cushion against interim interest rate movements.

▪ **Water System Results.** For the Water System, the Authority could use up to approximately \$106.6 million today of pay-go cash (if available) to defease \$101.8 million of outstanding bonds with an escrow cost of \$106.6 million. The Authority would then finance any earmarked projects using approximately \$106.8 million of tax-exempt bond proceeds by issuing \$90.0 million of tax-exempt new money bonds. Assuming a uniform savings structure, a Cash Optimization could generate approximately \$12.0 million in present value savings, \$9.2 million greater than a conventional taxable advance refunding.

Cash Optimization Results	Water Senior Lien		Difference
	TX Adv Ref	Cash Optimization	
Delivery Date	7/13/2022	7/13/2022	-
Refunding Par (\$)	105,305,000	90,045,000	-15,260,000
Refunded Par (\$)	101,770,000	101,770,000	-
All-In TIC	3.96%	2.84%	-1.12%
Average Life (years)	8.25	8.57	0.32
Negative Arbitrage (\$)	2,763,867	540,180	-2,223,687
NPV Savings (\$)	2,785,113	11,976,854	9,191,741
NPV Savings	2.7%	11.8%	9.0%
Refunding Efficiency	50.2%	95.7%	45.5%

▪ **Sewer System Results.** For the Sewer System, the Authority could use up to approximately \$122.4 million today of pay-go cash (if available) to defease \$116.8 million of outstanding bonds with an escrow cost of \$122.4 million. The Authority would then finance any earmarked projects using approximately \$122.4 million of tax-exempt bond proceeds by issuing \$94.6 million of tax-exempt new money bonds. Assuming a uniform savings structure, a Cash Optimization could generate approximately \$14.5 million in present value savings, \$11.3 million greater than a conventional taxable advance refunding.

Cash Optimization Results	Sewer Senior Lien		Difference
	TX Adv Ref	Cash Optimization	
Delivery Date	7/13/2022	7/13/2022	-
Refunding Par (\$)	111,445,000	94,590,000	-16,855,000
Refunded Par (\$)	116,845,000	116,845,000	-
All-In TIC	4.02%	2.89%	-1.13%
Average Life (years)	9.27	9.32	0.05
Negative Arbitrage (\$)	3,315,335	733,410	-2,581,925
NPV Savings (\$)	3,189,609	14,528,836	11,339,226
NPV Savings	2.7%	12.4%	9.7%
Refunding Efficiency	49.0%	95.2%	46.2%

iv. Provide tax-exempt and taxable scales from 1-30 years (July 1 maturities) for each of the Water Senior, Water Second, Sewer Senior, and Sewer Second liens. Assume market conditions as of April 6, 2022. Assume 5% coupons for tax-exempt issuance, and par coupons for taxable issuance. Assume a 7/1/2032 par call.

Indicative Pricing Levels. Below are indicative pricing levels for the Authority's Senior and Second Lien bonds for both Water and Sewer. MMD and spreads are as of the close of business on April 6, 2022. Both tax-exempt and taxable pricing levels assume a 10-year par.

Due (7/1)	MMD (4/6/22)	Water & Sewer Senior Lien			Water & Sewer Second Lien			Due (7/1)	Tsy (4/6/22)	Water & Sewer Senior Lien			Water & Sewer Second Lien		
		Spread	Coupon	YTC	Spread	Coupon	YTC			Spread	Coupon	Yield	Spread	Coupon	Yield
2023	1.74%	25	5.00%	1.99%	30	5.00%	2.04%	2023	2.50%	30	2.80%	2.80%	35	2.85%	2.85%
2024	1.91%	30	5.00%	2.21%	35	5.00%	2.26%	2024	2.50%	60	3.10%	3.10%	65	3.15%	3.15%
2025	2.02%	35	5.00%	2.37%	40	5.00%	2.42%	2025	2.67%	65	3.32%	3.32%	70	3.37%	3.37%
2026	2.08%	38	5.00%	2.46%	45	5.00%	2.53%	2026	2.70%	80	3.50%	3.50%	85	3.55%	3.55%
2027	2.11%	43	5.00%	2.54%	50	5.00%	2.61%	2027	2.70%	90	3.60%	3.60%	95	3.65%	3.65%
2028	2.13%	45	5.00%	2.58%	52	5.00%	2.65%	2028	2.69%	100	3.69%	3.69%	105	3.74%	3.74%
2029	2.20%	48	5.00%	2.68%	55	5.00%	2.75%	2029	2.69%	110	3.79%	3.79%	115	3.84%	3.84%
2030	2.25%	50	5.00%	2.75%	58	5.00%	2.83%	2030	2.61%	125	3.86%	3.86%	132	3.93%	3.93%
2031	2.29%	53	5.00%	2.82%	60	5.00%	2.89%	2031	2.61%	135	3.96%	3.96%	142	4.03%	4.03%
2032	2.33%	55	5.00%	2.88%	62	5.00%	2.95%	2032	2.61%	140	4.01%	4.01%	147	4.08%	4.08%
2033	2.37%	58	5.00%	2.95%	65	5.00%	3.02%	2033	2.61%	155	4.16%	4.16%	162	4.23%	4.23%
2034	2.40%	60	5.00%	3.00%	67	5.00%	3.07%	2034	2.61%	170	4.31%	4.31%	177	4.38%	4.38%
2035	2.43%	63	5.00%	3.06%	70	5.00%	3.13%	2035	2.61%	180	4.41%	4.41%	187	4.48%	4.48%
2036	2.44%	65	5.00%	3.09%	72	5.00%	3.16%	2036	2.61%	190	4.51%	4.51%	197	4.58%	4.58%
2037	2.46%	65	5.00%	3.11%	72	5.00%	3.18%	2037	2.61%	195	4.56%	4.56%	202	4.63%	4.63%
2038	2.48%	65	5.00%	3.13%	72	5.00%	3.20%	2042	2.63%	205	4.68%	4.68%	212	4.75%	4.75%
2039	2.50%	65	5.00%	3.15%	72	5.00%	3.22%	2052	2.63%	215	4.78%	4.78%	222	4.85%	4.85%
2040	2.51%	65	5.00%	3.16%	72	5.00%	3.23%								
2041	2.52%	65	5.00%	3.17%	72	5.00%	3.24%								
2042	2.54%	65	5.00%	3.19%	72	5.00%	3.26%								
2047	2.62%	67	5.00%	3.29%	74	5.00%	3.36%								
2052	2.67%	70	5.00%	3.37%	77	5.00%	3.44%								

v. Analytical Capabilities: Provide a brief description of your firm’s analytic capabilities and how your firm proposes to use such capabilities to assist the Authority.

SWS’ Structuring and Quantitative Expertise. SWS’ dedicated in-house **Quantitative Group** provides debt structuring and financial analyses, incorporating technology to optimize financing structures and ensure the lowest possible borrowing cost on any given financing. SWS utilizes a combination of industry-leading software and in-house Microsoft Excel models for financing optimization and structuring analytics for new money and refunding transactions. Our capabilities include proprietary as well as industry-standard structuring, bond sizing, refunding, and option evaluation applications. SWS provides the following services:

- **What’s Best Optimization:** Tax-exempt and taxable debt structuring, including *What’sBest* linear optimization (optimization for complex issuers and niche sectors)
- **Escrow Optimization:** Escrow portfolio optimization and investment portfolio rebalancing
- **Project financing strategies**
- **Flow of Funds models**
- **Call optimization and efficiency analysis**

Resource	Summary
Linear Optimization Modeling Software	“ <i>What’sBest</i> ” <i>Linear Optimization Software</i> – used for tax-exempt and taxable debt structuring using fixed, stepped and zero coupons; the models determine the optimal method of issuing new debt given specific revenue constraints to bond covenants
Water & Sewer Specific Modeling	Include revenue projection, bonding capacity and debt service coverage maximization strategies
Proprietary Refunding Algorithm	Designed to thoroughly evaluate refunding opportunities from all different angles so that our issuer clients can make the most well-informed decisions when considering a refunding of which the Commission has several pending and attractive opportunities over the next few years
Coupon Analysis Model	Allows an issuer for interest cost sensitivity tests to compare issuing 5% versus sub-5% coupons taking into account the savings achieved today versus the future refunding savings potential
Portfolio Statistics Report	SWS’ proprietary report will show how the Authority’s bond portfolios compare to other issuers in duration, convexity, and option adjusted duration
Asset Liability Management	Protocol can minimize variances between revenue receipts, investment earnings and bond payments
DBC Finance	The industry standard for municipal bond structuring

vi. Provide a credit rating strategy for GLWA to maintain or upgrade its bond ratings over the planning horizon of two to three years.

SWS Water and Sewer Credit Expertise. SWS continues to have a very close connectivity to the Authority’s credit having been highly involved in the 2020 rating process and assisting other issuers throughout the COVID-19 pandemic. SWS has a dedicated Michigan coverage team as well as a highly-regarded credit specialist, **Laura McGraw**, *Senior Vice President*, who joined the team in 2020. Ms. McGraw has nearly 15 years of public finance banking experience and worked at Build America Mutual (“BAM”) where she was a member of the Credit Surveillance Group responsible for early identification of developing credit trends across BAM’s entire insured portfolio.

Rating Agency Water and Sewer Outlooks STABLE. Despite the pandemic **all major agencies currently maintain a “Stable” Water and Sewer Sector Outlook.** In December 2021, S&P released a public inquiry seeking comment on its current Water and Sewer Methodology published in January 2016. Per S&P, the request “will likely result in approximately 98% of the ratings being unchanged”.

S&P Global Ratings	FitchRatings	MOODY’S INVESTORS SERVICE
<p>Stable Outlook</p> <p><i>“Water and sewer systems were remarkably resilient and the unsung heroes during and after the worst of the pandemic-related recession”</i></p>	<p>Stable Outlook</p> <p><i>“An increase in sector leverage is expected going forward however robust balance sheets should be able to withstand business disruptions”</i></p>	<p>Stable Outlook</p> <p><i>“Governance will be critical in mitigating environmental and social risks; climate change and regulatory challenges”</i></p>

Rating Strategy and Outlook Upgrade Request

- **Key Credit Strengths:** Highlight key credit strengths with a focus on the **incremental** improvement since the 2020 rating process
- **Member Partner Credit Strengths:** Highlighting the credit of member partners, as well as ratings upgrades and outlooks improvements
- **Agency Concerns and Sector Pressures:** Analyze rating agency concerns and sector pressures and provide mitigating factors
- **Indicative Rating Scorecards:** Analyze indicative ratings utilizing the scorecards provided by each agency

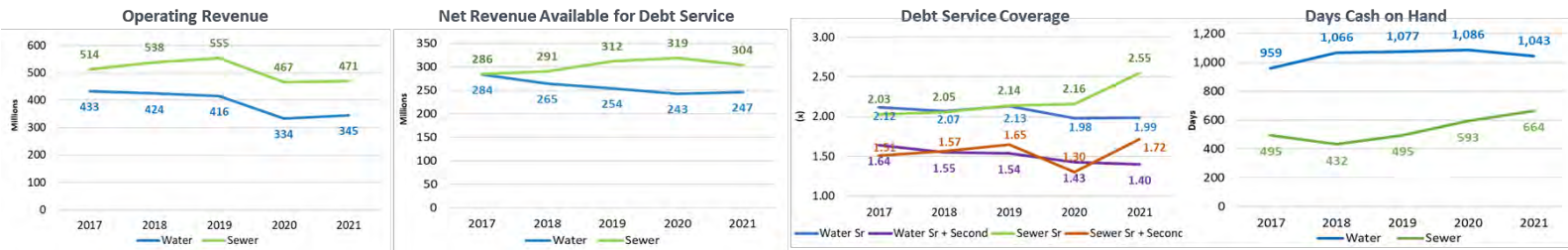
	MOODY’S	S&P Global	FitchRatings
Water and Sewer Ratings (Senior/Second Lien)	A1/A2 (Stable)	AA-/A+ (Stable)	A+/A (Stable)
Pursue One-Notch Rating Upgrade?	Scorecard reflects AA- category rating on Sr. Lien	Pursue Upgrade/Positive Outlook	Pursue Upgrade/Positive Outlook
Indicative Scorecard Rating (Senior Lien)	Aa3/A1 (Stable)	AA/AA- (Stable)	AA-/A+ (Stable)

We believe at a minimum the Authority is poised for an Outlook increase to Positive from Each of the three agencies

Great Lakes Water Authority Key Credit Strengths

Seasoned Management	<ul style="list-style-type: none"> Seasoned management team with deep bench of long-tenured professionals Track record of strong budget management and transparency
Necessity of System	<ul style="list-style-type: none"> Natural supply of raw water coupled with existing capital facilities of the Water System Long-standing municipal relationships extending contractually for many years and no material competition
Diverse Customer Base	<ul style="list-style-type: none"> FY21 Water Revenue: \$150.8MM or 43.8% of FY21 Operating Revenue \$344.6MM FY21 Sewer Revenue: \$264.5MM or 56.2% of FY21 Operating Revenue \$470.8MM
COVID-19 Response	<ul style="list-style-type: none"> Quick action to implement strategies to deal with the short-and long-term impacts Great Lakes provided continuity of service throughout this difficult time while prioritizing projects
Manageable Capital Program	<ul style="list-style-type: none"> Capital Plan comparable to other large urban water and sewer systems, representing significant investment in critical infrastructure (<i>sufficient proforma coverage</i>)
Healthy Liquidity	<ul style="list-style-type: none"> Water: Unrestricted Cash and Investments: \$415 million Days Cash of Hand: 1,043 Days Sewer: Unrestricted Cash and Investments: \$358 million Days Cash of Hand: 664 Days
Strong Operating Performance & Financial Results	<ul style="list-style-type: none"> Since 2020, the Authority's key operating and financial metrics have remained stable or improved Operating revenue and coverage on the Sewer System has increased, <i>despite the COVID-19 pandemic</i>
Strong Rate Covenant / Pro Forma Coverage	<ul style="list-style-type: none"> Strong Rate Covenant of 1.2x Senior Lien, 1.1x for Second Lien and 1.0x for all bonds Post proposed Series 2022 issuances, minimum pro forma debt service coverage Water: 1.41x Sewer: 1.84x Conservative debt profile with no swap exposure
Legal Agreements Mitigate Credit Risk	<ul style="list-style-type: none"> Foundational agreements codify: revenue requirement parameters, allocation of costs/liabilities, step-in authority, closed loop lease payment, WRAP funding, and management and oversight standards 2018 MOU clarifies the foundational agreements, improves alignment between parties and provides for long-term stability

Positive Trend in Financing Metrics



Member Partner Credit Statistics

	State of Michigan	City of Detroit	Macomb County	Oakland County	Wayne County
Ratings (M/S/F)	Aa1/AA/AA	Ba2/BB/NR	Aa1/AA+/NR	Aaa/AAA/NR	A3/BBB+/BBB+
Median Household Income	\$57.1k	\$30.8k	\$62.6k	\$79.7k	\$47.3k
Population	10,077,331	639,111	881,217	1,274,395	1,793,561
Operating Revenue (\$MM)	\$27,469.0	\$111.8	\$258.5	\$620.9	\$111.9
General Fund Balance (\$MM)	\$5,500.0	\$854.2	\$72.4	\$267.0	\$191.9
Long-Term Debt (\$MM)	\$6,000.0	\$2,300.0	\$271.3	\$633.2	\$813.2

Revitalization of Cities and Counties

Wayne County:

- ✓ 2018: Upgraded by S&P to **BBB+** from **BBB-**
- ✓ 2019: Upgraded by Fitch to **BBB+** from **BBB-**
- ✓ 2021: Upgraded by Moody's to **A3** from **Baa1**

City of Detroit:

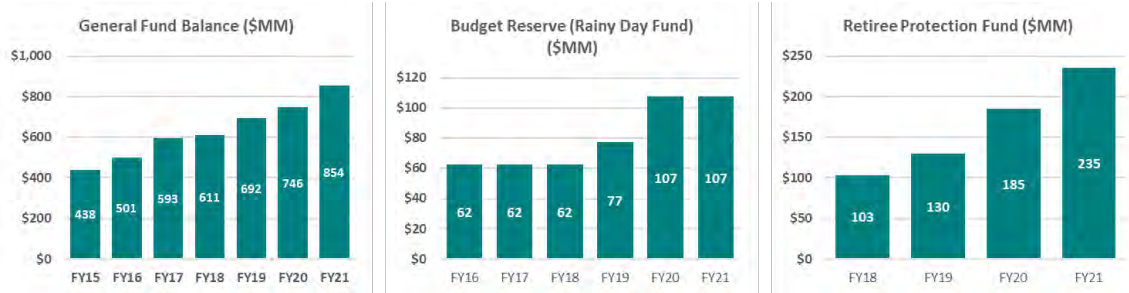
- ✓ 2018: Upgrade by Moody's and S&P
- ✓ 2020: Outlook revised to **Positive** from **Stable** by Moody's
- ✓ 2021: Outlook revised to **Stable** from **Negative** by S&P
- ✓ 2022: Upgrade by Moody's and S&P to **Ba2** and **BB**, respectively **Positive** Outlooks

Strengths	Considerations
<ul style="list-style-type: none"> Management: Strong budgetary oversight Relationship with DWSD: Oversight/Relationship with Detroit Water and Sewer Department that sets financial targets and internal controls Independent Operating Performance: 4 years of operating separately from DWSD Superior Bondholder Protections – all GLWA and DWSD payments deposited to Bond Trust Account Limited future exposure to pension cost escalation from legacy Detroit obligations resulting from prior bankruptcy negotiations Diverse revenue stream / Customer base Low Delinquencies: No current or historical collection concerns in the wholesale customer base with exception of Highland Park 	<ul style="list-style-type: none"> Pandemic Related Population Loss: Risk due to COVID-19 Mitigants to Detroit Economic Exposure <p>January 2021 Outlook Upgrade: - In January 2021, SWS helped Detroit receive an Outlook Upgrade from Negative to Stable</p> <p>March 2022 Detroit Upgrades: - UTGO: Upgraded to Ba2 by Moody's and BB by S&P, both with Positive Outlooks - Income Tax: Upgraded to BBB- by S&P, Positive Outlook</p>
<p>↑ What Could Change the Rating Up</p> <ul style="list-style-type: none"> Significant economic improvement within City of Detroit 	<p>↓ What Could Change Down</p> <ul style="list-style-type: none"> Economic stress or capital cost escalation

Highland Park. As of November 2019, Highland Park was the only wholesale customer with a past due balance. Highland Park’s sewer payment performance has improved in recent years, with sewer payments representing 73% and 93% of amounts billed during 2018 and 2019, respectively. The FY20 and FY21 payment performance was lower, with sewer payments representing 53% and 49% respectively. It is expected that Sewer charges will increase by 3.66% for all member partners, with 1.15% of that increase to account for revenue requirements allocable to Highland Park.

Recent City of Detroit Upgrades.

Detroit has maintained six years of balanced budgets, surpluses, and a fund balance grown to \$854 million by FY2021. Detroit implemented policies to budget conservatively and to only use non-recurring resources for one-time purposes and increased its



Rainy Day Fund to almost 10% of expenditures by FY21. Detroit also created the Retiree Protection Fund (“RPF”) to meet the FY24 pension funding schedule and built up budgetary and position control, revenue estimation, fiscal analysis, and long-term planning capabilities. Finally, the City established ongoing partnership with Michigan universities for Detroit economic forecasting and analyses. All these actions helped achieved the City’s recent UTGO rating upgrade to **Ba2** and **BB** by Moody’s and S&P, respectively and the City’s Income Tax upgrade to **BBB-** by S&P.

2021 Flooding. The Detroit area experience massive flooding in June 2021. In Wayne County, a class action lawsuit was filed after half of the 16 pumps were not working in two of the Authority’s pump houses. In Grosse Pointe Park, eleven (11) homeowners filed a lawsuit against the Authority, Detroit, Grosse Pointe Park and the Detroit Water and Sewerage Department claiming eight feet of sewage back-up.

Liability Coverage. Under Michigan’s Governmental Liability for Negligence Act, “a defect in the sewage disposal system must be substantial proximate cause of the sewer backup event and the property damage and physical injury.” The Authority maintains \$10 million general liability coverage that may cover claims related to flooding. It is possible federal funding can be allocated to help offset the costs of fixing the pumps.

Wastewater Master Plan: The Authority previously established a [Wastewater Master Plan](#) that is affordable to all while addressing the region’s wastewater service and source water protection needs for the next 40 years. The Plan establishes regional critical HGL and control strategies to reduce the risk of basement flooding and sanitary sewer overflows and takes a holistic and regionally integrated approach to wastewater treatment, stormwater, capacity management, and receiving water quality while leveraging regional collaboration.

Sector Trends and Pressures:

- 1) **Forecasting** - In 2021, Fitch released its **FAST** analysis which aimed to assess “how operating decisions could affect a utility’s financial profile in both a base and stress case scenario”. It is important for the Authority to present its pro forma capital plan in its entirety and how it will be impacted projected coverage levels when meeting with agencies.
- 2) **Liquidity** - The Authority has been building its cash reserves. In FY2021, unrestricted cash and investments in the Water System totaled \$415 million and unrestricted cash and investments in the sewer system total \$358 Million. **The fact the Authority built up its reserves prior to the pandemic will be viewed as a credit positive.**
- 3) **Environmental, Social, and Governance (ESG)** - In 2021, rating agencies began issuing a ESG Score for cities across the U.S. While this score is not included in rating scorecards, it is taken into account and could sway an indicative rating either up or down for municipal issuers.
- 4) **Cyber-Attacks** - Cyber-attacks across all infrastructure in the U.S. has increased. Phishing and attacks on older systems have been the most common. **Sharing the Authority’s anti-cyber-attack plan to the agencies will be critical.** The Infrastructure Investment and Jobs Act (IIJA) includes increased support for cyber security including \$250 million authorized for Cyber Grant Assistance Program.
- 5) **COVID-19 Response and Customer Assistance** - At the onset of the COVID-19 pandemic, the Authority acted quickly. Management projected at the April 2020 Board Meeting a budget shortfall of approximately \$7.4 million (which was offset by projected net expenditure reductions). GLWA and DWSD staff have been meeting regularly since the start of the pandemic to prioritize essential projects. Affordability programs such as the **Water Residential Assistance Program (“WRAP”)** has helped reduce customer’s monthly water bills.

vii. If your firm offers direct placements or other alternatives to traditional underwriting to its municipal clients, please describe those products and their application to GLWA.

Although SWS does not currently offer any sort of direct placement or bridge loan product, we have recently announced a strategic partnership with Apollo (NYSE: APO) under which Apollo, along with its managed funds, will make a combined equity and credit investment in SWS that will, among other things, enhance SWS’ ability to bridge the investment and liability management needs of both its corporate and municipal clients. Although this partnership was just established this week, and as such, we have not yet developed a specific bridge loan-type product for our municipal clients, we do expect to be able to effectively leverage the additional financial resources offered by Apollo to this partnership and we will continue to apprise the Authority of our expanded capabilities in this area as they are developed.

viii. Describe any enhancements GLWA should consider with respect to investor outreach and marketing strategies to diversify and strengthen its investor base.

Marketing Strategy and Investor Outreach. SWS has extensive experience aggressively marketing and pricing Michigan, water and sewer, and taxable new issues with similar credit ratings to the Authority. SWS will work with the Authority to develop a comprehensive marketing plan:

- ✓ Sell bonds at the lowest interest cost, regardless of the credit being issued
- ✓ Create an extensive investor target list
- ✓ Educate and enhance the investment community’s perception of the Authority’s credits
- ✓ Create an active, liquid secondary market for the Authority’s securities and enable tracking the performance of its bonds in secondary market

Key recommendations are as follows:

1) Aggressive Marketing to Active Buyers during the Pandemic – Ever since the municipal bond market began recovering from its essential shutdown in early March 2020, SWS’ sales desk has actively tracked changing investor interest in the primary market. Since January 2021, SWS has served as underwriter on approximately \$95 billion in primary market debt issuance and we know intimately the database of top investors (out of **over 610 institutional investors**) including where along the yield curve they bought bonds since the onset of COVID-19.

2) Targeting Active Secondary Market Investors. Since the onset of the pandemic in March 2020, **SWS’ trading desk has completed \$43.4 billion in secondary market trades with over 250 institutional investors, including over \$658 million of bonds for Michigan-based issuers through 2,391 transactions in the secondary market.** By analyzing investor buying data patterns and demand in the secondary market during the pandemic, SWS can effectively tap pockets of demand to generate a larger universe of investors and push interest rates lower for the Authority.

3) Deepen the Authority’s Investor Base. We also recognize a broader investor segment who could be primary targets based on their large holdings of Michigan bonds, wastewater and water bonds, and ESG/green bonds. Accordingly, the table to the right lists potential investors that SWS would target for the Authority’s upcoming new money financing based off their current holdings of bonds that are similar to the Authority’s credit.

4) Analyzing Monthly Investor Cash Flow. SWS analyzes investor demand capacity based on their estimated reinvestment cash flow returns. SWS’ sales desk then prioritizes marketing efforts by targeting those investors that are not only comfortable with the credit and/or structure, but also have available cash to reinvest. The colorful tables to the right list the monthly cash flow of select major investors of Michigan bonds, Water and Sewer bonds, and Taxable bonds.

Anticipated Buyer Breakdown. For the Authority’s issuance, SWS will target (i) bond funds, (ii) professional retail (SMA) (iii) trading accounts, (iv) insurance companies, (v) and individual retail as key investors. Based on the anticipated size and structure of the transaction, SWS anticipates a composition of buyers of the **Senior Water and Sewer Lien** to include 37% bond funds, 30% professional retail (SMA), 15% trading accounts, 15% insurance companies, and 3% individual retail. For the Water and Sewer **Second Lien**, SWS anticipates buyers to include 43% bond funds, 30% professional retail (SMA), 12% trading accounts, 12% insurance companies, and 3% individual retail.

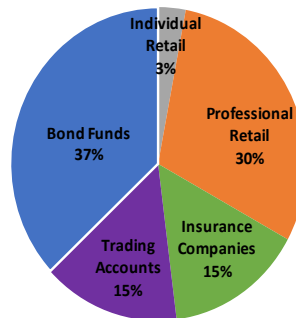
Additional GLWA Investor Targets		
GLWA Top Holders	National Wastewater & Water Top Holders	National ESG/Green Top Holders
Vanguard	Vanguard	Vanguard
TIAA-CREF	State Farm	Blackrock
T Rowe Price	Nuveen	TIAA-CREF
MacKay Shields	BlackRock	Capital Group Co.
Nuveen	Franklin Advisers	Franklin Resources
Capital Research	Travelers	Invesco
Fidelity	Capital Research	Fidelity
Alliance Bernstein	MacKay Shields	Goldman Sachs
Wells Capital	T Rowe Price	Alliance Bernstein
Western Asset Management	Oppenheimer Funds	New York Life Group

Source: eMAXX

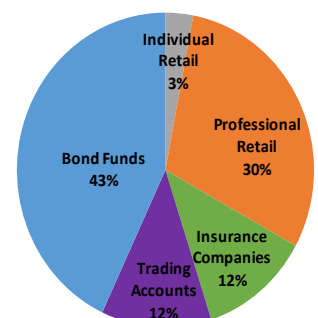
Firms with the Most 2022 Cash Flows from Michigan Bonds (\$000's)					
Firm	22-Apr	22-May	22-Jun	22-Jul	22-Aug
Vanguard Group	27,414	88,291	100,144	117,548	7,055
Nuveen Asset Management	14,788	27,987	69,202	43,020	2,340
BlackRock	9,979	19,250	18,851	103,613	4,240
Capital Research & Management	1,337	30,597	41,386	24,425	1,404
Fidelity Management & Research	3,075	27,526	18,762	18,704	21,602
Franklin Advisers,	3,952	15,305	31,449	26,506	1,082
INVESCO	1,150	11,042	25,558	33,220	481
MacKay Shields	702	22,324	8,193	28,741	1,206
Goldman Sachs Asset Management	5,131	16,456	17,366	17,402	1,354
T Rowe Price Associates	5,078	5,273	22,755	21,163	812
All Others	94,043	350,268	159,619	232,057	27,260
Total	166,650	614,319	513,286	666,398	68,835

Firms with the Most Cash Flows Water and Sewer Bonds (\$000's)					
Firm	22-Apr	22-May	22-Jun	22-Jul	22-Aug
Vanguard Group	72,311	97,741	195,945	237,525	77,462
Nuveen Asset Management	35,235	26,525	51,473	237,303	28,170
Franklin Advisers,	14,110	84,813	42,292	146,637	33,489
BlackRock	23,312	38,537	47,024	168,076	10,086
State Farm Insurance Companies	41,549	35,407	40,618	76,279	69,252
OppenheimerFunds	9,025	8,964	31,033	163,985	2,421
Travelers Companies	35,158	12,861	29,168	41,728	44,723
T Rowe Price Associates	7,640	6,275	51,971	57,952	1,865
J.P. Morgan Asset Management	10,285	20,593	35,281	42,931	12,319
Capital Research & Management	16,180	16,690	29,538	42,427	16,212
All Others	218,433	434,029	498,456	863,332	267,309
Total	483,237	782,434	1,052,798	2,078,174	563,306

Senior Lien Anticipated Buyer Breakdown



Subordinate Lien Anticipated Buyer Breakdown



Investor Relations Strategies and Tools	
EMMA Posting – Notice of Potential Sale	▪ When receiving Board approval for the bond sale(s), post an early notice of sale on EMMA to alert the market to the upcoming bond sale that investors could put that on their future deal calendar
Early Coordination with Co-Manager	▪ SWS will be in contact with co-managers often to ensure that they are aware of and ready to actively market the Authority's bonds. Early contact and coordination is important to ensure the widest distribution of bonds, particularly to retail investors.
Monitor Primary Markets and Economic Calendar	▪ The Authority should maintain flexibility to modify, to the extent possible, the sale date to avoid pricing when other comparable offerings are in the market and major geopolitical events that could produce volatility
Internet Roadshow	▪ An internet roadshow can provide wide groups of investors with relevant information about the proposed bond sale and differentiate the Authority's credit.
One-on-One Investor Calls	▪ Following the release of the POS (approximately two weeks prior to pricing) speaking directly to specific investor targets gives the Authority the opportunity to address any concerns investors may have.
COVID-19 Disclosure	▪ Include detailed descriptions about the impact of the pandemic on operations and finances
Multiple Coupon Pricing Wire	▪ Release pricing wires that show multiple coupon options for each maturity to investors to garner feedback and determine interest

Improve Marketability with ESG Designation. Utilization of the ESG label has the proven potential to attract additional investors and lower the overall borrowing cost. In analyzing upcoming GLWA projects, we have identified several that may qualify for this designation. For example, the significant improvements expected to be made to the Southeast Michigan Water Systems include the following projects: *Chapaton Retention Basin and Martin Drain System* (sewage prevention/overflow reduction and beach/fishing protection), *Detroit River Interceptor Upgrade* (flood prevention), *City of St. Clair Water Treatment Plant Improvements* (growing and boosting economic development), *St. Clair County Clay-Ira Interceptor Project* (protection of natural resources and keeping water safe/clean), and *Pontiac Drinking Water Improvements* (replacing lead pipes to keep drinking water safe for children). Each of these projects closely correlates to the International Capital Markets Association Green Bond Principles (“GBPs”) as well as the UN Sustainable Development Goals (“UN SDGs”), which are used to substantiate the ESG designation. While the Green label is most evidently applicable, an argument can also be made for a Social and ultimately Sustainable label, which combines the Green and Social Bond Principles (“SBPs”). The most applicable eligible Social Project Category is “Access to Basic Infrastructure (e.g. clean drinking water and sewers). Target populations include “Living below the Poverty Line” and “Excluded and/or Marginalized Populations and/or Communities”. Therefore, if a project benefits residents of Wayne County, for example, which is within the Wastewater Service Area and whose population is over 52% minority (37% black or African American) with a high percentage living below poverty line, it may qualify as a Social or Sustainable Bond. Alignment and mapping to these standards is more fully described in Appendix D.



In addition to the projects being financed, ESG investors are acutely interested in the overall sustainability efforts of issuers. Fortunately, GLWA has a great story to tell in this regard. The Authority has recently made upgrades to regional system resiliency, including improvements to the utility power supply feeding its pump stations, changes to operational procedures and enhanced collaboration and coordination with member partner communities. Moreover, the Authority's long-standing sustainability efforts have been award-winning, such as *Best Pilot Demonstration in the Water Utility Energy Challenge* (reducing energy related pollution emissions) and the *Gold Award for Exceptional Utility Performance* (leading the nation in efforts toward sustainability). The Siebert team will highlight these ongoing efforts to ensure that investors comprehend the Authority's enduring commitment to sustainability.

SWS ESG Leadership. As a leader in the ESG space, SWS is prepared to guide GLWA through the entire bond issuance process. Siebert has done so for a variety of issuer types across the country, including those issuing inaugural ESG financings. The Firm's expertise in the space has resulted in the industry recognizing our leadership on multiple occasions. Since the Bond Buyer created the ESG/Green category in 2019 for its Deal of the Year (“DOY”) Awards, **SWS has won two of the three ESG/Green DOY Awards.** Furthermore, of the multitude of municipal ESG financings to come to market over the years, only a handful have been able to achieve a pricing benefit on its Green Bonds. Siebert was able to accomplish just that in November 2021 when it senior managed Fairfax County Economic Development Authority's **Green Bonds, which priced 1-3 basis points tighter than the non-Green Bonds.** The success of this financing is discussed further in Appendix D. As these accomplishments demonstrate, the Firm has long placed an importance on the ESG space. It also employs a **dedicated ESG Specialist** in Jamiyl Flemming, Senior Vice President, who will be available to assist the Authority with all ESG matters and guide GLWA towards a successful transaction. Mr. Flemming's expertise and the Firm's extensive experience has resulted in SWS developing numerous effective ESG marketing strategies, providing a comprehensive education to investors, and fostering relationships that we will leverage on behalf of GLWA.



2019 and 2021 ESG/Green Deals of the Year

- Los Angeles County Metropolitan Transit Authority (2019)
- Newark Public Schools (2021)

ix. GLWA's outstanding Sewer Series 2006D Bonds are variable rate bonds that reset based on LIBOR. The Series 2006D Bonds provide a low-cost option (3-month LIBOR + 0.60% through maturity) with a favorable risk profile, but the existing fallback language relating to the Series 2006D Bonds is not workable. Please provide commentary on strategies and timing to address the Series 2006D bonds, should legislative solutions not materialize.

Outstanding Series 2006D Sewer Disposal System Bonds: The 2006D Sewer Bonds are Senior Lien Tax-Exempt Floating LIBOR Notes that mature on July 1, 2032 (CUSIP 251237W66). The variable interest rate on these bonds is calculated at 67% of 3-month LIBOR plus a fixed interest spread of 0.60%; the interest rate adjusts quarterly and interest is paid quarterly. \$370 million bonds were originally issued as a single term bond; annual sinking funds commenced on July 1, 2007 and \$169.390 million in par remains outstanding. The 2006D Bonds are subject to optional call by the Authority on any interest payment date at par. There was originally an interest rate swap associated with these bonds that effectively fixed the interest rate on the bonds; this swap was terminated and the Bonds are currently carried as an unhedged variable rate position by the Authority. There is currently no liquidity or remarketing risk with these Bonds for the Authority as there are no mandatory tender features built into the Bonds.

Current Holders: The 2006D Bonds are held by large funds and investment managers; holders of \$233 million of the outstanding \$169.390 million in bonds outstanding (Note: Per Bloomberg, reported holdings can be greater than 100% if reporting periods are inconsistent amongst investors) can be identified (see table of holders in **Appendix C**).

LIBOR Phase-Out: Although the formal daily calculation and reporting of many LIBOR tenor and currency rates by ICE Benchmark Administration (“IBA”) was eliminated after December 31, 2021. The 3-month LIBOR index that is used in the calculation of the 2006D interest rate will continue to be calculated and published until June 30, 2023. **Beginning after June of 2023, LIBOR will likely be phased out completely.** The Secured Overnight Financing Rate (“SOFR”) will be used in replacing LIBOR as a U.S. dollar-denominated reference rate for derivatives. Spread adjustments to SOFR have been established by the FCA as fallback indices for all euro, sterling, Swiss franc, US dollar and yen LIBOR tenors. However, because the fallback language contained in the Authority’s existing 2006D contract with bondholders is very limited and does not allow for the unilateral application of this FCE-adopted fallback solution by the Authority, a more deliberate process for transitioning the interest rate setting process will need to be crafted and executed by the Authority. Additionally, all bondholders would not be expected to act in unison with regard to accepting a uniform alternative index and spread, and the Authority would need to undertake a communication/dialogue and ultimately some form of agreement process with holders to determine a single uniform rate formula that would be acceptable to all holders.

Recommended Solution. SWS’ recommended solution for the 2006D Bonds would be to craft a new variable rate index that would be favorable to the Authority as well as being acceptable to as many existing bondholders as possible. The Authority would then offer its existing 2006D bondholders the ability to convert their bonds into new bonds with this new variable interest rate index; bondholders who accept the offer would receive a modified bond with the new variable rate index in a par-for-par exchange; bondholders who do not wish to accept the new index would have their bonds redeemed from the proceeds of a fixed interest rate current refunding that would take place in conjunction with the Authority’s planned new money/refunding transaction. A conversion to a fixed interest rate is a very efficient solution for the 2006D bond position given the relatively short final maturity of these bonds and the robust market for fixed rate bonds at that spot on the curve, and combined with the fact that a fixed rate new money transaction is currently being planned by GLWA. As such SWS would recommend that the best course of action for the 2006D Bonds would be We believe this to be the simplest and most effective and efficient solution for these bonds at this time.

Timing. Given that three-month LIBOR will continue to be published through June 30, 2023 there is still plenty of time for GLWA to implement a conversion from the LIBOR index. However, we strongly recommend that our recommended solution for the 2006D Bonds be implemented in conjunction with the upcoming offering to take advantage of the fact that an offering document, rating and sale process is already taking place and will not need to be unnecessarily duplicated solely for the 2006D bond issue in the future.

References

- i. Provide the names and telephone numbers and e-mail addresses of at least three (3) persons representing clients for whom the proposer has performed work similar to that proposed, and who may be contacted as references. Preferably, these references should include municipalities or utilities similar to GLWA and should include the types of recent projects cited above.

Issuer References. We encourage the Authority to contact the following client references who can attest to SWS’ experience and our ability to serve as senior managing underwriter on the Authority’s transaction.

New York State Environmental Facilities Corp	New York City Municipal Water Finance Authority (NYW)	Los Angeles Department of Water and Power (LADWP)	City of Phoenix Civic Improvement Corporation	District of Columbia Water and Sewer Authority
Brian McClintock Director of Public Finance (518) 402-7085 Brian.Mcclintock@efc.ny.gov	Olga Chernat Executive Director (212) 788-4969 chernato@omb.nyc.gov	Peter Huynh Assistant CFO & Treasurer (213) 367-4671 peter.huynh@ladwp.com	Andrew Durket Investment & Debt Manager (602) 534-2168 andrew.durket@phoenix.gov	Matthew Brown CFO and Executive VP (202) 787-2714 matthew.brown@dcwater.com

- ii. List descriptions of any contracts which have been terminated, including the circumstances surrounding the termination. Provide the name and telephone number of your client's representatives of any such contracts.

No previous contracts have been terminated.

Proposal Presentation

- i. Proposal presentation in alignment with the proposal document that demonstrates the value that your firm provides for a successful 2022 bond program.
- ii. The presentation document should be limited to twelve slides.
- iii. Ten minutes will be allowed for the proposal presentation with an additional ten minutes for Audit Committee questions.

Please refer to **Appendix E** for the Firm’s proposal presentation for the proposed Series 2022 issuances.

Appendix A: Project Team and Key Individuals

Appendix A – Project Team and Key Individuals

1. Key Individuals - Provide staff resumes for all individuals assigned to this project.

Suzanne Shank
President & CEO

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sshank@siebertwilliams.com

Ms. Shank, President & CEO, is a 30+ year veteran of the industry, is a founding partner of the firm, its largest shareholder and currently serves as CEO. She has led the financings for large scale projects for a variety of issuers, including the cities of Detroit, New York, Chicago, St. Louis, Philadelphia, and the states of Michigan, Ohio, Connecticut, Massachusetts and New York.

Ms. Shank has a longstanding relationship with Michigan issuers, having led the firm as senior manager on numerous transactions since the firm's founding. Ms. Shank's experience extends to issuers across the State of Michigan for over 60 senior managed transactions for a combined par of over \$12 billion. This includes transactions for the Detroit Water and Wastewater Supply Systems, City of Detroit, Detroit Downtown Development Authority bonds, Detroit Public Schools, Ann Arbor Public Schools, Ypsilanti Public Schools, Bloomfield Hills School District, Wayne County Airport Authority, Wayne County, Michigan Finance Authority, Michigan State Building Authority, and the State of Michigan. Ms. Shank has been instrumental in crafting financing structures and investor outreach strategies for numerous issuers across the country. Water and Sewer experience includes Great Lakes Water Authority (including DWSD), Houston Combined Utility System, Philadelphia Water, NY Water Authority, Chicago Water & Wastewater and many others.

Ms. Shank actively serves on several boards, including Invest Detroit, Kresge Foundation, Skillman Foundation, Invest Detroit, Detroit Regional Chamber (Executive Committee) and is a member of the International Women's Forum. Ms. Shank is a graduate of The Wharton School, University of Pennsylvania with a Masters of Business Administration degree in Finance, and the Georgia Institute of Technology with a Bachelor of Science degree in Civil Engineering. FINRA securities registrations held include the Series 7, 24, 50, 52, 53, 63 and 79.

Sean Werdlow
Head of the Mid-West Region
Senior Managing Director

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swerdlow@siebertwilliams.com

Mr. Werdlow has over 27 years of diversified and progressive experience within the commercial finance, investment banking and governmental industries. Mr. Werdlow has demonstrated expertise in raising capital for public and private needs, determining minimal credit risk, managing rating agency and investor relationships as well as SEC disclosure requirements.

Mr. Werdlow is responsible for managing a large universe of municipal clients in the Midwest and Southeast. Most recently, Mr. Werdlow was the lead banker on SWS' senior managed \$206 million Michigan State Building Authority transaction which priced in June 2021. In addition, Mr. Werdlow, a Detroit native, has a long history of serving Michigan issuers, including Detroit Wayne County Joint Building Authority, Wayne County Community College, Wayne State University, Wayne County Airport Authority, Michigan Department of Transportation, Michigan Finance Authority and Ann Arbor Schools, among others. His water and sewer experience includes transactions for the City of Atlanta, City of Cleveland, Northeast Ohio Regional Sewer District, Jackson and Broward County, and the Michigan Strategic Fund (Flint Water Settlement) transactions.

Mr. Werdlow serves on the boards of the Detroit Zoological Society and the Community Foundation of Southeastern Michigan. Mr. Werdlow is a graduate of Wayne State University with a Bachelors of Science degree in Corporate Finance. FINRA securities registrations held include Series 7, 50, 52, 53, 63.

SWS acknowledges that Team Resumes are to be excluded from the page count

John Carter, CFA
Senior Managing Director

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Ph: (646) 775-4881 | Fax: (646) 576-9680
jcarter@siebertwilliams.com

Mr. Carter has been involved in the municipal finance field for over 35 years and has been with SWS for over 17 years. Mr. Carter has worked on numerous transactions for Michigan clients over the years including Great Lakes Water Authority and its predecessor, the Detroit Water and Sewerage Department, and the City of Detroit. Mr. Carter has also served as SWS' primary transaction banker for clients such as: the City of New York, the New York City Transitional Finance Authority, the New York City Municipal Water Finance Authority, the New York State Environmental Facilities Corporation, the Dormitory Authority of the State of New York, the Metropolitan Transportation Authority, the New York State Housing Finance Agency, the Battery Park City Authority, the New York City Housing Development Corporation, and the New York State Thruway Authority.

Mr. Carter started his career at E. F. Hutton in the tax-exempt housing finance group in 1982. He moved to Paine Webber in 1987 where he helped to develop taxable mortgage and CMO products for state agency clients. In 1989, Mr. Carter joined MBIA Insurance Corporation where he was charged with developing financial guarantee business in the taxable mortgage and asset backed finance area. Mr. Carter joined M. R. Beal & Co. in 1990 where he served as Executive Vice President and Co-Head of Investment Banking. He joined Siebert Williams Shank in February of 2005.

Laura McGraw
Senior Vice President

100 Wall Street, 18th Floor New York, NY 10005
Ph: (212) 373-4290 | Fax: (646) 576-9680
lmcgraw@siebertwilliams.com

Ms. McGraw joined SWS in July of 2020 and works primarily with municipal issuers located within the Midwest. Ms. McGraw has performed extensive quantitative analyses such as bond restructurings, refinancings, asset monetizations and credit research for issuers across the country. Her experience includes recent senior managed transactions for the Michigan State Building Authority (\$206MM, June 2021), University of Michigan (\$55MM, March 2022) and City of Phoenix Water System (\$469MM, May 2021), and co-senior managed transactions for the Michigan Strategic Fund (\$603MM Flint Water Settlement, June 2021), University of Michigan (\$413MM, April 2022), City of Detroit (\$255MM, Feb. 2021 & Oct. 2020), and Wayne County (\$245MM, October 2020)).

Ms. McGraw additional experience includes serving as senior manager on nine new money and refunding transactions between 2008 to 2017 for the Idaho Housing and Finance Association totaling over \$876.3 million, serving as senior manager on \$556.62 million Special Obligation Revenue Bonds, Series 2017 A&B for the Alabama Federal Aid Highway Finance Authority and serving as senior manager on \$1.5 billion Tobacco Settlement Revenue Bonds for the Railsplitter Tobacco Settlement Authority (State of Illinois). She also has extensive credit experience having worked at Build America Mutual.

Phong Pham, CPA
Senior Vice President

250 Monroe Ave NW, Suite 400, Grand Rapids, MI 49503
Ph: (616) 655-1710
ppham@siebertwilliams.com

Phong Pham joined SWS in January 2019 as a Senior Vice President. Mr. Pham is a Certified Public Accountant and previously worked for the State of Michigan holding positions with the Michigan Department of State, Michigan Department of Health and Human Services and Michigan Office of the Auditor General.

In addition to his Michigan government experience, Mr. Pham has over 18 years of public finance experience with RBC Capital Markets and Stone & Youngberg (currently Stifel) serving state agencies, counties, cities and towns, K-12 school districts and charter schools, and special districts. He has been involved in over 300 transactions totaling more than \$15 billion par amount.

Since joining SWS in 2019, Mr. Pham has served several Michigan issuers including the State of Michigan, Michigan State Building Authority, Michigan Strategic Fund, Michigan Department of Transportation, Michigan Finance Authority (School Loan Revolving Fund and Local Government Loan Program), Great Lakes Water Authority, City of Lansing, City of Detroit, Detroit Public Schools,

Wayne County, City of Wayne, Branch County, Lansing Community College, Western Michigan University, Grandville Public Schools, and West Ottawa Public Schools, to name a few. Mr. Pham has also served issuers in Arizona including the cities of Phoenix, Tucson, Mesa, Scottsdale, Flagstaff, and Nogales, to name a few; Greater Arizona Development Authority, Arizona Water Infrastructure Financing Authority, Arizona School Facilities Board, Graham County, and Santa Cruz County. Some of the recent transactions on which Mr. Pham served as the co-lead and/or day-to-day banker include City of Phoenix Civic Improvement Corporation Water System Revenue and Refunding (\$469MM Senior, May 2021), Detroit Public Schools (\$41.15MM Senior, May 2020), Flint Public Schools (\$30.62MM Co-Senior, June 2020), and Lansing Community College (\$38MM Senior, October 2019).

Mr. Pham holds a bachelor's degree in accounting from Grand Valley State University and is licensed Certified Public Accountant (Michigan). He is currently registered with FINRA with Series 7, 50, 52, 53 and 63.

Jamiyl Flemming
Senior Vice President

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Mr. Flemming has been in the municipal finance industry for 15 years. Mr. Flemming is the firm's ESG/Climate Bond expert, recently being honored as a Rising Star by The Bond Buyer in September 2019. He has served as senior manager to multiple issuers of ESG bonds, such as the State of Connecticut (Green Bonds), W.K. Kellogg Foundation (Social Bonds) and Community Preservation Corporation (Sustainable Bonds) and provided green bond insight to a variety of other municipal issuers. His most recent ESG experience includes working on the firm's senior managed transaction for the LA County Metropolitan Transportation Authority, which included \$419 million of green bonds. He also sits on SIFMA's Sustainable Finance Task Force. He has experience with a variety of financing types including green bonds, water and wastewater, general obligations, pooled financings, state revolving funds, tobacco, education, tax increment financings and transportation.

Mr. Flemming has a Bachelor of Arts in Economics from Wesleyan University and holds FINRA Series 7 and 63 securities licenses.

Anthony Piccinich
Vice President

100 Wall Street, 18th Floor New York, NY 10005
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apiccinich@siebertwilliams.com

Mr. Piccinich joined SWS in July 2017 after graduating from Fordham University with a Bachelor of Science in Finance with a minor in Economics. He is solely dedicated to covering the Firm's clients in Michigan and Ohio, including Great Lakes Water Authority, City of Detroit, Wayne County, Detroit-Wayne County Joint Building Authority, University of Michigan, City of Lansing, Flint Public Schools, and Detroit Public Schools, among others. He has also served the City of Columbia (SC), Dormitory Authority of the State of New York (DASNY), New Jersey Education Facilities Authority (NJEFA), City of Philadelphia, and Pennsylvania Turnpike Commission, among many others.

He has served as primary and quantitative support banker on over \$2.5 billion in senior managed par for a variety of credits and bond structures. He has significant experience structuring water and sewer utility bonds, general obligation, and revenue bonds using DBC, Excel, and "What's Best" Linear optimization software.

Mr. Piccinich holds FINRA Series 52, 63, and SIE licenses.

Olivia Nelson
Associate

100 Wall Street, 18th Floor New York, NY 10005
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onelson@siebertwilliams.com

Ms. Nelson joined Siebert Williams Shank's Investment Banking team in August 2019. Her responsibilities include both quantitative and credit analysis, as well as assisting senior bankers on transactions and analyses for SWS' Northeast Banking Group. Ms. Nelson's primary client responsibilities are the New York City Municipal Water Finance Authority, the New York State Environmental Facilities Corporation, the City and State of New York, and the Commonwealth of Massachusetts, among others. Since joining Siebert Williams Shank, Ms. Nelson has worked on senior managed transactions for clients including the New York City Municipal Water Finance Authority, the City of New York, the New York State Thruway Authority, and the Dormitory Authority of the State

of New York, among others. She most recently supported the Northeast Banking Group on SWS' senior managed \$500 million New York City Municipal Water Finance Authority Water and Sewer System Second General Resolution Revenue Bonds, Fiscal 2022 Series CC transaction.

Ms. Nelson graduated from Boston College in 2019 with a Bachelor of Arts in Economics. She holds SIE, Series 52 and Series 63 Licenses.

Sean Conway
Analyst

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sconway@siebertwilliams.com

Mr. Conway joined SWS in August 2021 after graduating from the University of Minnesota with a Bachelor of Science in Finance with a minor in Accounting. He is covering the firm's Midwest clients with a focus on Michigan and Ohio issuers. Mr. Conway provides day-to-day banking support and has been involved in transactions for the Michigan Strategic Fund, Michigan State Building Authority, and University of Michigan, to name a few. He assists in running new money and refunding analyses and creating RFPs/presentations for SWS' municipal issuer clients. He holds FINRA Series 7, 52, 63, and SIE licenses.

Drew Gurley
Managing Director
Underwriter

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agurley@siebertwilliams.com

A 34-year veteran in municipal securities, Mr. Gurley has had extensive experience serving as a senior underwriter for a wide variety of clients. Mr. Gurley began his career at Matthews & Wright in 1985 and worked at UBS Securities LLC for 20 years. Prior to joining SWS in October 2010, Mr. Gurley served as Senior Vice President in municipal underwriting for First Southwest Co.

Mr. Gurley has extensive experience serving as underwriter on municipal securities for a wide variety of clients. Mr. Gurley has served on transactions for many Michigan issuers including Great Lakes Water Authority, Detroit Public Schools, Wayne State University, Wayne County Airport Authority, State of Michigan, Michigan Strategic Fund, Michigan State Building Authority, Michigan Finance Authority, University of Michigan, and Oakland University, among many others.

Some of his other Water and Sewer utility experience includes transactions for Great Lakes Water Authority, City of Wayne (MI), New York City Municipal Water Finance Authority, City of Philadelphia, City of Cleveland, Rhode Island Infrastructure Bank (SRF), District of Columbia Water & Sewer Authority, Broward County (FL), Northeast Ohio Regional Sewer District, Pittsburgh Water & Sewer Authority, among many others.

Mr. Gurley is a graduate of the University of Vermont with a Bachelor of Science degree in Finance. He holds FINRA security licenses Series 7, 53, and 63.

Cindy Ashmore
Managing Director
Underwriter

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Ph: (646) 775-4880
cashmore@siebertwilliams.com

Ms. Ashmore joined SWS from Jefferies where she spent over eight years as a senior vice president/underwriter. In this capacity, she structured and priced \$30 billion in primary market municipal bonds across a variety of sectors as book-running underwriter and has worked with issuers in the Commonwealth of Pennsylvania, and states of Connecticut, New Jersey, New York, California, Ohio, Illinois and Michigan. With 20 years of experience in the municipal sector, Ms. Ashmore has held senior positions with J.P. Morgan as well as Bear Stearns.

2. Project Team - Summarize the roles and pertinent experience of each key individual and indicate the percentage of time planned for them to be dedicated to this project using the following format in Table 2 below:

Part 1 Summary of contractor's current involvement with all projects:					
	Contract No.	Client Name	Involvement Time	Contract Title	Type of Involvement
Involvement time for this project	2200290	Great Lakes Water Authority	100%, as necessary	Series 2022	TBD (Senior, Co-Senior or Co-Manager)
Other Projects	TBD	Tribridge Bridge and Tunnel Authority	Limited	Series 2022C	Senior Manager
	N/A	All Other Projects	Limited	N/A	Senior and/or Co-Manager

Part 2 Explain how the commitments listed under part 1 will impact performance on this project.
SWS is committed to providing GLWA with the full resources of the firm throughout the Authority's 2022 transaction process (i.e., from inception of engagement through closing of the transaction). Other projects in which the firm is involved with will not interfere in any way with the responsibilities of our engagement with the Authority.

Part 3 Explain how the project manager or consultant representatives allocated percentage of time to this contract will be utilized.
SWS has a fully dedicated Michigan Banking and Underwriting team assigned to serve the Authority. The team consists of the below senior level individuals and includes the Firm's President & CEO, two (2) Senior Managing Directors, two (2) Managing Directors, three (3) Senior Vice Presidents, and one (1) Vice President. We have allocated up to 100% of each member's time, as necessary, to ensure the effective and efficient execution of the Authority's 2022 transaction.

Table 1

3. Staff experience - Identify by name and title the individuals the vendor considers to be key to the successful completion of this project using the format in Table 3 below.

No.	Staff Name	Employer Name	Total Years of Related Exp.	Related Projects*	Project Role
1	Suzanne Shank	Siebert Williams Shank & Co. LLC (SWS)	30+	GLWA, Detroit Water & Sewerage, City of Detroit, Detroit Downtown Development Auth. (DDDA), Wayne County, State of Michigan (SOM)	Project Manager and Resource Allocation
2	Sean Werdlow	SWS	30+	Detroit Water & Sewerage, City of Detroit, DDDA, Wayne County, SOM	Co-Lead Banker
3	John Carter	SWS	30+	GLWA, Detroit Water & Sewerage, NYC Water	Co-Lead Banker
4	Laura McGraw	SWS	15+	GLWA, City of Phoenix (Water), City of Detroit, Wayne County, SOM	Credit Specialist / Day-to-Day Banker
5	Phong Pham	SWS	18+	GLWA, City of Phoenix (Water), City of Detroit, Wayne County, SOM	Regional / Day-to-Day Banker
6	Jamiyl Flemming	SWS	15+	LA County MTA, Fairfax Cty. EDC, NY Water	ESG Specialist
7	Anthony Piccinich	SWS	5+	GLWA, Wayne County, Detroit, SOM	Support Banker
8	Olivia Nelson	SWS	3+	NYC Water, Mass. Clean Water Trust	Support Banker
9	Sean Conway	SWS	.75	SOM, University of Michigan	Support Banker
10	Drew Gurly	SWS	30+	GLWA, SOM, NYC Water, D.C. Water & Sewer Authority	Taxable Underwriter/ Co-Head of Sales
11	Cindy Ashmore	SWS	20+	Pittsburgh W&S Authority, NYC Water, D.C. Water & Sewer Authority	Tax-Exempt Underwriter

Table 2

* State of Michigan (SOM) includes the State, Michigan Finance Authority (LGLP and SRF), and Michigan Strategic Fund (Flint Water)

Appendix B: Indicative Rating Scorecards

Moody's Scorecard –

Moody's Utility Scorecard											
Description	Weight	Aaa	Aa	A	Baa	WATER			SEWER		
		0.5-1.5	1.5-2.5	2.5-3.5	3.5-4.5	Metric	Score	Weighted Score	Metric	Score	Weighted Score
Asset Condition (Remaining Useful Life)	10%	> 75 years	75 years ≥ n > 25 years	25 years ≥ n > 12 years	12 years ≥ n > 9 years	17 Yrs	3.0	0.300	19 Yrs	3.0	0.300
Service Area Wealth (Median Family Income)	12.5%	> 150% of US median	150% to 90% of US median	90% to 75% of US median	75% to 50% of US median	96.8%	2.0	0.250	96.8%	2.0	0.250
System Size (O&M) (\$000)	7.5%	O&M > \$65M	\$65M ≥ O&M > \$30M	\$30M ≥ O&M > \$10M	\$10M ≥ O&M > \$3M	\$164.995	0.5	0.038	\$255.908	0.5	0.038
Debt Service Coverage (Sr. & Sub.)	15%	> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.4x	3.0	0.450	1.3x	2.50	0.375
Days Cash on Hand	15%	> 250 days	250 days ≥ n > 150 days	150 days ≥ n > 35 days	35 days ≥ n > 15 days	1043 DCOH	0.5	0.075	664 DCOH	0.5	0.075
Debt to Operating Revenues	10%	< 2.00X	2.00x < n ≤ 4.00x	4.00x < n ≤ 7.00x	7.00x < n ≤ 8.00x	5.5x	3.0	0.300	5.2x	3.0	0.300
Rate Management	10%	Excellent rate-setting record; no material political, practical, or regulatory limits on rate increases	Strong rate-setting record; little political, practical, or regulatory limits on rate increases	Average rate-setting record; some political, practical, or regulatory limits on rate increases	Adequate rate-setting record; political, practical, or regulatory impediments place material limits on rate increases	Track record of ability to raise rates	3.0	0.300	Track record of ability to raise rates	3.0	0.300
Regulatory Compliance and Capital Planning	10%	Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single-year Capital Improvement Plan	Fully Compliant	3.0	0.300	Fully Compliant	3.0	0.300
Rate Covenant	5%	> 1.30x	1.30x ≥ n > 1.20x	1.20x ≥ n > 1.10x	1.10x ≥ n > 1.00x	1.20x	3.0	0.150	1.20x	3.0	0.150
Debt Service Reserve Requirement	5%	DSRF funded at MADS	DSRF funded at lesser of standard 3-prong test	DSRF funded at less than 3-prong test OR springing DSRF	NO explicit DSRF; OR funded with speculative grade surety	Lesser of 3-Pronged Test	2.0	0.100	Lesser of 3-Pronged Test	2.0	0.100
Total Score:								2.263	Total Score:		2.188
Suggested Rating								Aa3	Suggested Rating		Aa2

Standard & Poor's Scorecard –

Enterprise Risk Profile	Financial Risk Profile					
	1 Extremely Strong	2 Very Strong	3 Strong	4 Adequate	5 Vulnerable	6 Highly Vulnerable
1 Extremely Strong	aaa	aa+	aa-	a	bbb+/bbb	bb+/bb
2 Very Strong	aa+	aa/aa-	a+	a-	bbb/bbb-	bb/bb-
3 Strong	aa-	a+	a	bbb+/bbb	bbb-/bb+	bb-
4 Adequate	a	a/a-	a-/bbb+	bbb/bbb-	bb	b+
5 Vulnerable	bbb+	bbb/bbb-	bbb-/bb+	bb	bb-	b
6 Highly Vulnerable	bbb-	bb	bb-	b+	b	b-

WATER				
	Weighted Score	Input	Great Lakes	Score
Economic Fundamentals	45%	98%	3	1.35
Industry Risk	20%	1	1	0.20
Market Position	25%	Between 20-30% live below poverty line	3	0.75
Operational Management Assessment	10%	2	2	0.20
Enterprise Risk Profile Score:				2.50
	Weighted Score	Input	Great Lakes	Score
Sr. and Sub. Coverage	40%	1.40x	2	0.80
Liquidity and Reserves	40%	1,043 Days	1	0.40
Debt and Liabilities	10%	> 80%	6	0.60
Financial Management	10%	Very Strong	2	0.20
Financial Risk Profile Score:				2.00

SEWER				
	Weighted Score	Input	Great Lakes	Score
Economic Fundamentals	45%	98%	3	1.35
Industry Risk	20%	1	1	0.20
Market Position	25%	Between 20-30% live below poverty line	3	0.75
Operational Management Assessment	10%	2	2	0.20
Enterprise Risk Profile Score:				2.50
	Weighted Score	Input	Great Lakes	Score
Sr. and Sub. Coverage	40%	1.72x	3	1.20
Liquidity and Reserves	40%	664 Days	1	0.40
Debt and Liabilities	10%	> 80%	6	0.60
Financial Management	10%	Very Strong	2	0.20
Financial Risk Profile Score:				2.40

Fitch Scorecard –

Revenue Defensibility	AA	A	BBB	BB	
Revenue Source Characteristics	Very Strong. Nearly all revenue is derived from services or business lines exhibiting monopoly characteristics. Reliance on revenue from competitive sources is insignificant.	Strong. A significant portion of revenue is derived from services or business lines exhibiting monopoly characteristics. Reliance on revenue from competitive sources is manageable.	Midrange. The majority of revenue is derived from services or business lines exhibiting monopoly characteristics. Reliance of revenue from competitive sources is meaningful.	Weak. Less than 50% of revenue is derived from services or business lines exhibiting monopoly characteristics. Reliance on revenue from competitive sources is significant.	
Service Area Characteristics	Very strong demographic trends generally characterized by strong customer growth, above-average income levels and low unemployment rates.	Strong demographic trends generally characterized by average customer growth, with average income levels and average unemployment rates.	Midrange demographic trends generally characterized by little or no customer growth and below-average income or above-average unemployment rates.	Weak demographic trends generally characterized by a declining customer base, well below-average income and high unemployment rates.	
Rate Flexibility	Independent legal ability to increase service rates without external approval.	Legal ability to increase service rates is subject to approval of external authorities. History and expectation of operating and capital costs being recovered on a timing basis are strong.	Legal ability to increase service rates is subject to approval of external authorities. History and expectation that operating and capital costs may not be recovered on a full or timely basis.	Legal ability to increase service rates is subject to approval of external authorities. History and expectation that operating and capital cost recovery will be neither full nor timely.	
	Utility costs are affordable for the vast majority of the population.	Utility costs are affordable for a significant majority of the population but are high for a meaningful portion of the population.	Utility costs are affordable for the majority of the population but are high for a significant portion of the population.	Utility costs are high for an exceedingly large segment of the population.	
Asymmetric Rating Driver Considerations	None				
Operating Risk	AA	A	BBB	BB	
Operating Cost Burden	Very low operating cost burden	Low operating cost burden	Midrange operating cost burden	Midrange operating cost burden	High operating cost burden
Capital Planning and Management	Moderate life cycle investment needs supported by adequate capital investment.	Elevated life cycle investment needs but supported by adequate capital investment.	Elevated life cycle investment needs with weak capital investment.	Elevated life cycle investment needs with extremely weak capital investment.	
Financial Profile	AAA	AA	A	BBB	BB
Leverage Profile	Exceptionally Strong	Very Strong	Strong	Midrange	Weak
Liquidity Profile	Great Lake's has a favorable liquidity profile with 920 Days Cash on Hand (Water) and 512 Days Cash on Hand (Sewer) as of FY21				
Asymmetric Additional Risk Considerations	The Authority's outlook has remained Stable because of its sound financial metrics, strong budget management and commitment and ability to raise rates				

Takeaway - We note Fitch does not have formulaic ratings/weights however the agency relies heavily on qualitative metrics for utilities. SWS argues that liquidity, management of capital plan, diverse revenue stream of wholesale customers are strong credit drivers for Fitch.

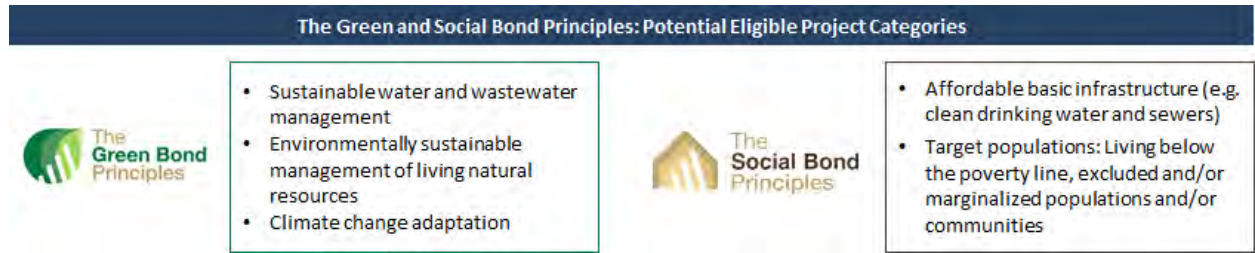
Appendix C: Holders of Detroit 2006D Bonds

Series 2006D Bondholders		
#	Firm	Par (\$000)
1	Capital Research And Management	54,160
2	Nuveen Asset Management LLC	50,000
3	Goldman Sachs Group Inc	32,915
4	Alliancebernstein LP	22,605
5	Pacific Investment Management Co	15,430
6	Mackay Shields LLC	12,500
7	Ace American Ins Co	10,425
8	Ace Prop & Cas Ins Co	8,735
9	Invesco LTD	7,825
10	Blackrock Advisors Llc	5,685
11	Csaa Insurance Exchange	4,000
12	Sanford C Bernstein & Company In	2,530
13	Russell Investments Group Ltd	2,325
14	Mag Mutual Insurance Company	2,000
15	Six Circles Trust	1,000
16	Allianz Global Inv Of America Lp	1,000
17	Blue Cross Of Id Health Service	500
18	Brinker Capital Inc	160
Total		233,795

Appendix D: ESG Considerations

Alignment with the GBPs and SBPs. The GBPs and SBPs Principles are voluntary issuance guidelines established by the ICMA to promote transparency and integrity in the ESG market. The four core components are: 1) Use of Proceeds, 2) Process for Project Evaluation and Selection, 3) Management of Proceeds, and 4) Reporting. Depending on the specific projects being financed by GLWA, the graphic below presents potential eligible project categories for Green and Social (together, Sustainability) Bonds.

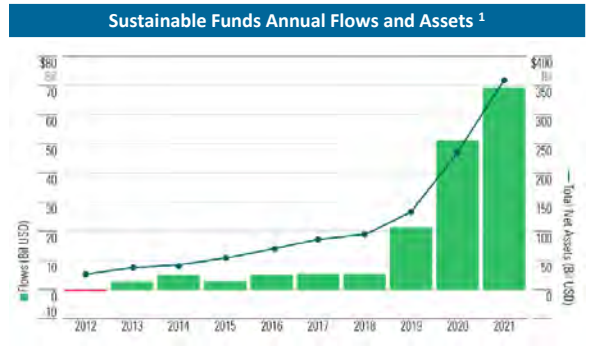
Preliminary Mapping to the UN SDGs. In conjunction with the Principles referenced above, issuers regularly map their projects to the UN SDGs as further justification for the ESG designation. The 17 SDGs are at the heart of the 2030 Agenda for Sustainable Development, adopted by all UN Member States in 2015 in a global partnership. Based on the sample projects detailed in our response to Question E (viii), the following is a high level mapping of potential GLWA projects to the UN SDGs.



Third-Party Verification vs. Self-Designation. Third-party verifiers attempt to provide investors with more transparency













and validate the ESG designation. While self-certification is feasible, a verifier can be valuable to assist GLWA and ensure that the projects meet the GBPs/SBPs. While most investors utilize internal ESG criteria when determining their participation, the designation/certification can provide additional validity. The cost for third-party verification tends to range from \$15,000 to \$25,000. Should GLWA decide to issue ESG bonds, but not commission a third-party verifier, the bonds may be still self-certified and labeled as ESG so long as they follow the GBPs/SBPs.



Capitalize on ESG Fund Flows and Investors. In recent years, an increasing number of investors have been creating municipal/corporate ESG Funds or implementing ESG strategies and policies. For the sixth consecutive calendar year, sustainable funds set an annual record for net flows in 2021. Sustainable funds enjoyed nearly \$70 billion in net flows, a 35% increase over 2020's record. Marketing the Authority's bonds to these buyers has the potential to increase investor demand, which can be leveraged to improve pricing.

Top ESG Muni Investors (\$ in mils) ²

	Vanguard Group	\$ 9,715
	Blackrock	7,172
	TIAA-CREF	6,305
	Capital Group Co. Inc.	3,551
	Franklin Resources	3,222
	Invesco	2,340
	FMR LLC	2,052
	Goldman Sachs Group Inc.	1,670
	Alliance Bernstein	1,634
	New York Life Group	1,414

² Source: Bloomberg. Data as of March 30, 2022

ESG Pricing Benefit Potential. The pricing benefit for ESG bonds is fairly nascent in the municipal primary market. This benefit is more widely seen in the international and corporate markets, which often portends trends to come in the municipal market. In turn, it is not uncommon for municipal ESG bonds to trade tighter in the secondary market as investors anticipate a future pricing differential. That said, there have been a select few municipal ESG financings to realize a pricing benefit. SWS was able to accomplish feat for a client in November 2021 when we served as senior manager on Fairfax County Economic Development Authority's Series 2021A&B Bonds, of which Series 2021A was labeled as tax-exempt Green Bonds. The Green Bonds maturing between 2037 and 2041 priced up to 3 bps tighter than the overlapping vanilla maturities of Series 2021B, with the Green series being up to 8.9x oversubscribed and the vanilla series being up to 4.5x oversubscribed.

Appendix E: Proposal Presentation



PRESENTATION TO:

GREAT LAKES WATER AUTHORITY

PRESENTATION TO SERVE AS SENIOR MANAGING UNDERWRITER



HIGHLY EXPERIENCED FINANCE TEAM

INVESTMENT BANKING AND EXECUTION



Suzanne Shank
President and CEO
Project Manager/Resource Allocation
30+ Years Experience
Detroit



Sean Werdlow
Senior Managing Director/Head of Midwest Region
Co-Lead Banker
30+ Years Experience
Detroit



John Carter
Senior Managing Director
Co-Lead Banker
30+ Years Experience
New York



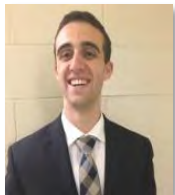
Laura McGraw
Senior Vice President
Credit Specialist / Day-to-Day Banker
15+ Years Experience
New York



Phong Pham
Senior Vice President
Regional / Day-to-Day Banker
18+ Years Experience
Grand Rapids



Jamiyl Flemming
Senior Vice President
ESG Specialist
15+ Years Experience
New York



Anthony Piccinich
Vice President
Support Banker
5+ Years Experience
New York



Olivia Nelson
Associate
Support Banker
3+ Years Experience
New York



Sean Conway
Analyst
Support Banker
0.75+ Years Experience
New York

MUNICIPAL SALES, TRADING AND RESEARCH



Drew Gurley
Managing Director
Taxable Underwriter / Co-Head Sales
30+ Years Experience
New York



Cindy Ashmore
Managing Director
Tax-Exempt Underwriter
20+ Years Experience
New York



SWS - MUNICIPAL FINANCE LEADERSHIP

LEADER IN MUNICIPAL FINANCE

- Underwriter on over \$1.7 trillion in municipal bond transactions; Bookrunning manager for transactions from \$3 million to \$1.75 billion in par amount
- Ranked #3 senior manager based on largest average deal size from 2019 to 2021 and among the top-10 senior managers by par in several industry segments
- Leader in ESG

STRONG LOCAL PRESENCE

- Certified Detroit Based Business
- Served as underwriter on 286 Michigan transactions totaling over \$58.7 billion; 78 transactions as senior manager totaling nearly \$13 billion
- Deep community engagement
 - Kresge Foundation, Skillman Foundation, Community Foundation of SE Michigan, Detroit Zoo, Invest Detroit, Detroit Children’s Fund, Detroit Regional Chamber, Charles Wright Museum



Select Michigan Senior Managed Transactions

\$56 MILLION / \$413 MILLION



UNIVERSITY OF MICHIGAN
Senior / Joint-Senior
Priced Mar. 10, 2022 / Apr. 5, 2022

\$83 MILLION



MICHIGAN STRATEGIC FUND
Senior Manager
Priced Mar. 2, 2022

\$206 MILLION



MICHIGAN STATE BUILDING AUTHORITY
Senior Manager
Priced Jun. 29, 2021


\$151 MILLION



WAYNE COUNTY AIRPORT AUTHORITY
Senior Manager
Priced Jun. 9, 2021

Select Large Senior Managed Transactions

\$1 BILLION*



METROPOLITAN TRANSPORTATION AUTH
Senior Manager
Expected May 2022

\$638 MILLION




NY LIBERTY DEV CORP FOR PORT AUTH OF NY & NJ
Senior Manager
Priced Dec. 14, 2021

\$932 MILLION



NYC TRANSITIONAL FINANCE AUTHORITY
Senior Manager
Priced Aug. 4, 2021

\$505 MILLION



DISTRICT OF COLUMBIA WATER AND SEWER
Senior Manager
Priced Oct. 8, 2019

Recent Industry Accolades for Siebert Williams Shank

IFR AWARDS 2021 Awarded International Financing Review’s inaugural U.S. Diversity and Inclusion House of the Year Award for 2021

THE BOND BUYER Deal of the Year Awards

2021 – ESG/Green Bond Deal of the Year
City of Newark, NJ Board of Education

2020 – Southwest Deal of the Year
Dallas/Fort Worth Airport

2019 – ESG/Green Bond Deal of the Year
Los Angeles County MTA



Source: Combined firm internal/external information
*Preliminary, subject to change

WATER & SEWER – TOP RANKED SENIOR MANAGER

2020-2022YTD National Water Neg. Senior Manager Ranking

(Full to Bookrunner – Full if Joint)	Par (\$MM)	Ranking
BofA Securities Inc	8,243	1
Citi	7,569	2
J.P. Morgan	7,445	3
Morgan Stanley	7,121	4
Barclays	5,731	5
Siebert Williams Shank	4,898	6
Raymond James	4,470	7
Jefferies	3,980	8
Wells Fargo	3,802	9
Stifel	3,348	10
Industry Total	\$56,605	

- Significant experience structuring, marketing and pricing Water and Sewer bonds for large prolific issuers
- Ranked #2 as Senior Manager of negotiated Water and Sewer revenue deals in 2020; #6 for Senior Manager for 2020-2022YTD; #4 for combined Senior and Co-Manager for 2020-2022YTD
- Many of our senior managed Water and Sewer transactions are for repeat clients

Demonstrated Pricing Leadership

- As Senior Manager on the City of Phoenix \$469 million Water System Revenue and Refunding transaction in 2021, SWS achieved the tightest 10-year tax-exempt and taxable spreads of any of the City's issuances since 2011
- As Senior Manager to the New York Municipal Water Finance Authority's \$500 million transaction, SWS tightened spreads by up to 8bps on day of pricing in February 2022 during volatile market conditions

Recent Senior Managed Water and Sewer Transactions

 <p>Los Angeles Dept of Water and Power Senior Manager \$325 million* June 2, 2022</p>	 <p>NYC Municipal Water Finance Authority Senior Manager \$500 million February 3, 2022</p>	 <p>Broward Co, FL Water & Sewer Senior Manager \$155 million February 2, 2022</p>	 <p>Kansas City, MO Water and Sewer Senior Manager \$171 million October 2021</p>	 <p>Southern California Metro Water District Senior Manager \$98 million June 23, 2021</p>	 <p>City of Phoenix Civic Improvement Corp Senior Manager \$469 million May 18, 2021</p>	 <p>Los Angeles Dept of Water & Power Senior Manager \$243 million December 8, 2020</p>	 <p>Santa Clara Valley Water District Senior Manager \$216 million September 30, 2020</p>
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FINANCING CONSIDERATIONS AND LIEN STRATEGY FOR WATER AND SEWER CREDITS

Key Financing Issues:

Lien Strategy	Future Capital Plans	Debt Service Reserve Funds	Refunding Savings	Market Conditions
<ul style="list-style-type: none"> Utilization of Senior Lien vs. Second Lien 	<ul style="list-style-type: none"> Future Capital Plan Considerations 	<ul style="list-style-type: none"> Maximize DSRF Cash Release Eliminate new reserve deposits Consider expiring surety policies 	<ul style="list-style-type: none"> Refunding candidate selection criteria and justification 	<ul style="list-style-type: none"> Current market conditions and projected investor interest

New Money Lien Considerations

- Develop most efficient overall cost of borrowing
- Preserve maximum lien capacity for future borrowing
- Target 50%/50% senior/second lien allocation to achieve balance
- Modify lien allocation to achieve optimal DSRF cash release amounts

DSRF Considerations

- Three-pronged DSRF requirement on both systems
- Average annual debt service prong is determining factor
- 60%/40% lien split on Water new money results in incremental DSRF cash release of \$1.6 million (versus 50%/50%)
- 40%/60% lien split on Sewer results in incremental DSRF cash release of \$1.3 million (versus 50%/50%)
- Total incremental DSRF release under both programs from modest lien allocation modification: \$2.9 million

REFUNDING CRITERIA AND PRESENT VALUE SAVINGS

Recommended Refunding Candidate Pool

- Candidates with individual present value savings in excess of 2.5% (per GLWA's Debt Management Policy)

Credit		Total Refunded Par					PV Savings (\$)			PV Savings (%)		
Water – Senior Lien		\$101.77 million					\$2.7 million			2.67%		
Sewer – Senior Lien		\$134.83 million					\$3.6 million			2.69%		

System	Series	Maturity	Coupon	Principal	Call Date	Call Price	Taxable Advance Refunding			Future Current Refunding		Break	
							Savings \$	Savings %	Savings Eff.	Savings \$	Savings %	Even(bps)	
Water	2014D_D4	7/1/2032	5.00%	18,950,000	7/1/2024	100	548,752	2.90%	50.00%	2,977,608	15.71%	172	
Water	2014D_D4	7/1/2031	5.00%	28,515,000	7/1/2024	100	745,157	2.61%	48.27%	4,097,019	14.37%	178	
Water	2014D_D4	7/1/2030	5.00%	54,305,000	7/1/2024	100	1,402,430	2.58%	49.73%	7,069,320	13.02%	181	
Water Total				101,770,000									
Sewer	2014E_C6	7/1/2032	5.00%	9,100,000	7/1/2024	100	263,517	2.90%	50.00%	1,429,881	15.71%	172	
Sewer	2014C_C3	7/1/2032	5.00%	50,515,000	7/1/2024	100	1,462,807	2.90%	50.00%	7,937,408	15.71%	172	
Sewer	2014C_C3	7/1/2031	5.00%	31,945,000	7/1/2024	100	834,790	2.61%	48.27%	4,589,839	14.37%	178	
Sewer	2014C_C3	7/1/2030	5.00%	25,285,000	7/1/2024	100	652,987	2.58%	49.73%	3,291,552	13.02%	181	
Sewer	2012A*	7/1/2023	5.00%	17,985,000	7/1/2022	100	N/A	N/A	N/A	463,109	2.57%	N/A	
Sewer Total				134,830,000									

* The 2023 maturity of the Sewer Series 2012A bonds is a tax-exempt current refunding candidate and savings reflect such

Interest Rate Sensitivity (+/- 50bps and 100bps)

Movement (bps)	Water System Taxable Advance Refunding					Sewer System Combined Refunding				
	-100 bps	-50 bps	0 bps	50 bps	100 bps	-100 bps	-50 bps	0 bps	50 bps	100 bps
Refunded Par	101,770,000	101,770,000	101,770,000	101,770,000	101,770,000	134,830,000	134,830,000	134,830,000	134,830,000	134,830,000
All-In TIC	2.97%	3.47%	3.97%	4.47%	4.97%	2.99%	3.49%	3.99%	4.49%	4.99%
Net PV Savings	10,774,133	6,662,630	2,721,717	-1,056,054	-4,678,263	13,612,684	8,507,636	3,623,945	-1,048,801	-5,520,989
% Savings	10.59%	6.55%	2.67%	-1.04%	-4.60%	10.10%	6.31%	2.69%	-0.78%	-4.09%

- Breakevens are high due to shorter candidate maturity range
- However, interest rate sensitivity is high also – creates incentive to proceed with refunding
- Very low initial option cost of candidates results in high ROI of refunding despite low savings levels
- Total recommended advance refunding of only \$225 million par of a total universe of \$3.3 billion in callable bonds
- Strategy consideration would be to refund Water for coverage benefits but consider foregoing Sewer refunding

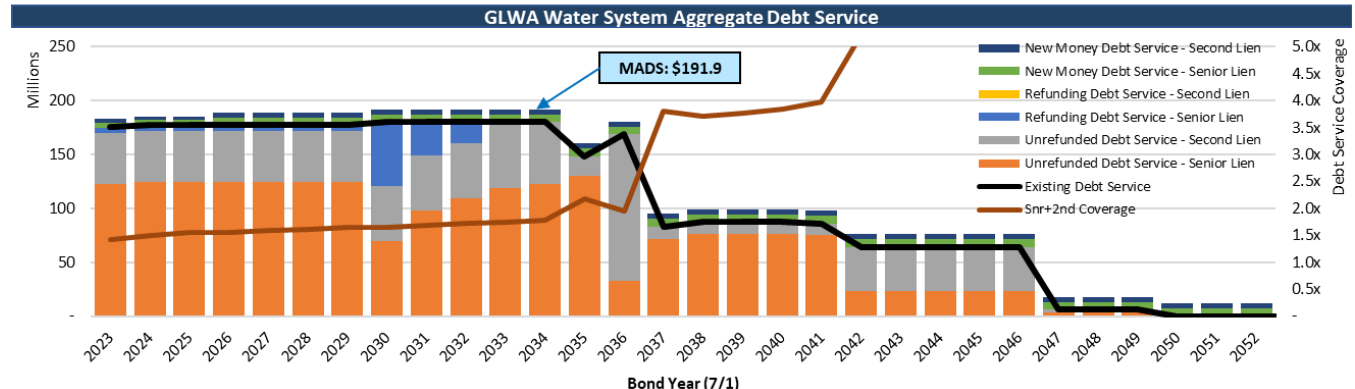
Note: Preliminary, Subject to Change.
Rates as of April 6, 2022

WATER SYSTEM: SUMMARY OF FINANCING RESULTS

- Senior and Second Lien new money issuances structured with level debt service and a 30-year final maturity
 - Wrapped and deferred principal structures can also be used to enhance coverage if desired
- No new money principal payments from 2023 through 2025 to alleviate upfront pressure on debt service coverage
- Senior/Second Lien new money split of approximately 60%/40% to maximize DSRF release
- Refundings were structured for uniform savings, although these savings could be accelerated into 2023 and 2024 in order to maximize debt service coverage in those years to 1.45x and 1.50x respectively

Sources	Senior Lien			Second Lien		Aggregate		
	2022A New Money	2022C Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Par Amount	104,920,000	105,305,000	210,225,000	68,530,000	68,530,000	173,450,000	105,305,000	278,755,000
Premium/OID	15,503,246	-	15,503,246	9,701,560	9,701,560	25,204,806	-	25,204,806
DSF Release	-	424,042	424,042	-	-	-	424,042	424,042
DSRF Release	-	1,488,052	1,488,052	2,046,156	2,046,156	2,046,156	1,488,052	3,534,208
Total	120,423,246	107,217,094	227,640,340	80,277,717	80,277,717	200,700,963	107,217,094	307,918,056

Uses	Senior Lien			Second Lien		Aggregate		
	2022A New Money	2022C Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Deposit to Escrow Fund	-	106,792,642	106,792,642	-	-	-	106,792,642	106,792,642
Deposit For New Money	120,000,000	-	120,000,000	80,000,000	80,000,000	200,000,000	-	200,000,000
DSRF Deposit	-	-	-	-	-	-	-	-
UWD	209,840	210,610	420,450	137,060	137,060	346,900	210,610	557,510
COI	209,840	210,610	420,450	137,060	137,060	346,900	210,610	557,510
Contingency	3,566	3,232	6,798	3,597	3,597	7,163	3,232	10,394
Total	120,423,246	107,217,094	227,640,340	80,277,717	80,277,717	200,700,963	107,217,094	307,918,056



Financing Scenario	Estimated Debt Service Coverage	
	Senior	Senior + Second
Recommended Case	1.95x	1.41x

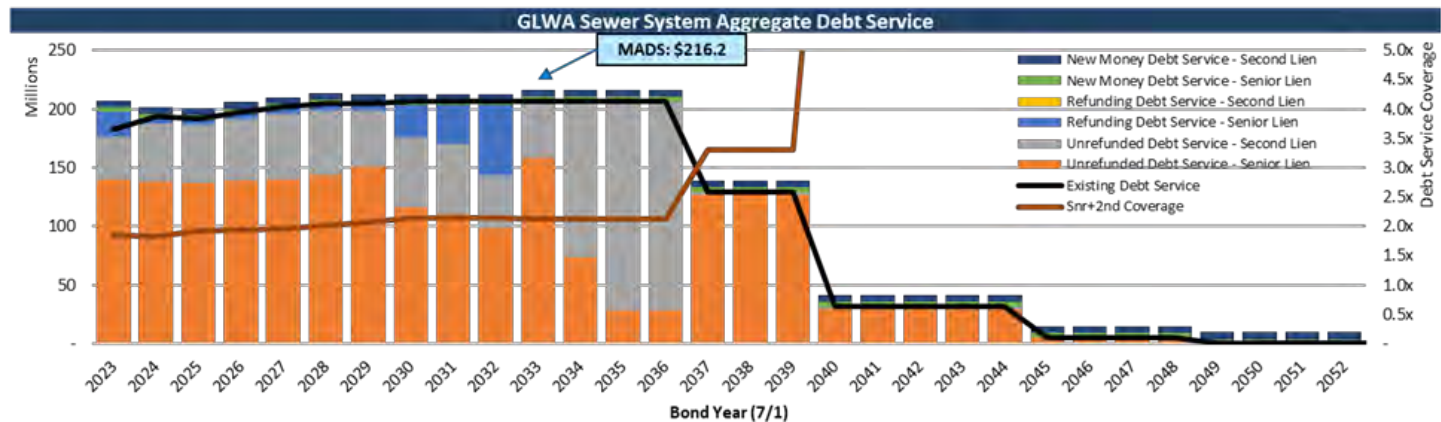
Note: Preliminary, Subject to Change.
Rates as of April 6, 2022. Assumes \$4/bond Cost of Issuance.

SEWER SYSTEM: SUMMARY OF FINANCING RESULTS

- Senior and Second Lien new money issuances structured with level debt service and a 30-year final maturity
- Senior/Second new money Lien split of approximately 40%/60%
- Refundings structured for uniform savings
- \$14.193 million in DSRF cash released from Senior Lien and \$6.043 million of cash released from the Second Lien

Sources	Senior Lien				Second Lien		Aggregate		
	2022A New Money	2022C Refunding	2022E Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Par Amount	61,455,000	110,270,000	15,705,000	187,430,000	87,330,000	87,330,000	148,785,000	125,975,000	274,760,000
Premium/OID	8,794,395	-	450,105	9,244,500	11,977,726	11,977,726	20,772,121	450,105	21,222,226
DSF Release	-	486,854	-	486,854	-	-	-	486,854	486,854
DSRF Release*	-	12,300,380	1,893,297	14,193,677	6,043,348	6,043,348	6,043,348	14,193,677	20,237,025
Total	70,249,395	123,057,234	18,048,403	211,355,032	105,351,074	105,351,074	175,600,469	141,105,637	316,706,106

Uses	Senior Lien				Second Lien		Aggregate		
	2022A New Money	2022C Refunding	2022E Refunding	Aggregate	2022B New Money	Aggregate	New Money	Refunding	Aggregate
Deposit to Escrow Fund	-	122,611,636	17,985,002	140,596,638	-	-	-	140,596,638	140,596,638
Deposit For New Money	70,000,000	-	-	70,000,000	105,000,000	105,000,000	175,000,000	-	175,000,000
DSRF Deposit	-	-	-	-	-	-	-	-	-
UWD	122,910	220,540	31,410	374,860	174,660	174,660	297,570	251,950	549,520
COI	122,910	220,540	31,410	374,860	174,660	174,660	297,570	251,950	549,520
Contingency	3,575	4,518	581	8,674	1,754	1,754	5,329	5,099	10,428
Total	70,249,395	123,057,234	18,048,403	211,355,032	105,351,074	105,351,074	175,600,469	141,105,637	316,706,106



Financing Scenario	Estimated Debt Service Coverage	
	Senior	Senior + Second
Recommended Case	2.39x	1.84x

Note: Preliminary, Subject to Change.
Rates as of April 6, 2022. Assumes \$4/bond Cost of Issuance.

REFUNDING ENHANCEMENTS

Tender / Exchange

- ***Tender/Exchange can increase PV savings by up to \$14.3 million***
- 90% of total bondholders identified
- Process is as follows:
 - GLWA issues EMMA voluntary notice
 - SWS conducts dialogue with investors to gauge interest
 - Formal tender/exchange process initiated depending upon investor interest

Cash Optimization

- Requires no participation from investors
- ***Can potentially increase PV savings by up to \$20 million***
- Optimizes use of existing pay-go cash to enhance debt service savings
- Replaces pay-go cash with new money tax-exempt borrowing
- Must be evaluated by bond counsel for tax considerations

2006D Conversion

- SWS recommends that 2006D solution be implemented in conjunction with upcoming new money and refunding transaction
- New replacement variable rate index to be developed by GLWA and offered to existing 2006D bond holders
- 2006D bondholders willing to accept replacement index would receive a replacement variable rate bond with new index
- A fixed rate current refunding would be implemented to retire bonds of any bondholder choosing not to accept the new replacement index

CREDIT STRATEGY FOCUSED ON UPGRADES

	MOODY'S	S&P Global	FitchRatings
Water and Sewer Ratings (Senior/Second Lien)	A1/A2 (Stable)	AA-/A+ (Stable)	A+/A (Stable)
Pursue One-Notch Rating Upgrade?	Scorecard reflects AA- category rating on Sr. Lien	Pursue Upgrade/Positive Outlook	Pursue Upgrade/Positive Outlook
Indicative Scorecard Rating (Senior Lien)	Aa3/A1 (Stable)	AA/AA- (Stable)	AA-/A+ (Stable)

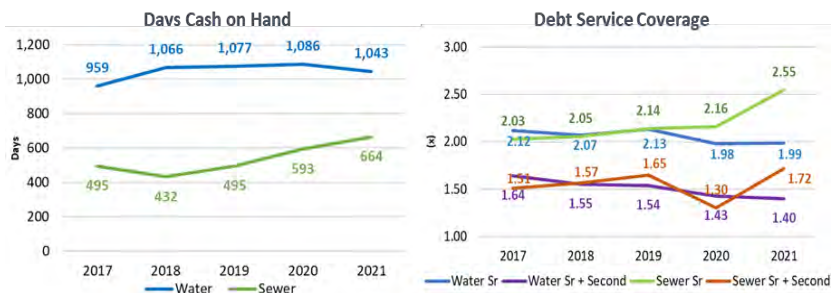
Strengths

- **Seasoned Management:** Strong budgetary oversight
- **Relationship with DWSD:** Oversight/Relationship with Detroit Water and Sewer Department that sets financial targets and internal controls
- **Independent Operating Performance:** 4 years of operating separately from DWSD
- **Healthy Liquidity:** Water 1,043 DCOH | Sewer 664 DCOH
- **Superior Bondholder Protections** – all GLWA and DWSD payments deposited to Bond Trust Account
- **Limited Pension Exposure** - Limited future exposure to pension cost escalation from legacy Detroit obligations
- **Diverse revenue stream / Customer base**
- **Low Delinquencies:** No current or historical collection concerns in the wholesale customer base with exception of Highland Park

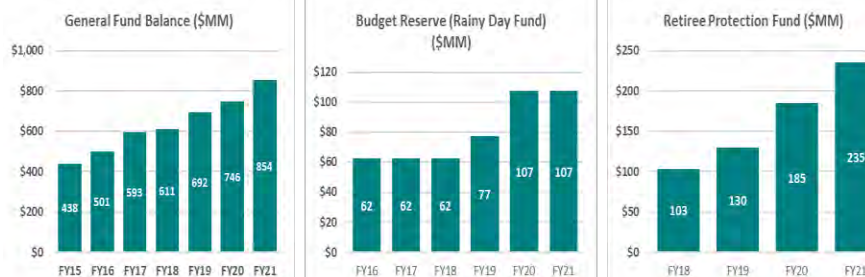
Considerations

- Increasing occurrence of extreme wet weather
Mitigant: Established Wastewater Master Plan extending 40 years that establishes regional critical HGL and control strategies to reduce the risk of basement flooding and sanitary sewer overflows
- Revitalization of Member Partners' Economies:
Mitigants: Positive economy growth and recent upgrades:
 - 1) **Detroit:**
 - ✓ UTGO: Upgraded to **Ba2** by Moody's and **BB** by S&P (Positive)
 - ✓ Income Tax: Upgraded to **BBB-** by S&P (Positive)
 - 2) **Wayne County:**
 - ✓ Upgraded by Moody's to **A3** from **Baa1**
- Significant Long-Term Capital Needs
Mitigant: Strong DSC of 1.2x for Senior and 1.1x for Second Liens

Great Lake's Positive Financial Metrics



Detroit's Growing Economy: Six Years of Positive Financial Trends

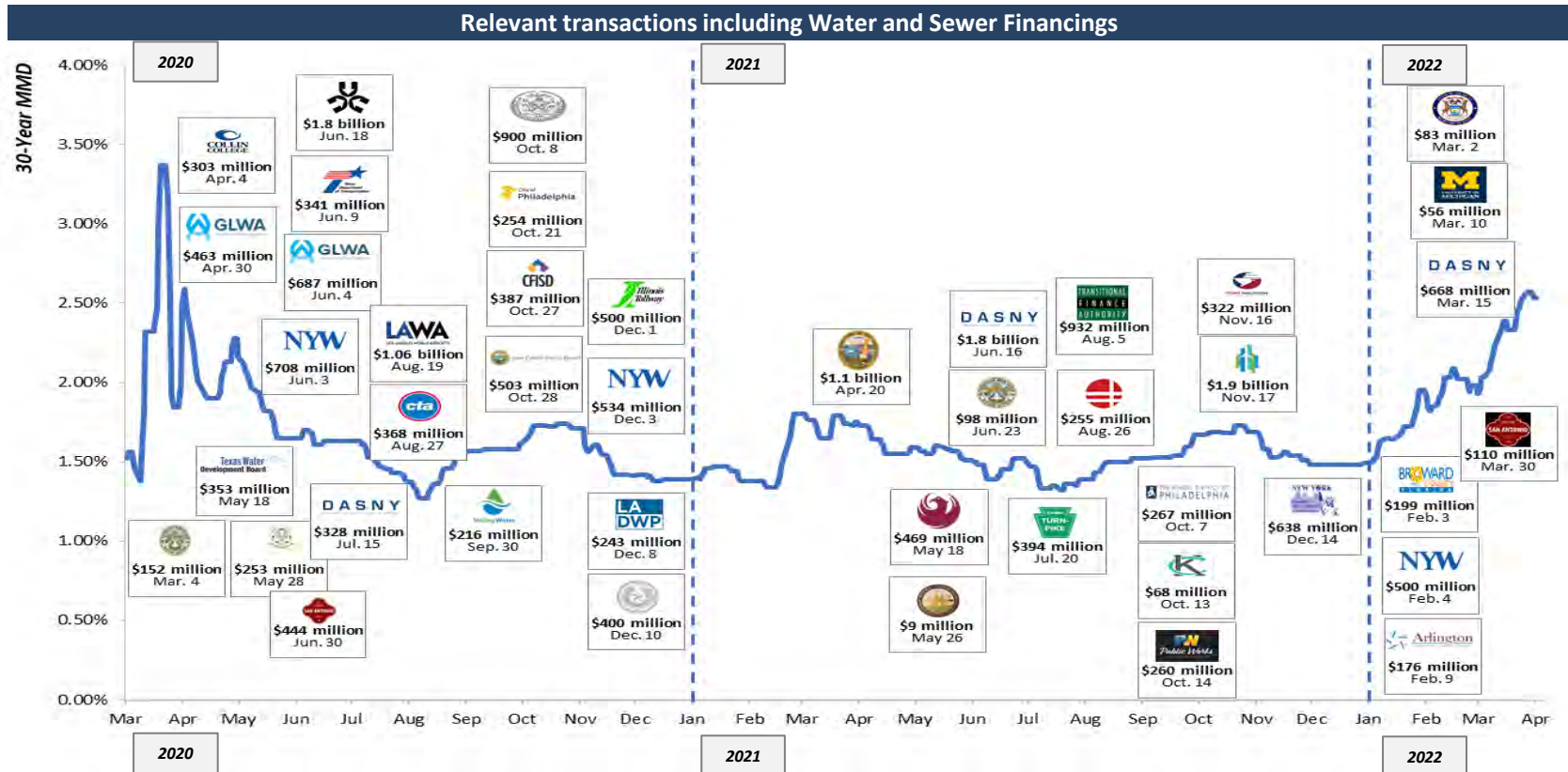


We believe at a minimum the Authority is poised for an Outlook increase to Positive from each of the three agencies



SIGNIFICANT RELEVANT PRICING EXPERIENCE DURING MARKET VOLATILITY

- Since the Firm's founding in 1996, SWS has had the opportunity to serve as Senior Manager in all market environments, including transactions sold amidst the significant instability of the Financial Crisis and market disruption brought on by the Covid-19 pandemic as well as current market volatility
 - Brought \$391mm DFW Airport deal- first major airport deal to price after the start of the pandemic
 - Priced \$674mm MTA deal amid significant volatility due to Brexit vote
 - Brought \$500mm State of Connecticut deal- first major transaction to price after the market shutdown due to Financial Crisis



SIGNIFICANT RELEVANT PRICING EXPERIENCE DURING MARKET VOLATILITY

Source: Thomson Reuters SDC as of April 2022

ASSESSING PROPER TRANSACTION TIMING FOR GLWA'S 2022 FINANCING

- Investor Cashflows:** Cashflows in both Michigan and the Water and Sewer sector are heaviest in July 2022
 Target investors with heavy redemptions of both Water and Sewer and Michigan bonds such as Vanguard, Nuveen, and Blackrock
- FOMC Meetings and Political Events:** The FOMC meetings scheduled for the Spring and Summer of 2022 are on May 4th, June 15th, and July 27th
 Pricing on or around the 2022 G-7 summit (June 26th – June 28th) should be done with caution as decisions made at this meeting could move the market
- Forward Calendar:** Monitor the forward calendar for other large Water and Sewer issuances
- ESG:** Consider Green Bonds designation to enhance buyer base

Water and Sewer Forward Calendar		
Expected Sale Date*	Issuer	Par (\$mm)
4/20/2022	Texas Water Development Board	272
April	San Francisco Public Utilities Commission	100+
May	East Bay Municipal Utility District	275
6/2/2022	Los Angeles Department of Water & Power	325
June	Metropolitan St. Louis Sewer District	125
June	Metropolitan Water District of Southern California	400
June	City of Philadelphia Water and Wastewater Revenue Bonds	250
June	Texas Water Development Board	260
June	Metropolitan Sewer District of St. Louis	115
June/2Q	Chicago Water	Up to 600
June/2Q	Chicago Wastewater	Up to 600
July	Metropolitan Water District of Southern California	600
TBD 2Q	South Carolina Waterworks & Sewer System	100
TBD 2Q/3Q	Contra Costa Water District	45
TBD 2Q/3Q	Boise, Idaho	80
TBD 2Q/3Q*	San Francisco Public Utilities Commission	400
TBD	City of Fort Worth Water and Sewer	80

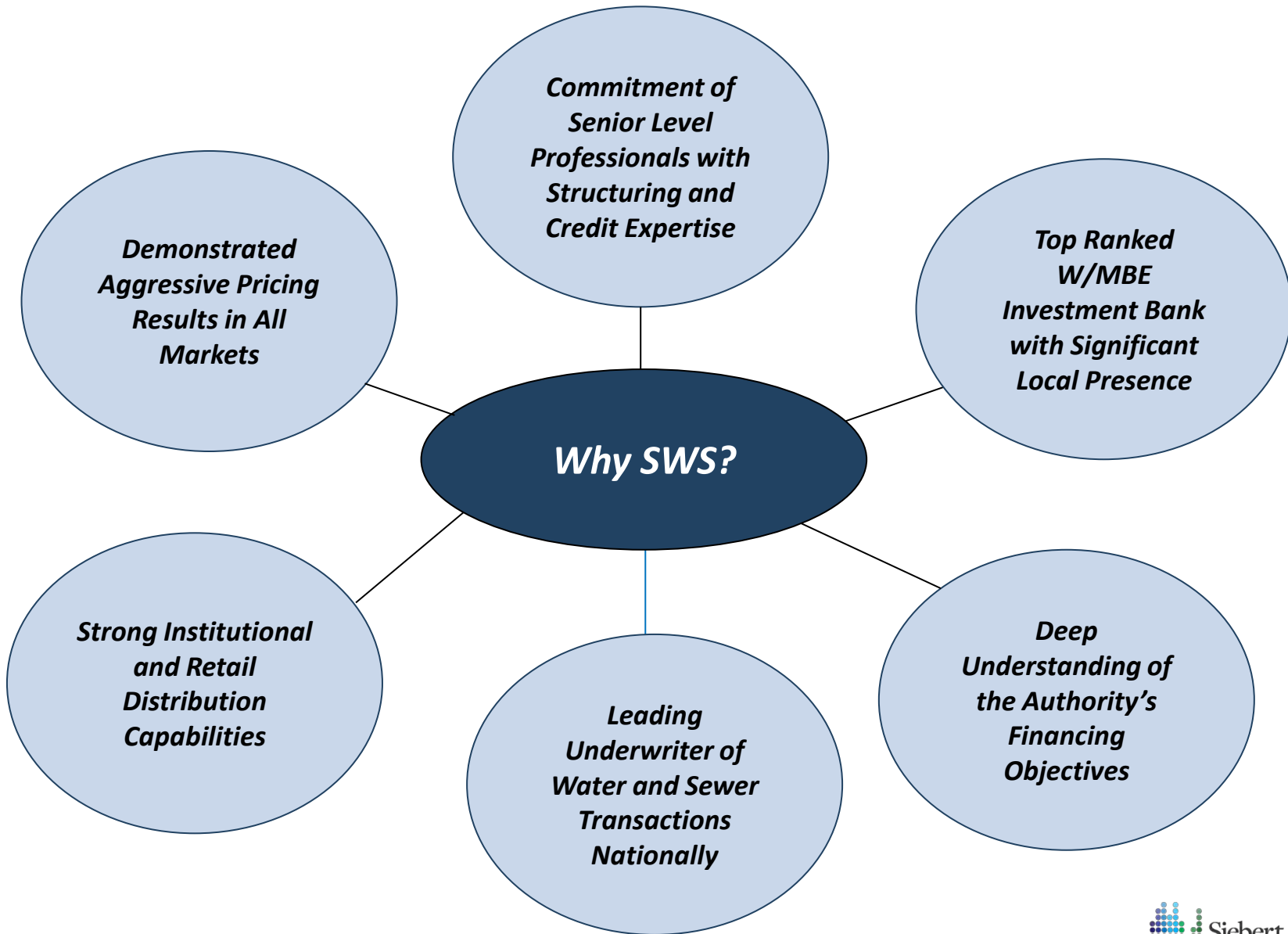
Firms with the Most Cash Flows from Michigan Bonds (\$000's)					
Firm	22-Apr	22-May	22-Jun	22-Jul	22-Aug
Vanguard Group	27,414	88,291	100,144	117,548	7,055
Nuveen Asset Management	14,788	27,987	69,202	43,020	2,340
BlackRock	9,979	19,250	18,851	103,613	4,240
Capital Research & Management	1,337	30,597	41,386	24,425	1,404
Fidelity Management & Research	3,075	27,526	18,762	18,704	21,602
Franklin Advisers,	3,952	15,305	31,449	26,506	1,082
INVESCO	1,150	11,042	25,558	33,220	481
MacKay Shields	702	22,324	8,193	28,741	1,206
Goldman Sachs Asset Management	5,131	16,456	17,366	17,402	1,354
T Rowe Price Associates	5,078	5,273	22,755	21,163	812
AllianceBernstein	3,291	26,274	3,809	20,083	166
State Farm Insurance Companies	529	45,032	1,339	1,990	419
Eaton Vance Management	1,546	3,344	1,016	41,514	188
Dimensional Fund Advisors	227	2,558	27,536	6,173	-
Loews Corporation	555	29,674	323	-	-
All Others	87,895	243,386	125,596	162,297	26,487
Total	166,650	614,319	513,286	666,398	68,835

Firms with the Most Cash Flows Water and Sewer Bonds (\$000's)					
Firm	22-Apr	22-May	22-Jun	22-Jul	22-Aug
Vanguard Group	72,311	97,741	195,945	237,525	77,462
Nuveen Asset Management	35,235	26,525	51,473	237,303	28,170
Franklin Advisers,	14,110	84,813	42,292	146,637	33,489
BlackRock	23,312	38,537	47,024	168,076	10,086
State Farm Insurance Companies	41,549	35,407	40,618	76,279	69,252
OppenheimerFunds	9,025	8,964	31,033	163,985	2,421
Travelers Companies	35,158	12,861	29,168	41,728	44,723
T Rowe Price Associates	7,640	6,275	51,971	57,952	1,865
J.P. Morgan Asset Management	10,285	20,593	35,281	42,931	12,319
Capital Research & Management	16,180	16,690	29,538	42,427	16,212
AllianceBernstein	6,183	14,667	10,249	71,617	14,537
MacKay Shields	6,411	6,341	13,041	74,014	2,551
Dimensional Fund Advisors	15,093	18,931	16,696	16,230	31,732
Deutsche Asset Management	3,205	24,789	38,068	24,800	5,341
Fidelity Management & Research	4,436	11,520	26,136	33,580	8,774
All Others	183,105	357,781	394,266	643,091	204,374
Total	483,237	782,434	1,052,798	2,078,174	563,306

¹Note: All Figures in \$ thousands, Green is 90th percentile or greater, Red is 10th percentile or less

¹Source: eMAXX. Note, not all investors are required to report holdings

¹Assumptions: All bonds that are callable are called at par and pay interest semi-annually



Disclosures About SWS's Role as Underwriter, Not as Municipal Advisor

SWS is providing the information contained in this document for discussion purposes only as underwriter or in anticipation of serving as underwriter on a future transaction, and not as financial advisor or municipal advisor. The primary role of SWS, as underwriter, is to purchase securities with a view to distribution and/or for resale to investors in an arm's-length commercial transaction with an issuer. SWS has financial and other interests that differ from those of the Issuer. An underwriter is required to deal fairly at all times with both issuers and investors. An underwriter has a duty to purchase securities from an issuer at a fair and reasonable price, but must balance that duty with its duty to sell municipal securities to investors at prices that are fair and reasonable. SWS, as underwriter, will review any official statement for the Issuer's securities in accordance with, and as part of, its responsibilities to investors under the federal securities laws, as applied to the facts and circumstances of the transaction.

SWS is not acting as a municipal advisor to the Issuer. Rather, as an underwriter acting for its own interest and unlike a municipal advisor, SWS does not have or owe a fiduciary duty to the Issuer pursuant to Section 15B of the Securities Exchange Act of 1934, as amended (the "Act"), and, therefore, is not required by federal law to act in the best interests of the Issuer without regard to its own financial or other interests. The Issuer should consult with its own financial and/or municipal, legal, accounting, tax and other advisors, as applicable, to the extent it deems appropriate before acting on any information or material herein. If the Issuer would like a municipal advisor in this transaction and does not have one that owes fiduciary duties to the Issuer, then the Issuer is free to engage a municipal advisor to serve in that capacity.

No Recommendations or Advice

SWS is not recommending any action to the Issuer. Unless otherwise expressly stated herein, the information provided consists of general information that is factual in nature and may incorporate certain hypothetical information based on the facts and assumptions described herein. Such information, hypotheticals, facts and assumptions are not intended to be or to imply a recommendation or to be construed as "advice" within the meaning of Section 15B of the Act.

Additional Disclosures and Disclaimer

All information contained in this document was obtained from sources believed to be reliable and in good faith, but no representation or warranty, express or implied, is made as to its accuracy or completeness. All information, hypotheticals, facts and assumptions (including prices, rates, yields and other calculations) are current only as of the date of this report, and are subject to change without notice. Any estimations or hypothetical results based on market conditions or the occurrence of future events are based upon the best judgment of SWS from publicly available information as of the date of this report.

**THERE IS NO GUARANTEE THAT ANY OF THESE
ESTIMATES OR HYPOTHETICALS WILL BE ACHIEVED.**



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

Vendor Certifications Regarding Debarment, Equal Opportunity, Non-Collusion and Agreement to Contract Terms and Conditions

I, the undersigned, am a representative of Siebert Williams Shank & Co., LLC, (“Vendor”), and affirm that I am authorized to make the following certifications on behalf of Vendor, its owners, and principals. Vendor acknowledges that the below certifications are material to this solicitation and any contract or purchase order (collectively, “Contract”) resulting therefrom and will be relied on by the Great Lakes Water Authority (“GLWA”) in awarding the Contract. Vendor acknowledges that any fraud, misrepresentation, or falsification in these certifications is and shall be treated as fraudulent concealment from GLWA of the true facts relating to the submission of Vendor’s offer and subject Vendor to certain penalties, including loss of the Contract or debarment, as further stated herein.

Part I. Debarment Certification

A. Debarment Pursuant to Federal Law.

Vendor certifies, to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in transactions under federal non-procurement programs by any federal department or agency;
2. Have not, within the three-year period preceding Vendor’s offer on this solicitation, had one or more public transactions (federal, state, or local) terminated for cause or default; and
3. Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) and have not, within the three-year period preceding Vendor’s offer on this solicitation, been convicted of or had a civil judgment rendered against it:
 - a. For the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction (federal, state, or local) or a procurement contract under such a public transaction;
 - b. For the violation of federal or state antitrust statutes, including those proscribing price fixing between competitors, the allocation of customers between competitors, or bid rigging; or
 - c. For the commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property.

Vendor understands that a false statement on this Debarment Certification may be grounds for the rejection of Vendor’s offer under this solicitation or the termination of an award thereunder. In addition, under 18 U.S.C. §1001, a false statement may result in a fine or imprisonment for up to five years, or both.



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

B. Debarment Pursuant to GLWA Procurement Policy.

Vendor certifies that:

1. It has read and understands the GLWA Procurement Policy (“Policy”) located at glwater.org/vendors, and in particular, Section 13 – Vendor Suspension/Debarment.
2. No federal, state, or local government entity has found Vendor (as defined in footnote 2 of the Policy) in violation of Section 13.1(a) through (p) in the past three (3) years.

Vendor is unable to certify to all the above statements. Attached is Vendor’s explanation.

Part II. Equal Opportunity Certification

1. Vendor makes this Equal Opportunity Certification (“EOC”) with GLWA, effective upon the execution of a Contract between Vendor and GLWA resulting from this solicitation, obligating Vendor and all sub-contractors on the Contract to not discriminate against any employee or applicant for employment, training, education, or apprenticeship connected directly or indirectly with the performance of the Contract, with respect to their hire, promotion, job assignment, tenure, terms, conditions or privileges of employment because of race, color, religious beliefs, public benefit status, national origin, age, marital status, disability, sex, sexual orientation, or gender identity or expression.
2. Vendor shall ensure that all potential sub-contractors on the Contract are reported to GLWA and that each such sub-contractor has executed its own EOC prior to working on the Contract.
3. Furthermore, Vendor understands that this EOC is valid for the duration of the Contract and that a breach of this EOC shall be deemed a material breach of the Contract.

Part III. Non-Collusion Certification

Vendor certifies that:

1. The prices in and amount of this offer have been arrived at independently and without consultation, communication, or agreement with any other vendor or potential vendor.
2. Neither the prices nor the amount of this offer, and neither the approximate prices nor the approximate amount of this offer, have been disclosed to any other firm or person that is a vendor or potential vendor to this solicitation, and the same shall not be disclosed before bid opening.
3. No attempt has been made or will be made to induce any firm or person to refrain from offering on this solicitation, or to submit a cost higher than this offer, or to submit any intentionally high or noncompetitive offer or other form of complementary offer.
4. The offer of Vendor is made in good faith and fair dealing and not pursuant to any agreement or discussion with, or inducement from, any firm or person.



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

5. Vendor, its affiliates, subsidiaries, principals, officers, directors, partners, members, and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable in any jurisdiction for any act prohibited by state or federal law involving conspiracy or collusion with respect to public contracting, except as follows:

Accordingly, Vendor, by its authorized signature below, acknowledges its agreement with the foregoing certifications.


Siebert Williams Shank & Co., LLC

(Vendor):

Print Name: John Carter

Title: Senior Managing Director

Dated: April 14, 2022

Signature: 



Procurement Form (DOC)

Effective Date:
1/2/2021

Document #:
FSA_PRO_DOC_0014

Revision Date:
11/23/2021

Revision#:
1

Document Title:
Business Inclusion and Diversity Program

Document Owner/Department:
Procurement Team

Please complete the following form and attach all supporting documentation.

A. Prime Vendor: Name and Contact Information (mandatory)

1. Vendor Name(s):

2. Vendor Mailing Address(es):

3. Contact Person(s) and Title(s):

4. Contact Email(s):

5. Contact Phone/Cell:

B. Prime Vendor: Diversity Certifications (if applicable)

Vendor Name	Certifying Organization	Certifying Public Agency (if applicable)	Date of Certification

C. Prime Vendor: Diversity and Inclusion Efforts Summary (mandatory)

Instructions: Provide a summary of diversity and inclusion efforts undertaken or strategies employed to maximize opportunities for small, minority-owned, and disadvantaged subcontractors on the specific GLWA solicitation to which you are responding.



Procurement Form (DOC)

Effective Date:
1/2/2021

Document #:
FSA_PRO_DOC_0014

Revision Date:
11/23/2021

Revision#:
1

Document Title:
Business Inclusion and Diversity Program

Document Owner/Department:
Procurement Team

D. Prime Vendor: Targeted Outreach Efforts Summary (mandatory)

Instructions: Provide a summary of the targeted outreach efforts undertaken or strategies employed to encourage participation by small, minority-owned, and disadvantaged subcontractors on the specific GLWA solicitation to which you are responding.

E. Prime Vendor: Targeted Outreach Communications Log (mandatory)

Subcontractor Name	Certifying Organization	Date of Outreach	Subcontractor Response (bid, no bid, and why)



Procurement Form (DOC)

Effective Date:
1/2/2021

Document #:
FSA_PRO_DOC_0014

Revision Date:
11/23/2021

Revision#:
1

Document Title:
Business Inclusion and Diversity Program

Document Owner/Department:
Procurement Team

F. Prime Vendor: Resources Utilized (*mandatory*)

Instructions: Please note the resources used to identify small, minority-owned, and disadvantaged subcontractors (e.g., Federal or Michigan-based databases, certification programs, websites, listservs, or advertisements).

G. Prime Vendor: Additional Diversity and Inclusion Efforts Summary (*optional*)

Instructions: Please describe or summarize below any additional diversity and inclusion efforts undertaken (as related to the specific GLWA solicitation to which you are responding) that are not addressed in the above fields.

H. Prime Vendor: Internal Diversity and Inclusion Efforts Summary (*optional*)

Instructions: Please describe below any inclusion and diversity efforts, programs, initiatives, professional associations, or awards that your organization has undertaken, belonged to, or won.



Procurement Form (DOC)

Effective Date:
1/2/2021

Document #:
FSA_PRO_DOC_0014

Revision Date:
11/23/2021

Revision#:
1

Document Title:
Business Inclusion and Diversity Program

Document Owner/Department:
Procurement Team

I. Proposed Subcontractor(s) Information (mandatory)

Subcontracted Goods and/or Services	Subcontractor Name	Certifying Organization

J. Supporting Documentation (mandatory)

Instructions: Provide a short description of any supporting or supplemental documentation included with this form.

Document No.	Description
1.	
2.	
3.	
4.	
5.	
6.	

THIS CERTIFIES THAT

Siebert Williams Shank & Co., LLC



* Nationally certified by the: **NEW YORK & NEW JERSEY MINORITY SUPPLIER DEVELOPMENT COUNCIL**

*NAICS Code(s): 523110

* Description of their product/services as defined by the North American Industry Classification System (NAICS)

06/25/2021

Issued Date

NY03409

Certificate Number

07/28/2022

Expiration Date

Jose Turkiewicz

NMSDC Board Chair

Terrence Clark

Terrence Clark, President & CEO

By using your password (NMSDC issued only), authorized users may log into NMSDC Central to view the entire profile: <http://nmsdc.org>

Certify, Develop, Connect, Advocate.

* MBEs certified by an Affiliate of the National Minority Supplier Development Council, Inc.®



COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVENUE, SUITE 1240
DETROIT, MICHIGAN 48226
PHONE 313•224•4950 TTY 313•224•4960
FAX 313•224•3434
WWW.DETROITMI.GOV

July 26, 2021

Siebert Williams Shank & Co., LLC
150 W. Jefferson Street, Suite 1350
Detroit, MI 48226
Attn: Melissa Little

RE: DETROIT BUSINESS CERTIFICATION- APPROVAL
(Approval Date: 07/26/2021-07/26/2022)

Dear Applicant:

Congratulations! This letter shall serve as your notification that this office has completed its evaluation of the Certification Application and supporting documents submitted by your company.

Based upon our review it has been determined that your company meets the eligibility criteria of the Detroit Business Opportunity Program. Therefore, your company's certification status as Detroit Based Business (DBB), Woman-Owned Business Enterprise (WBE) and Minority-Owned Business Enterprise (MBE) is effective for a period of one (1) year.

Please keep this office apprised of any changes that may affect the status of your company's certification, i.e. ownership, management, location, etc. Also this office may request additional information at any time to verify your continued eligibility.

Remember to visit our web page for any updates to the program, resources, events and most current application for next year at detroitmi.gov/crrio. In addition, Detroit Means Business is a new initiative that is here to support Detroit Businesses as they pursue success and continue to scale through COVID-19. Find out more information on Detroit Means Business and get connected to more resources at: <http://detroitmeansbusiness.org>

Stay connected on how we are working daily to ensure equity and inclusion on behalf of Detroiters at <https://www.facebook.com/crriodepartment>

Your continued interest in and support of the Detroit Business Opportunity Program is greatly appreciated.

Sincerely,

Bianca Owens, MBA
Detroit Business Opportunity Program Manager
Civil Rights, Inclusive and Opportunity (CRIO)

FY 2021 – 2022

Detroit Business Certification Program

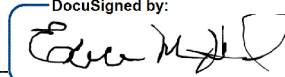
This is to certify the business below has met all requirements set forth by the City of Detroit, Civil Rights, Inclusion & Opportunity Department as

Siebert Williams Shank & Co., LLC

**Detroit Based Business (DBB)
Woman-Owned Business Enterprise (WBE)
Minority-Owned Business Enterprise (MBE)**

Commencing **July 26, 2021** expiring on **July 26, 2022.**

DocuSigned by:



Erica M. Hill, Deputy Director
Civil Rights, Inclusion & Opportunity

**City of Detroit
Michael E. Duggan, Mayor**

WBENC

WOMEN'S BUSINESS ENTERPRISE
NATIONAL COUNCIL

JOIN FORCES. SUCCEED TOGETHER.

hereby grants

National Women's Business Enterprise Certification

to

Siebert Williams Shank & Co., LLC

who has successfully met WBENC's standards as a Women's Business Enterprise (WBE).
This certification affirms the business is woman-owned, operated and controlled and is valid through the date herein.

WBENC National WBE Certification was processed and validated by Women's Business Enterprise Council Metro NY, a WBENC Regional Partner Organization.

Certification Granted: April 29, 2016

Expiration Date: April 29, 2022

WBENC National Certification Number: 2005128798



Sandra Eberhard, President & CEO Women's
Business Enterprise Council Metro NY

WBECMETRONY
WOMEN'S BUSINESS ENTERPRISE CENTER
JOIN FORCES. SUCCEED TOGETHER.

NAICS: 523110
UNSPSC: 84111700, 93151600



Executive Summary

Affirmative Action Plan & Equal Employment Opportunity Policy

As Wall Street's preeminent Black, Hispanic and Woman owned firm, Siebert Williams Shank & Co., LLC (SWS) is fully committed to the concept and practice of diversity and equal employment opportunities. This commitment is demonstrated in our mission, all aspects of employment as well as its charitable and community work.

Pursuant to this commitment, SWS has developed this Affirmative Action Plan and Equal Employment Opportunity Policy with the objective of achieving genuine equal employment opportunity for all qualified individuals, to ensure its practices personnel policies are in complete accord with applicable federal and state equal employment opportunity laws, forbidding any type of unlawful discrimination against its employees or job applicants. It is SWS's policy that employment and employment opportunities should be based on an individual's qualifications and competence to perform the job, without regard to the individual's race, color, religion, sex, age, national origin, handicap, disability, disabled veteran or veteran status, marital status, sexual orientation, genetic information, or any other characteristic protected by applicable law. This policy applies to all aspects of the employment relationship including hiring, termination, promotion, transfer, training, layoff, recall, leave of absence and wage, salary and benefit administration. Further, SWS expects that each employee will respect every other employee. Derogatory comments about someone's background, or unlawful harassment or retaliation of any kind, will not be tolerated.

In addition, SWS's commitment to the concept and practice of diversity and equal employment opportunities is led by the belief that having a diverse workforce is essential to stimulate an environment of ingenuity, innovation, and high-quality inclusivity. In addition, our employees should mirror the cities in which we conduct business. As such, in an effort to sustain an inclusive hiring and promotion process, SWS:

- Evaluates job descriptions to ensure job duties are in line with reasonable work-related requirements for employment.
- Advertises position vacancies with community organizations likely to refer women and minorities.
- Uses a team-based approach when interviewing for all positions.
- Pinpoints other methods of improving its recruitment and retention of women and minorities.

As a result of this effort, in the past four years, SWS has promoted 20 employees – 15 of whom are women and minorities – to the roles of managing director, senior vice president, vice president, and associate. Specifically, within the last twelve months, SWS has hired 21 new employees of which 9 are women and 14 are minorities. Additionally, 11 employees were promoted – 3 women, 7 minorities. These promotions were based on consistent displays of a diligent work ethic, a commitment to being the best teammate, and overall ensuring that SWS consistently provides high levels of outstanding service to our clients.

Executive Summary

Affirmative Action Plan & Equal Employment Opportunity Policy

Of note, the Firm's ownership comprises of 92% minorities and 61% women. The workforce is 57% minorities and 31% women. The management team, including the President & CEO, COO, CAO, Controller, and the heads of the Public Finance, Equity, and Taxable Fixed Income departments, consists of 60% minorities and 30% women. Of SWS's ownership, it is 92.87% minority-owned and 61.24% woman-owned. Also, of senior management, 65% are minorities and 25% are women. Of SWS's 127 employees, 31% are women and 57% are minorities.

Recruitment

SWS is an equal employment opportunity employer: EOE/M/F/V/D; and will be identified in all employment advertisements as such using the above italicized tagline. Recruitment efforts at colleges, universities, high schools and vocational institutions with significant populations of women and minority students are encouraged. Through its many charitable donations, SWS also encourages the support of fraternal, sorority, civic and community-based organizations.

Hiring

In order to eliminate or minimize intentional or unintentional bias against minority applicants during the interview process, candidates will be interviewed by an interview committee of two to three Firm employees. The interview committee will also evaluate each candidate and decide on the most viable applicant. If selected, all offers of employment will be made by either the President & CEO or the Chairman of SWS.

Promotion

As a means of identifying qualified minority employees who are eligible for promotions or transfers to more upwardly mobile positions in the organization, the Firm will conduct a review process. All employees' reviews will be assessed by the President & CEO, COO, CAO and the respective department manager. Further consideration may be determined by the Board of Directors.

Procurement

SWS does not discriminate against minority and women owned businesses in its own procurement of goods, supplies and services. In such instances, minority groups and agencies, e.g. government, educational, civic and/or community study groups, should be consulted for the purpose of identifying potentially qualified minority professional applicants.

Grievances

Any employee may bring matters of unfair treatment or other personal concerns to the attention of the Affirmative Action Officer, DiAnne Calabrisotto.

Program Reporting

Employment statistical records relative to SWS's affirmative action policies are available for inspection during normal working hours to appropriate government representatives. These records are located in the New York office. Government representatives wishing to inspect these records should contact our office at 212-830-4559.

Annual Review

The Affirmative Action Plan is evaluated, and updated if necessary, as part of the review of the Firm's policies and procedures.

Minority/Women Participation

SWS also actively participates in New York State’s annual MWBE conference in order to develop opportunities and relationships to promote maximum MWBE participation. SWS seeks to create value for society through a broad range of community initiatives, volunteerism, and supporting under- utilized organizations. The Firm places a specific focus on collaborating with, advocating for, and engaging minority- and women-owned law firms as underwriters’ counsel, bond counsel, and/or special or co-counsel on transactions in which we are involved.

- ✓ The Firm voluntarily participates in work-study and internship programs to encourage students of diverse economic and cultural backgrounds to pursue an investment banking career;
- ✓ SWS actively maintains a policy to assist local and regional minority law firms to gain valuable municipal bond experience by utilizing them as sole or co-underwriter’s counsel when it is selected as senior manager;
- ✓ As an underwriter, the Firm consistently and successfully places significant minority firms in our financial transactions as co-underwriter, bond counsel, special counsel, and underwriters’ counsel; and
- ✓ SWS makes every effort to utilize Historically Underutilized Businesses for any available work associated with all financings it accepts.

Sexual Harassment

SWS is committed to maintaining a work environment in which people are treated with dignity, decency and respect. This environment should be characterized by mutual trust and the absence of intimidation, oppression and exploitation. Sexual harassment is illegal under local, state and federal civil rights laws. It is against company policy for any employee to subject any other employee to unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature at any time. SWS will not tolerate unlawful discrimination or harassment of any kind. Through enforcement of its Policy Against Discrimination, Harassment and Sexual Harassment, and by education of its employees, SWS will seek to prevent, correct and discipline behavior that violates this policy.

All employees, regardless of their positions, are covered by and are expected to comply with this policy and to take appropriate measures to ensure that prohibited conduct does not occur. Appropriate disciplinary action will be taken against any employee who violates this policy. Based on the seriousness of the offense, disciplinary action may include verbal or written reprimand, suspension, or termination of employment.

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Quantity Required	Numeric	Total Cost
					\$\$ Per Bond	
Success: All values provided	Bid	#0-1	Management Fee	1	\$ 0.00	\$ 0.00
Success: All values provided	Bid	#0-2	Risk Fee \$\$ Per Bond (if applicable)	1	\$ 0.00	\$ 0.00
Success: All values provided	Bid	#0-3	Other Fee \$\$ Per Bond (if applicable)	1	\$ 0.00	\$ 0.00

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Numeric	Text	Numeric	Total Cost
				Quantity anticipated	Expense Description	Unit Price	
Success: All values provided	Bid	#0-1	Expense	1	IPREO - Base Fee	\$ 34,207.23	\$ 34,207.23
Success: All values provided	Bid	#0-2	Expense	1	IPREO - Wire System	\$ 240.00	\$ 240.00
Success: All values provided	Bid	#0-3	Expense	1	IPREO - Dealer EOE	\$ 1,000.00	\$ 1,000.00
Success: All values provided	Bid	#0-4	Expense	1	IPREO - Gameday	\$ 16,605.45	\$ 16,605.45
Success: All values provided	Bid	#0-5	Expense	1	DTC Fees	\$ 1,600.00	\$ 1,600.00
Success: All values provided	Bid	#0-6	Expense	1	CUSIP Fees	\$ 5,543.50	\$ 5,543.50
Success: All values provided	Bid	#0-7	Expense	1	Day Loan	\$ 16,624.35	\$ 16,624.35
Success: All values provided	Bid	#0-8	Expense	1	NetRoadShow	\$ 4,000.00	\$ 4,000.00
Success: All values provided	Bid	#0-9	Expense	1	DAC Fee	\$ 1,000.00	\$ 1,000.00
Success: All values provided	Bid	#0-10	Expense	1	Out of Pocket (Contingency)	\$ 1,000.00	\$ 1,000.00

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-1	Uninsured \$ per Bond	1	Per Bond	\$ 2.50	\$ 2.50
Success: All values provided	Bid	#0-2	Uninsured \$ per Bond	2	Per Bond	\$ 2.50	\$ 5.00
Success: All values provided	Bid	#0-3	Uninsured \$ per Bond	3	Per Bond	\$ 2.50	\$ 7.50
Success: All values provided	Bid	#0-4	Uninsured \$ per Bond	4	Per Bond	\$ 2.50	\$ 10.00
Success: All values provided	Bid	#0-5	Uninsured \$ per Bond	5	Per Bond	\$ 2.50	\$ 12.50
Success: All values provided	Bid	#0-6	Uninsured \$ per Bond	6	Per Bond	\$ 2.50	\$ 15.00
Success: All values provided	Bid	#0-7	Uninsured \$ per Bond	7	Per Bond	\$ 2.50	\$ 17.50
Success: All values provided	Bid	#0-8	Uninsured \$ per Bond	8	Per Bond	\$ 2.50	\$ 20.00
Success: All values provided	Bid	#0-9	Uninsured \$ per Bond	9	Per Bond	\$ 2.50	\$ 22.50
Success: All values provided	Bid	#0-10	Uninsured \$ per Bond	10	Per Bond	\$ 2.50	\$ 25.00
Success: All values provided	Bid	#0-11	Uninsured \$ per Bond	11	Per Bond	\$ 2.50	\$ 27.50
Success: All values provided	Bid	#0-12	Uninsured \$ per Bond	12	Per Bond	\$ 2.50	\$ 30.00
Success: All values provided	Bid	#0-13	Uninsured \$ per Bond	13	Per Bond	\$ 2.50	\$ 32.50
Success: All values provided	Bid	#0-14	Uninsured \$ per Bond	14	Per Bond	\$ 2.50	\$ 35.00
Success: All values provided	Bid	#0-15	Uninsured \$ per Bond	15	Per Bond	\$ 2.50	\$ 37.50

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-16	Uninsured \$ per Bond	16	Per Bond	\$ 2.50	\$ 40.00
Success: All values provided	Bid	#0-17	Uninsured \$ per Bond	17	Per Bond	\$ 2.50	\$ 42.50
Success: All values provided	Bid	#0-18	Uninsured \$ per Bond	18	Per Bond	\$ 2.50	\$ 45.00
Success: All values provided	Bid	#0-19	Uninsured \$ per Bond	19	Per Bond	\$ 2.50	\$ 47.50
Success: All values provided	Bid	#0-20	Uninsured \$ per Bond	20	Per Bond	\$ 2.50	\$ 50.00
Success: All values provided	Bid	#0-21	Uninsured \$ per Bond	21	Per Bond	\$ 2.50	\$ 52.50
Success: All values provided	Bid	#0-22	Uninsured \$ per Bond	22	Per Bond	\$ 2.50	\$ 55.00
Success: All values provided	Bid	#0-23	Uninsured \$ per Bond	23	Per Bond	\$ 2.50	\$ 57.50
Success: All values provided	Bid	#0-24	Uninsured \$ per Bond	24	Per Bond	\$ 2.50	\$ 60.00
Success: All values provided	Bid	#0-25	Uninsured \$ per Bond	25	Per Bond	\$ 2.50	\$ 62.50
Success: All values provided	Bid	#0-26	Uninsured \$ per Bond	26	Per Bond	\$ 2.50	\$ 65.00
Success: All values provided	Bid	#0-27	Uninsured \$ per Bond	27	Per Bond	\$ 2.50	\$ 67.50
Success: All values provided	Bid	#0-28	Uninsured \$ per Bond	28	Per Bond	\$ 2.50	\$ 70.00
Success: All values provided	Bid	#0-29	Uninsured \$ per Bond	29	Per Bond	\$ 2.50	\$ 72.50
Success: All values provided	Bid	#0-30	Uninsured \$ per Bond	30	Per Bond	\$ 2.50	\$ 75.00

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-31	Insured \$ per Bond	1	Per Bond	\$ 2.50	\$ 2.50
Success: All values provided	Bid	#0-32	Insured \$ per Bond	2	Per Bond	\$ 2.50	\$ 5.00
Success: All values provided	Bid	#0-33	Insured \$ per Bond	3	Per Bond	\$ 2.50	\$ 7.50
Success: All values provided	Bid	#0-34	Insured \$ per Bond	4	Per Bond	\$ 2.50	\$ 10.00
Success: All values provided	Bid	#0-35	Insured \$ per Bond	5	Per Bond	\$ 2.50	\$ 12.50
Success: All values provided	Bid	#0-36	Insured \$ per Bond	6	Per Bond	\$ 2.50	\$ 15.00
Success: All values provided	Bid	#0-37	Insured \$ per Bond	7	Per Bond	\$ 2.50	\$ 17.50
Success: All values provided	Bid	#0-38	Insured \$ per Bond	8	Per Bond	\$ 2.50	\$ 20.00
Success: All values provided	Bid	#0-39	Insured \$ per Bond	9	Per Bond	\$ 2.50	\$ 22.50
Success: All values provided	Bid	#0-40	Insured \$ per Bond	10	Per Bond	\$ 2.50	\$ 25.00
Success: All values provided	Bid	#0-41	Insured \$ per Bond	11	Per Bond	\$ 2.50	\$ 27.50
Success: All values provided	Bid	#0-42	Insured \$ per Bond	12	Per Bond	\$ 2.50	\$ 30.00
Success: All values provided	Bid	#0-43	Insured \$ per Bond	13	Per Bond	\$ 2.50	\$ 32.50
Success: All values provided	Bid	#0-44	Insured \$ per Bond	14	Per Bond	\$ 2.50	\$ 35.00
Success: All values provided	Bid	#0-45	Insured \$ per Bond	15	Per Bond	\$ 2.50	\$ 37.50
Success: All values provided	Bid	#0-46	Insured \$ per Bond	16	Per Bond	\$ 2.50	\$ 40.00
Success: All values provided	Bid	#0-47	Insured \$ per Bond	17	Per Bond	\$ 2.50	\$ 42.50
Success: All values provided	Bid	#0-48	Insured \$ per Bond	18	Per Bond	\$ 2.50	\$ 45.00
Success: All values provided	Bid	#0-49	Insured \$ per Bond	19	Per Bond	\$ 2.50	\$ 47.50

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-50	Insured \$ per Bond	20	Per Bond	\$ 2.50	\$ 50.00
Success: All values provided	Bid	#0-51	Insured \$ per Bond	21	Per Bond	\$ 2.50	\$ 52.50
Success: All values provided	Bid	#0-52	Insured \$ per Bond	22	Per Bond	\$ 2.50	\$ 55.00
Success: All values provided	Bid	#0-53	Insured \$ per Bond	23	Per Bond	\$ 2.50	\$ 57.50
Success: All values provided	Bid	#0-54	Insured \$ per Bond	24	Per Bond	\$ 2.50	\$ 60.00
Success: All values provided	Bid	#0-55	Insured \$ per Bond	25	Per Bond	\$ 2.50	\$ 62.50
Success: All values provided	Bid	#0-56	Insured \$ per Bond	26	Per Bond	\$ 2.50	\$ 65.00
Success: All values provided	Bid	#0-57	Insured \$ per Bond	27	Per Bond	\$ 2.50	\$ 67.50
Success: All values provided	Bid	#0-58	Insured \$ per Bond	28	Per Bond	\$ 2.50	\$ 70.00
Success: All values provided	Bid	#0-59	Insured \$ per Bond	29	Per Bond	\$ 2.50	\$ 72.50
Success: All values provided	Bid	#0-60	Insured \$ per Bond	30	Per Bond	\$ 2.50	\$ 75.00

*Note: The underwriter
presentation starts on
PDF page 360.*



Response to Procurement Solicitation for Bond Underwriting Services Project/Contract No.: 2200290

April 14, 2022



April 14, 2022

Nicolette Bateson, *Chief Financial Officer and Treasurer*
Great Lakes Water Authority

Dear Ms. Bateson,

On behalf of Wells Fargo Corporate and Investment Banking (“WF CIB” or “Wells Fargo”) we thank you for the opportunity to submit our proposal to serve the Great Lakes Water Authority (“GLWA” or “Authority”) as senior manager in connection with its upcoming new money and refunding transaction. We believe our proposal will show evidence of our complete understanding of all considerations with a new money and refinancing transaction and further evidence that we understand what is important to the Authority. We do believe our competition will have that same knowledge, but that said, **the Wells Fargo team believes we possess a unique selling proposition to the Authority** in that we:

- Subject to final document and terms approval, offer \$150 million or more of credit that can be used in a variety of ways as detailed in our response: Creating refunding value well in excess of what is available in the public markets, providing a bridge for the 2006D issuance, or serving as an interim financing vehicle. All at what we believe are attractive rates.
- We have a track record of showing capital commitment to hold spreads in volatile markets such as the one we are in, which could result in better pricing and execution for GLWA.
- We are a leader in ESG space, currently ranked #2 in par in 2020-2021.¹
- Carry the distinction of leading the investment banking effort with GLWA and PFM to achieve the triple notch upgrade from S&P in 2018.

It is very likely that the market environment GLWA will enter in 2022 will be the most volatile of any in the years the Authority has been in existence. It may also be the first time GLWA chooses to travel down the path of ESG, one of the hottest topics in the municipal market over the last 18 months and now one that offers empirical value. While the market’s volatility cannot be controlled, a bank with a strong balance sheet and a history of using it to hold spreads can mitigate those concerns. Wells Fargo is that bank as you’ll see in this RFP. Further, Wells Fargo is one of the top underwriters in ESG space, ready to make that path a smooth one for the Authority. It would be our hope to pick up 2-3 basis points through an ESG designation.

This could also be the first time GLWA is able to release all reserve funds from its Senior lien debt by achieving two “AA” category ratings. We show a path to those upgrades, from either Moody’s or Fitch in our very detailed credit section. Our path is one that you can trust as we have led GLWA in the right direction in the past. When the upgrade happens, we believe with a structuring of the new money bonds, GLWA should be able to release all cash from its Second Lien credits as well. You will see that approach in our structuring section. While all of these wins are in close reach of GLWA, we caution that the Authority may see spreads to MMD that are slightly wider than what it could achieve in a normal market environment. That fact is offset by the overall low interest rate environment where rates on the longer end have only been lower 8% of time in history. Lastly, as you’ll see in our structuring section, Wells Fargo has a firm grasp on all the important factors GLWA considers during financings of new money and refunding transactions. We always have the following in mind: releasing cash portions of reserve requirements, fully understanding the 2018 MOU and its implications for GLWA, upholding coverage in the current issuances and expected future issuances to drive further ratings upgrades, cross lien refundings if they help release more cash reserves, using an appropriate criteria for refundings and suggesting to wait if breakevens to current refundings are high, among many others we talk about in this RFP.

We are confident that our team of seasoned credit, banking, and underwriting professionals offers the Authority the knowledge and experience necessary to successfully implement GLWA’s plan of finance as Senior Manager and hope that you will place your trust in us for this 2022 issuance.

We are extremely grateful for the opportunity to present our financing recommendations and credentials to the GLWA Board on the 22nd. We look forward to seeing you all then. As requested in the RFP, our proposal will remain valid for a period of 6 months and thereafter until withdrawal. Should you have any questions concerning our proposal, or require further information, please do not hesitate to contact us.

Sincerely,


Kevin Hoecker, *Managing Director*
Co-Head of West Region and Head of Limited Public Offerings
(424) 350-6500, kevin.hoecker@wellsfargo.com


Michael Engelbrecht, *Managing Director*
Co-Head of West Region and Co-Head of Utilities
(213) 253-7219, michael.j.engelbrecht@wellsfargo.com


Kristen Fontana, *Director*
Lead Public Finance Credit Strategist
212-214-2836; kristen.fontana@wellsfargo.com

¹ Source: Bloomberg. True Economics to Bookrunner. Represents combined negotiated and competitive long-term new issues underwritten from 1/1/20 to 12/31/21. Includes WFBNA MFG and WFSLLC transactions, including corporate CUSIP transactions such as for Ford Foundation.

Section B. Table of Contents

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Important Information & Disclaimer

This document and any other materials accompanying this document (collectively, the “Materials”) are provided for general informational purposes only. By accepting any Materials, the recipient acknowledges and agrees to the matters set forth below.

Wells Fargo Corporate & Investment Banking and Wells Fargo Securities (each referred to herein as “CIB” and may be referred to elsewhere as “WFS”) are trade names used for the corporate banking, capital markets and investment banking services of Wells Fargo & Company (“WFC”) and its subsidiaries, including but not limited to Wells Fargo Bank, N.A. Municipal Finance Group, a separately identifiable department of Wells Fargo Bank, N.A. which is registered with the U.S. Securities and Exchange Commission (“SEC”) as a municipal securities dealer.

Commercial banking products and services are provided by Wells Fargo Bank, N.A. (“WFBNA”). Investment banking and capital markets products and services provided by CIB are not a condition to any banking product or service.

CIB, as potential underwriter or placement agent (together with any of its affiliates as context may require, “we”, or “Wells Fargo”) is providing the information contained in the Materials for discussion purposes only in anticipation of, or in connection with, engaging in arm’s length commercial transactions with you in which Wells Fargo would be acting solely as a principal or agent, as applicable, and not as a municipal advisor, financial advisor or fiduciary to you or any other person or entity regardless of whether we have or are currently acting as such on a separate transaction (the use of the term “agent” does not imply any fiduciary relationship).

These Materials are being provided to you for the purpose of working with you as an underwriter or placement agent (collectively, “underwriter”) on the transaction(s) described in the Materials. As part of its services as underwriter, CIB may provide information concerning the structure, timing, terms, and other similar matters concerning the issue of municipal securities that CIB proposes to underwrite as described in the Materials. The Materials may also contain such information. Any such information has been, and would be, provided by CIB in the context of serving as an underwriter and not as your municipal or financial advisor. Additionally, CIB, as underwriter, has financial and other interests that differ from your interests (or those of the issuer). In its capacity as underwriter, CIB’s primary role would be to purchase securities from you (or the issuer in the case of a conduit transaction) for resale to investors, or arrange for the placement of securities with investors on your behalf. Wells Fargo will not have any duties or liability to any person or entity in connection with the information being provided in the Materials.

The information provided herein is not intended to be and should not be construed as advice within the meaning of Section 15B of the Securities Exchange Act of 1934, and Wells Fargo will not be acting as your municipal advisor under the municipal advisor rules (“Muni Advisor Rules”) of the SEC and the SEC’s guidance in its Registration of Municipal Advisors Frequently Asked Questions dated May 19, 2014, as supplemented (collectively, “Muni Advisor Rules”).

CIB distributes municipal securities to institutional investors primarily through Wells Fargo Bank, N.A. Municipal Finance Group (“WFBNA MFG”) and Wells Fargo Securities, LLC (“WFSLLC”). Distribution to middle market clients is provided primarily through WFSLLC. Retail distribution is primarily provided by Wells Fargo Advisors, which is the trade name used by Wells Fargo Clearing Services, LLC (“WFCS”) and Wells Fargo Advisors Financial Network, LLC (“WFAFN”), two non-bank separate registered broker-dealers (members FINRA and SIPC). WFSLLC, WFBNA MFG, WFCS, and WFAFN are affiliates and are each wholly-owned subsidiaries of WFC.

Any municipal underwriting, commercial paper and remarketing rankings referenced herein represent combined totals for WFBNA MFG and WFSLLC. Non-municipal underwriting, commercial paper and remarketing rankings referenced herein represent totals for WFSLLC only. Source information for any ranking information not otherwise provided herein is available on request.

If the Materials are being provided to you under any of the following events, the information contained in the Materials and any subsequent discussions between us, including any and all information, advice, recommendations, opinions, indicative pricing, quotations and analysis with respect to any issuance of municipal securities, are provided to you in reliance upon the Bank, RFP, IRMA exemptions and underwriter exclusion, as applicable, provided under the Muni Advisor Rules. In the event the Bank, RFP, IRMA exemptions, or underwriter exclusion do not apply, the information included in the Materials are provided in reliance on the general information exclusion to advice under the Muni Advisor Rules.

Any information related to a bank-purchased bond transaction (“Direct Purchase”) included in the Materials is a product offering of WFBNA or a subsidiary thereof as purchaser / investor (“Purchaser”). CIB will not participate in any manner in any Direct Purchase transaction between you and Purchaser, and Wells Fargo employees involved with a Direct Purchase transaction are not acting on behalf of or as representatives of CIB. The information contained herein regarding Purchaser’s Direct Purchase is being provided to you by CIB only for purposes of providing financing alternatives that may be available to you from WFC and its affiliates. Information contained in this document regarding Direct Purchase is for discussion purposes only in anticipation of engaging in arm’s length commercial transactions with you in which Purchaser would be acting solely as a principal to purchase securities from you or a conduit issuer, and not as a municipal advisor, financial advisor or fiduciary to you or any other person or entity regardless of whether Purchaser, or an affiliate has or is currently acting as such on a separate transaction. Additionally, Purchaser has financial and other interests that differ from your interests. Purchaser’s sole role would be to purchase securities from you (or the conduit issuer). Any information relating to a Direct Purchase is being provided to you pursuant to and in reliance on the “Bank exemption” under the Muni Advisor Rules and the general information exclusion to advice under the Muni Advisor Rules.

In the event the Materials are being provided in connection with a RFP, the SEC exempts from the definition of municipal advisor “any person providing a response in writing or orally to a request for proposals or qualifications from a municipal entity or obligated person for services in connection with a municipal financial product or the issuance of municipal securities; provided however, that such person does not receive separate direct or indirect compensation for advice provided as part of such response” (“RFP exemption”). In such event, we have relied upon the RFP exemption, and on your distribution and execution of this RFP through a competitive process. In the event WFBNA MFG is the party providing the Materials, responses to all questions, certifications, attestations, information requests, and similar in the RFP or RFQ to which this response relates are specifically limited to, in context of, and as applied to, WFBNA MFG in its capacity as a separately identifiable department of a national bank that is registered as a municipal securities dealer with the Securities and Exchange Commission, Office of the Comptroller of the Currency, and Municipal Securities Rulemaking Board; and not on behalf of WFBNA, unless specified otherwise in our response.

In the event that you have provided us with your written representation that you are represented by an independent registered municipal advisor (an “IRMA”) within the meaning of the Muni Advisor Rules, with respect to the transaction(s) described in the Materials we have provided you with our written disclosure that we are not a municipal advisor to you and are not subject to the fiduciary duty under the Muni Advisor Rules, if applicable, and have taken certain other steps to establish the “IRMA exemption” under the Muni Advisor Rules.

In the event that you have engaged us to serve as an underwriter with respect to the municipal securities issuance described in the Materials we have provided you with our written disclosure regarding our role as an underwriter, that we are not a municipal advisor to you and are not subject to the fiduciary duty under the Muni Advisor Rules, if applicable.

If savings threshold level information is contained herein, please be advised that CIB is not recommending nor providing advice regarding which maturities should be refunded by you.

See additional important disclosures at the end of the Materials.

Section C. Disclosure Statement

i. State your firm's name and address

Wells Fargo & Company ("WFC") Headquarters: 420 Montgomery Street, San Francisco, CA 94104

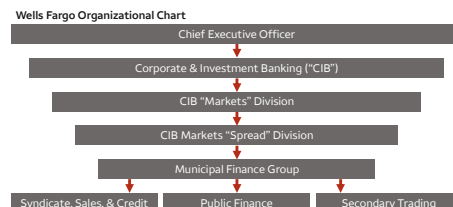
Wells Fargo's Municipal Finance Group (incl. Public Finance) Headquarters: 500 W. 33rd Street, New York, NY 10001

Midwest Public Finance Office: 10 S. Wacker Dr., Floor 18, Chicago, IL 60606

It is also important to note that Wells Fargo is local in that it has offices and hundreds of employees located in the GLWA service area.

ii. Describe your firm's organizational structure (i.e., partnership, corporation, etc.) and list any controlling stockholder, general partners, or principals.

Wells Fargo & Company, a publicly-held organization (NYSE: WFC), is a diversified financial services corporation providing banking, mortgage, consumer finance, asset and wealth management, and investment banking products and services. Wells Fargo Corporate & Investment Banking ("WF CIB") is the trade name under which WFC conducts certain of its investment banking, capital markets and institutional securities business through Wells Fargo Bank, N.A. ("WFBNA"). Municipal investment banking business is conducted through WFBNA's Municipal Finance Group ("MFG"). We provide a fuller discussion of the MFG and its sub-groups (such as Public Finance) within our answer to question D.ii.



Municipal Finance Group Overview. WF CIB conducts its municipal investment banking business through WFBNA's 126-member Municipal Finance Group ("MFG"). WF CIB's Public Finance Department is located within MFG and operates in 12 offices nationwide. The group provides a full range of capital market products, including banking and origination, underwriting, credit analysis, sales and trading, infrastructure/P3 advisory, and access to derivative solutions. WF CIB is a leading senior manager of municipal debt nationally and consistently ranks among the top ten municipal underwriters over the past decade. **In 2022, WF CIB is ranked as the #5 senior manager nationwide, having lead managed 53 negotiated and competitive long-term municipal issues totaling \$7.35 billion.²**

- Public Finance Investment Banking:** This group is staffed with 89 public finance professionals who are dedicated to serving governmental, utility and water/sewer, public power, transportation, higher education, healthcare, and other nonprofit institutions in every facet of the municipal market through both historically conventional capital markets solutions as well as bespoke structured finance debt solutions.
- Top-Tier Municipal Syndicate, Institutional Sales, and Credit Strategies:** Staffed with 21 professionals, this group has an experienced syndicate that underwrites negotiated and competitive municipal issues nationwide, an institutional sales team that concentrates its efforts on selling municipal and structured finance products to top-tier institutional buyers throughout the nation, and a credit strategy investor marketing team that facilitates ongoing dialogue with key investors, translating into demand at pricing.
- Bond Trading:** This 16-member group is an active participant in all aspects of the secondary market and maintains positions in various types of municipal bonds. In 2021, our average daily inventory of municipal fixed rate securities was \$1.8 billion.

2022 Year-to-Date Municipal New Issues

Rank	Manager	Par (\$000)	Market Share	No. of Issues
1	BofA Securities	14,102.8	12.6%	85
2	JP Morgan	12,913.4	11.5%	76
3	Citi	9,404.0	8.4%	54
4	RBC Capital Markets	8,304.5	7.4%	112
5	Wells Fargo	7,346.8	6.6%	53
6	Morgan Stanley	5,971.2	5.3%	52
7	Goldman Sachs	5,402.4	4.8%	17
8	Stifel	5,247.6	4.7%	229
9	Jefferies	4,473.3	4.0%	23
10	Barclays	4,303.1	3.8%	14
11	Raymond James	4,081.6	3.6%	133
12	Piper Sandler	3,619.5	3.2%	158
13	Robert W Baird	3,388.1	3.0%	189
14	Samuel A Ramirez	3,340.2	3.0%	11
15	Loop Capital Markets	2,048.6	1.8%	9
16	FHN Financial	1,518.2	1.4%	60
17	UBS	1,496.0	1.3%	25
18	Siebert Williams Shank	1,473.5	1.3%	8
19	Hilltop Holdings Inc	1,289.8	1.2%	46
20	DA Davidson	1,160.7	1.0%	113

Source: Bloomberg; Represents negotiated and competitive municipal new issues underwritten from 1/1/2020 to 4/13/2022 by CIB (includes WFBNA MFG & WFSLLC). Par amount only includes lead-managed credit.

iii. Briefly describe your firm's equal employment opportunity policies and programs.

As an indication of Wells Fargo & Company's deep focus on diversity, 73% of Wells Fargo's employees are either women or minorities, exemplifying Wells Fargo's dedication to diversity within the firm. We are recognized nationally for our diversity leadership by DiversityInc magazine, the Human Rights Campaign Foundation, and others. In fact, in May 2021, DiversityInc announced its 2021 Top 50 Companies for Diversity, and WFC was recognized as the #25 overall company (across all industries) on the list (source: DiversityInc). This commitment to diversity is further exemplified in our public finance department's approach, and our team has worked on many financings with MBE/WBE firms. We further show this in our submission to our B.I.D. form where we propose GLWA finding a role for Loop Capital Markets whom has an office in Detroit. Our firm also has established an Affirmative Action Program that is in compliance with all applicable federal, state and local laws to ensure equal employment opportunities to all employees and applicants. We would be happy to share a document detailing our program upon request.

WFC recently created a new Operating Committee role to lead diversity and inclusion in our workplace and marketplace. The new role is led by Kleber Santos and reports directly to WFC's CEO Charlie Scharf. One of the key recommended procedures in order to create a meaningful change to Diversity and Inclusion is to have accountability across all levels in the company; creating this new role is an example that WFC is making this a top priority in how we conduct business. As a firm, we sponsor and are a member of several organizations committed to promoting diversity. Specifically, within the public finance sector – WF CIB is a member of Women Public Finance, Asian Americans in Public Finance, and Latinos in Public Finance.

² Source: Bloomberg; from 1/1/2021 to 4/9/2022 for WFBNA MFG and WFSLLC. True economics to book runner, negotiated and competitive long term transactions



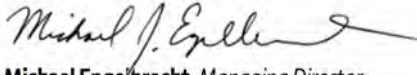
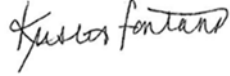
Our diversity and inclusion strategy provides common direction and clear goals across Wells Fargo. We focus on three areas: **1) Workforce diversity and inclusion:** We strive for a culture with inclusive policies and programs that attract, develop, engage, and retain the best talent; **2) Marketplace:** We integrate diversity and inclusion into the business decisions we make every day, including how to increase work with diverse vendors and suppliers; **3) Advocacy:** We demonstrate leadership and commitment through our interactions in both the workplace and in our communities. WFC helps create stronger communities through our commitment to diversity and inclusion. Our work is ongoing and impactful, as demonstrated by our workforce profile and the diversity of selected recognitions in 2021. For additional information, please go to: <https://www.wellsfargo.com/about/diversity/diversity-and-inclusion/>.

iv. Indicate any jurisdictions where your firm or officer, director, etc is or has been the subject of any pending or anticipated investigation or inquiry since January 1, 2017.

None of the members of Wells Fargo’s team for GLWA have been a part of any investigation or inquiry. As with any large diversified financial services company of its size, WFBNA and WFC are subject to receiving inquiries and subpoenas from regulators and law enforcement, as well as being subject to civil litigation. WFC responds regularly to inquiries and investigations by governmental entities and, as a highly regulated institution, has in the past entered into settlements of some of those investigations, including those specified in Appendix C.

v. Indicate any conflicts or potential conflicts your firm may have in serving as a bond underwriting firm for GLWA.

Please note that we are not aware of any conflict of interest that would preclude WF CIB from serving as underwriter for GLWA. We have included our firm’s standard conflict of interest disclosure as Appendix B.

 Kevin Hoecker , <i>Managing Director</i> Co-Head of West Region and Head of Limited Public Offerings	 Michael Engelbrecht , <i>Managing Director</i> Co-Head of West Region and Co-Head of Utilities	 Kristen Fontana , <i>Director</i> Lead Public Finance Credit Strategist
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Section D. Firm Background and Related Experience

i. Detail your firm credit ratings and other relevant financial information, such as net capital position and underwriting capacity and/or limitations.

As a bank dealer, WF CIB has access to the capital base of WFBNA (*the legal entity that provides municipal securities underwriting services for Wells Fargo & Company*). WFBNA is one of the premier U.S.-domiciled banks with **credit ratings of Aa2/A+/AA-** from Moody’s, S&P and Fitch, respectively.³ As of December 31, 2021 WFBNA maintained equity capital of **\$171.1 billion**, risk-based capital of \$163.2 billion, and tier one capital of \$149.3 billion (*source: WFBNA 4Q2021 Call Report*). **A capital position of this magnitude gives WFBNA the strength to underwrite securities of significant size (well in excess of any issuance size that GLWA or any other municipal issuer would ever contemplate), and the ability to commit capital to unsold balances in an effort to support an issuer’s offering**, actively bid for competitive issues, and support secondary markets. In addition to the above capital figures, WFBNA’s hypothetically-calculated excess net capital figure is \$139.0 billion.

As requested, as follows are links to Wells Fargo’s most recent annual reports and quarterly earnings.

Annual Report Link: <https://www.wellsfargo.com/about/investor-relations/annual-reports/>

Quarterly Earnings Report Link: <https://www.wellsfargo.com/about/investor-relations/quarterly-earnings/>

ii. Describe your firm’s experience with municipal utility revenue bonds.

Municipal Utility Revenue Bond Experience. WF CIB is an industry leader in the water and sewer sector and has senior managed recent financings for some of the largest municipal water and sewer agencies in the nation, including Ohio Water Development Authority, Los Angeles Department of Water and Power, Texas Water Development Board, Cities of Houston and Charlotte (water & sewer credits for both), Metro Wastewater Reclamation District (Colorado), St. Louis Metropolitan Sewer District, and San Antonio Water System, among others. The firm’s water and sewer efforts are led by Michael Engelbrecht, who is Co-Head of the West Region and Co-Head of Utilities and has over 30 years of experience covering water and wastewater utilities. Michael is also one of the leads on the GLWA account. **Over the past 5+ years (since the beginning of 2017), Wells Fargo CIB is the 5th ranked senior manager of water and sewer bonds nationally, having led 109 deals in the sector for over \$9.8 billion in par amount.**⁴ We have provided the following tombstones that represent a sampling of some of the large water and sewer deals that we have executed, all of which have some relevance to GLWA.

Wells Fargo CIB Select Negotiated Water and Sewer Financing Experience

City of San Diego (Sewer credit) Expected \$150,000,000 Expected April 2022 <i>Lead Bookrunner</i>	Los Angeles Dept. of Water and Power \$494,670,000 March 2022 <i>Lead Bookrunner</i>	Indianapolis Bond Bank (Stormwater credit) \$50,000,000 February 2022 <i>Lead Bookrunner</i>	Texas Water Development Board \$444,735,000 September 2021 <i>Lead Bookrunner</i>	Broomfield (CO) City / County (Water credit) \$131,500,000 August 2021 <i>Lead Bookrunner</i>	Metro Wastewater Reclamation Dist. (CO) \$146,545,000 October 2020 <i>Lead Bookrunner</i>
Ohio Water Development Authority \$250,000,000 October 2020 <i>Lead Bookrunner</i>	City of Charlotte (Water / Sewer credits) \$333,445,000 September 2020 <i>Lead Bookrunner</i>	San Antonio Water System \$153,390,000 July 2020 <i>Lead Bookrunner</i>	City of Houston Combined Util. System \$610,720,000 June 2020 <i>Lead Bookrunner</i>	Metro Water District of Southern California \$267,995,000 June 2020 <i>Lead Bookrunner</i>	Great Lakes Water Authority \$413,060,000 September 2018 <i>Joint Bookrunner</i>

Source: Wells Fargo Internal Data and Official Statements; Represents select negotiated water and sewer transactions underwritten by WFCIB since 2018 in order to demonstrate similar transactions to GLWA’s

³ <https://www.wellsfargo.com/about/investor-relations/credit-ratings/> as of 4/9/2022

⁴ Bloomberg from 1/1/17 to 4/9/22 for negotiated and competitive long-term water and sewer financings. True economics to bookrunner.



iii. Describe your firm's experience with municipal utility financings in Michigan.

Wells Fargo Helps GLWA and PFM Achieve a Triple Notch Upgrade. As Co-Senior Manager on the Authority's 2018 transaction, WF CIB was instrumental in leading the rating agency strategy for GLWA which enabled the Authority to achieve upgrades from Moody's and S&P and a positive outlook from Fitch. GLWA's strong credit story resonated with S&P, and ultimately the water supply system debt earned an elusive three notch upgrade along with a two notch upgrade with a positive outlook on the sewer system debt. The other rating agencies demonstrated an incremental response, with a one notch upgrade on all debt from Moody's and a positive outlook from Fitch. As follows is the full case study from the 2018 GLWA financing which summarizes the rating agency strategy, process, and result in greater detail. We believe our past experience with GLWA is the most relevant in Michigan Utility financing.

Case Study: Great Lakes Water Authority; WF CIB Role: Co-Senior Manager

\$257,465,000 Sewage Disposal System Revenue and Revenue Refunding Bonds, Series 2018ABC

\$155,595,000 Water Supply System Revenue Second Lien Bonds, Series 2018A

In September 2018, WF CIB served as co-senior manager on GLWA's \$155.595mm Water Supply System Revenue Second Lien Bonds and \$257.465mm Sewer Supply System Revenue Senior Lien Bonds. WF CIB was selected to lead the rating agency strategy for the 2018 transaction, and achieving significant rating upgrades was an explicit priority because of the Authority's strong financial and operational trends, as well as strong legal provisions and a broad service area.

Our recommended rating agency approach included requesting a wide audience of rating analysts, including senior committee members. Direct access to key leaders allowed the Authority to directly communicate their credit story. Additionally, the Authority scheduled pre-meeting calls with the primary analysts to explain the nuances of the Authority's financial results versus its audited financial statements, as well as the unique credit protections associated with the core legal agreements. Altogether, this strategy yielded upgrades from Moody's and S&P and a 'Positive' Outlook from Fitch. S&P upgraded the Senior and Second Lien Water System Revenue bonds three notches from A-/BBB+ to AA-/A+ and two notches with a 'Positive' Outlook on the Senior and Second Lien Sewer System Revenue bonds from A-/BBB+ to A+/A. Moody's assigned a one notch upgrade on both the Senior and Second Lien Water and Sewer System bonds from A3/Baa1 to A2/A3. Despite the metrics and scorecard results indicating a multi-notch upgrade, Moody's credit committee chose to increase the rating only one notch. Although Fitch took a measured approach it is important to note that they had previously assigned a three notch upgrade in 2016. The transactions also furthered majority consent to a springing debt service reserve fund amendment. The amendment removed the obligation to fund a reserve fund when the Authority receives either 'Aa3' or 'AA-' Senior Lien ratings from at least two rating agencies.

Wells Fargo's Commitment to Michigan and the GLWA Service Area. WFC maintains a longstanding commitment to Michigan and currently employs 581 team members throughout the state in 27 Cities, **some of which are within the GLWA service area (Birmingham, Farmington Hills, Troy and Grosse Pointe Woods) and some of which are in GLWA's disadvantaged areas (Pontiac and Flint).** In 2020, Wells Fargo & Company donated \$2.7 million to Michigan nonprofits, schools, and community organizations, as well as \$750,000 from its Open for Business Fund which provides grants to small, minority-owned businesses in response to the COVID-19 pandemic. In addition, WFC's Michigan employees contributed over 6,200 hours of community service in 2020. Since 2017, WF CIB has served as managing underwriter on 25 Michigan municipal new issues, totaling a par amount of \$7.4 billion, including 8 deals as senior manager for a par amount of \$2.0 billion.⁵ WF CIB's trading desk is an active market maker for all sectors and regions, and since 2019, we have executed \$3.5 billion of trades for Michigan issuers. Our retail distribution capabilities in the State are particularly notable, as Wells Fargo Advisors maintains a network of 450 retail brokers in 58 offices who work with clients within the state who hold \$36.6 billion in assets.⁶

iv. Indicate your firm's current ability and willingness to underwrite bonds and hold bonds in inventory. Provide specific examples since January 1, 2021 through today.

This question is essential to achieving proper execution in this current, very volatile, interest rate environment. As described in Section E. i below, we discuss the stressful day to day and intraday volatility that, if not managed correctly, can cause a multiple basis point deviation from proper execution. One of the most trusted ways to achieve proper execution is to be certain investors know that the bookrunning Senior Manager has a track record of underwriting bonds onto their own balance sheet to uphold spreads for its issuer client. Wells Fargo is that bank and we believe we have a unique selling proposition in this area vs. the other firms being considered for the Senior Role. As discussed in our response to question D.i. of this RFP, WF CIB has access to the capital base of WFBNA (which maintains current equity capital of \$171.1 billion). A capital position of this magnitude gives us the strength to underwrite securities of significant size and to choose to commit capital to unsold balances in an effort to support an issuer's offering. While a number of firms have a large capital base, **it is most important that such firms evidence their willingness to deploy that capital in the municipal market on behalf of their clients, we do.**

Though the municipal bond market has experienced periods of stress and volatility since March 2020, WF CIB is a firm that has consistently supported clients' transactions in the negotiated and competitive primary markets. WF CIB has never imposed any prohibition on underwriting unsold balances and continues to frequently commit capital for our municipal clients' benefit. **Wells Fargo's frequent practice of underwriting unsold balances to preserve pre-pricing spreads has the potential to be meaningful for GLWA, as the present value of 1 basis point for our proposed our base case new money and refunding analysis (within question E.ii) is over \$281,000.** The table below highlights our practice of taking down unsold balances and includes WFBNA's largest negotiated capital commitments since the beginning of 2021. These represent just a fraction of the total instances in which we underwrote bonds for clients.

⁵ Source: WF CIB and WFBNA internal data. Includes competitive and negotiated new issues by WFBNA and WFSLLC for the time period 1/1/17 to 4/9/22.

⁶ WFA statistical information as of 4Q2021.



Wells Fargo CIB's Largest Municipal Negotiated Capital Commitments since 1/1/2021

Issuer Name	Pricing Date	Par Amount	Underwritten	% Underwritten	PV of 1 Basis Point
Metropolitan Washington Airports Auth.	01/20/2022	\$421,715,000*	\$113,245,000	26.9%	\$548,944
Piedmont Municipal Power Agency	09/28/2021	\$183,260,000	\$90,930,000	49.6%	\$134,782
Texas Water Development Board	09/30/2021	\$443,740,000	\$58,640,000	13.2%	\$425,983
Miami-Dade County	08/18/2021	\$701,405,000*	\$56,910,000	8.1%	\$689,113
County of Wake (NC)	03/17/2021	\$184,425,000	\$56,300,000	30.5%	\$131,984
Dist. of Columbia Housing Finance Agency	09/02/2021	\$54,455,000	\$33,840,000	62.1%	\$26,180

*Represents tax-exempt series of transaction; **Note:** Balances may have been placed with investors at any of various points after pricing.

v. Financing Team: Provide a description of the team you plan to assign to work with GLWA and the responsibilities of each team member. In an appendix, provide a brief resume for each team member.

Wells Fargo takes a team approach to GLWA, bringing the best of the platform whenever necessary whether it be banking or underwriting. The team has the understanding of GLWA's goals, a proven ratings strategy and the financial modeling capability to assure new money transactions, reserve fund releases and refundings are structured in the appropriate way. **Kevin Hoecker**, *Managing Director*, **Michael Engelbrecht**, *Managing Director*, and **Kristen Fontana**, *Director*, are very familiar to the GLWA team as these three were the main contacts for the 2018 transaction. Kevin, Michael, and Kristen work together on a daily basis and both will be readily available to the Authority to provide specialized water/sewer financing and credit expertise. Our banking team will interface regularly with **Amanda Amaro**, *Director*, our lead underwriter for GLWA, on market, investor communication, and structuring discussions.

Kevin currently serves as Co-Head of the Public Finance West Region (which includes Michigan) and Head of Limited Public Offerings, and he has 22 years of extensive experience with complex municipal finance clients in the Midwest region. Kevin is an expert in the structuring and marketing of bond issuances for best execution and results and will take on that role for GLWA. He will also serve as the point of contact for deal management assuring a smooth transaction. He serves as the lead banker for all state-level Michigan issuers and continues to serve as the primary investment banking contact to all major municipal issuers in the Midwestern United States, including within the states of Michigan, Ohio, Illinois, Wisconsin, and Indiana, to name a few. In addition to his prior GLWA experience, he has served as senior manager for water, sewer, and SRF clients such as the Indianapolis Local Public Improvement Bond Bank (Stormwater), St. Louis Metropolitan Sewer District, Indiana Finance Authority's SRF Program, Ohio Water Development Authority, City of Chicago and Illinois Finance Authority, among others.

Michael serves as Co-Head of the West Region and Co-Head of our firm's municipal Utilities group. Michael is our firm's water and sewer specialist and has over 30 years of capital markets experience during which he has provided investment banking services to water utilities, special districts and general municipal clients nationally. He worked served GLWA on its 2018 transaction and other of his clients include the Los Angeles Department of Water and Power, State of California Department of Water Resources, Bonneville Power Administration, Indiana Finance Authority (SRF program), Metropolitan Water District of Southern CA, Texas Water Development Board, and numerous other water and power agencies. He is known as a national expert in Water and Sewer finance and will be the go to professional for all matters in that regard.

Kristen serves as Head of Public Finance Credit Strategy and will be an invaluable resource in assisting GLWA in developing its rating agency and investor presentations. She was instrumental in developing the rating strategy on GLWA's 2018 financing which allowed the Authority to obtain ratings upgrades from Moody's and S&P. Kristen has worked with other utilities including: Indianapolis Public Improvement Bond Bank (Stormwater credit), San Diego Sewer System and the City of Charlotte, to name a few. She provides our municipal clients with insightful credit perspective regarding debt structure, bond indenture provisions and rating agency strategy. She is well versed in the current fiscal, regulatory and economic environment offering clients highly customized strategies to achieve their ratings goals. She will provide continued and in-depth rating agency strategic guidance, investor credit analyst insights, and investor credit support during the marketing period for GLWA. Kristen joined WF CIB in 2010 and has over 15 years of municipal experience overall.

Amanda serves as an underwriter for the Midwest region and will manage the Authority's underwriting and provide day-to-day marketing and structuring insight. Her insight will make for a valuable addition to the GLWA's underwriting syndicate. She has over a decade of experience with WF CIB on the Municipal Syndicate Desk and has served as lead underwriter on WF CIB-led transactions for the Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Metropolitan Water District of Salt Lake & Sandy (Utah), Beaufort-Jasper (South Carolina) Water and Sewer Authority, and Water/Sewer transactions for the Town of Mount Pleasant and City of Myrtle Beach (South Carolina), among many others. Amanda serves as lead underwriter for all state-level entities in Michigan and was underwriter in our role as joint bookrunner for the Michigan State Building Authority's 2020 Series I & II transaction.

Scott Goldstein, *Director*, will serve as the Authority's quantitative specialist and has over 30 years of experience developing innovative financing structures for many of the nation's most complex issuers. He has structured over 1,000 senior managed municipal transactions with significant emphasis on refunding and structured financial solutions. Scott will run point on all quantitative modeling, for which there will be several. **Brian LePenske**, *Director*, will be heavily involved on a day-to-day basis for GLWA, working closely with the lead banking team. He will also work closely with Scott on structure modeling and will interface regularly with Amanda on market and structure discussions. Brian plays a key role in the origination, project management and transaction execution for large, complex issuers in the Midwest region. Additional transaction support will be provided by **Ryan Trauffer**, Associate, and **Samantha Fong**, Associate, who possess the skills to assure excellent transactional processes. Ryan served as the key support team member for our team during GLWA's 2018 financing.

Resumes for each member of the finance team are provided within Appendix A, as requested.



Section E. Key Financing Issues

i. Strategic issues to be considered by GLWA in the implementation of its potential transaction(s). Key challenges encountered for financing plans in 2022 and how to mitigate these challenges.

It is very likely that the market environment GLWA will enter in 2022 will be the most volatile of any in the years the Authority has been in existence. It may also be the first time GLWA chooses to travel down the path of ESG, one of the hottest topics in the municipal market over the last 18 months and now one that offers empirical value. While the market's volatility cannot be controlled, a bank with a strong balance sheet and a history of using it to hold spreads can mitigate those concerns. Wells Fargo is that bank as you'll see in this RFP. Further, Wells Fargo is one of the top underwriters in ESG space, ready to make that path a smooth one for the Authority. It would be our hope to pick up 2-3 basis points through an ESG designation.

This could also be the first time GLWA is able to release all reserve funds from its Senior lien debt by achieving two "AA" category ratings. We show a path to those upgrades, from either Moody's or Fitch in our credit section. If/When that happens, we believe with a structuring of the new money bonds GLWA should be able to release all cash from its Second Lien credits as well. You will see that approach in our structuring section. While all of these wins are in close reach of GLWA, we caution that the Authority may see spreads to MMD that are slightly wider than what it could achieve in a normal market environment. That fact is offset by the overall low interest rate environment where rates on the longer end have only been lower 8% of time in history. Lastly, as you'll see in our structuring section, Wells Fargo has a firm grasp on all the important factors GLWA considers during financings of new money and refunding transactions. We always have the following in mind: releasing cash portions of reserve requirements, fully understanding the 2018 MOU and its implications for GLWA, upholding coverage in the current issuances and expected future issuances to drive further ratings upgrades, cross lien refundings if they help release more cash reserves, using an appropriate criteria for refundings and suggesting to wait if breakevens to current refundings are high, among others we talk about in this RFP. For this section we will focus on GLWA's step into ESG designation and the overall market volatility.

Wells Fargo believes this transaction could be GLWA's first step into the ESG world and we, as the #2 ranked Underwriter in that space, want to help. WF

CIB has developed into a leading underwriter of ESG financings in the municipal market, ranking as the #2 underwriter of ESG bonds from 2020 through 2021 with \$6.5 billion of par issued and 11.8% market share⁷. We can make the going through the ESG process very comfortable for GLWA, including choose a second party provider (Kestrel or Sustainability). We would recommend the Authority consider labeling its Water and Sewage bond issuances as "Green Bonds," as the uses of proceeds of GLWA's bonds are consistent with "Goal 6: Clean Water and Sanitation" of the United Nations 17 Sustainable Development Goals. Due to our market leading experience placing municipal ESG paper, WF CIB understands the rapidly developing green investor community and will actively market the sustainable aspects of a GLWA transaction to a comprehensive group of ESG buyers. A portion of tax-exempt municipal market issuers who have entered the municipal ESG market have experienced increased investor participation and attracted new investors, ultimately leading to some transactions where a pricing benefit, or "Greenium," has been observed. In November 2021, the State Public Works Board of the State of California (2021 Series C) realized a spread advantage of 2-3 basis points on its tax-exempt Green Bonds compared to its non-labeled bonds with the same maturities and coupons. We believe that these pricing benefits should persist and continue. There are now five investors with dedicated tax-exempt ESG/SRI funds, as well as 19 crossover investors with ESG funds. **A possible Greenium realized by GLWA could have a meaningful impact on its upcoming financing; the present value of 1 basis point for our proposed our base case new money and refunding analysis (within question E.ii) is over \$281,000, so a Greenium of 2-3 bps could save the Authority between \$562,000-\$843,000.**

2020-2021 Muni Long-Term Negotiated ESG Rankings

Rank	Mgr	Par (\$MM)	Deals	Mkt Share
1	Citi	\$6,765.33	32	12.2%
2	WFCIB	6,515.99	40	11.8%
3	BofA	6,079.24	36	11.0%

Volatility is the new norm in the Municipal Market and has to be managed appropriately. In the second half of 2020 and in 2021 we observed a stable tax-exempt and taxable market in which many issuers successfully issued new municipal bonds. After over a year of "business-as-usual", the market environment in 2022 has taken a marked turn and seen high levels of volatility, Treasuries increasing to levels last seen in 2019, and MMD yields last experienced during March and April 2020.⁸ At right, we have demonstrated some of the most extreme daily MMD moves since February 1 of this year. From January 1, 2022 through April 6, 2022 (the date of requested rates for our analysis in this RFP) the MMD curve as a whole rose by between 118 to 165 basis points across the curve. **This rate rise has greatly affected GLWA's refunding opportunities as you will see in the next section. That said, a decrease in rates of 50 basis points creates a very different refunding result and GLWA needs to work with a bank that can quickly access the market if necessary.** Market uncertainty has stemmed from factors such as the rate of anticipated FOMC policy tightening (short-end) and inflation fears continuing (long-end) in addition to global market moving events such as the ongoing war in Ukraine. As tax-exempt yields have risen, investors have pulled money from municipal funds, currently to the tune of \$26.6 billion in outflows since the beginning of 2022, which followed record inflows in 2021.⁹ This market dynamic has caused credit spreads to widen significantly. During markets conditions of this sort, selecting an underwriter with a deep and broad distribution platform that has proven successes in similar markets is important so that GLWA can be confident in its ability to access the market and price its 2022 issuance at correct levels.

Daily Adjustment in MMD on Select Dates (in bps)

	1	2	3	5	7	10	20	30
4/6/2022	12	12	12	12	12	12	12	12
3/22/2022	12	12	12	12	12	12	12	12
3/14/2022	10	10	10	10	10	10	10	10
2/11/2022	10	10	10	10	10	8	7	7
3/25/2022	10	10	10	10	5	5	3	3
3/24/2022	9	9	9	7	5	4	4	4
3/10/2022	5	7	7	7	7	5	5	5
2/15/2022	6	6	6	6	6	6	6	6
2/10/2022	5	5	5	5	5	5	5	5
3/9/2022	5	5	5	5	5	5	5	5
3/17/2022	0	-3	-3	-4	-5	-5	-6	-6
3/31/2022	-3	-3	-3	-4	-4	-4	-4	-4
2/24/2022	-6	-6	-8	-8	-8	-8	-8	-8

Total YTD Adjustments	155	165	164	151	132	129	124	118
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Source: Refinitiv TM3

⁷ Source: Bloomberg. True Economics to Bookrunner. Represents combined negotiated and competitive long-term new issues underwritten from 1/1/20 to 12/31/21. Includes WFBNA MFG and WFSLLC transactions, including corporate CUSIP transactions such as for Ford Foundation.

⁸ Refinitiv TM3 from 1/1/2022 to 4/6/2022

⁹ Lipper as of 4/6/2022



ii. Provide potential 2022 transaction recommendations for the plan of finance and structural features including its advantages, disadvantages, or any alternatives GLWA should consider.

New Money and 2012A Refunding: A Conservative Base Case. In structuring our proposed base case new money scenario, we sought to allocate bonds between the senior and second lien (for both the Water System and Sewer System credits) such that cash releases from the respective DSRFs could be maximized. Pursuant to the RFP, we have assumed a new money borrowing size of \$200 million for the Water Supply System and \$175 million for the Sewage Disposal System. We have utilized interest rates and market conditions as of April 6, 2022 and structured the bonds to produce level debt service, similar to what GLWA has done in the past and importantly a good foundation for future capital programs as detailed in several GLWA documents. In addition, we have analyzed an all 5% coupon structure and have incorporated a par call of 7/1/2032 into our analyses. For this analysis, we used an uninsured scale, however we do believe insurance in some cases could be impactful to the results/augment what the reader sees in this section.

In our base case, to remain conservative, we have assumed that GLWA continues to hold just one rating in the 'AA' category (mimicking April 6th, 2022 circumstances) and thus must retain its Reserve Requirements. We have utilized a proprietary model (further discussed in our response to question E.v.) to determine the optimal mix of senior and second lien new money bonds in order to maximize cash releases from the reserve funds (our goal seek), while also ensuring that the par amount of a senior lien issuance is sufficiently large to garner ample investor interest in the primary market (i.e. at least approximately \$20 million of par amount). **In optimizing the reduction in the reserve requirement in order to release the maximum amount of cash, our analysis recognizes the difference between the second lien reserve requirements for the Sewage Disposal System (i.e. lesser of average annual debt service and the maximum permitted by the Code) and the Water Supply System (i.e. lesser of MADs and the maximum permitted by the Code). As seen in this section in the yellow highlighted rows, our structure releases a net total of \$16.1 million in cash from the Sewage System reserve funds and \$262k from the Water System reserve funds.** Given current market conditions this is the best result available to GLWA. That said, we do believe GLWA will achieve an upgrade to 2 "AA" ratings on its Senior Liens and will therefore be able to release all Senior Lien reserve requirements (more on that below). We also note that we have not used the DSRF releases for any purpose in this base case, yet they can be used as a deposit to the project fund (reduce borrowing amount) or pay current-year debt service.

We also demonstrate pre-and post-issuance coverage patterns by year through 2032 in the table above and to the right. Upon issuance of the base case bonds in this analysis, sewer system senior lien coverage remains at or above 2.21x and senior plus second lien coverage remains at or above 1.68x. Water system senior lien coverage remains at or above 1.78x and senior plus second lien coverage remains at or above 1.32x.

Proposed Sewage Disposal System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Current Ref. of Senior 2012A	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$21,930,000	\$132,585,000	\$17,620,000	\$172,135,000
Project Fund	\$25,000,000	\$150,000,000	-	\$175,000,000
Arbitrage Yield	3.21%	3.21%	3.21%	3.21%
True Interest Cost	3.85%	3.91%	1.99%	3.89%
Average Life	19.0	19.0	0.9	17.1
PV of 1 Basis Point	\$18,630	\$111,907	\$1,762	\$132,299
Total Debt Service of Issue	\$42,725,875	\$258,332,313	\$18,427,583	\$319,485,771
Average Annual D/S of Issue	\$1,424,196	\$8,611,077	\$18,427,583	\$10,649,526
Max. Annual D/S of Issue	\$1,430,750	\$8,637,250	\$18,427,583	\$27,654,521
Prior Reserve Requirement	\$110,819,563	\$48,500,349	-	-
New Reserve Requirement	\$98,880,606	\$44,301,058	-	-
Reduction (Increase) in Req.	\$11,938,957	\$4,199,291	-	-
Available Cash	\$14,350,467	\$6,292,854	-	-
Cash Release (Addition)	\$11,938,957	\$4,199,291	-	\$16,138,248
Par Amount Refunded	-	-	\$17,985,000	\$17,985,000
Maturity Refunded	-	-	2023	2023
NPV Savings (\$)	-	-	\$373,843	\$373,843
NPV Savings (%)	-	-	2.08%	2.08%

Sewage System Debt Service Coverage Patterns through 2032

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior Lien	Sr + 2nd Lien	Senior Lien	Sr + 2nd Lien
7/1/2023	2.22x	1.77x	2.21x	1.69x
7/1/2024	2.38x	1.77x	2.35x	1.68x
7/1/2025	2.41x	1.79x	2.39x	1.70x
7/1/2026	2.45x	1.79x	2.42x	1.71x
7/1/2027	2.50x	1.80x	2.47x	1.72x
7/1/2028	2.50x	1.82x	2.48x	1.74x
7/1/2029	2.44x	1.87x	2.42x	1.79x
7/1/2030	2.67x	1.90x	2.64x	1.82x
7/1/2031	2.74x	1.95x	2.71x	1.86x
7/1/2032	2.57x	2.00x	2.54x	1.91x

Water System Debt Service Coverage Patterns through 2032

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior Lien	Sr + 2nd Lien	Senior Lien	Sr + 2nd Lien
7/1/2023	1.91	1.39	1.78x	1.32x
7/1/2024	2.04	1.48	1.89x	1.39x
7/1/2025	2.02	1.47	1.87x	1.38x
7/1/2026	2.11	1.54	1.96x	1.45x
7/1/2027	2.19	1.60	2.03x	1.50x
7/1/2028	2.28	1.66	2.11x	1.56x
7/1/2029	2.37	1.72	2.20x	1.62x
7/1/2030	2.46	1.76	2.28x	1.66x
7/1/2031	2.55	1.83	2.36x	1.72x
7/1/2032	2.66	1.91	2.47x	1.79x

Pre-issue D/S and coverage utilizes existing debt service from 2020 transactions' official statements; These projections only include the 2022 GLWA issuance; The 2025-2032 projections are based off of the 2023 Cost of Service Study and represent only the wholesale system.

Proposed Water Supply System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$154,470,000	\$21,125,000	\$175,595,000
Project Fund	\$176,100,000	\$23,900,000	\$200,000,000
Arbitrage Yield	3.15%	3.15%	3.15%
True Interest Cost	3.85%	3.91%	3.86%
Average Life	19.0	19.0	19.0
PV of 1 Basis Point	\$131,230	\$17,830	\$149,060
Total Debt Service of Issue	\$300,981,625	\$41,161,229	\$342,142,854
Average Annual D/S of Issue	\$10,032,721	\$1,372,041	\$11,404,762
Max. Annual D/S of Issue	\$10,063,750	\$1,378,250	\$11,442,000
Prior Reserve Requirement	\$101,583,914	\$47,732,579	-
New Reserve Requirement	\$104,256,024	\$44,798,813	-
Reduction (Increase) in Req.	(\$2,672,110)	\$2,933,766	-
Available Cash	\$1,575,413	\$2,934,922	-
Cash Release (Addition)	(\$2,672,110)	\$2,933,766	\$261,656

Assumptions: Moody's/S&P/Fitch senior lien ratings of A1/AA-/A+ and second lien ratings of A2/A+/A; market rates as of 4/6/2022; 7/1 principal payments; 10-year par call on 7/1/2032; \$6.25 per bond all-in COI & UWD; Available cash figures sourced from PFM's 2022 Municipal Market Outlook and GLWA Borrowing Considerations presentation from 2/25/2022

The base case analysis also includes a tax-exempt current refunding of the Sewage System Series 2012A Bonds which will be callable on 7/1/2022. Because the Series 2012A Bonds' 2023 maturity is the only one available to be refunded, NPV savings (\$373,873 or 2.08%) are limited due to the near-term nature of the maturity compared to the call date. We did not include other refunding candidates in our base case scenario as the traditional means of achieving savings on those longer calls in 2024-2026 is a taxable advance refunding and in the current market, the breakevens to current refunding are high and no PV savings percentages are higher than 3.3%. This is discussed more below.

New Money and Refunding Alternative/Target Case: Achieving two "AA" Ratings and Releasing ALL Cash Reserves. In our alternative financing case, we have analyzed an issuance under which GLWA achieves two "AA" category ratings on its senior lien credits during the rating process and thus is able to release all senior lien reserve requirements. For this scenario we have contributed the entirety of the senior lien cash

Proposed Sewage Disposal System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Current Ref. of Senior 2012A	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$18,575,000	\$22,020,000	\$17,615,000	\$158,210,000
Project Fund	\$150,000,000	\$25,000,000	-	\$175,000,000
Arbitrage Yield	3.09%	3.09%	3.09%	3.09%
True Interest Cost	3.82%	3.88%	1.97%	3.82%
Average Life	19.0	19.0	0.9	17.0
PV of 1 Basis Point	\$101,454	\$18,737	\$1,585	\$121,777
Total Debt Service of Issue	\$231,040,438	\$42,905,000	\$18,422,354	\$292,367,792
Average Annual D/S of Issue	\$7,701,348	\$1,430,167	\$18,422,354	\$9,745,593
Max. Annual D/S of Issue	\$7,725,000	\$1,435,750	\$18,422,354	\$26,816,292
Prior Reserve Requirement	\$110,819,563	\$48,500,349	-	-
New Reserve Requirement	\$0	\$37,100,145	-	-
Reduction (Increase) in Req.	\$110,819,563	\$11,400,204	-	-
Available Cash	\$14,350,467	\$6,292,854	-	-
Cash Release (Addition)	\$14,350,467	\$6,292,854	-	\$20,643,321
Par Amount Refunded	-	-	\$17,985,000	\$17,985,000
Maturity Refunded	-	-	2023	2023
NPV Savings (\$)	-	-	\$377,422	\$377,422
NPV Savings (%)	-	-	2.10%	2.10%

Proposed Water Supply System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$152,495,000	\$21,110,000	\$173,605,000
Project Fund	\$176,035,000	\$23,965,000	\$200,000,000
Arbitrage Yield	3.10%	3.10%	3.10%
True Interest Cost	3.82%	3.88%	3.83%
Average Life	19.0	19.0	19.0
PV of 1 Basis Point	\$130,472	\$17,963	\$148,435
Total Debt Service of Issue	\$297,122,604	\$41,126,542	\$338,249,146
Average Annual D/S of Issue	\$9,904,087	\$1,370,885	\$11,274,972
Max. Annual D/S of Issue	\$9,934,000	\$1,372,250	\$11,310,250
Prior Reserve Requirement	\$101,583,914	\$47,732,579	-
New Reserve Requirement	\$0	\$44,797,364	-
Reduction (Increase) in Req.	\$101,583,914	\$2,935,215	-
Available Cash	\$1,575,413	\$2,934,922	-
Cash Release (Addition)	\$1,575,413	\$2,934,922	\$4,510,335

Assumptions: Moody's/S&P/Fitch senior lien ratings of Aa3/AA-/A+ and second lien ratings of A1/A+/A; market rates as of 4/6/2022; 7/1 principal payments; 10-year par call on 7/1/2032; \$6.25 per bond all-in COI & UWD; Available cash figures sourced from PFM's 2022 Municipal Market Outlook and GLWA Borrowing Considerations presentation from 2/25/2022



reserve releases as a source of funds for the financing analysis. However, we have continued to *not* utilize the second lien cash DSRF releases for any purpose in the analysis (GLWA to choose). That said, **this scenario is able to release all cash reserves from all liens and credits with a total of \$25,153,656 released between Senior and Second.** We have structured the senior/second lien distribution of bonds in this alternative to achieve a maximum level of second lien cash reserve release coupled with a structure that achieves an advantageous cost of capital for GLWA by issuing a larger proportion of senior lien bonds. Stated differently, we have incorporated enough second lien bonds in the sewer and water analyses to allow GLWA to release the maximum amount of cash from its second lien DSRF, while also ensuring that the par amount of a second lien issuance is sufficiently large to garner ample investor interest in the primary market (i.e. at least approximately \$20 million of par amount). This structure allows for GLWA to issue a greater amount of senior lien bonds and realize additional pricing benefit by issuing more under its senior liens. We note that post-issuance coverage across all credits and liens under this alternative remains strong and should not be a cause for concern by the rating agencies.

You will notice in our sewage system analysis below, when compared to our base case, the distribution of bond proceeds is completely flipped, with a base case senior lien to second lien split of \$25.0mm and \$150.0mm, respectively, versus a respective split of \$150mm to \$25mm in our alternative case. You might then also observe that the water system distribution of proceeds is very similar between senior and second lien when comparing the base case and the alternative case. When sizing the water issuances in the base case above, the maximum combined senior plus second lien cash reserve release occurred near the point when the second lien cash reserve release was maximized. Because maximizing the second lien cash reserve release was the explicit goal of our alternative case, the base case and alternative case water issuances demonstrated similar results as one another.

We also mentioned above the fact that this alternative case would allow GLWA to achieve a lower interest cost (under the sewer system analysis in particular) due to the greater proportion of senior lien bonds utilized. In comparing the sewage base case versus sewage alternative case, the true interest cost is 7 basis points lower in the alternative case. Part of this decrease is due to a slight pricing benefit of the single notch upgrade (which we have conservatively assumed to be 2-5 bps across the curve) and another portion of the decrease is due to this reallocation of senior/second bonds issued. If the benefit of this reallocation to include additional senior lien bonds is 3 bps, that translates to over \$360k in NPV savings (with the PV01 of the entire sewage alternative case being \$122k).

Augmentation Available for Alternative/Target Case: GRS Pension Payment Reduction. With GRS Pension payments terminating in 2023, O&M expense is reduced by approximately \$10.3 million for the Water System and \$13.6 million for the Sewer System in 2024 and beyond (Quarterly Budget Amendment Report). With this, coverage increases allowing for more bond principal to be placed in nearer term years. We'd like to explore this strategy with GLWA and PFM for this issuance, but also know that this room can be used with the expected Regional System Capital needs in FY2025 and the bonding associated with it.

Taxable Advance Refunding Considerations (Wait and See Approach in the Current Market). We have analyzed and provided below a taxable advance refunding monitor of individual bonds across GLWA's various credits with call dates through 2024; for a complete monitor that includes all callable bonds through 2026, please see Appendix D. Utilizing interest rates as of close of business on April 6, 2022, the refunding monitor demonstrates only a few candidates that meet a more relaxed 3% NPV savings + 50% savings efficiency test (candidates highlighted in green), which includes \$149 million of Water Senior 2014D-4 bonds and \$133 million of Sewage Senior 2014C-3 bonds. These results have weakened over the course of 2022 due to the recent run up in treasury rates (10-year and 30-year USTs increased 127 bps and 94 bps YTD, respectively) and widening of municipal credit spreads (*source: US Treasury*). In light of the high levels of volatility that currently persist in the market, we have also included results demonstrating a scenario in which interest rates decrease by 50 basis points (bright purple column). The candidates that would then meet our aforementioned refunding test are highlighted in yellow; the majority of candidates callable in 2024 meet the refunding criteria under this scenario. Finally, we also have provided a column in the below monitor in red representing the individual breakeven to a hypothetical tax-exempt current refunding at the call date, assuming today's rates exist in the future. The candidates currently highlighted in green under a taxable advance refunding scenario have breakevens ranging from 145 to 153 bps. **Given these relatively high breakevens and the relaxed refunding criteria to generate "green" candidates, we would not recommend that GLWA refund any of these bonds on a taxable basis if rates stay the same or get worse (4/6/2022 market conditions). If that were to happen we would encourage GLWA to wait for the call dates to approach or for market conditions to turn more favorable. In knowing the minus 50 bps scenario creates such attractive candidates, GLWA should be prepared to seek approval for refunding multiple series of bonds.**¹⁰

Sewage System Debt Service Coverage Patterns through 2032

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior Lien	Sr + 2nd Lien	Senior Lien	Sr + 2nd Lien
7/1/2023	2.22x	1.77x	2.12x	1.70x
7/1/2024	2.38x	1.77x	2.26x	1.69x
7/1/2025	2.41x	1.79x	2.29x	1.71x
7/1/2026	2.45x	1.79x	2.32x	1.71x
7/1/2027	2.50x	1.80x	2.37x	1.72x
7/1/2028	2.50x	1.82x	2.38x	1.74x
7/1/2029	2.44x	1.87x	2.33x	1.79x
7/1/2030	2.67x	1.90x	2.54x	1.82x
7/1/2031	2.74x	1.95x	2.60x	1.87x
7/1/2032	2.57x	2.00x	2.45x	1.92x

Water System Debt Service Coverage Patterns through 2032

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior Lien	Sr + 2nd Lien	Senior Lien	Sr + 2nd Lien
7/1/2023	1.91	1.39	1.78x	1.32x
7/1/2024	2.04	1.48	1.89x	1.40x
7/1/2025	2.02	1.47	1.87x	1.38x
7/1/2026	2.11	1.54	1.96x	1.45x
7/1/2027	2.19	1.60	2.03x	1.50x
7/1/2028	2.28	1.66	2.12x	1.56x
7/1/2029	2.37	1.72	2.20x	1.62x
7/1/2030	2.46	1.76	2.28x	1.66x
7/1/2031	2.55	1.83	2.37x	1.72x
7/1/2032	2.66	1.91	2.47x	1.79x

Pre-issue D/S and coverage utilizes existing debt service from 2020 transactions' official statements; These projections only include the 2022 GLWA issuance; The 2025-2032 projections are based off of the 2023 Cost of Service Study and represent only the wholesale system.

¹⁰ Subject to 10-year par call; Key Assumptions: A1 / AA- / A+ rating by Moody's, S&P, and Fitch for senior lien and A2 / A+ / A ratings for second lien; pricing is indicative as of 4/6/2022 and subject to market conditions at time of pricing; principal payments of 7/1; dated/delivery date of 8/1/2022; estimated all-in cost of issuance of \$6.25/bond; SLGS funded escrow for demonstrative purposes (if SLGS are not available at the time of pricing, alternate securities would be used); Green light indicates 3% or greater NPV savings or 50% escrow efficiency, yellow light indicates 2% to 3% NPV savings or 40% to 50% escrow efficiency, and red light indicates under 2% NPV savings or under 40% escrow efficiency; no effect on reserve fund; Savings (or Escrow Efficiency calculated as NPV Savings / (NPV Savings + Negative Arbitrage))



Credit	Series	Maturity	Par Amount (\$000s)	Prior Coupon	Next Call	Current Market				Current Market - 50bps			Cash Optimization Ref.	
						NPV Savings (\$000)	% NPV Savings	Escrow Efficiency	Break-even to T/E Current Ref.	NPV Savings (\$000)	% NPV Savings	Escrow Efficiency	% NPV Savings	Escrow Efficiency
Water Sr	2014D-1	07/01/35	20,020	5.000%	07/01/24	302	1.5%	30.9%	1.67%	1358	6.8%	73.4%	12.0%	92.4%
Water Sr	2014D-1	07/01/37	24,170	5.000%	07/01/24	137	0.6%	13.4%	1.68%	1537	6.4%	70.0%	11.9%	91.9%
Water Sr	2014D-2	07/01/25	29,525	5.000%	07/01/24	(9)	-0.1%	--	1.66%	406	1.4%	86.7%	2.2%	115.1%
Water Sr	2014D-2	07/01/26	50,370	5.000%	07/01/24	469	0.9%	38.3%	1.53%	1431	2.8%	83.7%	4.3%	102.7%
Water Sr	2014D-2	07/01/27	34,340	5.000%	07/01/24	579	1.7%	48.6%	1.49%	1391	4.1%	82.8%	6.2%	100.0%
Water Sr	2014D-2	07/01/28	22,690	5.000%	07/01/24	559	2.5%	55.8%	1.44%	1196	5.3%	83.9%	8.1%	98.8%
Water Sr	2014D-4	07/01/29	47,265	5.000%	07/01/24	1409	3.0%	58.3%	1.45%	2938	6.2%	83.8%	9.5%	97.1%
Water Sr	2014D-4	07/01/30	54,305	5.000%	07/01/24	1713	3.2%	57.2%	1.51%	3686	6.8%	82.7%	10.9%	96.3%
Water Sr	2014D-4	07/01/31	28,515	5.000%	07/01/24	930	3.3%	56.2%	1.50%	2075	7.3%	81.9%	12.2%	95.8%
Water Sr	2014D-4	07/01/32	18,950	5.000%	07/01/24	605	3.2%	53.9%	1.53%	1434	7.6%	80.8%	13.3%	95.3%
Water Sr	2014D-4	07/01/33	7,765	5.000%	07/01/24	194	2.5%	45.3%	1.63%	558	7.2%	77.5%	12.8%	94.2%
Water Sr	2014D-4	07/01/34	52,560	5.000%	07/01/24	1090	2.1%	39.4%	1.67%	3713	7.1%	75.7%	12.3%	93.2%
Water 2nd	2014D-6	07/01/25	2,870	5.000%	07/01/24	(9)	-0.4%	--	--	31	1.1%	73.0%	1.9%	105.2%
Water 2nd	2014D-6	07/01/26	1,895	5.000%	07/01/24	10	0.6%	24.7%	1.62%	47	2.5%	76.7%	3.0%	85.1%
Water 2nd	2014D-6	07/01/27	1,930	5.000%	07/01/24	24	1.2%	38.3%	1.55%	69	3.6%	77.6%	5.8%	96.7%
Water 2nd	2014D-6	07/01/28	445	5.000%	07/01/24	9	1.9%	47.2%	1.26%	21	4.7%	79.7%	7.5%	96.3%
Water 2nd	2014D-6	07/01/29	500	5.000%	07/01/24	12	2.3%	50.3%	1.49%	28	5.6%	80.0%	8.8%	94.9%
Water 2nd	2014D-6	07/01/30	405	5.000%	07/01/24	10	2.4%	49.0%	1.55%	24	6.0%	79.0%	10.1%	94.3%
Water 2nd	2014D-6	07/01/31	420	5.000%	07/01/24	10	2.5%	47.6%	1.54%	27	6.5%	78.2%	11.3%	94.0%
Water 2nd	2014D-6	07/01/32	440	5.000%	07/01/24	10	2.3%	44.5%	1.56%	29	6.7%	77.1%	12.3%	93.6%
Water 2nd	2014D-6	07/01/33	455	5.000%	07/01/24	7	1.6%	33.2%	1.66%	28	6.2%	73.3%	11.8%	92.4%
Water 2nd	2014D-6	07/01/34	1,215	5.000%	07/01/24	13	1.1%	24.7%	1.69%	73	6.0%	71.1%	11.4%	91.3%
Water 2nd	2014D-6	07/01/36	33,115	5.000%	07/01/24	(82)	-0.2%	--	--	1726	5.2%	64.9%	11.0%	90.2%
Sewage Sr	2014C-3	07/01/25	47,045	5.000%	07/01/24	(31)	-0.1%	--	--	647	1.4%	86.7%	2.2%	115.1%
Sewage Sr	2014C-3	07/01/26	40,375	5.000%	07/01/24	376	0.9%	38.3%	1.54%	1147	2.8%	83.7%	4.3%	102.7%
Sewage Sr	2014C-3	07/01/27	45,895	5.000%	07/01/24	774	1.7%	48.6%	1.49%	1859	4.1%	82.8%	6.2%	100.0%
Sewage Sr	2014C-3	07/01/28	24,075	5.000%	07/01/24	593	2.5%	55.8%	1.44%	1270	5.3%	83.9%	8.1%	98.8%
Sewage Sr	2014C-3	07/01/29	15,770	5.000%	07/01/24	470	3.0%	58.3%	1.46%	980	6.2%	83.8%	9.5%	97.1%
Sewage Sr	2014C-3	07/01/30	25,285	5.000%	07/01/24	797	3.2%	57.2%	1.52%	1716	6.8%	82.7%	10.9%	96.3%
Sewage Sr	2014C-3	07/01/31	31,945	5.000%	07/01/24	1042	3.3%	56.2%	1.51%	2325	7.3%	81.9%	12.2%	95.8%
Sewage Sr	2014C-3	07/01/32	50,515	5.000%	07/01/24	1612	3.2%	53.9%	1.53%	3822	7.6%	80.8%	13.3%	95.3%
Sewage Sr	2014C-3	07/01/33	22,665	5.000%	07/01/24	566	2.5%	45.3%	1.63%	1628	7.2%	77.5%	12.8%	94.2%
Sewage Sr	2014C-6	07/01/32	9,100	5.000%	07/01/24	290	3.2%	53.9%	1.53%	689	7.6%	80.8%	13.3%	95.3%
Sewage Sr	2014C-6	07/01/33	79,800	5.000%	07/01/24	1992	2.5%	45.3%	1.63%	5731	7.2%	77.5%	12.8%	94.2%
Sewage 2nd	2014C-7	07/01/25	5,025	5.000%	07/01/24	(8)	-0.4%	--	--	55	1.1%	73.0%	1.9%	105.2%
Sewage 2nd	2014C-7	07/01/26	4,945	5.000%	07/01/24	27	0.3%	24.7%	1.62%	121	2.5%	76.7%	3.0%	85.1%
Sewage 2nd	2014C-7	07/01/27	5,260	5.000%	07/01/24	64	1.2%	38.3%	1.55%	88	3.6%	77.6%	5.8%	96.7%
Sewage 2nd	2014C-7	07/01/28	5,480	5.000%	07/01/24	105	1.9%	47.2%	1.26%	258	4.7%	79.7%	7.5%	96.3%
Sewage 2nd	2014C-7	07/01/29	5,460	5.000%	07/01/24	128	2.3%	50.3%	1.49%	304	5.6%	80.0%	8.8%	94.9%
Sewage 2nd	2014C-7	07/01/30	275	5.000%	07/01/24	7	2.4%	49.0%	1.55%	17	6.0%	79.0%	10.1%	94.3%
Sewage 2nd	2014C-7	07/01/31	280	5.000%	07/01/24	7	2.5%	47.6%	1.54%	18	6.5%	78.2%	11.3%	94.0%
Sewage 2nd	2014C-7	07/01/32	14,450	5.000%	07/01/24	338	2.3%	44.5%	1.56%	964	6.7%	77.1%	12.3%	93.6%
Sewage 2nd	2014C-7	07/01/34	1,595	5.000%	07/01/24	18	1.1%	24.7%	1.69%	96	6.0%	71.1%	11.4%	91.3%
Sewage 2nd	2014C-7	07/01/35	910	5.000%	07/01/24	4	0.5%	12.2%	1.70%	52	5.7%	68.4%	11.0%	90.3%
Sewage 2nd	2014C-7	07/01/36	385	5.000%	07/01/24	(1)	-0.2%	--	--	20	5.2%	64.9%	11.0%	90.2%

Creating Value in the Current Market for Refundings: Cash Optimization Refunding Opportunities. On the far right of the monitor provided above (in the magenta-colored column) we have also included statistics for a cash optimization refunding of GLWA's bonds. Cash optimization is a strategy that would allow the Authority to apply excess cash in GLWAs unrestricted cash and investments funds to defease bonds and realize savings greater than those attainable from a taxable refunding; this strategy can closely mirror the results of a tax-exempt advance refunding (a tool which is not currently available for issuers). A cash defeasance involves applying cash to the purchase of a defeasance escrow for those maturities that produce an expected level of savings, and later (typically at least 15+ days later, but subject to counsel direction) GLWA would sell tax-exempt bonds with the same maturity structure as those they defeased with cash to replenish their cash. This structure mimics a tax-exempt advance refunding, but given the separation of at least 15 days, creates muted risk (consult with PFM) that the market must be open and available with proper spreads and rates when the bonds are issued 15 days later. In this instance the bonds would be issued with the current expected new money issuance and the defeasance would happen 15 days or greater prior to.

Cash Optimization Results

	Defeasance of Water Bonds	Defeasance of Sewer Bonds
Defeas. Escrow Funded	8/1/2022	8/1/2022
Par Defeased	\$63,140,000	\$22,060,000
Escrow Yield	2.50%	2.50%
Escrow Cost	\$66,340,592	\$23,178,230
Gross Savings	\$10,405,208	\$3,124,313
NPV Savings (\$)	\$7,776,395	\$2,509,469
NPV Savings (%)	12.32%	11.38%

New Money Transaction Sold 25+ Days Later

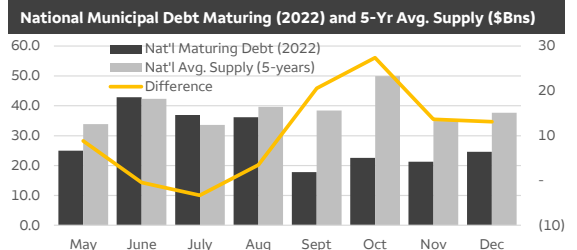
	Defeasance of Water Bonds	Defeasance of Sewer Bonds
Sale Date	8/27/2022	8/27/2022
Dated/Delivery Date	9/11/2022	9/11/2022
Par Amount	\$56,930,000	\$19,995,000
Arbitrage Yield	2.99%	2.92%
All-In TIC	3.39%	3.01%
PV of 1 bp change	\$53,285	\$17,485

Key Assumptions: SLGS funded escrow (if SLGS are unavailable at the time of defeasance, other securities would be used); savings based on indicative GLWA pricing as of 4/6/2022; COI of \$6.25/bond; subject to a 10-year par call

For the analysis at right, we have analyzed GLWA's existing days cash on hand and total unrestricted cash and investments figures for both its Water and Sewer funds and calculated the amount of cash that could be expended for GLWA to have 365 days cash on hand leftover in each fund. We note that 250 days cash on hand or more is considered strong by the rating agencies, and thus we don't believe there would be any negative effect in that regard, especially considering it is only a brief decline of approximately 15-30 or so days. We'd note that the 365 days is used as an example and a number greater or less than can be used to GLWA's comfort.

To arrive at 365 days cash on hand for each fund, we have modeled a defeasance of up to \$70 million of Water bonds and up to \$23.5 million of sewer bonds. We have selected a combination of high-performing candidates from the magenta column above (specific candidates highlighted in light pink) and tried to approach our stated defeasance thresholds as closely as possible. As seen in our summary table of results, we have selected \$85.2 million of Water and Sewer bonds to analyze under a cash optimization refunding. These candidates currently demonstrate aggregate NPV savings of \$10.3 million, or 12.1% of par refunded. **These results are very compelling and far above anything possible in the taxable advance refunding market.**

Market Timing Considerations. WF CIB will dedicate our firm's resources to provide a successful financing for the Authority. Absent the immediate need for the project fund proceeds at on a particular date, GLWA can look to various muni market data, global news and the economic calendar to assist in the issuance timing decision. First, GLWA can look to the relationship between expected national maturing municipal debt in 2022 and the 5-year average of new issuance supply. As detailed at right, the relationship between maturing debt and the average supply would be beneficial for issuance during the summer month of June



Source: Bloomberg - Municipal Bond Market Profile as of 4/12/22



through August. Supply outstrips maturing debt by \$20 to \$25 mm in September and October before plateauing for the remainder of the year (Bloomberg, 4/12/22).

Monitor Global News and the Associated Effects on Markets. As described in more detail in our response to Question E.i., the impacts of the war in Ukraine and continued elevated inflation has led to market uncertainty and volatility. These factors have had a major impact on the municipal bond market in 2022 as many investors have pulled money from the market which has reduced demand and pushed interest rates higher.

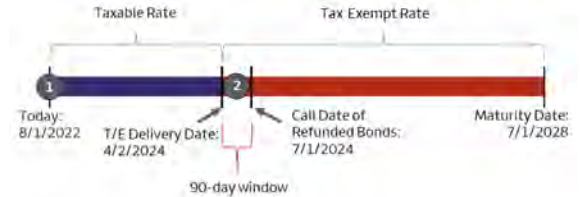
Monitor Significant Calendar Items. As we work with GLWA and its Municipal Advisor on a timeline, we would monitor the primary markets for competing transactions and the economic calendar for important market reports. If a particular day or week can be found where the primary calendar is lighter, co-managers and investors might pay more attention to the offering, and the pricing and distribution of the bonds may benefit. Additionally, we suggest trying to avoid planning to price immediately before or after major economic data releases and Fed meetings (2022 economic calendar from WFSLLC).

Market-Moving Events – Summer 2022

Event	Dates
FOMC Statement	6/15; 7/27; 9/21
FOMC Minutes	7/6; 8/17
CPI	6/10; 7/13; 8/10; 9/13
Employment	6/3; 7/8/ 8/5; 9/2
GDP	6/29; 7/28

iii. Provide examples of innovative financing techniques, financial products, structures, suggestions, or ideas that would be relevant to GLWA and how they would be specifically applied to GLWA.

Wells Fargo could buy GLWA’s Bonds to Create Refunding Value well in excess of Public Markets: Wells Fargo Bank, N.A. Convertible Direct Purchase (“CDP”)¹¹. As an alternative to issuing public market taxable advance refunding bonds, while still mitigating interest rate risk and locking in savings, the Authority may wish to consider a WFBNA convertible direct purchase refunding of bonds maturing through 2032. **This is one of Wells Fargo’s competitive advantages, as many of our competitors do not offer this product.** Under a CDP, WFBNA would purchase a fixed rate, taxable bond that converts to tax-exempt (both taxable and tax-exempt rates are determined upfront) from GLWA with proceeds that would defease selected bonds. While initially taxable, the bond converts to tax-exempt within 90 days of the call date of the refunded bonds. This is usually done with the Authority delivering a tax-exempt bond opinion to WFBNA. A graphic explaining the mechanics is included in this section. Please note that the CDP is subject to further due diligence and WFBNA credit approval. We also note our current approved bank capacity for GLWA is \$150 million, or more if desired by GLWA.



WFBNA Convertible Direct Purchase Refunding Statistics

Summary Statistics	Water Senior Series 2014D-2	Sewer Senior Series 2014C-3
Maturities Refunded	2025 - 2028	2025 - 2032
Refunding Bond Par Amount	\$144,020,000	\$295,295,000
Par Amount of Refunded Bonds	\$136,925,000	\$280,905,000
Final Maturity	7/1/2028	7/1/2032
Arbitrage Yield	2.76%	2.81%
All-in TIC	2.78%	2.82%
Average Life (Years)	4.2	6.1
PV of 1 Basis Point Change	\$0	\$0
Net PV Savings (\$)	\$5,762,188	\$21,318,168
Net PV Savings (%)	4.21%	7.59%
Escrow Efficiency*	89.44%	92.61%
Taxable Advance Ref. NPV Savings	\$1,588,385	\$5,905,893
NPV Svgs: Convertible DP Advantage	\$4,173,802	\$15,412,275

*Escrow Efficiency = NPV Savings / (NPV Savings + Negative Arbitrage); Key Assumptions: Assumed dated/delivery date of 8/1/2022; Pricing is indicative as of 4/6/2022 and subject to market conditions at pricing; Ratings of AA-/AA-/+ A+ by Moody's, S&P, and Fitch; all-in COI: \$150k per convertible series refunded and 0.625% of par amount for taxable advance refunding

In this section as well, we demonstrate the results of a CDP for the Authority’s Water Senior 2014D-2 Bonds and Sewer Senior 2014C-3 Bonds as an example (excluding the 2033 maturity of the Sewer Senior 2014C-3 Bonds). In aggregate across the two demonstrated opportunities and **when compared to a taxable advance refunding of the same maturities (yellow highlight), the CDP provides an additional \$19.6 million in NPV savings (4.7% of par refunded).** Given the significant CDP advantage versus a taxable advance refunding, **this is an alternative financing strategy that GLWA may want to consider.**

Sewage Series 2014C-3 and 2014C-6 – Top Bondholders

Top Publicly Reporting Holders	Amount Held	% Held of Total Par Outstanding
Vanguard	\$69,420,000	17.7%
Alliance Bernstein	\$47,740,000	12.2%
Eaton Vance	\$23,925,000	6.1%
Franklin	\$23,000,000	5.9%
Blackrock	\$21,653,180	5.5%
BNY Mellon	\$18,625,000	4.7%
Invesco	\$16,925,000	4.3%
Nuveen	\$14,635,000	3.7%
Fidelity	\$8,641,670	2.2%
Columbia	\$6,650,000	1.7%
Bank of Montreal	\$6,225,000	1.6%

Publicly reporting bondholders sourced from Bloomberg on 4/12/2022

Creating Value in the Current Market for Refundings: Tender Refunding. As another alternative to a purely taxable refunding, the Authority could seek to execute a bond tender whereby current bondholders would sell back their existing debt to GLWA at a specific price (the tender price), with such cost paid for by GLWA through the issuance of tax-exempt (instead of taxable) refunding bonds. A tender or exchange is a means to boost savings by shifting from a taxable advance refunding to a tax-exempt current refunding for tendered bonds. In addition, a tender is ideally used as a means to increase refunding savings, not a driver to complete a refunding. While it is difficult to forecast how successful a tender process will be, any bonds tendered would

be an enhancement to the refunding savings. **We have had success with recent tenders and have the most relevant recent case study; On April 12, 2022, Wells Fargo CIB completed a tender process for Anaheim Public Utilities in which four series of bonds were**

Series	Maturity (7/1)	Par (\$)	Coupon	Taxable Advance Refunding (Escrow)		Tax-Exempt Bond Tender				Tender Advantage		Combined Transaction (assumes 25% tendered)			
				PV Savings \$	PV Savings %	Tender Price	B/E Tender	PV Savings \$	PV Savings %	PV Savings \$	PV Savings %	Tendered Par \$	TX Ref'd Par \$	PV Savings \$	PV Savings %
2014C-3	7/1/2025	47,045,000	5.00%	(41,084)	-0.09%	106.286	107.682	102,088	0.22%	143,172	0.30%	11,760,000	35,285,000	-5,295	-0.01%
2014C-3	7/1/2026	40,375,000	5.00%	366,755	0.91%	106.286	109.190	905,878	2.24%	539,124	1.34%	10,095,000	30,280,000	501,552	1.24%
2014C-3	7/1/2027	45,895,000	5.00%	764,086	1.66%	106.286	110.623	1,900,139	4.14%	1,136,052	2.48%	11,475,000	34,420,000	1,048,130	2.28%
2014C-3	7/1/2028	24,075,000	5.00%	588,050	2.44%	106.286	111.918	1,419,220	5.89%	831,170	3.45%	6,020,000	18,055,000	795,886	3.31%
2014C-3	7/1/2029	15,770,000	5.00%	466,856	2.96%	106.286	112.857	1,129,850	7.16%	662,994	4.20%	3,945,000	11,825,000	632,710	4.01%
2014C-3	7/1/2030	25,285,000	5.00%	792,176	3.13%	106.286	113.905	2,119,835	8.38%	1,327,659	5.25%	6,320,000	18,965,000	1,124,025	4.45%
2014C-3	7/1/2031	31,945,000	5.00%	1,035,617	3.24%	106.282	113.416	3,033,989	9.50%	1,998,372	6.26%	7,985,000	23,960,000	1,535,132	4.81%
2014C-3	7/1/2032	50,515,000	5.00%	1,602,112	3.17%	106.282	114.585	5,272,562	10.44%	3,670,450	7.27%	12,630,000	37,885,000	2,519,815	4.99%
2014C-3	7/1/2033	22,665,000	5.00%	561,230	2.48%	106.282	115.851	2,225,584	9.82%	1,664,354	7.34%	5,665,000	17,000,000	977,227	4.31%
2014C-6	7/1/2032	9,100,000	5.00%	288,612	3.17%	106.283	115.682	949,779	10.44%	661,168	7.27%	2,275,000	6,825,000	453,903	4.99%
2014C-6	7/1/2033	79,800,000	5.00%	1,976,005	2.48%	106.283	115.708	7,835,556	9.82%	5,859,551	7.34%	19,950,000	59,850,000	3,440,893	4.31%
Totals		\$392,470,000		8,400,415	2.14%			26,894,481	6.85%	18,494,065	4.71%	98,120,000	294,350,000	13,023,879	3.32%

Assumptions: Rates as of 4/6/2022, \$6.25/bond COI, \$2.70/bond Tender Costs, Tender Price calculated with a 0.35% yield concession to estimated Pre-Refunded Yields

PV Benefit of Tender (B minus A) = \$4,623,564

assumes 25% tendered

¹¹ Product of Wells Fargo Bank, N.A. Subject to credit approval and negotiation of terms and conditions



invited for tender aggregating to \$282.3 million in par; of this amount, \$139.9 million (or nearly 50% of the invited bonds) were offered for tender and \$118.6 million were accepted. We estimate the tender refunding provided NPV savings of \$5.0 million greater than an equivalent taxable refunding based on market conditions as of April 12, 2022.

One factor in the success of a tender is based on the concentration of bondholders. We have chosen to analyze a tender refunding for GLWA’s Sewage Disposal System Senior Lien Revenue Bonds, Series 2014C-3 and 2014C-6 bonds due to their relatively high concentration of a few bondholders. **As we demonstrate in the accompanying table, assuming a 25% tender success rate in the current market, GLWA could recognize NPV savings that are improved by approximately \$4.62 million versus solely a taxable refunding of these bonds.**

SRF Junior Lien Refunding Considerations. In recent years we have observed instances across the municipal market of some issuers’ subordinate SRF loans that can be refunded on a tax-exempt basis for near-term debt service savings and/or the creation of additional capacity. While coupon rates on these type of loans are typically low (often in the 2% range), we have found that it is frequently worth exploring an SRF loan refunding where applicable, and we have assisted multiple of our clients with refunding their SRF loans or refinancing their loans at a lower interest cost. As seen in the results at right, GLWA’s junior lien SRF loans do not produce compelling net present value savings at this time, however, all of the 2.5% coupon candidates do produce positive savings. If market conditions are to improve, this may be a strategy that the Authority may find worth exploring. **Ultimately, a theoretical refunding of SRF loans could create upfront room for additional debt service and allow GLWA to consider accelerating a portion of senior or second lien debt service that otherwise would have been placed out longer.**

Summary of Sewage Fund Junior Lien SRF Loans Analyzed

Series	Par Analyzed	Coupons	Refunded Maturities	Individual NPV Svgs %
2001 SRF-1	\$15,100,000	2.500%	10/22 – 10/24	0.26%
2001 SRF-2	\$10,995,000	2.500%	10/22 – 10/24	0.26%
2002 SRF-1	\$1,195,000	2.500%	10/22 – 04/23	0.20%
2002 SRF-3	\$5,335,000	2.500%	10/22 – 10/24	0.26%
2003 SRF-1	\$11,740,000	2.500%	10/22 – 10/25	0.23%
2003 SRF-2	\$4,580,000	2.500%	10/22 – 04/25	0.28%
2004 SRF-2	\$3,265,000	2.125%	10/22 – 04/25	-0.24%
2004 SRF-3	\$2,255,000	2.125%	10/22 – 04/25	-0.24%
Total	\$54,465,000			

Assumptions: Pricing is indicative as of 4/6/2022 and subject to market conditions at pricing; Assumes second lien ratings; delivery date of 8/1/22; uniform savings

iv. Tax-exempt and taxable scales from 1-30 years (July 1 maturities) for each of the Water Senior, Water Second, Sewer Senior, and Sewer Second liens. Assume market conditions as of April 6, 2022.

Indicative Pricing Scales. Within the table below, we have provided indicative tax-exempt and taxable pricing (uninsured) for the Authority’s Water Senior, Water Second, Sewer Senior, and Sewer Second liens based on interpolated MMD and US Treasury yields as of April 6, 2022. **We note that at present, we feel that GLWA’s water and sewer credits trade at the same spreads as each other given their equivalent ratings.** Please also note that while these spreads shown are as of 4/6/2022, a market environment demonstrating less volatility would likely allow GLWA’s spreads to be tighter than what is shown below. **A couple of other important points to note: If GLWA is upgraded a notch by either Moody’s or Fitch we believe they could see up to a 5 bps point improvement in these spreads, also, if GLWA were to choose to issue their bonds as ESG, we believe the increased interest could help tighten spreads shown below by 2-3 basis points.** Lastly, we believe insurance in this market is worth exploring. **We believe insurance would offer a pick up of approximately 5 basis points in spread on the Senior Lien and up to 10 basis points in spread on the Junior Lien.** Insurance could also be helpful to diversify the investor base in a difficult market environment. While insurance companies are never willing to guarantee pricing of insurance for RFP purposes, we believe insurance could be very inexpensive and may help. We have run an insurance breakeven and that is included in Appendix E. You will see the analysis is by maturity and by credit. Given conversations with insurers on other credits, we believe, in the current market, there may be some benefit to insurance.

Indicative Pricing - Great Lakes Water Authority - Water Supply System Revenue Bonds & Sewage Disposal System Revenue Bonds

Maturity (7/1)	Tax-Exempt Scales Senior Lien						Second Lien				Taxable Scales Senior Lien				Second Lien			
	MMD	Type	Spread	Coupon	YTC	YTM	Spread	Coupon	YTC	YTM	UST	Type	Spread	Coupon/Yield	Price	Spread	Coupon/Yield	Price
2023	1.74%	Serial	0.25%	5.00%	1.99%	-	0.34%	5.00%	2.08%	-	2.50%	Serial	0.15%	2.65%	100.0	0.25%	2.75%	100.0
2024	1.91%	Serial	0.30%	5.00%	2.21%	-	0.40%	5.00%	2.31%	-	2.50%	Serial	0.35%	2.85%	100.0	0.45%	2.95%	100.0
2025	2.02%	Serial	0.34%	5.00%	2.36%	-	0.44%	5.00%	2.46%	-	2.67%	Serial	0.45%	3.12%	100.0	0.55%	3.22%	100.0
2026	2.08%	Serial	0.37%	5.00%	2.45%	-	0.47%	5.00%	2.55%	-	2.70%	Serial	0.60%	3.30%	100.0	0.70%	3.40%	100.0
2027	2.11%	Serial	0.40%	5.00%	2.51%	-	0.50%	5.00%	2.61%	-	2.70%	Serial	0.75%	3.45%	100.0	0.85%	3.55%	100.0
2028	2.13%	Serial	0.43%	5.00%	2.56%	-	0.53%	5.00%	2.66%	-	2.69%	Serial	0.85%	3.54%	100.0	0.95%	3.64%	100.0
2029	2.20%	Serial	0.46%	5.00%	2.66%	-	0.56%	5.00%	2.76%	-	2.69%	Serial	0.95%	3.64%	100.0	1.05%	3.74%	100.0
2030	2.25%	Serial	0.48%	5.00%	2.73%	-	0.58%	5.00%	2.83%	-	2.61%	Serial	1.15%	3.76%	100.0	1.25%	3.86%	100.0
2031	2.29%	Serial	0.50%	5.00%	2.79%	-	0.60%	5.00%	2.89%	-	2.61%	Serial	1.25%	3.86%	100.0	1.35%	3.96%	100.0
2032	2.33%	Serial	0.52%	5.00%	2.85%	-	0.62%	5.00%	2.95%	-	2.61%	Serial	1.35%	3.96%	100.0	1.45%	4.06%	100.0
2033	2.37%	Serial	0.55%	5.00%	2.92%	3.07%	0.65%	5.00%	3.02%	3.16%	2.61%	Serial	1.50%	4.11%	100.0	1.60%	4.21%	100.0
2034	2.40%	Serial	0.58%	5.00%	2.98%	3.24%	0.68%	5.00%	3.08%	3.33%	2.61%	Serial	1.60%	4.21%	100.0	1.70%	4.31%	100.0
2035	2.43%	Serial	0.60%	5.00%	3.03%	3.39%	0.70%	5.00%	3.13%	3.47%	2.61%	Serial	1.70%	4.31%	100.0	1.80%	4.41%	100.0
2036	2.44%	Serial	0.60%	5.00%	3.04%	3.48%	0.70%	5.00%	3.14%	3.56%	2.61%	Serial	1.80%	4.41%	100.0	1.90%	4.51%	100.0
2037	2.46%	Serial	0.60%	5.00%	3.06%	3.57%	0.70%	5.00%	3.16%	3.64%	2.61%	Serial	1.85%	4.46%	100.0	1.95%	4.56%	100.0
2038	2.48%	Serial	0.60%	5.00%	3.08%	3.64%	0.70%	5.00%	3.18%	3.71%	2.63%	-	-	-	-	-	-	-
2039	2.50%	Serial	0.60%	5.00%	3.10%	3.71%	0.70%	5.00%	3.20%	3.78%	2.63%	-	-	-	-	-	-	-
2040	2.51%	Serial	0.60%	5.00%	3.11%	3.76%	0.70%	5.00%	3.21%	3.83%	2.63%	-	-	-	-	-	-	-
2041	2.52%	Serial	0.60%	5.00%	3.12%	3.81%	0.70%	5.00%	3.22%	3.87%	2.63%	-	-	-	-	-	-	-
2042	2.54%	Serial	0.60%	5.00%	3.14%	3.86%	0.70%	5.00%	3.24%	3.92%	2.63%	Term	1.90%	4.53%	100.0	2.00%	4.63%	100.0
2047	2.62%	Term	0.63%	5.00%	3.25%	4.06%	0.73%	5.00%	3.35%	4.11%	2.63%	-	-	-	-	-	-	-
2052	2.67%	Term	0.65%	5.00%	3.32%	4.17%	0.75%	5.00%	3.42%	4.22%	2.63%	Term	2.00%	4.63%	100.0	2.10%	4.73%	100.0

Interpolated MMD Rates & UST rates as of 4/6/2022; Delivery date of 8/1/2022; Rated A1 / AA- / A+ for senior lien and A2 / A+ / A for second lien by Moody's, S&P, Fitch; 10-year par call on 7/1/2032; pricing is indicative & subject to market conditions

v. Analytical Capabilities: Provide a brief description of your firm’s analytic capabilities and how your firm proposes to use such capabilities to assist the Authority.

All the members of GLWA’s team, including Kevin, Michael and Kristen are very quantitatively driven. This fact, marked with the addition of Scott Goldstein as head quantitative specialist, allows us to create models for anything GLWA or PFM could contemplate. In fact, we believe we already have all the models necessary



to serve GLWA as shown in our responses to the new money/refunding sections. As previously mentioned, Scott Goldstein, who has over 30 years of directly relevant experience, has served as our quantitative expert for the Authority since our response to GLWA's 2018 RFP. Scott has structured some of the most complex transactions executed in the municipal market (over 1,000) and has extensive experience working on water and sewer revenue financings. Scott will be responsible for providing GLWA with cash flow and coverage analysis, working closely with Kevin Hoecker, Michael Engelbrecht, Kristen Fontana, and Ryan Trauffer. **For GLWA we employ What'sBest!, DBC Finance and other useful excel modeling.** Ultimately, we feel that our model and knowledge of the Authority's objectives will produce what we believe is the most efficient financing for GLWA, such as the various financing plans for the Authority's new money and refunding scenarios. We have also applied our model in determining the optimal breakdown of senior lien versus second lien new money proceeds for the upcoming water and sewer issuances. The model sizes multiple proceed combinations to determine the most advantageous structure for releasing maximum amounts of cash from the respective reserve funds based on the differing reserve requirements for each system's senior and second liens. It can also take into account cross lien refundings to maximize savings and reserve releases. Wells Fargo also has a break even insurance model as well, where we can calculate, given the expected pick up in spreads from insurance (in this instance 5-10 basis points) what insurance could cost while still being beneficial to GLWA.

vi. Provide a credit rating strategy for GLWA to maintain or upgrade its bond ratings over the planning horizon of two to three years.

Our alternate/target financing scenario contemplates the potential for upgrades in the near term. **We remain steadfast in our belief that GLWA's senior lien bonds should be rated in the low AA rating category with the Second lien remaining just one notch below.** Our updated credit analysis highlighted below in this section continues to underscore that conclusion. Indeed, the GLWA continues to make incremental progress with the 2020 issuances yielding yet another round of upgrades. We recommend redoubling efforts to earn additional upgrades in conjunction with the 2022 issuance. Our recommended rating strategy is to target a one notch upgrade from Fitch and Moody's. We recognize that this is an important threshold as it would engender the release of the senior lien water and sewer bonds from the current debt service reserve fund requirement. Our "alternate/target" scenarios underscore the impact of two AA-/Aa3 ratings on the financing structure and economics. While we believe that only two ratings are necessary to market the proposed issuances, given the goal of an upgrade from either Moody's or Fitch, we suggest pursuing ratings from all three agencies in conjunction with the 2022 issuance. **Once a second AA-/Aa3 rating is achieved then we suggest pursuing two ratings on issuances thereafter.** We recognize that all three rating agencies will maintain ratings on all outstanding prior debt yet only including the AA-/Aa3 rating on an issuance could have a marginal pricing benefit. Below we highlight a few aspects of GLWA's credit story which we believe will well-position the Authority for an upgrade or positive outlook from Moody's and/or Fitch.

GLWA is a Mature Organization with Demonstrated Strong Financial Performance and Management. We believe that it is critical to highlight that GLWA is a mature organization with proven ability to deliver strong financial and operational results. While GLWA has made incredible strides in receiving positive recognition for its accomplishments from the rating agencies, it is more difficult to earn upgrades than downgrades. As such, despite the plethora of peer data and financial metrics to support a Aa3/AA- senior lien rating, we believe that GLWA has been underrated due in part to the relatively short tenure of the organization. However, the Authority has now reached a milestone of 5 years of audited financial results that demonstrate strong financial performance over time. Furthermore, GLWA performed well despite a global pandemic as well as the continued incidence of severe weather events. Despite these headwinds, financial margins remain strong and FY 2021 debt service coverage exceeded budget forecasts. Further, the Biennial Budget/Five Year Plan, 2023 Cost of Service Study as well as our pro-forma debt service coverage provide debt service coverage ratios in-line with AA-/Aa3 rating senior lien water and sewer system ratings. It is important to note that the expiration of the GRS Legacy Pension and step-down in Accelerated Pension payments provides notable relief in FY 2024 and beyond. While GLWA's day's cash on hand is projected to fall from 1,043 days for the water system and 664 days for the sewer in FY 2021 to 538 and 413 days in FY 2022, these levels still provide ample liquidity. The reduction in cash is a deliberate strategy to limit debt issuance and rely on pay-go for capital improvements.

CIP Focused on Strategic Investments and Maintaining Manageable Long Term Liabilities. In an effort to conservatively manage its liabilities and preserve flexibility for future issuance, in FY 2021 GLWA intentionally shifted to rely solely on I&E funds to fund its CIP through FY 2022. The 2023-2027 CIP represents a very modest increase of 3-4% from the prior plan. Further, GLWA's capital investments are not driven by regulatory mandates but on the critical improvements including: continuing to right-size the water system, protecting public health and safety while maintaining strong service. We believe that GLWA's responsible use of debt to fund its CIP is an important mitigant to rating agency concerns associated with leverage.

GLWA Agreements Bolster Financial and Operational Resilience. We believe that it is important to continue to emphasize the mechanics of the water and sewer services agreement ("WSSA"), lease agreements, the master bond ordinance ("MBO"), MOU and charge structure as contributing to GLWA's resilience. For example, highlighting the ability of the local system to use its lease payment for its debt service obligation can have a negative impact on debt service. Also, collection issues associated with Highland Park are absorbed by member partners through the rate setting process. Lastly, the 2018 MOU has been functioning as intended to resolve periodic DWSD budget shortfalls. GLWA's unique agreements provide solid bondholder security and have supported its continued financial and operational strength.

Strong Regional Economic Recovery. It is important to continue to reinforce GLWA's very large and diverse regional service area economy. Moody's in particular references improved credit profile of the City of Detroit and sustained diversification of the service area's economic base as driver for a rating upgrade. While the area economy was impacted by the pandemic, the Detroit-Warren-Dearborn MSA unemployment rates rebounded to pre-pandemic levels in 2021. Furthermore, Moody's upgraded the City of Detroit to Ba2 (positive outlook) in March 2022. Overall, we suggest providing the rating agencies an update on regional economic trends as it will likely be an important driver for a Moody's upgrade.

Fitch Strategy. Fitch's upgraded GLWA's ratings in conjunction with the 2020 issuance using their revised criteria. Their new criteria focuses heavily on debt and capital investment needs in addition to operating and financial measures. Fitch has cited GLWA's leverage ratio, as measured by debt to funds available for debt service, falling below 10x as a driver for an upgrade. In Fitch's 2020 report they cite leverage ratios of 11.6x and 10.4x for the water and sewer systems,



respectively. Fitch revised Miami-Dade County Water and Sewer system to ‘positive’ outlook (rated A+ by Fitch, peer data below) due to their leverage ratio falling to around 10x. Thus we recommend focusing on projected trends in debt metrics and GLWA’s conservative CIP. Further, the peer analysis below underscores that Fitch rates highly levered issuers such as Massachusetts Water Resources Authority and Atlanta in the ‘AA’ category.

Moody’s Strategy. To the right, we provide our estimated Moody’s scorecard output for GLWA’s senior lien water and sewer credits. Similar to our past analyses, GLWA’s water and sewer revenue bond grid indicative scores are within the ‘Aa3’ rating range suggesting that the Authority should continue to pursue upgrades from Moody’s. Moody’s most recent rating report cited three key factors that could lead to an upgrade including: (i) sustained expansion and diversification of the service area economy, (ii) revenue growth that outpaces debt issuance and (iii) improved credit profile of the Detroit. As previously mentioned, GLWA continues to demonstrate strong financial margins and coverage, the regional economy has demonstrated a strong recovery, and Detroit was upgraded.

The second table to the right provides a summary of key credit metrics as compared to Moody’s published medians which support our scorecard analysis conclusions that many of the Authority’s credit characteristics such as: system size, wealth levels, and liquidity are consistent with ‘Aa’ rated water and sewer medians.

Peer Analysis. The below table summarizes key metrics for a variety of water and sewer utilities in the low AA category/high A category. We believe that the wholesale peers such as San Francisco Public Utilities Commission and Massachusetts Water Resources Authority are a good representation of AA category, large, established wholesale systems with leverage metrics and financial margins consistent with GLWA. Of the hybrid systems, Baltimore is a AA category water and sewer system and has less liquidity than GLWA with an urban base within its service area. Overall, we believe that GLWA compares well to both AA category wholesale and hybrid systems.

Facilities	Weight	Water Sr Lien 2021	Sewer Sr Lien 2021	Factor Metrics/Rating Level	Aaa	Aa	A	Baa	Rating	Overall Weighted Score
System Characteristics	30%	2021 Grade	2021 Grade	System Characteristics					Aaa	0.5 - 1.5
Asset Condition (Remaining Useful Life)	10%	16	19	Net Fixed Assets/Depreciation (NetFD)	175	75-25	25-11	11-8	Aa1	1.51 - 1.83
Service Area Wealth (% of US)	12.5%	97	97	Median Family Income as % of US	>150	100-100	90-75	75-50	Aa2	1.84 - 2.17
System Size (O&M)	7.5%	155	342	O&M Expenses (\$MM)	>65	65-30	30-10	10-1	Aa3	2.18 - 2.5
Financial Strength	40%			Financial Strength					A1	2.51 - 2.83
Total Annual Debt Service Coverage	15%	1.4	1.5	Annual Debt Service Coverage	>2.0	2.0-1.7	1.7-1.25	1.25-1.0	A2	2.84 - 3.17
Days Cash on Hand	15%	1,043	664	Days Cash on Hand	>250	250-150	150-35	35-15	A2	3.18 - 3.5
Debt to Operating Revenues	10%	5.4	5.3	Debt to Operating Revenues	<2.0	2.0-1.0	1.0-0.7	0.7-0.0	Baa1	3.51 - 3.83
Management	20%			Management					Baa2	3.84 - 4.17
Rate Management	10%	Excellent	Excellent	Rate Management	Excellent	Strong	Average	Adquate	Baa3	4.18 - 4.5
Regulatory Compliance and Capital Planning	10%	Mod	Mod	Regulatory Compliance and Capital Planning	>10 yr CIP	10-yr CIP	5-yr CIP	1-yr CIP	Ba1	4.51 - 4.83
Legal Provisions	10%			Legal Provisions					Ba2	4.84 - 5.17
Rate Covenant	5%	A	A	Rate Covenants	>13	13-12	12-11	11-10	Ba3	5.18 - 5.5
Debt Service Requirement	5%	Aa	Aa	Debt Service Requirements	MADS	3 prog	<3 prog or 4 prog	No DSR	B1	5.51 - 5.83
Raw Quantitative Rating		2.2	2.2	Raw Quantitative Rating					B2	5.84 - 6.17
Total Health Adjustments		0	0	Total Health Adjustments					B3	6.18 - 6.5
Final Health Adjusted Score		Aa3	Aa3	Final Health Adjusted Score						

	GLWA FY 2021		Water Medians		Sewer Medians	
	Water	Sewer	A	AA	A	AA
Asset Condition (Remaining Useful Life)	16	19	28	32	27	30
System Size (O&M in 000's)	154,674	242,229	3,731	14,980	6,275	17,843
Service Area Wealth (% of US) (%)	96.8	96.8	92	105	97	102
Annual Debt Service Coverage	2.0	2.9	1.8	2.3	1.7	2.3
Days Cash on Hand	1,043	664	419	439	630	622
Debt to Operating Revenues	5.5	5.3	2.1	1.7	2.1	2.2

Source: Moody's Financial Ratio Analysis, Moody's, and "Municipal Water and Sewer Utilities- US Medians- Rate increases support stable financial metrics on 2019", May 11, 2021, GLWA FY 2021 ACFR and Audit Committee Binder 3/25/2022
Green signifies stronger than 'A' category median, Yellow signifies weaker than 'AA' category median

Issuing Entity and Credit	Senior Lien Ratings			Debt Service		Liquidity		Leverage		System Characteristics		
	Moody's	S&P	Fitch	Sr Lien DSC(x)	Total Annual DSC(x)	Cash (\$000)	Days Cash on Hand	Debt to Op. Revenue (%)	MFL of US	Net Fixed Assets/Deprec (years)	O&M Expense (\$000)	
Great Lakes Water Authority Water Enterprise	A1	AA-	A+	2.0	1.4	353,308	1,043	119	5.5	97	16	154,674
Great Lakes Water Authority Sewer Enterprise	A1	AA-	A+	2.9	1.5	323,973	664	115	5.3	97	19	242,229
San Francisco Public Utilities Commission Water System	Aa2	AA-	NR	1.2	1.2	484,128	617	80.8	8.1	166	45	309,797
Massachusetts Water Resources Authority	Aa1	AA+	AA+	1.8	1.1	74,674	93	71	5.4	107	27	294,059
Atlanta (City Of) Water & Wastewater	Aa2	AA-	AA	1.8	1.7	798,289	1,098	43.5	6	105	51	265,368
Baltimore (City of) Sewer Enterprise	Aa2*	AA*	NR	2.6	1.7	176,171	453	35	4.9	82	44	142,078
Baltimore (City of) Water Enterprise	Aa2*	AA*	NR	3.4 ⁽¹⁾	2.0 ⁽¹⁾	125,323	460	45	4.2	82	48	134,534
Miami-Dade (County Of) Water & Sewer	Aa3	AA-	A+*	1.8	1.7	144,451	117	45	3.8	75	25	450,023
Philadelphia (City of) Water and Sewer	A1	A+	A+	1.9	1.9	170,619	103	56.3	3.2	71	22	411,065
Sub Group Median				1.8	1.7	170,619	453	45	4.9	81	44	194,058

Source: Moody's Municipal Financial Ratio Analysis Rating Reports, Issue 4-CRPL, Audit Committee Binders
Debt Ratio = Net Funded Debt (Total Current and Non-Current Debt, Minus Debt Service and Debt Service Reserve Funds) divided by the sum of Net Working Capital and Net Fixed Assets
* Moody's and S&P have withdrawn on negative outlook. In February 2022 debt ratings were downgraded to negative outlook from
** Debt to operating revenue was higher than historical average. FY 2020 senior revenue coverage was 1.3x and 1.4x for water and sewer.
1) FY 2020 debt service was higher than historical average. FY 2020 senior revenue coverage was 1.3x and 1.4x for water and sewer.

vii. If your firm offers direct placements or other alternatives to traditional underwriting to its municipal clients, please describe those products and their application to GLWA.

Subject to final terms and document approval, Wells Fargo would like to offer GLWA \$150 million or more of credit to be used as GLWA sees fit. We have already shown the power of our balance sheet in the section E. iii above referencing the Direct Purchase of Convertible Bonds to boost refunding savings when the current public market does not allow for a compelling solution. In that instance, we demonstrate the results of a CDP for the Authority’s Water Senior 2014D-2 Bonds and Sewer Senior 2014C-3 Bonds. When compared to a taxable advance refunding of the same maturities, **the CDP provides an additional \$19.6 million in NPV savings (4.7% of par refunded).** This is not a product that many banks offer and we would like to explore its use for GLWA.

Drawdown Direct Purchase as a Consideration. Under a Drawdown Direct Purchase (“DDP”), the Bank would commit to purchase a bond or note that can be drawn over time up to a predetermined amount, operating much like a revolving credit facility. We will talk about this product more in the last question as we believe it has some applicability to GLWA’s concerns about its Series 2006D. As compensation for the Bank’s purchase of DDP, the Authority would pay a fee that would generally have two components: (i) a flat fee charged on the portion of the DDP that is available but not drawn down (“undrawn”), and (ii) a floating interest rate on the “drawn” portion. The variable rate would be based on



% of SOFR plus a spread, with the spread fixed and determined at the time that the DDP is established. **In the current market, a sample market range for a 2-year term would be 80% of SOFR plus a spread of 23-25 bps for the drawn portion and 8-10 bps for the undrawn portion.**

viii. Describe any enhancements GLWA should consider with respect to investor outreach and marketing strategies to diversify and strengthen its investor base.

Wells Fargo, with each transaction it Senior Manages, seeks to add additional investors to our clients existing investors. This results in more demand in the near term and for years to come. Our distribution strength is detailed in this section, but we would also like to briefly revisit two topics discussed earlier in this RFP response. **The first is ESG** and labelling the 2022 bonds as such. We, as the number 2 underwriter in this space for the 2020-2021 time period, believe this will add value to the transactions by labeling the Water and Sewage bond issuances as “Green Bonds,” as the uses of proceeds of GLWA’s bonds are consistent with “Goal 6: Clean Water and Sanitation” of the United Nations 17 Sustainable Development Goals. There are now five investors with dedicated tax-exempt ESG/SRI funds, as well as 19 crossover investors with ESG funds. We would target these investors. **A possible Greenium realized by GLWA could have a meaningful impact on its upcoming financing; the present value of 1 basis point for our proposed our base case new money and refunding analysis (within question E.ii) is over \$281,000, so a Greenium of 2-3 bps could save the Authority between \$562,000-\$843,000.** This contrasts to the cost of a second party opinions which we have seen in the range of \$20-30,000 for transactions such as GLWA’s. The second party opinion process is rather straight forward requiring the choice of provider (Kestrel or Sustainalytics in our minds) and working with them to provide the necessary documentation for the OS and Investor Presentation.

Bond Insurance. The second enhancement to discuss is bond insurance. In this volatile market, even being as highly rated as GLWA is, we have seen insurance benefit a transaction and diversify an investor base. We believe insurance will create a scale improvement by up to 10 basis points on the Second Lien and up to 5 basis points on the Senior Lien. We have detailed our insurance breakeven model in Appendix E for review. If a deal has insurance, it may bring in more investors.

Wells Fargo’s Distribution Capabilities as the Backbone of a Successful Transaction. WF CIB offers distribution resources that can aid GLWA in executing a targeted investor approach and maximize investor demand. Wells Fargo remains one of the few firms that covers all investor segments through our three in-house distribution channels: (1) institutional sales; (2) middle-market sales; and (3) retail brokerage. This three-tiered distribution channel and broad coverage of investors provides us with flexibility to adapt our marketing strategy to the current investor landscape. Furthermore, with Wells Fargo’s broad distribution network and active participation in the municipal market, WF CIB brings the Authority an extensive knowledge and understanding of municipal investors.

Wells Fargo’s Extensive Distribution Network

Municipal Institutional Sales	Middle Market Sales*	Retail Sales**
<ul style="list-style-type: none"> ▪ 12 municipal sales professionals ▪ 2 offices ▪ 250 key buyers of municipal securities ▪ 425-account institutional base 	<ul style="list-style-type: none"> ▪ 75 sales professionals ▪ 17 offices throughout the country ▪ Extensive network covering 6,300+ “Tier 2” and “Tier 3” investors 	<ul style="list-style-type: none"> ▪ 3rd Largest Brokerage: 12,819 (450 brokers in 58 offices in Michigan) ▪ Brokerage Locations: 3,000+ ▪ Total Assets held by WFA clients: \$2.1 trillion

*Provided by Wells Fargo Securities, LLC.; **Provided by Wells Fargo Advisors

Municipal Institutional Sales. WF CIB’s municipal institutional sales force is comprised of 12 dedicated municipal institutional sales professionals based in either New York City or Charlotte. These professionals distribute municipal products in the primary and secondary markets, serving the investment and risk management needs of institutional investors nationwide. **Middle Market Sales.** Among WF CIB’s competitive advantages is an ability to reach middle market investors, where we are confident in being able to find several new investors for the Authority. “Middle market” investors (also known as Tier 2 and Tier 3 institutional investors) are smaller institutions, including state and local community banks, asset managers, regional depositories, corporate trust departments, municipalities, corporations, and local insurance companies. Wells Fargo has 75 middle-market sales professionals in 17 regional sales offices in our affiliate WFSLLC who have relationships with more than 6,300 middle-markets investors, many of which are longstanding and proprietary relationships exclusive to WF CIB. **Retail Sales.** WF CIB’s retail distribution is effected through our affiliate, Wells Fargo Advisors (“WFA”), the 3rd largest retail brokerage network in the country (by number of advisors) which employs approximately 12,800 full-service financial advisors.¹² WFA’s Michigan platform consists of 450 financial advisors in 58 offices across the state. Our retail system is fully-integrated (as opposed to a third-party distribution model), so we have control over a transaction’s economics and can provide more incentive for retail brokers to participate.

Investor Marketing Strategies. WF CIB maintains a marketing staff whose sole focus is to coordinate and expand the sale of municipal securities through our multi-channel distribution system. With the help of these internal marketing resources, and our syndicate desk, we have developed a comprehensive plan to reach as many investors as possible. Below we have highlighted a few relevant strategies we believe could be of value within GLWA’s investor outreach campaign.

- **Identify Couponing and Other Structural Considerations.** While market conditions will ultimately drive the structure, WF CIB would work to offer maturities with sub-5% coupons, including potentially bifurcating maturities to achieve more diverse participation. WF CIB has priced a number of transactions where we were able to incorporate term bonds with sinking fund schedules aligned to retail investor demand which helped to lower the issuer’s cost of funds. We note, however, that 5% coupon bonds have become more prevalent in the current market and associated recent levels of high volatility.
- **Internal Dissemination of Marketing Materials.** WF CIB will disseminate the POS and ratings agency reports internally to our sales force with a sales point memorandum, providing a detailed summary of the financing.
- **Sales Force Teach-In.** WF CIB will hold internal “teach-in” conference calls to promote the upcoming bond issue within our retail and institutional distribution networks.

¹² Source: Peer group analysis based on number of financial advisors as disclosed in company reports, as of 2Q2021. WFA statistical information is as of 2Q2021.



- **Internet Roadshow.** WF CIB believes that an internet roadshow will provide GLWA with an excellent opportunity to emphasize the credit and structural strengths of its proposed financing to investors. WF CIB typically uses the MuniOS platform, which offers the options of a slides only presentation, a pre-recorded presentation or a live internet presentation allowing for an open Q&A session with investors.
- **One-on-One Calls or Individual Meetings.** In addition to making an investor presentation, WF CIB can assist the Authority in scheduling one-on-one calls meetings with institutional investors. **Virtual meetings can be incorporated into GLWA’s marketing strategy and are a very efficient use of time and resources while reaching the maximum amount of investors. They also afford middle market and retail investors, which are more disbursed across the country, more opportunity to participate in these events.**

Targeting Institutional Investors. Many high-probability purchasers of GLWA’s future offerings currently hold outstanding GLWA bonds, and such investors would be the focus of WF CIB’s institutional marketing efforts. Additionally, in order to diversify GLWA’s investor base, the optimal approach to reaching institutional investors includes identifying the firms that are missing and developing targeted marketing plan to win them over. WF CIB has the ability to conduct a thorough bond analysis to identify current holders and potential new buyers. Due to our active participation in the secondary market, WF CIB maintains strong relationships with these institutions and will target them early in the premarketing phase to ensure that they are aware of the offering and ready to support the transaction. WF CIB would also focus its marketing efforts on new institutional buyers who value similar bonds and may have an appetite for GLWA’s bonds.

Targeting Specific Investors. Below, we have provided a comparison of the current top 15 bondholders (by par amount) of the Authority’s water and sewage bonds and overlaid these investors with:

- 1) Top 15 holders of MI muni water/sewer debt who hold little/no GLWA debt
- 2) Top 15 holders of national water/sewer municipal debt that hold little or no GLWA nor Michigan water/sewer debt

As shown, GLWA already has a strong core of active, high-impact institutional investors including Vanguard, Nuveen (TIAA-CREF), Wells Fargo, Alliance Bernstein, BlackRock, and Invesco, to name a few. We also note, however, several other large accounts such as Travelers, State Farm, Dimensional, Thornburg, Bessemer, and Liberty Mutual have sizeable positions in other Michigan water/sewer and national water/sewer municipal credits but have minimal or no positions in GLWA’s debt. The water/sewer bond investors seen in the table, especially those that also have large appetite for Michigan debt, would be targeted in our pre-marketing efforts. Lastly, for a GLWA issuance we would also target Michigan-specific bond funds that exist at investment firms such as Franklin, BlackRock, Fidelity, Nuveen, Federated, Putnam, Oppenheimer, and Eaton Vance, among others. We are confident that a coordinated and concentrated outreach to the investors we have identified, emphasizing GLWA’s strengths, can produce the incremental demand necessary to achieve a low cost of capital at pricing.

GLWA Debt Top 15 Bondholders	Michigan Water/Sewer Debt Top 15 Bondholders (Hold <\$1mm GLWA Debt)	National Water/Sewer Debt Top 15 Holders (Hold <\$1mm GLWA & MI W&S Debt)
Vanguard Group	Travelers Companies Inc	Dimensional Fund Advisors Lp
Tiaa-Cref	State Farm Mutual Auto Insurance	Thornburg Investment Mgmt Inc
Wells Fargo & Company	Indexiq Advisors Llc	Cbre Group Inc
Alliance Bernstein	Royal Bank Of Canada	Bessemer Group Incorporated
T Rowe Price Group Inc	Country Trust Bank	Credit Agricole Groupe
Capital Group Companies Inc	Tennessee Farmers Group	Markel-Gayner Asset Management
Goldman Sachs Group Inc	Calvert Investment Management	Knights Of Columbus
Blackrock	Auto Owners Group	Kentucky Farm Bureau Group
Invesco Ltd	Ce Investment Management Llc	Loews Corporation
Fmr Llc	Merastar Insurance Company	Provident Investment Management
Bank Of New York Mellon	Rivernorth Capital Management	Liberty Mutual Group Asset Mgmt
New York Life Group	Donegal Group	Waddell & Reed Financial Inc
Ameriprise Fin Grp	Charles Schwab Corporation	General Electric Company
Legg Mason	Adams Street Partners Llc	Liberty Mutual Investment Adviso
Franklin Resources	American Equity Life Holdings	Stancorp Mortgage Investors Llc

Source: Bloomberg as of 4/9/2022; includes publicly reporting bondholders

ix. Please provide commentary on strategies and timing to address the Series 2006D bonds, should legislative solutions not materialize.

Understanding of Current Situation. With the LIBOR cessation in June 2023, we recommend the Authority prepare a plan to refinance its Series 2006D Bonds. Upon LIBOR cessation there will not be a sufficient number of banks to quote the required rates to set 3-Month LIBOR for the Interest Rate Adjustment Date. At that point, unless there is a legislative solution, the 3-Month LIBOR rate will be set at the one in effect on the prior Interest Determination Date. In short, if legislation with fallback language isn’t adopted, the interest rate going forward will be fixed at the last 3-Month LIBOR rate plus 60 basis points. This could be good or bad. The 2018 MOU adjusted the DSWD share of annual debt service of Pre-Effective Date Bond Indebtedness to a level debt service structure which would not be altered in the future if any of the Pre-Effective Date Bond Indebtedness was refunded. Thus, if and when the Series 2006D Bonds are refinanced, any increase or decrease in interest cost would be borne or benefited by the GLWA system.

Legislative Solutions Discussion. The “Adjustable Interest Rate (LIBOR) Act,” signed into law on March 15, 2022, nullifies certain fallback provisions in the Series 2006D Bonds and imposes a SOFR-based replacement rate and spread adjustment to be designated by the Board of Governors of the Federal Reserve (“Federal Reserve” or “Board”) later this year. Specifically, section 104(b) of the Act nullifies references in the fallback provisions of the Series 2006D Bonds to: (i) any requirement to poll for quotes or information concerning interbank lending or deposit rates and (ii) any replacement rate based on a value of LIBOR (e.g., “last LIBOR”). In addition, section 104(a) of the Act automatically imposes on the Series 2006D Bonds a benchmark replacement rate and spread adjustment selected by the Federal Reserve. These provisions take effect as of the first London banking day after June 23, 2023, unless the Federal Reserve designates another date. The Federal Reserve is required to issue rulemaking that identifies the replacement rate that will apply to contracts subject to the Act, called the “Board-Selected Benchmark Replacement,” by September 11, 2022. The Board-Selected Benchmark Replacement for bonds must be based on SOFR and must include a specified spread adjustment consistent with the ISDA fallback spreads. The spread adjustment for 3-month LIBOR is 0.26161 percent.

If legislative solutions were to not materialize for the Series 2006D Bonds, we propose some alternative financing solutions for GLWA’s consideration. Our contemplated solutions include private market (i.e. bank direct placement variable rate notes) and public market (i.e. either SIFMA or % of SOFR Index Floating Rate Notes) financing options. **Additionally, as part of the refinancing, we propose that GLWA could consider running a tender process for the Series 2006D Bonds which may result in a redemption price below par.**



Public Market Floating Rate Notes (“FRN”). We understand GLWA has enjoyed the cost and risk profile benefits of the Series 2006D FRNs, thus we propose the option to reissue the bonds as FRNs with a different index, either SIFMA or 80% of SOFR. **Currently, Wells Fargo ranks 1st as the bookrunner of SOFR-based corporate FRNs with \$1.2B issued to date.** Historically, more FRNs have been issued with a hard mandatory put or maturity than a soft mandatory put. From 2018 through 2021, the par amount of FRNs issued with a hard maturity or a hard put totaled nearly \$8.8 billion. By comparison, FRNs issued during that period with a soft put totaled \$6.6 billion. Soft put FRNs provide more flexibility to borrowers by allowing the bonds to remain with investors at an elevated rate in the event of an unsuccessful remarketing, versus a hard maturity or put option that requires the borrower to redeem the bonds to avoid an event of default. To compensate investors for providing this flexibility, soft put FRNs have historically had 5-15 bps wider spreads to the reference index compared to hard put equivalents.

Indicative FRN Spreads		
Put Period	SIFMA	80% of SOFR
2-year	+40 bps	+60 bps
3-year	+45 bps	+70 bps
4-year	+55 bps	+85 bps
5-year	+65 bps	+100 bps

Assumes hard put FRNs issued as Sewer Bonds with ratings of A1/AA-/A+ as of 4/6/2022

Tenor & Pricing. Currently, investors appear to have appetite for FRNs with mandatory put dates as long as five (5) years after issuance. In the table at right, we provide indicative SIFMA and 80% of SOFR-based FRN pricing for Senior Lien Sewer Bonds assuming mandatory tender dates of 2, 3, 4 and 5-years. The pricing assumes a “hard put” structure. To enhance optionality, the FRN pricings shown above assume the incorporation of a 12-month call window prior to the put date.

Public Market “Fix-Out.” As a public market alternative, GLWA could consider refunding and fixing out its Series 2006D Bonds in order to remove any future interest rate risk. A fix-out would utilize long-term, public market bonds for a tax-exempt current refunding of the 2006D Bonds. In modeling the debt service of the outstanding Series 2006D Bonds, we have assumed coupons of 1.99285%, as stated on the Debt Service Requirements page of the Sewage Series 2020AB Official Statement. While this produces NPV dissavings of 4.99%, it would eliminate variable rate risk on the bonds and produces annual gross savings beginning in 2026 after realizing more significant negative savings in 2023 – 2025. At right is a debt service table comparing the outstanding bonds against the potential refunding bonds. We have also provided the expected sewer aggregate debt service coverage after the fix-out, taking into consideration our modeled base case 2022 new money financing.

Savings Patterns and Coverage

Date	Series 2006D D/S	Fix-Out Ref. D/S	Gross Savings	New Sr Coverage after New Money Base Case
7/1/2023	4,772,378	9,636,458	-4,864,081	2.13x
7/1/2024	4,772,378	10,512,500	-5,740,122	2.25x
7/1/2025	4,772,378	10,512,500	-5,740,122	2.29x
7/1/2026	35,097,378	34,447,500	649,878	2.42x
7/1/2027	39,393,046	38,740,750	652,296	2.47x
7/1/2028	27,346,064	26,694,500	651,564	2.48x
7/1/2029	34,690,172	34,042,000	648,172	2.42x
7/1/2030	52,843,438	52,195,000	648,438	2.64x
7/1/2031	52,472,348	51,822,500	649,848	2.71x
7/1/2032	17,073,603	16,422,000	651,603	2.54x
Total	\$273,233,182	\$285,025,708	-\$11,792,527	

Key Assumptions: Rated A1 / AA- / A+ by Moody's, S&P and Fitch; Delivery Date of 8/1/22; maturity dates of 7/1; first coupon payment on 1/1/23; level annual savings; pricing indicative as of 4/6/2022 and subject to market conditions at time of pricing; 10-year par call; estimated all-in cost of issuance of \$6.25/bond; SLGS funded escrow (if SLGS are not available at the time of pricing, alternate securities would be used)

Wells Fargo Bank, N.A. Direct Pay Letter of Credit or Direct Purchase Alternatives. Should the public markets become unattractive at the time of the refinancing, WFBNA is pleased to be able to offer GLWA direct placement alternatives that leverage our balance sheet and position GLWA to achieve the optimal solution while also limiting execution risk. WFBNA’s DPs have similar characteristics to fixed and floating rate notes: term of typically 3-5 years; pricing based on a fixed spread against an index (or a fixed yield), and renewal risk at the end of the term. Benefits of bank financing may include a lower cost of funds (depending on prevailing public market conditions) and limited overall disclosure and ongoing administration. The DP bonds would also enjoy many of the benefits of public markets FRN, including no bank trading risk (the bonds are held by a bank and do not price based on the credit strength of the bank), and the avoidance of remarketing risk and related fees. For GLWA, the availability of a DP from WFBNA will expand options and can reduce risks related to recent market volatility. **A sample market range for a bank DP for a 2-year term would be 80% of SOFR plus a spread of 23-25 bps or 80% of SOFR plus a spread of 28-33 bps for a 3-year term,** subject to credit and internal approvals and negotiation of terms.

Section F. References

i. Names, numbers, and e-mail addresses of at least three (3) persons representing clients for whom the proposer has performed work similar to that proposed, and who may be contacted as references.

The accompanying three references will be able to attest to the strength of the WF CIB platform. We would encourage GLWA to contact these clients of our firm.

Ohio Water Development Authority	Indianapolis Local Public Improvement Bond Bank (Stormwater Project)	Los Angeles Department of Water & Power
Ken Heigel Executive Director 614.466.0257, kheigel@owda.org	Sarah Steele Riordan Executive Director and General Counsel 317.327.5793, Sarah.Riordan@Indy.Gov	Peter Huynh Chief Financial Officer and Treasurer 213.367.4671; Peter.Huynh@ladwp.com

ii. Descriptions of any contracts which have been terminated, including the circumstances surrounding the termination. Provide the name and telephone number of your client's representatives of any.

The team members assigned to the GLWA account have never been terminated from an assignment. Except as set forth below, WFBNA MFG, a separately identifiable department of WFBNA, has not been terminated from any engagement or contract for the provision of municipal securities underwriting services. In 3Q 2016, WFBNA entered into settlements with the City of Los Angeles, the Consumer Financial Protection Bureau, and the Office of the Comptroller of the Currency regarding certain sales practices stemming from Wells Fargo’s retail bank (not Wells Fargo Securities nor Public Finance). Following the 2016 Settlement discussed above, certain state and local governmental bodies and municipal entities temporarily suspended or removed WFBNA MFG as underwriter from certain of such issuers’ municipal underwritings as a result of the referenced settlement. In reference to Los Angeles, we note that all such sanctions have since been lifted and the prior staff is no longer employed at the City. The City’s contact info is Ha To, *Chief of Debt Management*, (213) 473-7529.



APPENDIX A

Wells Fargo CIB Team Member Biographies

Appendix A, 1. Key Individuals

PRIMARY BANKER*Chicago, IL***Kevin Hoecker, Managing Director***Co-Head of West Region and Head of Limited Public Offerings*

Mr. Hoecker brings 22 years of municipal finance experience and has several years of experience working with water issuers in the Midwest. He joined WFCIB in May 2018 and is Co-Head of the West Region and Head of National Limited Public Offerings. Kevin joined WFCIB after years as an investment banker at both RBC Capital Markets and JPMorgan Securities, where he covered some of the largest and most complex municipal finance clients in the Midwestern region. He has served as lead banker on over \$25 billion of senior managed issuance, and in addition to serving as lead banker for GLWA in our joint bookrunner role in 2018, his client list and experience includes serving as senior manager for financings for Ohio Water Development Authority, Indiana Finance Authority's SRF Program, Illinois Finance Authority's SRF Program, the Indianapolis Bond Bank's Stormwater credit, St. Louis Metropolitan Sewer District, City of Chicago, Chicago Transit Authority, State of Illinois, Illinois Tollway, and the State of Wisconsin, among many others. His Michigan-specific experience, outside of GLWA, includes leading transactions for the Michigan State Building Authority, Michigan Department of Transportation, and Pontiac School District. Kevin is an expert in the structuring and marketing of bond issuances for best execution and result. Kevin's leadership responsibility with the firm has recently expanded, and he now serves as Co-Head of the Midwest and West regions (called the common "West Region") which encompasses 24 states and for which he is responsible for setting strategy and continuing to provide investment banking services to his clients. He serves as the lead banker for all state-level Michigan issuers and continues to serve as the primary investment banking contact to all major municipal issuers in the Midwestern United States, including within the states of Michigan, Illinois, Wisconsin, Indiana, and Ohio, to name a few.

PRIMARY BANKER*Los Angeles, CA***Michael Engelbrecht, Managing Director***Co-Head of West Region and Co-Head of Utilities*

Mr. Engelbrecht serves as Co-Head of the West Region (alongside Kevin) and leads our Utility and Corporate-Backed Group which includes all Water and Wastewater transactions as well as SRF deals across the country. Michael has more than 30 years of capital markets experience during which he has provided investment banking services to water and sewer utilities, general municipal clients, and special districts nationally. He is known as a national expert in Water and Sewer finance and will be the go to professional for all matters in that regard. His utility experience includes senior managed financings totaling in excess of \$16.0 billion for over 150 separate water utility deals since 2015 and includes serving as senior and sole manager on financings for agricultural water agencies, urban water agencies, wholesale water agencies and direct retail water agencies. In addition to GLWA's 2018 transaction, he has played a pivotal role in leading several large utility financings in recent years, including: \$345 million for Anaheim Public Utilities (priced on 4/13/2022, just prior to this RFP response), \$250 million for Ohio Water Development Authority, \$628.6 million of bonds for Los Angeles Department of Water and Power, \$765.8 million financing for the State of California Department of Water and Resources, \$444.7 million Texas Water Development Board, and \$192.8 million financing for East Bay Municipal Utility District, among others. Michael's experience leading ESG transactions include serving as sole manager on the SFPUC's inaugural Hetch Hetchy Power System Green Bond transaction. Mr. Engelbrecht has assisted clients with several unique financing structures including securitizations of third-party contracts for underground water banking facilities, financings to facilitate the historic San Joaquin River Restoration Settlement Act, and Green Bond financings. He also currently serves on the board of the Urban Water Institute.

HEAD OF PUBLIC FINANCE CREDIT STRATEGY*New York, NY***Kristen Fontana, Director***Capital Markets*

Ms. Fontana serves as Head of Public Finance Credit Strategy and will be an invaluable resource in assisting GLWA in developing its rating agency and investor presentations. She was instrumental in developing the rating strategy on GLWA's 2018 financing which allowed the Authority to obtain ratings upgrades from Moody's and S&P. She provides our municipal clients with insightful credit perspective regarding debt structure, bond indenture provisions and rating agency strategy. She is well versed in the current fiscal, regulatory and economic environment offering clients highly customized strategies to achieve their ratings goals. She will provide continued and in-depth rating agency strategic guidance, investor credit analyst insights, and investor credit support during the marketing period for GLWA. Mrs. Fontana joined WF CIB in 2010 and has over 15 years of municipal experience overall. She joined Wells Fargo upon graduation from the University of Chicago where her graduate work focused on public finance and included research at the U.S. Office of Management and Budget as well as a consulting project with the Chicago Community Trust. Prior to graduate school, Kristen spent a combined six years at two large investment banks where she both fostered relationships with

institutional equity clients and provided analytical support for the credit derivatives business. She has worked with a variety of issuers including state, local, water and sewer as well as transportation agencies. Kristen graduated cum laude with a B.S. in Finance from the University of Maryland, College Park and holds an M.P.P. from the University of Chicago. She is currently serving on the GASB Board.

QUANTITATIVE SPECIALIST*New York, NY***Scott Goldstein, Director***Capital Markets*

Mr. Goldstein joined Wells Fargo Securities in 1993 (via merger with A.G. Edwards). He has over 30 years of experience in investment banking as a quantitative specialist with extensive understanding of bond related tax code issues. He has structured over a 1,000 senior managed municipal transactions with significant emphasis for refunding and structured financial solutions. His primary focus has been in the area of system revenue, general infrastructure, and utility revenue issues. He has been instrumental in developing and applying several refunding innovations, providing analytical decision making framework for cash market and derivative solutions, as well as, improving escrow efficiencies to help issuers lower their cost of capital or overall funding cost. Scott is a graduate of the University of Maryland, College Park, Maryland, where he earned a B.S. degree in business with an emphasis in finance and accounting. He received his M.B.A. degree in finance from George Washington University, Washington, D.C. Mr. Goldstein maintains Series 7, 63 and 79 securities registrations.

SUPPORT BANKER*Chicago, IL***Brian LePenske, Director***West Public Finance*

Mr. LePenske joined Wells Fargo in July 2019 and has over 15 years of municipal finance experience as an investment banker and municipal advisor. Mr. LePenske plays a key role in the origination, project management and transaction execution for large, complex general government, utility, transportation, and higher education issuers in the Midwest region. He has executed financings for clients including Michigan State Building Authority; City of Pontiac School District; Ohio Water Development Authority; Ohio Turnpike & Infrastructure Commission; Ohio Treasurer; City of Cleveland; Indianapolis Local Public Improvement Bond Bank (Stormwater credit), State of Illinois; State of Wisconsin; City of Chicago; Will County (IL); Cook County (IL); Illinois Tollway; and Northern Illinois University, among many others. He brings a diverse expertise related to debt structuring and project finance through the use of revenue bonds, general obligation bonds, lease revenue bonds and interim financing. Mr. LePenske's banking and advisor perspective enhances the broad-based client-centered approach which ensures results meet the client's strategic goals and objectives via thorough analysis and creative planning. Prior to joining Wells Fargo, he worked as a municipal investment banker for 6 years at Piper Sandler (formerly Piper Jaffray) and BMO Capital Markets, and as a municipal advisor for 7 years at Scott Balice Strategies and at PFM.

BANKING & TRANSACTION SUPPORT*Chicago, Illinois***Ryan Trauffler, Associate***West Public Finance*

Mr. Trauffler joined Wells Fargo CIB in 2017 and is responsible for providing day-to-day analytical, quantitative, and transaction support for a variety of municipal clients throughout the Midwest. He has served on senior managed financings issuers including GLWA's 2018 transaction, Michigan State Building Authority, Michigan Strategic Fund, City of Pontiac School District, Ohio Water Development Authority, Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Ohio Turnpike & Infrastructure Commission, Indiana Finance Authority SRF, State of California, State of Wisconsin, Illinois State Toll Highway Authority, and Northern Illinois University, to name a few.

BANKING & TRANSACTION SUPPORT*San Francisco, California***Samantha Fong, Associate***West Public Finance*

Ms. Fong joined Wells Fargo CIB in 2022 after spending the previous 2.5 years at Bank of America and Siebert Williams Shank. She provides quantitative and deal execution support and has wide-ranging experience working with various utility credits across the Western US region. Some of her clients for which she has executed water/wastewater transactions as senior manager include: Metropolitan Water District of Southern CA, Santa Clara Valley Water District, San Mateo-Foster City Public Financing Authority, City of Chico, and City of San Buenaventura.

LEAD FIXED RATE MUNICIPAL UNDERWRITER*New York, NY***Amanda Amaro, Director***Municipal Syndicate*

Ms. Amaro has originally joined Wells Fargo as a general analyst supporting the municipal sales, trading and underwriting desks, and for nearly a decade has worked in a dedicated underwriting role providing marketing, pricing, and distribution services for various fixed rate financings. Her experience includes, but is not limited to utility revenue, general obligation, higher education, housing, transportation, and taxable, with a current focus on the Midwest, Southeast, and Southwest regions. Ms. Amaro has served as lead underwriter on recent WF CIB-led transactions in the utility space for the Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Metropolitan Water District of Salt Lake & Sandy (Utah), Beaufort-Jasper (South Carolina) Water and Sewer Authority, and Water/Sewer transactions for the Town of Mount Pleasant and City of Myrtle Beach (South Carolina), among many others. She also serves as lead underwriter for all state-level entities in Michigan and was underwriter in our role as joint bookrunner for the Michigan State Building Authority's 2020 Series I & II transaction. Ms. Amaro is a graduate of the University of North Carolina at Chapel Hill, where she earned a B.S. in Business Administration and a B.A. in Economics.

SUPPORTING FIXED RATE UNDERWRITER*Charlotte, NC***Will Illingworth, Director***Municipal Syndicate*

Mr. Illingworth has been with Wells Fargo's Municipal Finance Group since 2006 and currently serves as underwriter for both long term and short term financings and provides assistance in marketing and distribution of all new issue products. In addition to providing second chair support on many WFCIB senior managed transactions, Mr. Illingworth has served as lead underwriter on 37 transactions totaling over \$2.1 billion of senior managed transactions since 2017. Mr. Illingworth's expertise ranges from general market paper across the country to complex credits. His experience extends back over two decades where he acted in many capacities and roles and has assisted WF CIB's efforts in the competitive underwriting space. This level of transactional experience will allow Mr. Illingworth to provide a thorough understanding through the entire marketing and pricing process so that best execution will be achieved for the Authority's transactions.

SYNDICATE COORDINATION*Charlotte, NC***Rebekah Wales, Director***Municipal Syndicate*

Ms. Wales joined Wells Fargo CIB Municipal Finance in 2011 after four years of service in the public sector. Rebekah's roles within Wells Fargo have focused on regulatory risk mitigation, both for Public Finance transactions and on the Syndicate Desk. She focuses on ensuring adherence to all regulatory requirements while providing seamless execution for Wells Fargo's clients. Rebekah has a B.A. in English and a Juris Doctorate from the University of Alabama School of Law.

Appendix A, 2. Project Team

Part 1 – Summary of contractor’s current involvement with all projects					
	Contract No.	Client Name	Involvement Time	Contract Title	Type of involvement
Involvement time for this project – Kevin Hoecker	2200290	Great Lakes Water Authority	40%	Bond Underwriting Services	Overall Project Mgmt, Structuring, Marketing
Involvement time for this project – Michael Engelbrecht	2200290	Great Lakes Water Authority	40%	Bond Underwriting Services	Water/Sewer Expertise
Involvement time for this project – Kristen Fontana	2200290	Great Lakes Water Authority	40%	Bond Underwriting Services	Credit & Rating Strategy
Involvement time for this project – Scott Goldstein	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Quantitative Support
Involvement time for this project – Brian LePenske	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Additional Banking Support
Involvement time for this project – Ryan Trauffer	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Deal Execution Support
Involvement time for this project – Samantha Fong	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Deal Execution Support
Involvement time for this project – Amanda Amaro	2200290	Great Lakes Water Authority	25%	Bond Underwriting Services	Underwriting and Marketing
Other projects					
Part 2 – Explain how the commitments listed under part 1 will impact performance on this project					
The commitments listed under Part 1 detailed each individual’s time dedicated to the GLWA project out of their total available time.					
Part 3 – Explain how the project manager or consultant representatives allocated percentage of time to this contract will be utilized					
The project manager, Kevin Hoecker, will dedicate as much time to this project as required for ultimate success. This same approach will be taken by all employees listed above.					

Appendix A, 3. Staff Experience

No.	Staff Name	Employer Name	Total Yrs of Related Exp.	Related Projects	Project Role
1	Kevin Hoecker	Wells Fargo CIB	22	Ohio Water Development Authority, Indiana Finance Authority's SRF Program, Illinois Finance Authority's SRF Program, the Indianapolis Bond Bank's Stormwater credit, St. Louis Metropolitan Sewer Dist.	Overall Project Mgmt, Structuring, Marketing
2	Michael Engelbrecht	Wells Fargo CIB	30	Anaheim Public Utilities, Ohio Water Development Auth., Los Angeles Department of Water and Power, State of CA Dept. of Water & Resources, Texas Water Development Board	Water/Sewer Expertise
3	Kristen Fontana	Wells Fargo CIB	15	Indianapolis Bond Bank's Stormwater credit, San Diego Sewer Rev., Charlotte (NC) W&S	Credit & Rating Strategy
4	Scott Goldstein	Wells Fargo CIB	30	State of California Department of Water and Resources, Anaheim Public Utilities, Los Angeles Department of Water and Power	Quantitative Support
5	Brian LePenske	Wells Fargo CIB	15	Michigan State Building Authority, Ohio Water Development Authority, Indianapolis Bond Bank's Stormwater credit, State of Wisconsin	Additional Banking Support
6	Ryan Trauffler	Wells Fargo CIB	5	Michigan State Building Authority, Ohio Water Development Authority, Indiana Finance Authority SRF	Deal Execution Support
7	Samantha Fong	Wells Fargo CIB	2.5	Metropolitan Water District of Southern CA, Santa Clara Valley Water District, City of Chico	Deal Execution Support
8	Amanda Amaro	Wells Fargo CIB	12	Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Metropolitan Water District of Salt Lake & Sandy (Utah), Beaufort-Jasper (SC) Water and Sewer Auth.	Underwriting and Marketing

APPENDIX B

Wells Fargo CIB Conflict of Interest Disclosure

Wells Fargo CIB Conflict of Interest Disclosure.

Wells Fargo CIB would like to ensure that you are aware of the following.

CIB anticipates that as underwriter for GLWA, CIB would be compensated by a fee and/or an underwriting discount that would be set forth in the bond purchase agreement to be negotiated and entered into in connection with the issuance of the bonds. Payment or receipt of the underwriting fee or discount would be contingent on the closing of the transaction and the amount of the fee or discount may be based, in whole or in part, on a percentage of the principal amount of the bonds. While this form of compensation is customary in the municipal securities market, it presents a conflict of interest since an underwriter may have an incentive to recommend a transaction that is unnecessary or to recommend that the size of a transaction be larger than is necessary.

Wells Fargo Bank, N.A., acting through its Municipal Finance Group ("WFBNA MFG"), has entered into an agreement with its affiliate, Wells Fargo Clearing Services, LLC ("WFCS") for the distribution of certain municipal securities offerings, including the Bonds. Pursuant to this agreement, WFBNA MFG shares a portion of its underwriting compensation with respect to the Bonds with WFCS. WFBNA MFG and WFCS are each wholly-owned subsidiaries of Wells Fargo & Company.

WFBNA MFG also utilizes the distribution capabilities of its affiliate Wells Fargo Securities, LLC ("WFSLLC") for the distribution of municipal securities offerings, including the Bonds. In connection with utilizing the distribution capabilities of WFSLLC, WFBNA MFG pays a portion of WFSLLC's expenses based on its municipal securities transactions. WFBNA MFG and WFSLLC are each wholly-owned subsidiaries of Wells Fargo & Company.

Various Wells Fargo & Company subsidiaries may place orders for their own accounts for the bonds to be issued by GLWA. CIB and its broker-dealer affiliate Wells Fargo Advisors may also place orders for GLWA's bonds for their own accounts, for the purpose of subsequent resale to customers. As required by MSRB rules, CIB will not allocate bonds to any such orders over orders received from prospective purchasers that are not affiliates of CIB, without first obtaining your consent. While your consent must be received before making any such allocations, this nonetheless may present a conflict of interest for CIB to allocate bonds to itself or to an affiliate over orders from non-affiliates.

It is possible that certain purchasers to which CIB allocates bonds may look to CIB to provide liquidity to such purchasers by offering their bonds for sale to CIB in the immediate short term after allocations have been confirmed. While CIB does not intend to allocate bonds to a purchaser that CIB reasonably believes intends to sell the bonds in the immediate short term, this nonetheless may present a conflict of interest for CIB in the allocation process.

At the time of pricing for the Bonds, the Issuer may request or authorize the sale of certain maturities of the Bonds via competitive bid among the group of underwriters. To the extent that Wells Fargo Corporate & Investment Banking as senior syndicate manager is responsible for receiving bids from the other underwriters, and notwithstanding the mitigating controls that Wells Fargo Corporate & Investment Banking has instituted, a conflict of interest would nevertheless exist due to the fact that Wells Fargo Corporate & Investment Banking would have knowledge of which underwriters were submitting bids and the level of any such bid, which could influence Wells Fargo Corporate & Investment Banking' decision whether to submit a bid for the bonds, or the level of any such bid.

To the best of CIB's knowledge, CIB is not aware of any conflict of interest that would preclude CIB from serving as underwriter for the financing(s) contemplated by this RFP.

APPENDIX C

WFBNA Litigation Statement

Wells Fargo Bank N.A. Litigation Statement.

Wells Fargo Bank N.A. ("WFBNA") is a subsidiary of Wells Fargo & Company ("WFC"), a corporation organized under the laws of Delaware.

As with any large diversified financial institution in the highly regulated banking and securities field, Wells Fargo receives inquiries and subpoenas from regulators and law enforcement from time to time, some of which may be confidential in nature, and is subject to civil litigation. Wells Fargo responds regularly to inquiries and investigations by governmental entities and has in the past entered into settlements of some of those investigations, including those listed below. None have resulted in any material restrictions on Wells Fargo's ability to operate its businesses as related to the services and products addressed in our responses to this RFP.

Wells Fargo Bank, NA Municipal Finance Group ("WFBNA MFG"), the party responding to this RFP, is a separately identifiable department of WFBNA and is registered with the Securities and Exchange Commission ("SEC") as a municipal securities dealer, authorized to provide underwriting and investment banking services in connection with municipal securities.

Below is a summary of (i) certain resolved regulatory matters related to WFBNA MFG and WFBNA that are related to municipal securities and (ii) certain matters relating to actions involving municipal entities.

During the fourth quarter of 2011, WFBNA entered into a settlement with various regulators regarding municipal derivatives contracts. Please see the Legal Actions section of WFC's 2011 Annual Report for additional information regarding the municipal derivatives bid practices settlement with the Office of the Comptroller of the Currency ("OCC"), SEC, the U.S. Internal Revenue Service, U.S. Department of Justice and a group of state Attorneys General. See press release dated December 8, 2011 at <https://www.sec.gov/litigation/litreleases/2011/lr22183.htm>.

WFBNA has paid municipal fines in connection with a small number of houses for alleged violations of local housing ordinances, some of which are characterized as misdemeanors.

During the third quarter of 2016, WFBNA entered into settlements with the City of Los Angeles, the Consumer Financial Protection Bureau and the Office of the Comptroller of the Currency regarding certain sales practices. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-issues-statement-agreements-related-sales>. (the "2016 Settlement").

Following the announcement of the 2016 Settlement discussed above, certain state and local governmental bodies and municipal entities have temporarily suspended or removed WFBNA MFG as underwriter from certain of such issuers' municipal underwritings.

On February 2, 2016, WFBNA MFG entered into an agreement with the SEC resulting from a self-report submitted to the SEC by WFBNA MFG pursuant to the SEC's Municipalities Continuing Disclosure Cooperation Initiative ("MCDC") (see <https://www.sec.gov/litigation/admin/2016/33-10028.pdf>).

On December 26, 2018, WFC was served with a Complaint for a qui tam action pending in San Francisco County, California, which was subsequently amended to add WFBNA as a defendant. State of California, ex rel., Edelweiss Fund, LLC v. JP Morgan Chase & Co., et al., Case No. CGC-14-540777. The California qui tam action alleges Wells Fargo and other remarketing agents conspired to inflate the interest rates on certain tax-exempt bonds issued by public entities called variable rate demand obligations issued by the State of California or its political subdivisions. In July 2019, the San Francisco Superior Court dismissed the claims against a group of defendants, including WFC, due to untimely service, and the Court of Appeals upheld that dismissal in December 2020. On June 1, 2021, the Court dismissed the Relator's, Edelweiss Fund, LLC, seventh amended complaint without leave to amend. On July 27, 2021, Relator appealed the Court's June 1, 2021 Order. On or about July 26, 2019, another qui tam action was unsealed in Mercer County, New Jersey. State of New Jersey, ex rel., Edelweiss Fund, LLC v. JP Morgan Chase & Co., et al., Docket No. L. 885-15. The New Jersey qui tam action names Wells Fargo & Co. and several other financial institutions as defendants. The allegations in the New Jersey qui tam action are substantially similar to the California qui tam action. On February 20, 2019, the City of Philadelphia filed a putative class action against WFBNA and related entities, along with six other banks and their related entities. The City of Philadelphia v. Bank of America Corporation, et al., No. 1:19-cv-01608, U.S.D.C., S.D.N.Y. The plaintiff alleges that the defendants conspired to inflate the interest rates on certain tax-exempt bonds issued by public entities called variable rate demand obligations from February 1, 2008 to June 30, 2016. On March 25, 2019, the City of Baltimore filed a similar putative class action complaint against WFBNA and related entities, along with nine other banks and related entities. Mayor and City Council of Baltimore v. Bank of America Corporation, et al., No. 1:19-cv-02667, U.S.D.C., S.D.N.Y. The City of Baltimore's allegations are substantially similar to the allegations in the City of Philadelphia case. The Philadelphia and Baltimore cases were consolidated and an amended consolidated complaint was filed on May 31, 2019, naming WFBNA and related entities, along with seven other banks and related entities. On June 2, 2021, a substantially similar class action complaint was filed in the Southern District of New York on behalf of a putative class of California issuers of variable rate demand obligations against the same defendants. (Board of Directors of the San Diego Association of Governments v. Bank of America Corporation, et al., No. 1:21-cv-4893, U.S.D.C., S.D.N.Y.) The complaint includes the same defendants and class period as the Philadelphia and Baltimore consolidated complaint, and largely tracks the allegations asserted in that complaint. In August 2021, the San Diego Association of Governments action was consolidated with the Philadelphia and Baltimore action through an amended consolidated class action complaint. In August 2021, the San Diego Association of Governments action was consolidated with the Philadelphia and Baltimore action through an amended consolidated class action complaint.

WFBNA was named as a defendant in an antitrust case filed in the U.S. District Court for the Middle District of Louisiana on October 21, 2019, by the City of Baton Rouge/East Baton Rouge Parish, Consolidated Parish Employees Retirement System and Police Guaranty Fund. No. 3:19-cv-00725. The plaintiffs allege that WFBNA and 11 other defendants colluded to keep the bid-offer spreads artificially wide in secondary market trading for Government Sponsored Enterprise bonds, including those issued by Fannie Mae, Freddie Mac, and Federal Home Loan Banks. WFC and Wells Fargo Securities, LLC ("WFSLLC") and 23 other parties were named as defendants in a case filed in the U.S. District Court for the Eastern District of Louisiana on July 17, 2020, by the Louisiana Asset Management Pool ("LAMP"). No. 2:20-cv-1095. WFC and WFSLLC and 22 other parties were named as defendants in a case filed in the U.S. District Court for the Eastern District of Louisiana on September 21, 2020, by the City of New Orleans, the New Orleans Municipal Employees Retirement System and the New Orleans Aviation Board. No. 2:20-cv-2570. The allegations in the LAMP and City of New Orleans cases are substantially similar to the allegations in the City of Baton Rouge case. All three cases were settled and dismissed on June 9, 2021.

On October 7, 2020, WFBNA, JPMorgan Chase & Co., and Stifel, Nicolaus & Co., Inc. were sued in the U.S. District Court for the Eastern District of Michigan federal court on behalf of children who allegedly were harmed by polluted water in the City of Flint, Michigan, LeeAnne Walters et al. v. J.P. Morgan Chase & Co., Wells Fargo Bank, N.A., and Stifel Nicolaus, No. 5:20-cv-12726. The plaintiffs allege that the banks violated their Constitutional rights and Michigan law by underwriting a 2014 municipal bond offering for a Michigan-based water authority with alleged knowledge that the bond offering would result in the City of Flint, Michigan transitioning to an unsafe water source. On March 29, 2022, the Court dismissed the plaintiffs' lawsuit. The plaintiffs have until April 26, 2022 to move for reconsideration and April 28, 2022 to appeal the Court's ruling.

Please be further advised of the following:

On February 2, 2018, WFC entered into a consent order with the Board of Governors of the Federal Reserve System, relating to governance oversight and the company's compliance and operational risk management program. This consent order does not relate to new matters, but rather to prior issues including the 2016 sales practices matter. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-commits-satisfying-consent-order-federal>.

In April 2018, WFC entered into consent orders with the Consumer Financial Protection Bureau and the Office of the Comptroller of the Currency that address matters relating to WFC's compliance risk management program and issues regarding certain interest rate-lock extensions on home mortgages and collateral protection insurance placed on certain auto loans. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-enters-consent-orders-occ-and-cfpb>.

In August 2018, WFC announced that it entered into an agreement with the U.S. Department of Justice ("DOJ") to resolve a previously disclosed investigation by the DOJ regarding claims related to certain 2005-07 residential mortgage-backed securities activities. For additional information, see the press release at <https://newsroom.wf.com/press-release/consumer-lending/wells-fargo-reaches-agreement-doj-resolve-legacy-rmbs-claims>.

On December 4, 2018, WFC reached an agreement with the Attorney General of the State of Illinois, pursuant to which it agreed to pay \$17.25 million in remediation relating to certain prior RMBS activities.

On December 28, 2018, WFC entered into a settlement with all 50 state Attorneys General and the District of Columbia regarding previously disclosed retail sales practices, auto collateral protection insurance and guaranteed asset/auto protection, and mortgage interest rate lock matters. For additional information, see the press release at <https://newsroom.wf.com/press-release/community-banking-and-small-business/wells-fargo-reaches-agreement-state-attorneys>.

The SEC filed a civil lawsuit in 2016 against Wells Fargo Securities, LLC ("WFSLLC") and a Wells Fargo employee, among others, regarding a 2010 Rhode Island Economic Development Corporation bond offering document. WFSLLC settled the matter with the SEC on March 20, 2019. The Court dismissed all claims against the Wells Fargo employee on June 11, 2019. SEC v. Rhode Island Commerce Corporation (f/k/a Rhode Island Economic Development Corporation), et al., No. 1:16-cv-107-M-PAS (D.R.I.).

On February 21, 2020, WFC entered into settlement agreements with the U.S. Department of Justice and the U.S. Securities and Exchange Commission to resolve these agencies' investigations into Community Bank sales practices and related disclosures. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-reaches-settlements-resolve-outstanding-doj-and>.

WFC also reached an agreement with the Attorney General of the State of Maryland on June 15, 2020, pursuant to which it agreed to pay \$20 million in remediation to resolve claims relating to certain prior RMBS activities.

On January 5, 2021, the Office of the Comptroller of the Currency terminated a 2015 consent order related to WFC's anti-money laundering compliance program. For additional information, please see the press release at newsroom.wf.com/English/news-releases/news-release-details/2021/Wells-Fargo-Announces-Termination-of-AML-Related-Consent-Order/default.aspx.

On September 9, 2021, WFC announced that the Office of the Comptroller of the Currency issued an enforcement action against WFBNA related to loss mitigation practices in the bank's Home Lending business, as well as a civil monetary penalty related to those loss mitigation practices and insufficient progress in addressing requirements under the OCC's April 2018 Compliance Risk Management and Customer Remediation consent order. For additional information, see the press release at Wells Fargo Newsroom - Wells Fargo Issues Statement on OCC Enforcement Action, Expiration of CFPB Consent Order ([wf.com](https://www.wellsfargo.com)).

On September 27, 2021, WFBNA reached an agreement with the United States District Court for the Southern District of New York pursuant to which WFBNA paid \$37.5 million to the United States and provided customer remediation in order to resolve an investigation related to certain activities in WFBNA's foreign exchange business, including whether customers may have received pricing inconsistent with commitments made to those customers. Furthermore, no member of the proposed deal team identified in this RFP has a reportable item on his or her broker check report (available online through FINRA's Broker Check), regarding investigations during his or her tenure with WFBNA MFG.

Many of the actions that Wells Fargo has taken in connection with these settlements are described at <https://www.wellsfargo.com/assets/pdf/commitment/progress-report.pdf>

To the extent any litigation or regulatory matters are required to be reported, they are disclosed in WFC's SEC filings and are matters of public record.

Copies of the (i) Legal Proceedings sections from Wells Fargo & Company recent public filings and (ii) Wells Fargo & Company's most recent periodic reports are available via the internet link below:

https://www.wellsfargo.com/invest_relations/filings

Wells Fargo & Company Annual Report Link:

https://www.wellsfargo.com/invest_relations/annual

APPENDIX D

Taxable Advance Refunding and Cash Optimization Monitor of Bonds Callable through 2026

Credit	Series	Maturity	Par Amount (\$000s)	Prior Coupon	Next Call	Current Market				Current Market - 50bps			Cash Optimization Ref.	
						NPV Savings (\$000)	% NPV Savings	Escrow Efficiency	Breakeven to T/E Current Ref	NPV Savings (\$000)	% NPV Savings	Escrow Efficiency	% NPV Savings	Escrow Efficiency
Water Sr	2014D-1	07/01/35	20,020	5.000%	07/01/24	302	1.5%	30.9%	167%	1,358	6.8%	73.4%	12.0%	92.4%
Water Sr	2014D-1	07/01/37	24,170	5.000%	07/01/24	137	0.6%	13.4%	168%	1,537	6.4%	70.0%	11.9%	91.9%
Water Sr	2014D-2	07/01/25	29,525	5.000%	07/01/24	(19)	-0.1%	--	166%	406	1.4%	86.7%	2.2%	115.1%
Water Sr	2014D-2	07/01/26	50,370	5.000%	07/01/24	469	0.9%	38.3%	153%	1,431	2.8%	83.7%	4.3%	102.7%
Water Sr	2014D-2	07/01/27	34,340	5.000%	07/01/24	579	1.7%	48.6%	149%	1,391	4.1%	82.8%	6.2%	100.0%
Water Sr	2014D-2	07/01/28	22,690	5.000%	07/01/24	559	2.0%	55.8%	144%	1,196	5.3%	83.9%	8.1%	98.8%
Water Sr	2014D-4	07/01/29	47,265	5.000%	07/01/24	1,409	3.5%	58.3%	145%	2,938	6.2%	83.8%	9.5%	97.1%
Water Sr	2014D-4	07/01/30	54,305	5.000%	07/01/24	1,713	3.2%	57.2%	15%	3,686	6.8%	82.7%	10.9%	96.3%
Water Sr	2014D-4	07/01/31	28,515	5.000%	07/01/24	930	3.3%	56.2%	150%	2,075	7.3%	81.9%	12.2%	95.8%
Water Sr	2014D-4	07/01/32	18,950	5.000%	07/01/24	605	3.2%	53.9%	153%	1,434	7.6%	80.8%	13.3%	95.3%
Water Sr	2014D-4	07/01/33	7,775	5.000%	07/01/24	94	2.5%	45.3%	163%	558	7.2%	77.5%	12.8%	94.2%
Water Sr	2014D-4	07/01/34	52,560	5.000%	07/01/24	1,090	2.1%	39.4%	167%	3,713	7.1%	75.7%	12.3%	93.2%
Water Sr	2015D-1	07/01/27	3,175	5.000%	07/01/25	(1)	0.0%	--	2.0%	74	2.3%	77.8%	4.5%	115.5%
Water Sr	2015D-1	07/01/28	8,250	5.000%	07/01/25	60	0.7%	23.9%	180%	292	3.5%	79.4%	6.4%	107.8%
Water Sr	2015D-1	07/01/29	9,270	5.000%	07/01/25	116	1.3%	32.3%	175%	416	4.5%	78.8%	7.8%	102.3%
Water Sr	2015D-1	07/01/30	5,085	5.000%	07/01/25	72	1.4%	32.5%	178%	257	5.7%	76.6%	9.2%	99.7%
Water Sr	2015D-1	07/01/31	5,660	5.000%	07/01/25	87	1.5%	32.1%	18%	314	5.5%	75.2%	10.4%	98.1%
Water Sr	2015D-1	07/01/32	5,985	5.000%	07/01/25	87	1.5%	29.4%	179%	349	5.8%	73.4%	11.6%	96.8%
Water Sr	2015D-1	07/01/33	6,405	5.000%	07/01/25	49	0.8%	16.3%	189%	349	5.5%	68.2%	11.0%	95.0%
Water Sr	2015D-1	07/01/34	18,915	5.000%	07/01/25	65	0.3%	7.5%	193%	1,009	5.3%	65.4%	10.6%	93.4%
Water Sr	2015D-1	07/01/35	6,530	5.000%	07/01/25	(14)	-0.2%	--	--	330	5.1%	62.0%	10.2%	91.9%
Water Sr	2016A	07/01/27	5	5.000%	07/01/26	(0.1)	-2.0%	--	--	0.0	0.4%	31.6%	2.6%	156.1%
Water Sr	2016A	07/01/28	5	5.000%	07/01/26	(0.1)	-1.2%	--	--	0.1	1.6%	58.5%	4.4%	120.0%
Water Sr	2016A	07/01/29	5	5.000%	07/01/26	(0.0)	-0.7%	--	--	0.1	2.5%	62.7%	5.8%	106.2%
Water Sr	2016A	07/01/30	5	5.000%	07/01/26	(0.0)	-0.5%	--	--	0.2	3.1%	61.5%	7.2%	101.1%
Water Sr	2016A	07/01/31	5	5.000%	07/01/26	(0.0)	-0.4%	--	--	0.2	3.6%	60.5%	8.5%	98.6%
Water Sr	2016A	07/01/32	5	5.000%	07/01/26	(0.0)	-0.5%	--	--	0.2	3.9%	59.0%	9.6%	96.2%
Water Sr	2016A	07/01/33	5	5.000%	07/01/26	(0.1)	-1.2%	--	--	0.2	3.5%	51.6%	9.0%	93.2%
Water Sr	2016A	07/01/34	5	5.000%	07/01/26	(0.1)	-1.6%	--	--	0.2	3.4%	48.1%	8.6%	90.7%
Water Sr	2016A	07/01/35	5	5.000%	07/01/26	(0.1)	-2.2%	--	--	0.2	3.1%	43.5%	8.2%	88.3%
Water Sr	2016A	07/01/36	5	5.000%	07/01/26	(0.1)	-2.9%	--	--	0.1	2.7%	37.8%	8.1%	87.9%
Water Sr	2016A	07/01/37	5	5.000%	07/01/26	(0.2)	-3.1%	--	--	0.1	2.7%	36.8%	8.0%	87.0%
Water Sr	2016A	07/01/38	5	5.000%	07/01/26	(0.2)	-3.7%	--	--	0.1	2.4%	32.9%	7.9%	86.2%
Water Sr	2016A	07/01/39	5	5.000%	07/01/26	(0.2)	-3.4%	--	--	0.1	2.9%	37.2%	7.8%	85.3%
Water Sr	2016A	07/01/40	5	5.000%	07/01/26	(0.2)	-3.2%	--	--	0.2	3.3%	40.9%	7.7%	84.8%
Water Sr	2016A	07/01/41	5	5.000%	07/01/26	(0.2)	-3.0%	--	--	0.2	3.8%	44.1%	7.7%	84.4%
Water Sr	2016A	07/01/42	15,905	5.000%	07/01/26	(45.1)	-3.0%	--	--	674	4.2%	46.8%	7.5%	83.4%
Water Sr	2016A	07/01/43	16,705	5.000%	07/01/26	(67.5)	-4.0%	--	--	526	3.1%	37.8%	6.4%	77.0%
Water Sr	2016A	07/01/44	17,535	5.000%	07/01/26	(684)	-3.9%	--	--	615	3.5%	40.3%	6.5%	77.1%
Water Sr	2016A	07/01/45	19,415	5.000%	07/01/26	(694)	-3.8%	--	--	709	3.8%	42.6%	6.5%	77.2%
Water Sr	2016A	07/01/46	19,335	5.000%	07/01/26	(705)	-3.8%	--	--	808	4.2%	44.6%	6.4%	77.3%
Water Sr	2016C	07/01/27	20,110	5.000%	07/01/26	(403)	-2.0%	--	--	72	0.4%	31.8%	2.6%	157.1%
Water Sr	2016C	07/01/28	39,855	5.000%	07/01/26	(489)	-1.2%	--	--	630	1.6%	58.6%	4.4%	119.9%
Water Sr	2016C	07/01/29	18,025	5.000%	07/01/26	(128)	-0.7%	--	--	455	2.5%	62.8%	5.8%	106.3%
Water Sr	2016C	07/01/30	19,640	5.000%	07/01/26	(106)	-0.5%	--	--	608	3.1%	61.3%	7.2%	101.1%
Water Sr	2016C	07/01/31	48,860	5.000%	07/01/26	(210)	-0.4%	--	--	1,752	3.6%	60.6%	8.5%	98.2%
Water Sr	2016C	07/01/32	62,395	5.000%	07/01/26	(312)	-0.5%	--	--	2,418	3.9%	58.9%	9.6%	96.1%
Water Sr	2016C	07/01/33	30,915	5.000%	07/01/26	(370)	-1.2%	--	--	1,079	3.5%	51.6%	9.0%	93.2%
Water Sr	2016C	07/01/33	36,000	5.250%	07/01/26	21	0.1%	1.1%	2.28%	1,728	4.8%	59.4%	10.4%	94.0%
Water Sr	2016C	07/01/34	17,775	5.250%	07/01/26	(39)	-0.2%	--	--	860	4.8%	56.9%	10.1%	91.9%
Water Sr	2016C	07/01/35	43,380	5.000%	07/01/26	(946)	-2.2%	--	--	1,341	3.1%	43.5%	8.2%	88.3%
Water Sr	2016C	07/01/35	30,730	5.250%	07/01/26	(201)	-0.7%	--	--	1,443	4.7%	53.8%	9.9%	90.1%
Water 2nd	2014D-6	07/01/25	2,870	5.000%	07/01/24	(10)	-0.4%	--	--	31	1.1%	73.0%	1.9%	105.2%
Water 2nd	2014D-6	07/01/26	1,895	5.000%	07/01/24	10	0.5%	--	--	47	2.5%	76.7%	3.0%	85.4%
Water 2nd	2014D-6	07/01/27	1,930	5.000%	07/01/24	24	1.2%	38.3%	155%	69	3.6%	77.6%	5.8%	96.7%
Water 2nd	2014D-6	07/01/28	445	5.000%	07/01/24	9	1.9%	47.2%	126%	21	4.7%	79.7%	7.5%	96.3%
Water 2nd	2014D-6	07/01/29	500	5.000%	07/01/24	12	2.3%	50.3%	149%	28	5.6%	80.0%	8.8%	94.9%
Water 2nd	2014D-6	07/01/30	405	5.000%	07/01/24	10	2.4%	49.0%	155%	24	6.0%	79.0%	10.1%	94.3%
Water 2nd	2014D-6	07/01/31	420	5.000%	07/01/24	10	2.5%	47.6%	154%	27	6.5%	78.2%	11.3%	94.0%
Water 2nd	2014D-6	07/01/32	440	5.000%	07/01/24	10	2.3%	44.5%	156%	29	6.7%	77.1%	12.3%	93.6%
Water 2nd	2014D-6	07/01/33	455	5.000%	07/01/24	7	1.6%	33.2%	166%	28	6.2%	73.3%	11.8%	92.4%
Water 2nd	2014D-6	07/01/34	1,215	5.000%	07/01/24	13	1.1%	24.7%	169%	73	6.0%	71.1%	11.4%	91.3%
Water 2nd	2014D-6	07/01/36	33,115	5.000%	07/01/24	(82)	-0.2%	--	--	1,726	5.2%	64.9%	11.0%	90.2%
Water 2nd	2015D-2	07/01/34	37,235	5.000%	07/01/25	(232)	-0.6%	--	--	1,606	4.3%	58.2%	9.6%	90.3%
Sewage Sr	2014C-3	07/01/25	47,045	5.000%	07/01/24	(31)	-0.1%	--	--	647	1.4%	86.7%	2.2%	115.1%
Sewage Sr	2014C-3	07/01/26	40,375	5.000%	07/01/24	376	0.9%	38.3%	154%	1,147	2.8%	83.7%	4.3%	102.7%
Sewage Sr	2014C-3	07/01/27	45,895	5.000%	07/01/24	774	1.7%	48.6%	149%	1,659	4.1%	82.8%	6.2%	100.0%
Sewage Sr	2014C-3	07/01/28	24,075	5.000%	07/01/24	593	2.5%	55.8%	144%	1,270	5.3%	83.9%	8.1%	98.8%
Sewage Sr	2014C-3	07/01/29	15,770	5.000%	07/01/24	470	3.0%	58.3%	146%	980	6.2%	83.8%	9.5%	97.1%
Sewage Sr	2014C-3	07/01/30	25,285	5.000%	07/01/24	797	3.2%	57.2%	152%	1,716	6.8%	82.7%	10.9%	96.3%
Sewage Sr	2014C-3	07/01/31	31,945	5.000%	07/01/24	1,042	3.3%	56.2%	15%	2,325	7.3%	81.9%	12.2%	95.8%
Sewage Sr	2014C-3	07/01/32	50,515	5.000%	07/01/24	1,612	3.2%	53.9%	153%	3,822	7.6%	80.8%	13.3%	95.3%
Sewage Sr	2014C-3	07/01/33	22,665	5.000%	07/01/24	566	2.5%	45.3%	163%	1,628	7.2%	77.5%	12.8%	94.2%
Sewage Sr	2014C-6	07/01/32	9,100	5.000%	07/01/24	290	3.2%	53.9%	153%	689	7.6%	80.8%	13.3%	95.3%
Sewage Sr	2014C-6	07/01/33	79,800	5.000%	07/01/24	1,992	2.5%	45.3%	163%	5,731	7.2%	77.5%	12.8%	94.2%
Sewage Sr	2016B	07/01/27	405	5.000%	07/01/26	(8)	-2.0%	--	--	1	0.4%	31.8%	2.6%	157.1%
Sewage Sr	2016B	07/01/30	27,710	5.000%	07/01/26									

APPENDIX E

Insurance Breakeven Analysis

Great Lakes Water Authority - Senior Lien Sewage Disposal System and Water Supply System Revenue Bonds

Maturity-by-Maturity Insurance Breakeven Analysis

Maturity	Uninsured Coupon	Insured Coupon	Uninsured Yield	Insured Yield	Maturity/ Call Date	Call Price	Uninsured Price	Insured Price	Price Difference	Years to Maturity	Breakeven Premium to Maturity
07/01/23	5.000%	5.000%	1.990%	1.970%	07/01/23	100	102.719	102.737	0.018	0.92	0.017%
07/01/24	5.000%	5.000%	2.210%	2.180%	07/01/24	100	105.205	105.263	0.058	1.92	0.053%
07/01/25	5.000%	5.000%	2.360%	2.320%	07/01/25	100	107.396	107.514	0.118	2.92	0.103%
07/01/26	5.000%	5.000%	2.450%	2.400%	07/01/26	100	109.466	109.662	0.196	3.92	0.164%
07/01/27	5.000%	5.000%	2.510%	2.460%	07/01/27	100	111.447	111.693	0.246	4.92	0.197%
07/01/28	5.000%	5.000%	2.560%	2.510%	07/01/28	100	113.315	113.609	0.294	5.92	0.227%
07/01/29	5.000%	5.000%	2.660%	2.610%	07/01/29	100	114.692	115.033	0.341	6.92	0.253%
07/01/30	5.000%	5.000%	2.730%	2.680%	07/01/30	100	116.061	116.448	0.387	7.92	0.277%
07/01/31	5.000%	5.000%	2.790%	2.740%	07/01/31	100	117.337	117.769	0.432	8.92	0.299%
07/01/32	5.000%	5.000%	2.850%	2.800%	07/01/32	100	118.456	118.932	0.476	9.92	0.318%
07/01/33	5.000%	5.000%	2.920%	2.870%	07/01/32	100	117.794	118.267	0.473	10.92	0.306%
07/01/34	5.000%	5.000%	2.980%	2.930%	07/01/32	100	117.230	117.700	0.470	11.92	0.295%
07/01/35	5.000%	5.000%	3.030%	2.980%	07/01/32	100	116.762	117.230	0.468	12.92	0.284%
07/01/36	5.000%	5.000%	3.040%	2.990%	07/01/32	100	116.669	117.136	0.467	13.92	0.275%
07/01/37	5.000%	5.000%	3.060%	3.010%	07/01/32	100	116.483	116.949	0.466	14.92	0.267%
07/01/38	5.000%	5.000%	3.080%	3.030%	07/01/32	100	116.297	116.762	0.465	15.92	0.259%
07/01/39	5.000%	5.000%	3.100%	3.050%	07/01/32	100	116.111	116.576	0.465	16.92	0.252%
07/01/40	5.000%	5.000%	3.110%	3.060%	07/01/32	100	116.019	116.483	0.464	17.92	0.245%
07/01/41	5.000%	5.000%	3.120%	3.070%	07/01/32	100	115.926	116.390	0.464	18.92	0.238%
07/01/42	5.000%	5.000%	3.140%	3.090%	07/01/32	100	115.741	116.204	0.463	19.92	0.232%
07/01/47 T	5.000%	5.000%	3.250%	3.200%	07/01/32	100	114.731	115.189	0.458	24.92	0.204%
07/01/52 T	5.000%	5.000%	3.320%	3.270%	07/01/32	100	114.093	114.548	0.455	29.92	0.182%
Total											0.247%

Key assumptions: A1/AA-/A+ underlying ratings from Moody's, S&P and Fitch; AGM or BAM insurance assumed for insured scenario; Dated/delivery date of 8/1/2022; interpolated MMD as of 4/6/2022, conditions subject to change; bonds maturing on or after 7/1/2033 callable on 7/1/2032 @ par

Great Lakes Water Authority - Second Lien Sewage Disposal System and Water Supply System Revenue Bonds

Maturity-by-Maturity Insurance Breakeven Analysis

Maturity	Uninsured Coupon	Insured Coupon	Uninsured Yield	Insured Yield	Maturity/ Call Date	Call Price	Uninsured Price	Insured Price	Price Difference	Years to Maturity	Breakeven Premium to Maturity
07/01/23	5.000%	5.000%	2.080%	2.030%	07/01/23	100	102.635	102.682	0.047	0.92	0.045%
07/01/24	5.000%	5.000%	2.310%	2.250%	07/01/24	100	105.013	105.128	0.115	1.92	0.105%
07/01/25	5.000%	5.000%	2.470%	2.400%	07/01/25	100	107.075	107.279	0.204	2.92	0.178%
07/01/26	5.000%	5.000%	2.540%	2.460%	07/01/26	100	109.114	109.426	0.312	3.92	0.261%
07/01/27	5.000%	5.000%	2.610%	2.520%	07/01/27	100	110.958	111.398	0.440	4.92	0.353%
07/01/28	5.000%	5.000%	2.660%	2.560%	07/01/28	100	112.730	113.315	0.585	5.92	0.451%
07/01/29	5.000%	5.000%	2.760%	2.660%	07/01/29	100	114.014	114.692	0.678	6.92	0.504%
07/01/30	5.000%	5.000%	2.830%	2.730%	07/01/30	100	115.292	116.061	0.769	7.92	0.551%
07/01/31	5.000%	5.000%	2.890%	2.790%	07/01/31	100	116.478	117.337	0.859	8.92	0.594%
07/01/32	5.000%	5.000%	2.950%	2.850%	07/01/32	100	117.512	118.456	0.944	9.92	0.631%
07/01/33	5.000%	5.000%	3.020%	2.920%	07/01/32	100	116.856	117.794	0.938	10.92	0.607%
07/01/34	5.000%	5.000%	3.080%	2.980%	07/01/32	100	116.297	117.230	0.933	11.92	0.585%
07/01/35	5.000%	5.000%	3.130%	3.030%	07/01/32	100	115.834	116.762	0.928	12.92	0.564%
07/01/36	5.000%	5.000%	3.140%	3.040%	07/01/32	100	115.741	116.669	0.928	13.92	0.547%
07/01/37	5.000%	5.000%	3.160%	3.060%	07/01/32	100	115.557	116.483	0.926	14.92	0.530%
07/01/38	5.000%	5.000%	3.180%	3.080%	07/01/32	100	115.373	116.297	0.924	15.92	0.515%
07/01/39	5.000%	5.000%	3.200%	3.100%	07/01/32	100	115.189	116.111	0.922	16.92	0.500%
07/01/40	5.000%	5.000%	3.210%	3.110%	07/01/32	100	115.097	116.019	0.922	17.92	0.486%
07/01/41	5.000%	5.000%	3.220%	3.120%	07/01/32	100	115.005	115.926	0.921	18.92	0.473%
07/01/42	5.000%	5.000%	3.240%	3.140%	07/01/32	100	114.822	115.741	0.919	19.92	0.460%
07/01/47 T	5.000%	5.000%	3.350%	3.250%	07/01/32	100	113.821	114.731	0.910	24.92	0.405%
07/01/52 T	5.000%	5.000%	3.420%	3.320%	07/01/32	100	113.190	114.093	0.903	29.92	0.362%
Total											0.488%

Key assumptions: A2/A+/A underlying ratings from Moody's, S&P and Fitch; AGM or BAM insurance assumed for insured scenario; Dated/delivery date of 8/1/2022; interpolated MMD as of 4/6/2022, conditions subject to change; bonds maturing on or after 7/1/2033 callable on 7/1/2032 @ par

Disclosures (Continued):

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Procurement Solicitation for Bond Underwriting Services Project/Contract No.: 2200290

Appendix A

April 14, 2022



Appendix A, 1. Key Individuals

PRIMARY BANKER*Chicago, IL***Kevin Hoecker, Managing Director***Co-Head of West Region and Head of Limited Public Offerings*

Mr. Hoecker brings 22 years of municipal finance experience and has several years of experience working with water issuers in the Midwest. He joined WFCIB in May 2018 and is Co-Head of the West Region and Head of National Limited Public Offerings. Kevin joined WFCIB after years as an investment banker at both RBC Capital Markets and JPMorgan Securities, where he covered some of the largest and most complex municipal finance clients in the Midwestern region. He has served as lead banker on over \$25 billion of senior managed issuance, and in addition to serving as lead banker for GLWA in our joint bookrunner role in 2018, his client list and experience includes serving as senior manager for financings for Ohio Water Development Authority, Indiana Finance Authority's SRF Program, Illinois Finance Authority's SRF Program, the Indianapolis Bond Bank's Stormwater credit, St. Louis Metropolitan Sewer District, City of Chicago, Chicago Transit Authority, State of Illinois, Illinois Tollway, and the State of Wisconsin, among many others. His Michigan-specific experience, outside of GLWA, includes leading transactions for the Michigan State Building Authority, Michigan Department of Transportation, and Pontiac School District. Kevin is an expert in the structuring and marketing of bond issuances for best execution and result. Kevin's leadership responsibility with the firm has recently expanded, and he now serves as Co-Head of the Midwest and West regions (called the common "West Region") which encompasses 24 states and for which he is responsible for setting strategy and continuing to provide investment banking services to his clients. He serves as the lead banker for all state-level Michigan issuers and continues to serve as the primary investment banking contact to all major municipal issuers in the Midwestern United States, including within the states of Michigan, Illinois, Wisconsin, Indiana, and Ohio, to name a few.

PRIMARY BANKER*Los Angeles, CA***Michael Engelbrecht, Managing Director***Co-Head of West Region and Co-Head of Utilities*

Mr. Engelbrecht serves as Co-Head of the West Region (alongside Kevin) and leads our Utility and Corporate-Backed Group which includes all Water and Wastewater transactions as well as SRF deals across the country. Michael has more than 30 years of capital markets experience during which he has provided investment banking services to water and sewer utilities, general municipal clients, and special districts nationally. He is known as a national expert in Water and Sewer finance and will be the go to professional for all matters in that regard. His utility experience includes senior managed financings totaling in excess of \$16.0 billion for over 150 separate water utility deals since 2015 and includes serving as senior and sole manager on financings for agricultural water agencies, urban water agencies, wholesale water agencies and direct retail water agencies. In addition to GLWA's 2018 transaction, he has played a pivotal role in leading several large utility financings in recent years, including: \$345 million for Anaheim Public Utilities (priced on 4/13/2022, just prior to this RFP response), \$250 million for Ohio Water Development Authority, \$628.6 million of bonds for Los Angeles Department of Water and Power, \$765.8 million financing for the State of California Department of Water and Resources, \$444.7 million Texas Water Development Board, and \$192.8 million financing for East Bay Municipal Utility District, among others. Michael's experience leading ESG transactions include serving as sole manager on the SFPUC's inaugural Hetch Hetchy Power System Green Bond transaction. Mr. Engelbrecht has assisted clients with several unique financing structures including securitizations of third-party contracts for underground water banking facilities, financings to facilitate the historic San Joaquin River Restoration Settlement Act, and Green Bond financings. He also currently serves on the board of the Urban Water Institute.

HEAD OF PUBLIC FINANCE CREDIT STRATEGY*New York, NY***Kristen Fontana, Director***Capital Markets*

Ms. Fontana serves as Head of Public Finance Credit Strategy and will be an invaluable resource in assisting GLWA in developing its rating agency and investor presentations. She was instrumental in developing the rating strategy on GLWA's 2018 financing which allowed the Authority to obtain ratings upgrades from Moody's and S&P. She provides our municipal clients with insightful credit perspective regarding debt structure, bond indenture provisions and rating agency strategy. She is well versed in the current fiscal, regulatory and economic environment offering clients highly customized strategies to achieve their ratings goals. She will provide continued and in-depth rating agency strategic guidance, investor credit analyst insights, and investor credit support during the marketing period for GLWA. Mrs. Fontana joined WF CIB in 2010 and has over 15 years of municipal experience overall. She joined Wells Fargo upon graduation from the University of Chicago where her graduate work focused on public finance and included research at the U.S. Office of Management and Budget as well as a consulting project with the Chicago Community Trust. Prior to graduate school, Kristen spent a combined six years at two large investment banks where she both fostered relationships with

institutional equity clients and provided analytical support for the credit derivatives business. She has worked with a variety of issuers including state, local, water and sewer as well as transportation agencies. Kristen graduated cum laude with a B.S. in Finance from the University of Maryland, College Park and holds an M.P.P. from the University of Chicago. She is currently serving on the GASB Board.

QUANTITATIVE SPECIALIST

Scott Goldstein, Director

*New York, NY
Capital Markets*

Mr. Goldstein joined Wells Fargo Securities in 1993 (via merger with A.G. Edwards). He has over 30 years of experience in investment banking as a quantitative specialist with extensive understanding of bond related tax code issues. He has structured over a 1,000 senior managed municipal transactions with significant emphasis for refunding and structured financial solutions. His primary focus has been in the area of system revenue, general infrastructure, and utility revenue issues. He has been instrumental in developing and applying several refunding innovations, providing analytical decision making framework for cash market and derivative solutions, as well as, improving escrow efficiencies to help issuers lower their cost of capital or overall funding cost. Scott is a graduate of the University of Maryland, College Park, Maryland, where he earned a B.S. degree in business with an emphasis in finance and accounting. He received his M.B.A. degree in finance from George Washington University, Washington, D.C. Mr. Goldstein maintains Series 7, 63 and 79 securities registrations.

SUPPORT BANKER

Brian LePenske, Director

*Chicago, IL
West Public Finance*

Mr. LePenske joined Wells Fargo in July 2019 and has over 15 years of municipal finance experience as an investment banker and municipal advisor. Mr. LePenske plays a key role in the origination, project management and transaction execution for large, complex general government, utility, transportation, and higher education issuers in the Midwest region. He has executed financings for clients including Michigan State Building Authority; City of Pontiac School District; Ohio Water Development Authority; Ohio Turnpike & Infrastructure Commission; Ohio Treasurer; City of Cleveland; Indianapolis Local Public Improvement Bond Bank (Stormwater credit), State of Illinois; State of Wisconsin; City of Chicago; Will County (IL); Cook County (IL); Illinois Tollway; and Northern Illinois University, among many others. He brings a diverse expertise related to debt structuring and project finance through the use of revenue bonds, general obligation bonds, lease revenue bonds and interim financing. Mr. LePenske's banking and advisor perspective enhances the broad-based client-centered approach which ensures results meet the client's strategic goals and objectives via thorough analysis and creative planning. Prior to joining Wells Fargo, he worked as a municipal investment banker for 6 years at Piper Sandler (formerly Piper Jaffray) and BMO Capital Markets, and as a municipal advisor for 7 years at Scott Balice Strategies and at PFM.

BANKING & TRANSACTION SUPPORT

Ryan Trauffer, Associate

*Chicago, Illinois
West Public Finance*

Mr. Trauffer joined Wells Fargo CIB in 2017 and is responsible for providing day-to-day analytical, quantitative, and transaction support for a variety of municipal clients throughout the Midwest. He has served on senior managed financings issuers including GLWA's 2018 transaction, Michigan State Building Authority, Michigan Strategic Fund, City of Pontiac School District, Ohio Water Development Authority, Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Ohio Turnpike & Infrastructure Commission, Indiana Finance Authority SRF, State of California, State of Wisconsin, Illinois State Toll Highway Authority, and Northern Illinois University, to name a few.

BANKING & TRANSACTION SUPPORT

Samantha Fong, Associate

*San Francisco, California
West Public Finance*

Ms. Fong joined Wells Fargo CIB in 2022 after spending the previous 2.5 years at Bank of America and Siebert Williams Shank. She provides quantitative and deal execution support and has wide-ranging experience working with various utility credits across the Western US region. Some of her clients for which she has executed water/wastewater transactions as senior manager include: Metropolitan Water District of Southern CA, Santa Clara Valley Water District, San Mateo-Foster City Public Financing Authority, City of Chico, and City of San Buenaventura.

LEAD FIXED RATE MUNICIPAL UNDERWRITER*New York, NY***Amanda Amaro, Director***Municipal Syndicate*

Ms. Amaro has originally joined Wells Fargo as a general analyst supporting the municipal sales, trading and underwriting desks, and for nearly a decade has worked in a dedicated underwriting role providing marketing, pricing, and distribution services for various fixed rate financings. Her experience includes, but is not limited to utility revenue, general obligation, higher education, housing, transportation, and taxable, with a current focus on the Midwest, Southeast, and Southwest regions. Ms. Amaro has served as lead underwriter on recent WF CIB-led transactions in the utility space for the Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Metropolitan Water District of Salt Lake & Sandy (Utah), Beaufort-Jasper (South Carolina) Water and Sewer Authority, and Water/Sewer transactions for the Town of Mount Pleasant and City of Myrtle Beach (South Carolina), among many others. She also serves as lead underwriter for all state-level entities in Michigan and was underwriter in our role as joint bookrunner for the Michigan State Building Authority's 2020 Series I & II transaction. Ms. Amaro is a graduate of the University of North Carolina at Chapel Hill, where she earned a B.S. in Business Administration and a B.A. in Economics.

SUPPORTING FIXED RATE UNDERWRITER*Charlotte, NC***Will Illingworth, Director***Municipal Syndicate*

Mr. Illingworth has been with Wells Fargo's Municipal Finance Group since 2006 and currently serves as underwriter for both long term and short term financings and provides assistance in marketing and distribution of all new issue products. In addition to providing second chair support on many WFCIB senior managed transactions, Mr. Illingworth has served as lead underwriter on 37 transactions totaling over \$2.1 billion of senior managed transactions since 2017. Mr. Illingworth's expertise ranges from general market paper across the country to complex credits. His experience extends back over two decades where he acted in many capacities and roles and has assisted WF CIB's efforts in the competitive underwriting space. This level of transactional experience will allow Mr. Illingworth to provide a thorough understanding through the entire marketing and pricing process so that best execution will be achieved for the Authority's transactions.

SYNDICATE COORDINATION*Charlotte, NC***Rebekah Wales, Director***Municipal Syndicate*

Ms. Wales joined Wells Fargo CIB Municipal Finance in 2011 after four years of service in the public sector. Rebekah's roles within Wells Fargo have focused on regulatory risk mitigation, both for Public Finance transactions and on the Syndicate Desk. She focuses on ensuring adherence to all regulatory requirements while providing seamless execution for Wells Fargo's clients. Rebekah has a B.A. in English and a Juris Doctorate from the University of Alabama School of Law.

Appendix A, 2. Project Team

Part 1 – Summary of contractor’s current involvement with all projects					
	Contract No.	Client Name	Involvement Time	Contract Title	Type of involvement
Involvement time for this project – Kevin Hoecker	2200290	Great Lakes Water Authority	40%	Bond Underwriting Services	Overall Project Mgmt, Structuring, Marketing
Involvement time for this project – Michael Engelbrecht	2200290	Great Lakes Water Authority	40%	Bond Underwriting Services	Water/Sewer Expertise
Involvement time for this project – Kristen Fontana	2200290	Great Lakes Water Authority	40%	Bond Underwriting Services	Credit & Rating Strategy
Involvement time for this project – Scott Goldstein	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Quantitative Support
Involvement time for this project – Brian LePenske	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Additional Banking Support
Involvement time for this project – Ryan Trauffer	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Deal Execution Support
Involvement time for this project – Samantha Fong	2200290	Great Lakes Water Authority	30%	Bond Underwriting Services	Deal Execution Support
Involvement time for this project – Amanda Amaro	2200290	Great Lakes Water Authority	25%	Bond Underwriting Services	Underwriting and Marketing
Other projects					
Part 2 – Explain how the commitments listed under part 1 will impact performance on this project					
The commitments listed under Part 1 detailed each individual’s time dedicated to the GLWA project out of their total available time.					
Part 3 – Explain how the project manager or consultant representatives allocated percentage of time to this contract will be utilized					
The project manager, Kevin Hoecker, will dedicate as much time to this project as required for ultimate success. This same approach will be taken by all employees listed above.					

Appendix A, 3. Staff Experience

No.	Staff Name	Employer Name	Total Yrs of Related Exp.	Related Projects	Project Role
1	Kevin Hoecker	Wells Fargo CIB	22	Ohio Water Development Authority, Indiana Finance Authority's SRF Program, Illinois Finance Authority's SRF Program, the Indianapolis Bond Bank's Stormwater credit, St. Louis Metropolitan Sewer Dist.	Overall Project Mgmt, Structuring, Marketing
2	Michael Engelbrecht	Wells Fargo CIB	30	Anaheim Public Utilities, Ohio Water Development Auth., Los Angeles Department of Water and Power, State of CA Dept. of Water & Resources, Texas Water Development Board	Water/Sewer Expertise
3	Kristen Fontana	Wells Fargo CIB	15	Indianapolis Bond Bank's Stormwater credit, San Diego Sewer Rev., Charlotte (NC) W&S	Credit & Rating Strategy
4	Scott Goldstein	Wells Fargo CIB	30	State of California Department of Water and Resources, Anaheim Public Utilities, Los Angeles Department of Water and Power	Quantitative Support
5	Brian LePenske	Wells Fargo CIB	15	Michigan State Building Authority, Ohio Water Development Authority, Indianapolis Bond Bank's Stormwater credit, State of Wisconsin	Additional Banking Support
6	Ryan Trauffler	Wells Fargo CIB	5	Michigan State Building Authority, Ohio Water Development Authority, Indiana Finance Authority SRF	Deal Execution Support
7	Samantha Fong	Wells Fargo CIB	2.5	Metropolitan Water District of Southern CA, Santa Clara Valley Water District, City of Chico	Deal Execution Support
8	Amanda Amaro	Wells Fargo CIB	12	Indianapolis Local Public Improvement Bond Bank (Stormwater credit), Metropolitan Water District of Salt Lake & Sandy (Utah), Beaufort-Jasper (SC) Water and Sewer Auth.	Underwriting and Marketing

Great Lakes Water Authority

Bond Underwriting Services – Oral Interview

April 22, 2022



Important Information & Disclaimer

Important Information & Disclaimer

This document and any other materials accompanying this document (collectively, the “Materials”) are provided for general informational purposes only. By accepting any Materials, the recipient acknowledges and agrees to the matters set forth below.

Wells Fargo Corporate & Investment Banking and Wells Fargo Securities (each referred to herein as “CIB” and may be referred to elsewhere as “WFS”) are trade names used for the corporate banking, capital markets and investment banking services of Wells Fargo & Company (“WFC”) and its subsidiaries, including but not limited to Wells Fargo Bank, N.A. Municipal Finance Group, a separately identifiable department of Wells Fargo Bank, N.A. which is registered with the U.S. Securities and Exchange Commission (“SEC”) as a municipal securities dealer.

Commercial banking products and services are provided by Wells Fargo Bank, N.A. (“WFBNA”). Investment banking and capital markets products and services provided by CIB are not a condition to any banking product or service.

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These Materials are being provided to you for the purpose of working with you as an underwriter or placement agent (collectively, “underwriter”) on the transaction(s) described in the Materials. As part of its services as underwriter, CIB may provide information concerning the structure, timing, terms, and other similar matters concerning the issue of municipal securities that CIB proposes to underwrite as described in the Materials. The Materials may also contain such information. Any such information has been, and would be, provided by CIB in the context of serving as an underwriter and not as your municipal or financial advisor. Additionally, CIB, as underwriter, has financial and other interests that differ from your interests (or those of the issuer). In its capacity as underwriter, CIB’s primary role would be to purchase securities from you (or the issuer in the case of a conduit transaction) for resale to investors, or arrange for the placement of securities with investors on your behalf. Wells Fargo will not have any duties or liability to any person or entity in connection with the information being provided in the Materials.

The information provided herein is not intended to be and should not be construed as advice within the meaning of Section 15B of the Securities Exchange Act of 1934, and Wells Fargo will not be acting as your municipal advisor under the municipal advisor rules (“Muni Advisor Rules”) of the SEC and the SEC’s guidance in its Registration of Municipal Advisors Frequently Asked Questions dated May 19, 2014, as supplemented (collectively, “Muni Advisor Rules”).

CIB distributes municipal securities to institutional investors primarily through Wells Fargo Bank, N.A. Municipal Finance Group (“WFBNA MFG”) and Wells Fargo Securities, LLC (“WFSLLC”). Distribution to middle market clients is provided primarily through WFSLLC. Retail distribution is primarily provided by Wells Fargo Advisors, which is the trade name used by Wells Fargo Clearing Services, LLC (“WFCS”) and Wells Fargo Advisors Financial Network, LLC (“WFAFN”), two non-bank separate registered broker-dealers (members FINRA and SIPC). WFSLLC, WFBNA MFG, WFCS, and WFAFN are affiliates and are each wholly-owned subsidiaries of WFC.

Disclosures (continued)

Any municipal underwriting, commercial paper and remarketing rankings referenced herein represent combined totals for WFBNA MFG and WFSLLC. Non-municipal underwriting, commercial paper and remarketing rankings referenced herein represent totals for WFSLLC only. Source information for any ranking information not otherwise provided herein is available on request.

If the Materials are being provided to you under any of the following events, the information contained in the Materials and any subsequent discussions between us, including any and all information, advice, recommendations, opinions, indicative pricing, quotations and analysis with respect to any issuance of municipal securities, are provided to you in reliance upon the Bank, RFP, IRMA exemptions and underwriter exclusion, as applicable, provided under the Muni Advisor Rules. In the event the Bank, RFP, IRMA exemptions, or underwriter exclusion do not apply, the information included in the Materials are provided in reliance on the general information exclusion to advice under the Muni Advisor Rules.

Any information related to a bank-purchased bond transaction (“Direct Purchase”) included in the Materials is a product offering of WFBNA or a subsidiary thereof as purchaser / investor (“Purchaser”). CIB will not participate in any manner in any Direct Purchase transaction between you and Purchaser, and Wells Fargo employees involved with a Direct Purchase transaction are not acting on behalf of or as representatives of CIB. The information contained herein regarding Purchaser’s Direct Purchase is being provided to you by CIB only for purposes of providing financing alternatives that may be available to you from WFC and its affiliates. Information contained in this document regarding Direct Purchase is for discussion purposes only in anticipation of engaging in arm’s length commercial transactions with you in which Purchaser would be acting solely as a principal to purchase securities from you or a conduit issuer, and not as a municipal advisor, financial advisor or fiduciary to you or any other person or entity regardless of whether Purchaser, or an affiliate has or is currently acting as such on a separate transaction. Additionally, Purchaser has financial and other interests that differ from your interests. Purchaser’s sole role would be to purchase securities from you (or the conduit issuer). Any information relating to a Direct Purchase is being provided to you pursuant to and in reliance on the “Bank exemption” under the Muni Advisor Rules and the general information exclusion to advice under the Muni Advisor Rules.

In the event the Materials are being provided in connection with a RFP, the SEC exempts from the definition of municipal advisor “any person providing a response in writing or orally to a request for proposals or qualifications from a municipal entity or obligated person for services in connection with a municipal financial product or the issuance of municipal securities; provided however, that such person does not receive separate direct or indirect compensation for advice provided as part of such response” (“RFP exemption”). In such event, we have relied upon the RFP exemption, and on your distribution and execution of this RFP through a competitive process. In the event WFBNA MFG is the party providing the Materials, responses to all questions, certifications, attestations, information requests, and similar in the RFP or RFQ to which this response relates are specifically limited to, in context of, and as applied to, WFBNA MFG in its capacity as a separately identifiable department of a national bank that is registered as a municipal securities dealer with the Securities and Exchange Commission, Office of the Comptroller of the Currency, and Municipal Securities Rulemaking Board; and not on behalf of WFBNA, unless specified otherwise in our response.

In the event that you have provided us with your written representation that you are represented by an independent registered municipal advisor (an “IRMA”) within the meaning of the Muni Advisor Rules, with respect to the transaction(s) described in the Materials we have provided you with our written disclosure that we are not a municipal advisor to you and are not subject to the fiduciary duty under the Muni Advisor Rules, if applicable, and have taken certain other steps to establish the “IRMA exemption” under the Muni Advisor Rules.

In the event that you have engaged us to serve as an underwriter with respect to the municipal securities issuance described in the Materials we have provided you with our written disclosure regarding our role as an underwriter, that we are not a municipal advisor to you and are not subject to the fiduciary duty under the Muni Advisor Rules, if applicable.


If savings threshold level information is contained herein, please be advised that CIB is not recommending nor providing advice regarding which maturities should be refunded by you.

See additional important disclosures at the end of the Materials.

Wells Fargo's Dedicated Finance Team for Great Lakes Water Authority (Question D.v. – Page 4)


Essential knowledge of GLWA, a proven rating strategy, national water/sewer expertise and extensive modeling capabilities

Wells Fargo Core Finance Team for the Authority



- 20+ years of industry experience
- \$25+ BN of sr. managed financings, including GLWA, Michigan SBA, Ohio Water Dev. Auth., Indiana Finance Auth. SRF, City of Cleveland
- Responsible for leading investment banking coverage for the firm's Midwest/West region

Kevin Hoecker, Managing Director
Co-Head of West Region & Head of Limited Public Offerings



- 30+ years of industry experience
- \$15 BN of senior managed financings since 2015 for utility and SRF issuers including Great Lakes Water Authority, Ohio Water Dev. Auth., Indiana Fin. Auth. SRF, Los Angeles Department of Water and Power, etc.

Michael Engelbrecht, Managing Director
Co-Head of West Region & Co-Head of Utilities



- 14+ years experience
- Expertise in credit research and analysis as well as rating agency strategy, including GLWA's 2018 deal
- Works alongside underwriters, salespeople, traders and investment bankers to provide credit and investor intelligence

Kristen Fontana, Director
Head of Public Finance Credit Strategies



- Fixed rate underwriter with focus on Midwest and Northeast regions
- Underwriter for recent Midwest region transactions for the Indianapolis Local Public Improvement Bond Bank's Stormwater credit and the Michigan State Building Authority

Amanda Amaro, Director
Fixed Rate Underwriting




- 25 years of banking experience and has been a lead relationship manager or treasury officer for over 20 years
- Primary focal point for all bank-related products and services for his clients with a focus on MI and IL municipal issuers

Mark Lester, SVP & Relationship Manager. Wells Fargo Bank N.A. Government Commercial Banking



- 4.5 years of experience in public finance
- Analytics backup and transaction execution support
- Banking support for a number of Midwest issuers, including Great Lakes Water Authority, Michigan SBA, OWDA, Indiana Fin. Auth. SRF

Ryan Trauffer, Associate
Midwest Region Banking Coverage



- 2.5 years of public finance experience
- Provides quantitative and deal execution support
- Experience with various utility credits across the Western US region

Samantha Fong, Associate
West Region Banking Coverage



- Joined Wells Fargo in 1993 and has over 30 years of experience as a quantitative specialist
- Extensive understanding of bond related tax code issues and has structured over 1,000 senior managed municipal transactions

Scott Goldstein, Director
Public Finance Quantitative Structuring & Capital Markets Group

Additional Wells Fargo Finance Team Members for the Authority

Chuck Peck
Managing Director
Head of Public Finance

Matt Rosenberg
Managing Director
Head of Secondary Trading

Chris Lee
Managing Director
Head of Institutional Sales

Brian LePenske
Director
Midwest Region Banking Coverage

Parks Lineberger
Managing Director
Co-Head of Municipal Underwriting & Syndicate

Why Hire Wells Fargo as GLWA's Next Bookrunning Senior Manager? *(Cover Letter)*

Foundational Knowledge and Unique Selling Propositions with a Passion for Excellence in Execution

Foundational Knowledge: Our team possesses the required understanding of the nuances of GLWA's near and long-term goals with regards to its credit and debt structure

- Well's Fargo's collaborative banking team has not changed since 2018 and the knowledge remains
 - Understanding the foundational documents and their impact on GLWA's financial structure: MBO, 2018 MOU, Shared Services Agreement, Lease Agreements and Services Agreements
- 2022 Transaction Credit Rating Goals – Two or More “AA” ratings for both Water and Sewer Senior Lien, one notch upgrade on Second.
- We possess the high level of analytical and modeling capabilities required in order to structure the Series 2022 transaction to meet GLWA's goals, including:
 - New Money Model created to maximize DSRF cash releases while balancing coverage to achieve ratings upgrades as well as take into account future issuance expectations (structuring around surety policies)
 - Model created for analyzing refundings in several ways given criteria inputs (taxable advance refunding, cash optimization, tenders, convertible direct purchases, cross lien refundings)
 - All Models incorporate nuances such as: the difference in Second Lien Sewer's DSRF requirement, the impact of the GRS Pension Payment Reduction in 2024, the cost of service study and budget for coverage purposes, foundational documents, etc.













Unique Selling Proposition: Wells Fargo believes we possess unique selling propositions as Bookrunner

- We offer \$150 million or more of credit that can be used in a variety of ways as detailed in our response *(subject to final document and terms approval)*
 - Creating refunding value well in excess of what is available in the public markets
 - Providing a bridge for the 2006D issuance
 - Serving as an interim financing vehicle
- Track record of showing capital commitment to hold spreads in volatile markets such as the one we are in, which could result in better pricing and execution for GLWA
- Leader in ESG space, currently ranked #2 in par for 2020-2021, ready to make that path a smooth one for the Authority
- Distinction of leading the investment banking effort with GLWA and PFM to achieve the triple notch upgrade from S&P in 2018

Wells Fargo is a Leader in the Municipal New Issue Market, Committed to Diversity and Inclusion and is Local to GLWA

(Question C.ii. – Page 1, Question D.ii – Page 2, Question D.iii. – Page 3)

Recent Notable Negotiated Financings

<p>Harris County Flood Control District</p> <p>Expected \$300,000,000</p> <p>Lead Bookrunner Expected May 2022</p> 	<p>City of San Diego (Sewer Revenue)</p> <p>Expected \$150,000,000</p> <p>Lead Bookrunner Expected April 2022</p> 	<p>Anaheim Public Utilities</p> <p>\$344,735,000</p> <p>Lead Bookrunner April 2022</p> 	<p>Los Angeles Dept. of Water and Power</p> <p>\$494,670,000</p> <p>Lead Bookrunner March 2022</p> 
<p>City of San Antonio (CPS Energy)</p> <p>\$413,720,000</p> <p>Lead Bookrunner March 2022</p> 	<p>Indianapolis Local Public Improvement Bond Bank (Stormwater)</p> <p>\$50,000,000</p> <p>Lead Bookrunner February 2022</p> 	<p>Metropolitan Washington (DC) Airports Authority</p> <p>\$754,830,000</p> <p>Lead Bookrunner January 2022</p> 	<p>State of Louisiana</p> <p>\$642,790,000</p> <p>Lead Bookrunner January 2022</p> 
<p>State of Mississippi</p> <p>\$1,130,970,000</p> <p>Lead Bookrunner November 2021</p> 	<p>Texas Water Development Board</p> <p>\$444,735,000</p> <p>Lead Bookrunner September 2021</p> 	<p>Long Island Power Authority</p> <p>\$725,145,000</p> <p>Lead Bookrunner September 2021</p> 	<p>Miami-Dade County Seaport*</p> <p>\$1,242,830,000</p> <p>Lead Bookrunner August 2021</p> 

2022 Year-to-Date Municipal New Issues¹

Rank	Manager	Par (\$000)	Market Share	No. of Issues
1	BofA Securities	14,102.8	12.6%	85
2	JP Morgan	12,913.4	11.5%	76
3	Citi	9,404.0	8.4%	54
4	RBC Capital Markets	8,304.5	7.4%	112
5	Wells Fargo	7,346.8	6.6%	53
6	Morgan Stanley	5,971.2	5.3%	52
7	Goldman Sachs	5,402.4	4.8%	17
8	Stifel	5,247.6	4.7%	229
9	Jefferies	4,473.3	4.0%	23
10	Barclays	4,303.1	3.8%	14
11	Raymond James	4,081.6	3.6%	133
12	Piper Sandler	3,619.5	3.2%	158
13	Robert W Baird	3,388.1	3.0%	189
14	Samuel A Ramirez	3,340.2	3.0%	11
15	Loop Capital Markets	2,048.6	1.8%	9
16	FHN Financial	1,518.2	1.4%	60
17	UBS	1,496.0	1.3%	25
18	Siebert Williams Shank	1,473.5	1.3%	8
19	Hilltop Holdings Inc	1,289.8	1.2%	46
20	DA Davidson	1,160.7	1.0%	113

Local Presence and Focus on Diversity and Inclusion

- 229 team members within GLWA’s service area: (Birmingham, Farmington Hills, Troy and Grosse Pointe Woods) and some of which are in GLWA’s disadvantaged areas (Pontiac and Flint)
- WFC’s Michigan employees contributed over 6,200 hours of community service (2020)
- WFC donated \$2.7 million to Michigan nonprofits, schools, and community organizations (2020)
- 73% of Wells Fargo’s employees are either women or minorities
- Recognized nationally for our diversity leadership by DiversityInc magazine, the Human Rights Campaign Foundation, and others

(1) Source: Bloomberg; Represents negotiated and competitive municipal new issues underwritten from 1/1/2020 to 4/13/2022 by CIB (includes WFBNA MFG & WFSLLC). Par amount only includes lead-managed credit.

(2) DiversityInc; (3) LinkedIn

*Underwritten through WFS,LLC; Source: Wells Fargo Internal Data and respective official statements; Tombstones represent select transactions for which CIB served as or is mandated as underwriter since 1/1/2021 in order to show CIB’s capabilities in deals of large scale or for clients similar to GLWA

Wells Fargo's Ability to Commit Capital to Support Pricing Levels in a Potentially Volatile Market

A Unique Selling Proposition (Question D.iv. – Page 3)

Weekly Adjustment in MMD (in bps)

	1	2	3	5	7	10	20	30
1/7/2022	16	16	14	14	13	14	16	14
1/14/2022	3	6	11	8	3	1	1	1
1/21/2022	6	12	12	10	10	10	8	8
1/28/2022	22	31	31	30	27	27	24	23
2/4/2022	0	-1	-5	-5	-11	-11	-11	-11
2/11/2022	17	17	18	18	19	17	19	19
2/18/2022	6	6	7	7	7	4	-1	-1
2/25/2022	-3	-3	-5	-5	-5	-5	-4	-4
3/4/2022	3	0	0	-2	-2	1	7	5
3/11/2022	19	21	21	22	22	23	23	23
3/18/2022	13	10	10	9	8	9	8	7
3/22/2022	14	14	14	14	14	14	12	12
3/29/2022	28	26	26	22	16	15	12	12
4/6/2022	11	10	10	9	11	10	10	10
4/13/2022	8	14	14	12	12	14	14	14

Total Adjustments	163	179	178	163	144	143	138	132
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Source: Thomson Reuters TM3 and U.S. Department of Treasury, as of 4/13/2022.

MMD / UST Ratios (%)

Date	1	2	3	5	7	10	20	30
1/7/2022	70%	46%	42%	49%	59%	66%	68%	77%
1/14/2022	65%	46%	48%	52%	60%	66%	67%	77%
1/21/2022	67%	57%	56%	59%	66%	73%	73%	83%
1/28/2022	81%	77%	75%	75%	80%	87%	84%	94%
2/4/2022	69%	67%	63%	65%	68%	75%	73%	83%
2/11/2022	73%	70%	68%	73%	77%	84%	81%	91%
2/18/2022	82%	76%	73%	77%	82%	86%	81%	90%
2/25/2022	72%	70%	67%	73%	77%	81%	77%	86%
3/4/2022	80%	72%	73%	81%	87%	93%	85%	94%
3/11/2022	84%	74%	73%	80%	85%	92%	87%	96%
3/18/2022	90%	71%	69%	77%	82%	90%	87%	96%
3/22/2022	82%	70%	68%	75%	79%	87%	86%	94%
3/29/2022	95%	76%	74%	81%	83%	92%	91%	102%
4/6/2022	94%	76%	75%	78%	81%	89%	90%	102%
4/13/2022	99%	86%	83%	83%	85%	91%	90%	100%

Source: Thomson Reuters TM3 and U.S. Department of Treasury, as of 4/13/2022.

Source: Refinitiv TM3 and US Treasury website for MMD rates; capital position from WFBNA 4Q 2021 call report

- Volatility is the new norm in the Municipal Market and if not managed correctly, can cause a multiple basis point deviation from proper execution
- As a “well-capitalized” bank under the Office of the Comptroller of the Currency’s capital regulation, WFBNA is authorized under applicable federal banking rules to underwrite municipal securities without any regulatory-defined capital constraint

Wells Fargo Bank, N.A. Capital Position (Q4 2021)	
Total Equity Capital	\$171,142,000
Total Risk-Based Capital	163,213,000
Tier 1 Capital	149,318,000

- **Utilizing an underwriter with a strong balance sheet and a history of using it to support its issuing clients is important in the current volatile market**
- This puts issuers in a position of strength. Investors know the underwriter may purchase any unsold balances instead of increasing spreads
- **We have calculated GLWA’s present value of 1 basis point to be \$281k in our base case analysis (for the aggregate sewer and water issues)**

WF CIB’s Largest Municipal Negotiated Capital Commitments since 1/1/2021

Issuer	Pricing Date	Par	Underwritten		PV of 1 BP (\$)
		(\$MM)	(\$MM)	(%)	
Metropolitan Washington Airports Auth.	1/20/2022	421.715*	113.245	26.90%	548,944
Piedmont Municipal Power Agency	9/28/2021	183.260	90.93	49.60%	134,782
Texas Water Development Board	9/30/2021	443.740	58.64	13.20%	425,983
Miami-Dade County	8/18/2021	701.405*	56.91	8.10%	689,113
County of Wake (NC)	3/17/2021	184.425	56.30	30.50%	131,984
Dist. of Columbia Housing Finance Agcy	9/2/2021	54.455	33.84	62.10%	26,180

*Represents tax-exempt series of transaction; Note: Balances may have been placed with investors at any of various points after pricing

Path to Ratings Upgrades In Conjunction with the Series 2022 Transaction (Question E.vi. – Page 11)

Rating Agency Strategy and Objectives

	Current: Water (Sr/2 nd)	Current: Sewer (Sr/2 nd)	2022 Target: Water Sewer (Sr/2 nd)	2022 Target: Sewer (Sr/2 nd)	Goals & Strategy	
FitchRatings	A+/A/Stable	A+/A/Stable	➔	AA-/A+/Stable	AA-/A+/Stable	Target an upgrade; Focus on moderating leverage ratios, capital plan and reduction in pension payments
MOODY'S	A1/A2/Stable	A1/A2/Stable	➔	Aa3/A1/Stable	Aa3/A1/Stable	Target an upgrade; Focus on continued strong financial results, economic recovery & recent Detroit upgrade
S&P Global Ratings	AA-/A+/Stable	AA-/A+/Stable	➔	AA-/A+/Stable	AA-/A+/Stable	Maintain current ratings in the near term

Credit Strategy Highlights

<p>Unique Agreements Foster Resilience</p>	<ul style="list-style-type: none"> Foundational agreements codify: revenue requirement parameters, allocation of costs/liabilities, step-in authority, closed loop lease payment, WRAP funding, and management and oversight standards The 2018 MOU has been effective at resolving periodic DWSD budget shortfalls Wholesale agreements have true-up provisions for bad debt expense Wholesale charge structure and billing promotes financial stability
<p>Success Driven Management Team</p>	<ul style="list-style-type: none"> GLWA continues to grow its extensive list of operating and financial accomplishments The Authority's management team has extensive experience and is focused on a best practices approach to management
<p>A Mature Organization With Proven Strong Financial Results</p>	<ul style="list-style-type: none"> FY 2021 audited debt service coverage outperformed budgeted; Financial metrics are consistent with 'AA' category peers Robust liquidity reduced due to increase in pay-go capital funding The expiration of GRS legacy payments provides increased flexibility in FY 2024 and beyond
<p>CIP Focused on Strategic Investments While Managing Leverage</p>	<ul style="list-style-type: none"> GLWA continues to succeed due to its strategic focus on reliability, redundancy, and resiliency Capital investments are driven by optimizing the system rather than mandates Water System investments are focused on flexibility and Sewer System projects target synergies within the region Increased usage of I&E funds as pay go for the CIP rather than debt Leverage ratios are in-line with AA category peers
<p>Strong Regional Economic Recovery</p>	<ul style="list-style-type: none"> Both systems serve an exceptionally large and diverse service area Detroit-Warren-Dearborn MSA unemployment rates rebounded to pre-pandemic levels in 2021 Moody's recently upgraded the City of Detroit's general obligation rating

GLWA Selected Financial Metrics								
Sewer	2018	2019	2020	2021	2021*	2022*	2023*	2024*
Senior lien DSC	2.04	2.11	2.15	2.92	2.44	2.42	2.23	2.28
Senior and Second DSC	1.56	1.62	1.64	1.97	1.73	1.74	1.79	1.72
All bonds DSC	1.25	1.29	1.29	1.51	1.34	1.35	1.4	1.35
Days Cash On Hand	1066	1058	1086	1043		538		
Water System								
Senior lien DSC	2.07	2.13	1.94	1.99	1.81	1.89	1.82	1.88
Senior and Second DSC	1.55	1.54	1.39	1.4	1.32	1.37	1.34	1.4
All bonds DSC	1.53	1.5	1.37	1.38	1.28	1.32	1.27	1.29
Days Cash On Hand	432	495	593	664		413		

Sources: 2021 ACFR, GLWA Audit Committee Combined Binder 2/25/2022 and 3/25/2022, FY 2022 and FY 2023 Biennial Budget Final
 * Budgeted debt service coverage. Days cash on hand for 2022 represents estimates provided in the financial update as of 3/25/2022
 Debt service coverage ("DSC") calculation based on rate covenants

The Series 2022 Transaction Could be GLWA’s First Step into the ESG World (Question E.i. – Page 5)

Wells Fargo is one of the top underwriters in ESG space, ready to make that path a smooth one for the Authority

Negotiated Municipal ESG League Table 2020 & 2021¹

Rank	Manager	Vol (\$MM)	Deals	Table Share (%)
1	Citi	6,765.33	32	12.24%
2	Wells Fargo	6,515.99	40	11.78%
3	BofA Securities	6,079.24	36	10.99%
4	JP Morgan	5,973.04	23	10.80%
5	Morgan Stanley	5,761.32	42	10.42%
6	Goldman Sachs	5,361.45	14	9.70%
7	RBC	4,422.13	62	8.00%
8	Jefferies	4,408.21	26	7.97%
9	Barclays	2,982.71	22	5.39%
10	Raymond James	1,297.11	24	2.35%
	Total	55,784.04	440	

- Wells Fargo understands the rapidly developing green investor community and will actively market the sustainable aspects of a GLWA transaction to a comprehensive group of ESG buyers
- Wells Fargo is proud to lead municipal ESG bond underwritings and has worked with clients to develop frameworks/disclosure that support an ESG designation that are in line with investor expectations
- Our team has had great success structuring, marketing, and selling labeled green, social, and sustainability bonds with ESG investor participation accounting for ~30% or more of recent order books

- Wells Fargo recommends the Authority consider labeling its Water and Sewage bond issuances as “Green Bonds,” as the uses of proceeds of GLWA’s bonds are consistent with “Goal 6: Clean Water and Sanitation” of the United Nations 17 Sustainable Development Goals
- Wells Fargo recommends GLWA obtain a Second Party Opinion (such as Kestrel Verifiers) to provide additional transparency and disclosure to ESG investors
- A possible Greenium realized by GLWA could have a meaningful impact on its upcoming financing; the present value of 1 basis point for our proposed our base case new money and refunding analysis (within question E.ii) is over \$281,000, so a Greenium of 2-3 bps could save the Authority between \$562,000-\$843,000
 - In November 2021, the State Public Works Board of the State of California (2021 Series C) realized a spread advantage of 2-3 basis points on its tax-exempt Green Bonds compared to its non-labeled bonds with the same maturities and coupons¹
 - In July 2021, Oberlin College sold taxable Green Bonds which achieved pricing 5 basis points tighter than similar non-labeled bonds¹

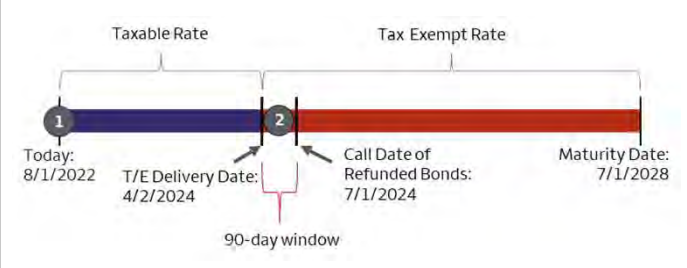
(1) Source: Bloomberg. True Economics to Bookrunner. Represents combined negotiated and competitive long-term new issues underwritten from 1/1/20 to 12/31/21. Includes WFBNA MFG and WFSLLC transactions, including corporate CUSIP transactions such as for Ford Foundation.

Ability to Provide Credit to Support GLWA Goals and Initiatives^{1,2}

A Unique Selling Proposition

- Wells Fargo Bank, N.A. is willing to explore \$150 million or more of credit that can be used in a variety of ways as GLWA sees fit
- Wells Fargo has identified three (3) potential ways this credit can be put to work to support GLWA’s goals

Convertible Direct Purchase (“CDP”): Create advance refunding value well in excess of what is available in the public markets (Question E.iii. – Page 9)



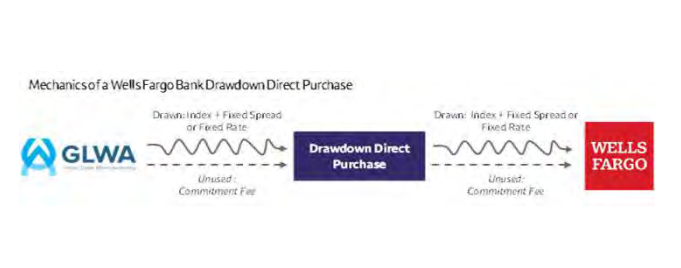
- Alternative to issuing public market taxable advance refunding bonds, while still mitigating interest rate risk and locking in savings
- WFBNA would purchase a fixed rate, taxable bond that converts to tax-exempt (both taxable and tax-exempt rates are determined upfront) within 90 days of the call date of the refunded bonds
- As an example, refunding the Authority’s Water Senior 2014D-2 Bonds and Sewer Senior 2014C-3 Bonds through a CDP **provides an additional \$19.6 million in NPV savings (4.7% of refunded par) compared to taxable advance refunding of the same bonds³**

Fixed or Variable Rate Direct Purchase: Provide a bridge financing for the Sewer Series 2006D Bonds (Question E.ix. – Page 14)



- WFBNA would commit to purchase a bond or note for a predetermined amount and time period
- Similar characteristics to fixed and floating rate notes: term of typically 3-5 years; pricing based on a fixed spread against an index (or a fixed yield), and renewal risk at the end of the term
- The availability of a DP from WFBNA will expand options and can reduce risks related to recent market volatility.
- A sample market range for a bank DP for a 2-year term would be 80% of SOFR plus a spread of 23-25 bps or 80% of SOFR plus a spread of 28-33 bps for a 3-year term³

Drawdown Direct Purchase (“DDP”): Serve as an interim financing vehicle (Question E.vii. – Page 12)



- WFBNA would commit to purchase a bond or note that can be drawn over time up to a predetermined amount, operating much like a revolving credit facility
- GLWA would pay a fee with two components: (i) a flat fee charged on the available but not drawn amount (“undrawn”), and (ii) a floating interest rate on the “drawn” portion
- The variable rate would be based on % of SOFR plus a spread, with the spread fixed and determined at the time that the DDP is established
- In the current market, a sample market range for a 2-year term would be 80% of SOFR plus a spread of 23-25 bps for the drawn portion and 8-10 bps for the undrawn portion³

(1) Direct purchase is a Wells Fargo Bank, N.A. product. Product is subject to future market conditions, final documentation, and credit approval.
 (2) Wells Fargo Municipal Capital Strategies, LLC (a wholly owned subsidiary of WFBNA) may serve as Purchaser of the bonds.
 (3) Indicative as of 4/6/2022 and subject to change

Indicative Pricing Scales (Question E.iv. – Page 10)

Opportunity to improve spreads with an Upgrade, ESG Designation or Insurance

Maturity (7/1)	Tax-Exempt Scales										Taxable Scales							
			Senior Lien				Second Lien						Senior Lien			Second Lien		
	MMD	Type	Spread	Coupon	YTC	YTM	Spread	Coupon	YTC	YTM	UST	Type	Spread	Coupon/Yield	Price	Spread	Coupon/Yield	Price
2023	1.74%	Serial	0.25%	5.00%	1.99%	-	0.34%	5.00%	2.08%	-	2.50%	Serial	0.15%	2.65%	100.0	0.25%	2.75%	100.0
2024	1.91%	Serial	0.30%	5.00%	2.21%	-	0.40%	5.00%	2.31%	-	2.50%	Serial	0.35%	2.85%	100.0	0.45%	2.95%	100.0
2025	2.02%	Serial	0.34%	5.00%	2.36%	-	0.44%	5.00%	2.46%	-	2.67%	Serial	0.45%	3.12%	100.0	0.55%	3.22%	100.0
2026	2.08%	Serial	0.37%	5.00%	2.45%	-	0.47%	5.00%	2.55%	-	2.70%	Serial	0.60%	3.30%	100.0	0.70%	3.40%	100.0
2027	2.11%	Serial	0.40%	5.00%	2.51%	-	0.50%	5.00%	2.61%	-	2.70%	Serial	0.75%	3.45%	100.0	0.85%	3.55%	100.0
2028	2.13%	Serial	0.43%	5.00%	2.56%	-	0.53%	5.00%	2.66%	-	2.69%	Serial	0.85%	3.54%	100.0	0.95%	3.64%	100.0
2029	2.20%	Serial	0.46%	5.00%	2.66%	-	0.56%	5.00%	2.76%	-	2.69%	Serial	0.95%	3.64%	100.0	1.05%	3.74%	100.0
2030	2.25%	Serial	0.48%	5.00%	2.73%	-	0.58%	5.00%	2.83%	-	2.61%	Serial	1.15%	3.76%	100.0	1.25%	3.86%	100.0
2031	2.29%	Serial	0.50%	5.00%	2.79%	-	0.60%	5.00%	2.89%	-	2.61%	Serial	1.25%	3.86%	100.0	1.35%	3.96%	100.0
2032	2.33%	Serial	0.52%	5.00%	2.85%	-	0.62%	5.00%	2.95%	-	2.61%	Serial	1.35%	3.96%	100.0	1.45%	4.06%	100.0
2033	2.37%	Serial	0.55%	5.00%	2.92%	3.07%	0.65%	5.00%	3.02%	3.16%	2.61%	Serial	1.50%	4.11%	100.0	1.60%	4.21%	100.0
2034	2.40%	Serial	0.58%	5.00%	2.98%	3.24%	0.68%	5.00%	3.08%	3.33%	2.61%	Serial	1.60%	4.21%	100.0	1.70%	4.31%	100.0
2035	2.43%	Serial	0.60%	5.00%	3.03%	3.39%	0.70%	5.00%	3.13%	3.47%	2.61%	Serial	1.70%	4.31%	100.0	1.80%	4.41%	100.0
2036	2.44%	Serial	0.60%	5.00%	3.04%	3.48%	0.70%	5.00%	3.14%	3.56%	2.61%	Serial	1.80%	4.41%	100.0	1.90%	4.51%	100.0
2037	2.46%	Serial	0.60%	5.00%	3.06%	3.57%	0.70%	5.00%	3.16%	3.64%	2.61%	Serial	1.85%	4.46%	100.0	1.95%	4.56%	100.0
2038	2.48%	Serial	0.60%	5.00%	3.08%	3.64%	0.70%	5.00%	3.18%	3.71%	2.63%	-	-	-	-	-	-	-
2039	2.50%	Serial	0.60%	5.00%	3.10%	3.71%	0.70%	5.00%	3.20%	3.78%	2.63%	-	-	-	-	-	-	-
2040	2.51%	Serial	0.60%	5.00%	3.11%	3.76%	0.70%	5.00%	3.21%	3.83%	2.63%	-	-	-	-	-	-	-
2041	2.52%	Serial	0.60%	5.00%	3.12%	3.81%	0.70%	5.00%	3.22%	3.87%	2.63%	-	-	-	-	-	-	-
2042	2.54%	Serial	0.60%	5.00%	3.14%	3.86%	0.70%	5.00%	3.24%	3.92%	2.63%	Term	1.90%	4.53%	100.0	2.00%	4.63%	100.0
2047	2.62%	Term	0.63%	5.00%	3.25%	4.06%	0.73%	5.00%	3.35%	4.11%	2.63%	-	-	-	-	-	-	-
2052	2.67%	Term	0.65%	5.00%	3.32%	4.17%	0.75%	5.00%	3.42%	4.22%	2.63%	Term	2.00%	4.63%	100.0	2.10%	4.73%	100.0

Interpolated MMD Rates & UST rates as of 4/6/2022; Delivery date of 8/1/2022; Rated A1 / AA- / A+ for senior lien and A2 / A+ / A for second lien by Moody's, S&P, Fitch; 10-year par call on 7/1/2032; pricing is indicative & subject to market conditions

- Wells Fargo believes there are opportunities for GLWA to improve upon the pricing levels provided
 - Ratings upgrades
 - “Green Bond” designation: It would be our hope to pick up 2-3 basis points through an ESG designation
 - Bond Insurance: We believe insurance will create a scale improvement by 10 basis points on the Second Lien and 5 on the Senior Lien

Base Case: 2022 New Money and Refunding Transaction (Question E.ii. – Page 6)

Maximizing the Cash Reserve Release

- Goals of the Transaction**
 - Allocate bonds between the senior and second liens such that cash releases from the respective DSRFs would be maximized
- Results of the Transaction**
 - Release \$16.1 million in cash from the Sewage System reserve fund and \$262k from the Water System reserve fund
 - Sewer System DSC: >2.21x (Senior); >1.68x (Senior + Second)
 - Water System DSC: >1.78x (Senior); >1.32x (Senior + Second)
- Common Assumptions**
 - Current bond ratings
 - Interest rates and market conditions as of April 6, 2022
 - \$200 million of proceeds for the Water Supply System
 - \$175 million of proceeds for the Sewage Disposal System
 - Level debt service structure (new money)
 - 5% coupon structure
 - Par call date of 7/1/2032
 - Use of DSRF releases is to be determined, but could be used to reduce bonded amount or to pay debt service

Proposed Sewage Disposal System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Current Ref. of Senior 2012A	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$21,930,000	\$132,585,000	\$17,620,000	\$172,135,000
Project Fund	\$25,000,000	\$150,000,000	-	\$175,000,000
Arbitrage Yield	3.21%	3.21%	3.21%	3.21%
True Interest Cost	3.85%	3.91%	1.99%	3.89%
Average Life	19.0	19.0	0.9	17.1
PV of 1 Basis Point	\$18,630	\$111,907	\$1,762	\$132,299
Issue Total Debt Service	\$42,725,875	\$258,332,313	\$18,427,583	\$319,485,771
Issue Average Ann. D/S	\$1,424,196	\$8,611,077	\$18,427,583	\$10,649,526
Issue Max. Annual D/S	\$1,430,750	\$8,637,250	\$18,427,583	\$27,654,521
Prior Reserve Req.	\$110,819,563	\$48,500,349	-	-
New Reserve Req.	\$98,880,606	\$44,301,058	-	-
Req. Reduction (or Incr.)	\$11,938,957	\$4,199,291	-	-
Available Cash	\$14,350,467	\$6,292,854	-	-
Cash Release (Addition)	\$11,938,957	\$4,199,291	-	\$16,138,248
Par Amount Refunded	-	-	\$17,985,000	\$17,985,000
Maturity Refunded	-	-	2023	2023
NPV Savings (\$)	-	-	\$373,843	\$373,843
NPV Savings (%)	-	-	2.08%	2.08%

Proposed Water Supply System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$154,470,000	\$21,125,000	\$175,595,000
Project Fund	\$176,100,000	\$23,900,000	\$200,000,000
Arbitrage Yield	3.15%	3.15%	3.15%
True Interest Cost	3.85%	3.91%	3.86%
Average Life	19.0	19.0	19.0
PV of 1 Basis Point	\$131,230	\$17,830	\$149,060
Issue Total Debt Service	\$300,981,625	\$41,161,229	\$342,142,854
Issue Average Ann. D/S	\$10,032,721	\$1,372,041	\$11,404,762
Issue Max. Annual D/S	\$10,063,750	\$1,378,250	\$11,440,750
Prior Reserve Req.	\$101,583,914	\$47,732,579	-
New Reserve Req.	\$104,256,024	\$44,798,813	-
Req. Reduction (or Incr.)	(\$2,672,110)	\$2,933,766	-
Available Cash	\$1,575,413	\$2,934,922	-
Cash Release (Addition)	(\$2,672,110)	\$2,933,766	\$261,656

Assumptions: Moody's/S&P/Fitch senior lien ratings of A1/AA-/A+ and second lien ratings of A2/A+/A; market rates as of 4/6/22; 7/1 principal payments; 10-year call on 7/1/2032; \$6.25 per bond all-in COI & UWD; Available cash figures sourced from PFM's 2022 Municipal Market Outlook and GLWA Borrowing Considerations presentation, 2/25/22

Sewage System D/S Coverage Patterns

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior	Sr + 2nd	Senior	Sr + 2nd
7/1/23	2.22x	1.77x	2.21x	1.69x
7/1/24	2.38x	1.77x	2.35x	1.68x
7/1/25	2.41x	1.79x	2.39x	1.70x
7/1/26	2.45x	1.79x	2.42x	1.71x
7/1/27	2.50x	1.80x	2.47x	1.72x
7/1/28	2.50x	1.82x	2.48x	1.74x
7/1/29	2.44x	1.87x	2.42x	1.79x
7/1/30	2.67x	1.90x	2.64x	1.82x
7/1/31	2.74x	1.95x	2.71x	1.86x
7/1/32	2.57x	2.00x	2.54x	1.91x

Water System D/S Coverage Patterns

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior	Sr + 2nd	Senior	Sr + 2nd
7/1/23	1.91x	1.39x	1.78x	1.32x
7/1/24	2.04x	1.48x	1.89x	1.39x
7/1/25	2.02x	1.47x	1.87x	1.38x
7/1/26	2.11x	1.54x	1.96x	1.45x
7/1/27	2.19x	1.60x	2.03x	1.50x
7/1/28	2.28x	1.66x	2.11x	1.56x
7/1/29	2.37x	1.72x	2.20x	1.62x
7/1/30	2.46x	1.76x	2.28x	1.66x
7/1/31	2.55x	1.83x	2.36x	1.72x
7/1/32	2.66x	1.91x	2.47x	1.79x

Pre-issue D/S and coverage utilizes existing debt service from 2020 transactions' official statements. These projections only include the 2022 GLWA issuance. The 2025-2032 projections are based off of the 2023 Cost of Service Study and represent only the wholesale system.

Alternative Case: 2022 New Money and Refunding Transaction (Question E.ii. – Page 6)

GLWA Achieves Two (2) “AA” Senior Lien Rating

- Goals of the Transaction**
 - Release all senior lien reserve requirements
 - Maximize release of second lien DSRF cash release while issuing as much under the senior lien as possible to achieve lowest total cost
- Results of the Transaction**
 - Release \$20.6 million in cash from the Sewage System reserve fund and \$4.5 million from the Water System reserve fund
 - Sewer System DSC: >2.12x (Senior); >1.69x (Senior + Second)
 - Water System DSC: >1.78x (Senior); >1.32x (Senior + Second)
- Common Assumptions**
 - GLWA achieves two (2) “AA” ratings on its senior lien
 - Senior lien DSRF cash release used as a source of funds. Second lien DSRF cash release use not determined
 - Market and proceeds assumptions same as Base Case
- Transaction Augmentations**
 - Convertible Direct Purchase utilized to refund additional bonds (slide 8)
 - Size around near-term reduction in pension payments
 - Bond Insurance to reduce d/s cost
 - Tender Process for refundings

Proposed Sewage Disposal System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Current Ref. of Senior 2012A	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$118,575,000	\$22,020,000	\$17,615,000	\$158,210,000
Project Fund	\$150,000,000	\$25,000,000	-	\$175,000,000
Arbitrage Yield	3.09%	3.09%	3.09%	3.09%
True Interest Cost	3.82%	3.88%	1.97%	3.82%
Average Life	19.0	19.0	0.9	17.0
PV of 1 Basis Point	\$101,454	\$18,737	\$1,585	\$121,777
Issue Total Debt Service	\$231,040,438	\$42,905,000	\$18,422,354	\$292,367,792
Issue Average Ann. D/S	\$7,701,348	\$1,430,167	\$18,422,354	\$9,745,593
Issue Max. Annual D/S	\$7,725,000	\$1,435,750	\$18,422,354	\$26,816,292
Prior Reserve Req.	\$110,819,563	\$48,500,349	-	-
New Reserve Req.	\$0	\$37,100,145	-	-
Req. Reduction (or Incr.)	\$110,819,563	\$11,400,204	-	-
Available Cash	\$14,350,467	\$6,292,854	-	-
Cash Release (Addition)	\$14,350,467	\$6,292,854	-	\$20,643,321
Par Amount Refunded	-	-	\$17,985,000	\$17,985,000
Maturity Refunded	-	-	2023	2023
NPV Savings (\$)	-	-	\$377,422	\$377,422
NPV Savings (%)	-	-	2.10%	2.10%

Proposed Water Supply System Issuance

Summary Statistics	New Money Senior Lien	New Money Second Lien	Aggregate
Dated Date	8/1/2022	8/1/2022	8/1/2022
Par Amount	\$152,495,000	\$21,110,000	\$173,605,000
Project Fund	\$176,035,000	\$23,965,000	\$200,000,000
Arbitrage Yield	3.10%	3.10%	3.10%
True Interest Cost	3.82%	3.88%	3.83%
Average Life	19.0	19.0	19.0
PV of 1 Basis Point	\$130,472	\$17,963	\$148,435
Issue Total Debt Service	\$297,122,604	\$41,126,542	\$338,249,146
Issue Average Ann. D/S	\$9,904,087	\$1,370,885	\$11,274,972
Issue Max. Annual D/S	\$9,934,000	\$1,377,250	\$11,310,250
Prior Reserve Req.	\$101,583,914	\$47,732,579	-
New Reserve Req.	\$0	\$44,797,364	-
Req. Reduction (or Incr.)	\$101,583,914	\$2,935,215	-
Available Cash	\$1,575,413	\$2,934,922	-
Cash Release (Addition)	\$1,575,413	\$2,934,922	\$4,510,335

Assumptions: Moody's/S&P/Fitch senior lien ratings of Aa3/AA-/A+ and second lien ratings of A2/A+/A; market rates as of 4/6/22; 7/1 principal payments; 10-year call on 7/1/2032; \$6.25 per bond all-in COI & UWD; Available cash figures sourced from PFM's 2022 Municipal Market Outlook and GLWA Borrowing Considerations presentation, 2/25/22

Sewage System D/S Coverage Patterns

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior	Sr + 2nd	Senior	Sr + 2nd
7/1/23	2.22x	1.77x	2.12x	1.70x
7/1/24	2.38x	1.77x	2.26x	1.69x
7/1/25	2.41x	1.79x	2.29x	1.71x
7/1/26	2.45x	1.79x	2.32x	1.71x
7/1/27	2.50x	1.80x	2.37x	1.72x
7/1/28	2.50x	1.82x	2.38x	1.74x
7/1/29	2.44x	1.87x	2.33x	1.79x
7/1/30	2.67x	1.90x	2.54x	1.82x
7/1/31	2.74x	1.95x	2.60x	1.87x
7/1/32	2.57x	2.00x	2.45x	1.92x

Water System D/S Coverage Patterns

Date	Pre-Issue Coverage		Post-Issue Coverage	
	Senior	Sr + 2nd	Senior	Sr + 2nd
7/1/23	1.91x	1.39x	1.78x	1.32x
7/1/24	2.04x	1.48x	1.89x	1.40x
7/1/25	2.02x	1.47x	1.87x	1.38x
7/1/26	2.11x	1.54x	1.96x	1.45x
7/1/27	2.19x	1.60x	2.03x	1.50x
7/1/28	2.28x	1.66x	2.12x	1.56x
7/1/29	2.37x	1.72x	2.20x	1.62x
7/1/30	2.46x	1.76x	2.28x	1.66x
7/1/31	2.55x	1.83x	2.37x	1.72x
7/1/32	2.66x	1.91x	2.47x	1.79x

Pre-issue D/S and coverage utilizes existing debt service from 2020 transactions' official statements. These projections only include the 2022 GLWA issuance. The 2025-2032 projections are based off of the 2023 Cost of Service Study and represent only the wholesale system.

Refunding Considerations – Taxable Advance & Cash Optimization Refunding Monitor

With a 50 basis point adjustment in the market, refundings become much more meaningful. Cash Optimization is worth consideration.

Credit	Series	Maturity	Par Amount (\$000s)	Prior Coupon	Next Call	Current Market				Current Market - 50bps			Cash Optimization Ref.	
						NPV Savings (\$000)	% NPV Savings	Escrow Efficiency	Breakeven to T/E Current Ref	NPV Savings (\$000)	% NPV Savings	Escrow Efficiency	% NPV Savings	Escrow Efficiency
Water Sr	2014D-1	07/01/35	20,020	5.000%	07/01/24	302	1.5%	30.9%	1.67%	1,358	6.8%	73.4%	12.0%	92.4%
Water Sr	2014D-1	07/01/37	24,170	5.000%	07/01/24	137	0.6%	13.4%	1.68%	1,537	6.4%	70.0%	11.9%	91.9%
Water Sr	2014D-2	07/01/25	29,525	5.000%	07/01/24	(19)	-0.1%	--	1.66%	406	1.4%	86.7%	2.2%	115.1%
Water Sr	2014D-2	07/01/26	50,370	5.000%	07/01/24	469	0.9%	38.3%	1.53%	1,431	2.8%	83.7%	4.3%	102.7%
Water Sr	2014D-2	07/01/27	34,340	5.000%	07/01/24	579	1.7%	48.6%	1.49%	1,391	4.1%	82.8%	6.2%	100.0%
Water Sr	2014D-2	07/01/28	22,690	5.000%	07/01/24	559	2.5%	55.8%	1.44%	1,196	5.3%	83.9%	8.1%	98.8%
Water Sr	2014D-4	07/01/29	47,265	5.000%	07/01/24	1,409	3.0%	58.3%	1.45%	2,938	6.2%	83.8%	9.5%	97.1%
Water Sr	2014D-4	07/01/30	54,305	5.000%	07/01/24	1,713	3.2%	57.2%	1.51%	3,686	6.8%	82.7%	10.9%	96.3%
Water Sr	2014D-4	07/01/31	28,515	5.000%	07/01/24	930	3.3%	56.2%	1.50%	2,075	7.3%	81.9%	12.2%	95.8%
Water Sr	2014D-4	07/01/32	18,950	5.000%	07/01/24	605	3.2%	53.9%	1.53%	1,434	7.6%	80.8%	12.3%	95.3%
Water Sr	2014D-4	07/01/33	7,765	5.000%	07/01/24	194	2.5%	45.3%	1.63%	558	7.2%	77.5%	12.8%	94.2%
Water Sr	2014D-4	07/01/34	52,560	5.000%	07/01/24	1,090	2.1%	39.4%	1.67%	3,713	7.1%	75.7%	12.3%	93.2%
Water 2nd	2014D-6	07/01/25	2,870	5.000%	07/01/24	(10)	-0.4%	--	--	31	1.1%	73.0%	1.9%	105.2%
Water 2nd	2014D-6	07/01/26	1,895	5.000%	07/01/24	10	0.6%	24.7%	1.62%	47	2.5%	76.7%	3.0%	85.1%
Water 2nd	2014D-6	07/01/27	1,930	5.000%	07/01/24	24	1.2%	38.3%	1.55%	69	3.6%	77.6%	5.8%	96.7%
Water 2nd	2014D-6	07/01/28	445	5.000%	07/01/24	9	1.9%	47.2%	1.26%	21	4.7%	79.7%	7.5%	96.3%
Water 2nd	2014D-6	07/01/29	500	5.000%	07/01/24	12	2.3%	50.3%	1.49%	28	5.6%	80.0%	8.8%	94.9%
Water 2nd	2014D-6	07/01/30	405	5.000%	07/01/24	10	2.4%	49.0%	1.55%	24	6.0%	79.0%	10.1%	94.3%
Water 2nd	2014D-6	07/01/31	420	5.000%	07/01/24	10	2.5%	47.6%	1.54%	27	6.5%	78.2%	11.3%	94.0%
Water 2nd	2014D-6	07/01/32	440	5.000%	07/01/24	10	2.3%	44.5%	1.56%	29	6.7%	77.1%	12.3%	93.6%
Water 2nd	2014D-6	07/01/33	455	5.000%	07/01/24	7	1.6%	33.2%	1.66%	28	6.2%	73.3%	11.8%	92.4%
Water 2nd	2014D-6	07/01/34	1,215	5.000%	07/01/24	13	1.1%	24.7%	1.69%	73	6.0%	71.1%	11.4%	91.3%
Water 2nd	2014D-6	07/01/36	33,115	5.000%	07/01/24	(82)	-0.2%	--	--	1,726	5.2%	64.9%	11.0%	90.2%
Sewage Sr	2014C-3	07/01/25	47,045	5.000%	07/01/24	(31)	-0.1%	--	--	647	1.4%	86.7%	2.2%	115.1%
Sewage Sr	2014C-3	07/01/26	40,375	5.000%	07/01/24	376	0.9%	38.3%	1.54%	1,147	2.8%	83.7%	4.3%	102.7%
Sewage Sr	2014C-3	07/01/27	45,895	5.000%	07/01/24	774	1.7%	48.6%	1.49%	1,859	4.1%	82.8%	6.2%	100.0%
Sewage Sr	2014C-3	07/01/28	24,075	5.000%	07/01/24	593	2.5%	55.8%	1.44%	1,270	5.3%	83.9%	8.1%	98.8%
Sewage Sr	2014C-3	07/01/29	15,770	5.000%	07/01/24	470	3.0%	58.3%	1.46%	980	6.2%	83.8%	9.5%	97.1%
Sewage Sr	2014C-3	07/01/30	25,285	5.000%	07/01/24	797	3.2%	57.2%	1.52%	1,716	6.8%	82.7%	10.9%	96.3%
Sewage Sr	2014C-3	07/01/31	31,945	5.000%	07/01/24	1,042	3.3%	56.2%	1.51%	2,325	7.3%	81.9%	12.2%	95.8%
Sewage Sr	2014C-3	07/01/32	50,515	5.000%	07/01/24	1,612	3.2%	53.9%	1.53%	3,822	7.6%	80.8%	13.3%	95.3%
Sewage Sr	2014C-3	07/01/33	22,665	5.000%	07/01/24	566	2.5%	45.3%	1.63%	1,628	7.2%	77.5%	12.8%	94.2%
Sewage Sr	2014C-6	07/01/32	9,100	5.000%	07/01/24	290	3.2%	53.9%	1.53%	689	7.6%	80.8%	13.3%	95.3%
Sewage Sr	2014C-6	07/01/33	79,800	5.000%	07/01/24	1,992	2.5%	45.3%	1.63%	5,731	7.2%	77.5%	12.8%	94.2%
Sewage 2nd	2014C-7	07/01/25	5,025	5.000%	07/01/24	(18)	-0.4%	--	--	55	1.1%	73.0%	1.9%	105.2%
Sewage 2nd	2014C-7	07/01/26	4,945	5.000%	07/01/24	27	0.6%	24.7%	1.62%	121	2.5%	76.7%	3.0%	85.1%
Sewage 2nd	2014C-7	07/01/27	5,260	5.000%	07/01/24	64	1.2%	38.3%	1.55%	188	3.6%	77.6%	5.8%	96.7%
Sewage 2nd	2014C-7	07/01/28	5,480	5.000%	07/01/24	105	1.9%	47.2%	1.26%	258	4.7%	79.7%	7.5%	96.3%
Sewage 2nd	2014C-7	07/01/29	5,460	5.000%	07/01/24	128	2.3%	50.3%	1.49%	304	5.6%	80.0%	8.8%	94.9%
Sewage 2nd	2014C-7	07/01/30	275	5.000%	07/01/24	7	2.4%	49.0%	1.55%	17	6.0%	79.0%	10.1%	94.3%
Sewage 2nd	2014C-7	07/01/31	280	5.000%	07/01/24	7	2.5%	47.6%	1.54%	18	6.5%	78.2%	11.3%	94.0%
Sewage 2nd	2014C-7	07/01/32	14,450	5.000%	07/01/24	338	2.3%	44.5%	1.56%	964	6.7%	77.1%	12.3%	93.6%
Sewage 2nd	2014C-7	07/01/34	1,595	5.000%	07/01/24	18	1.1%	24.7%	1.69%	96	6.0%	71.1%	11.4%	91.3%
Sewage 2nd	2014C-7	07/01/35	910	5.000%	07/01/24	4	0.5%	12.2%	1.70%	52	5.7%	68.4%	11.0%	90.3%
Sewage 2nd	2014C-7	07/01/36	385	5.000%	07/01/24	(1)	-0.2%	--	--	20	5.2%	64.9%	11.0%	90.2%

Subject to 10-year par call; Key Assumptions: A1 / AA- / A+ rating by Moody's, S&P, and Fitch for senior lien and A2 / A+ / A ratings for second lien ; pricing is indicative as of 4/6/2022 and subject to market conditions at time of pricing; principal payments of 7/1; dated/delivery date of 8/1/2022; estimated all-in cost of issuance of \$6.25/bond; SLGS funded escrow for demonstrative purposes (if SLGS are not available at the time of pricing, alternate securities would be used); Green light indicates 3% or greater NPV savings or 50% escrow efficiency, yellow light indicates 2% to 3% NPV savings or 40% to 50% escrow efficiency, and red light indicates under 2% NPV savings or under 40% escrow efficiency; no effect on reserve fund; Savings (or Escrow Efficiency calculated as NPV Savings / (NPV Savings + Negative Arbitrage)

Tendering Bonds for Refunding Savings & Sewer Series 2006D Bonds (Question E.ix. – Page 14)

Exploring a Tender for Bonds – Wells Fargo has a recent/relevant case study in Anaheim Public Utilities

Series	Maturity (7/1)	Par (\$)	Coupon	Taxable Advance Refunding (Escrow)		Tax-Exempt Bond Tender				Tender Advantage		Combined Transaction (assumes 25% tendered)			
				PV Savings \$	PV Savings %	Tender Price	B/E Tender	PV Savings \$	PV Savings %	PV Savings \$	PV Savings %	Tendered Par \$	TX Ref'd Par \$	PV Savings \$	PV Savings %
2014C-3	7/1/2025	47,045,000	5.00%	(41,084)	-0.09%	106.286	107.682	102,088	0.22%	143,172	0.30%	11,760,000	35,285,000	-5,295	-0.01%
2014C-3	7/1/2026	40,375,000	5.00%	366,755	0.91%	106.286	109.190	905,878	2.24%	539,124	1.34%	10,095,000	30,280,000	501,552	1.24%
2014C-3	7/1/2027	45,895,000	5.00%	764,086	1.66%	106.286	110.623	1,900,139	4.14%	1,136,052	2.48%	11,475,000	34,420,000	1,048,130	2.28%
2014C-3	7/1/2028	24,075,000	5.00%	588,050	2.44%	106.286	111.918	1,419,220	5.89%	831,170	3.45%	6,020,000	18,055,000	795,886	3.31%
2014C-3	7/1/2029	15,770,000	5.00%	466,856	2.96%	106.286	112.857	1,129,850	7.16%	662,994	4.20%	3,945,000	11,825,000	632,710	4.01%
2014C-3	7/1/2030	25,285,000	5.00%	792,176	3.13%	106.286	113.905	2,119,835	8.38%	1,327,659	5.25%	6,320,000	18,965,000	1,124,025	4.45%
2014C-3	7/1/2031	31,945,000	5.00%	1,035,617	3.24%	106.282	113.416	3,033,989	9.50%	1,998,372	6.26%	7,985,000	23,960,000	1,535,132	4.81%
2014C-3	7/1/2032	50,515,000	5.00%	1,602,112	3.17%	106.282	114.585	5,272,562	10.44%	3,670,450	7.27%	12,630,000	37,885,000	2,519,815	4.99%
2014C-3	7/1/2033	22,665,000	5.00%	561,230	2.48%	106.282	115.851	2,225,584	9.82%	1,664,354	7.34%	5,665,000	17,000,000	977,227	4.31%
2014C-6	7/1/2032	9,100,000	5.00%	288,612	3.17%	106.283	115.682	949,779	10.44%	661,168	7.27%	2,275,000	6,825,000	453,903	4.99%
2014C-6	7/1/2033	79,800,000	5.00%	1,976,005	2.48%	106.283	115.708	7,835,556	9.82%	5,859,551	7.34%	19,950,000	59,850,000	3,440,893	4.31%
Totals		\$392,470,000		8,400,415	2.14%			26,894,481	6.85%	18,494,065	4.71%	98,120,000	294,350,000	13,023,979	3.32%

A

PV Benefit of Tender (B minus A) = \$4,623,564
 assumes 25% tendered

B

2006D Current Situation – With the LIBOR cessation in June 2023, we recommend the Authority prepare a plan to refinance its Series 2006D Bonds, but know that legislation later this year may provide an acceptable replacement rate

- Upon LIBOR cessation there will not be a sufficient number of banks to quote the required rates to set 3-Month LIBOR for the Interest Rate Adjustment Date
- Unless there is a legislative solution, the 3-Month LIBOR rate will be set at the one in effect on the prior Interest Determination Date. In short, if legislation with fallback language isn't adopted, the interest rate going forward will be fixed at the last 3-Month LIBOR rate plus 60 basis points
- **Strategies to address the Series 2006D Bonds should legislative solutions not materialize**
 - Public Market Floating Rate Notes (“FRNs”)
 - Public Market “Fix-Out”
 - Results in NPV dissavings of (4.99%) assuming the 1.9928% interest rate assumed in the Series 2020AB Official Statement and creates debt service in near term years well in excess of current
 - Wells Fargo Bank, N.A. Direct Pay Letter of Credit or Direct Purchase Alternatives^{1,2}
 - **A sample market range for a bank DP for a 2-year term would be 80% of SOFR plus a spread of 23-25 bps or 80% of SOFR plus a spread of 28-33 bps for a 3-year term**, subject to credit and internal approvals and negotiation of terms³

(1) Direct purchase is a Wells Fargo Bank, N.A. product. Product is subject to future market conditions, final documentation, and credit approval.
 (2) Wells Fargo Municipal Capital Strategies, LLC (a wholly owned subsidiary of WFBNA) may serve as Purchaser of the bonds.
 (3) Indicative as of 4/6/2022 and subject to change

Disclosures (continued)

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If you have any questions or concerns about the disclosures presented herein, you should make those questions or concerns known immediately to Wells Fargo.

2Q22



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

Vendor Certifications Regarding Debarment, Equal Opportunity, Non-Collusion and Agreement to Contract Terms and Conditions

I, the undersigned, am a representative of Wells Fargo Bank, NA Municipal Finance Group, (“Vendor”), and affirm that I am authorized to make the following certifications on behalf of Vendor, its owners, and principals. Vendor acknowledges that the below certifications are material to this solicitation and any contract or purchase order (collectively, “Contract”) resulting therefrom and will be relied on by the Great Lakes Water Authority (“GLWA”) in awarding the Contract. Vendor acknowledges that any fraud, misrepresentation, or falsification in these certifications is and shall be treated as fraudulent concealment from GLWA of the true facts relating to the submission of Vendor’s offer and subject Vendor to certain penalties, including loss of the Contract or debarment, as further stated herein.

Part I. Debarment Certification

A. Debarment Pursuant to Federal Law.

Vendor certifies, to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in transactions under federal non-procurement programs by any federal department or agency;
2. Have not, within the three-year period preceding Vendor’s offer on this solicitation, had one or more public transactions (federal, state, or local) terminated for cause or default; and
3. Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) and have not, within the three-year period preceding Vendor’s offer on this solicitation, been convicted of or had a civil judgment rendered against it:
 - a. For the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction (federal, state, or local) or a procurement contract under such a public transaction;
 - b. For the violation of federal or state antitrust statutes, including those proscribing price fixing between competitors, the allocation of customers between competitors, or bid rigging; or
 - c. For the commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property.

Please refer to our attached litigation statement regarding #3 above.

Vendor understands that a false statement on this Debarment Certification may be grounds for the rejection of Vendor’s offer under this solicitation or the termination of an award thereunder. In addition, under 18 U.S.C. §1001, a false statement may result in a fine or imprisonment for up to five years, or both.



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

B. Debarment Pursuant to GLWA Procurement Policy.

Vendor certifies that:

1. It has read and understands the GLWA Procurement Policy (“Policy”) located at glwater.org/vendors, and in particular, Section 13 – Vendor Suspension/Debarment.
2. No federal, state, or local government entity has found Vendor (as defined in footnote 2 of the Policy) in violation of Section 13.1(a) through (p) in the past three (3) years.

Please refer to our attached litigation statement regarding #2 above.

Vendor is unable to certify to all the above statements. Attached is Vendor’s explanation.

Part II. Equal Opportunity Certification

1. Vendor makes this Equal Opportunity Certification (“EOC”) with GLWA, effective upon the execution of a Contract between Vendor and GLWA resulting from this solicitation, obligating Vendor and all sub-contractors on the Contract to not discriminate against any employee or applicant for employment, training, education, or apprenticeship connected directly or indirectly with the performance of the Contract, with respect to their hire, promotion, job assignment, tenure, terms, conditions or privileges of employment because of race, color, religious beliefs, public benefit status, national origin, age, marital status, disability, sex, sexual orientation, or gender identity or expression.
2. Vendor shall ensure that all potential sub-contractors on the Contract are reported to GLWA and that each such sub-contractor has executed its own EOC prior to working on the Contract.
3. Furthermore, Vendor understands that this EOC is valid for the duration of the Contract and that a breach of this EOC shall be deemed a material breach of the Contract.

Part III. Non-Collusion Certification

Vendor certifies that:

1. The prices in and amount of this offer have been arrived at independently and without consultation, communication, or agreement with any other vendor or potential vendor.
2. Neither the prices nor the amount of this offer, and neither the approximate prices nor the approximate amount of this offer, have been disclosed to any other firm or person that is a vendor or potential vendor to this solicitation, and the same shall not be disclosed before bid opening.
3. No attempt has been made or will be made to induce any firm or person to refrain from offering on this solicitation, or to submit a cost higher than this offer, or to submit any intentionally high or noncompetitive offer or other form of complementary offer.
4. The offer of Vendor is made in good faith and fair dealing and not pursuant to any agreement or discussion with, or inducement from, any firm or person.



Project/Contract Documents

Project/Contract No.:
2200290

Document Title:
Vendor Certifications

Project/Contract Title:
Bond Underwriting Services

5. Vendor, its affiliates, subsidiaries, principals, officers, directors, partners, members, and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable in any jurisdiction for any act prohibited by state or federal law involving conspiracy or collusion with respect to public contracting, except as follows:

Accordingly, Vendor, by its authorized signature below, acknowledges its agreement with the foregoing certifications.

Wells Fargo Bank, NA Municipal Finance Group

(Vendor):

Print Name: Kevin Hoecker

Title: Managing Director

Dated: 4/13/2022

Signature: 

WFBNA Litigation Statement 4

Wells Fargo Bank N.A. ("WFBNA") is a subsidiary of Wells Fargo & Company ("WFC"), a corporation organized under the laws of Delaware.

As with any large diversified financial institution in the highly regulated banking and securities field, Wells Fargo receives inquiries and subpoenas from regulators and law enforcement from time to time, some of which may be confidential in nature, and is subject to civil litigation. Wells Fargo responds regularly to inquiries and investigations by governmental entities and has in the past entered into settlements of some of those investigations, including those listed below. None have resulted in any material restrictions on Wells Fargo's ability to operate its businesses as related to the services and products addressed in our responses to this RFP.

Wells Fargo Bank, NA Municipal Finance Group ("WFBNA MFG"), the party responding to this RFP, is a separately identifiable department of WFBNA and is registered with the Securities and Exchange Commission ("SEC") as a municipal securities dealer, authorized to provide underwriting and investment banking services in connection with municipal securities.

Below is a summary of (i) certain resolved regulatory matters related to WFBNA MFG and WFBNA that are related to municipal securities and (ii) certain matters relating to actions involving municipal entities.

During the fourth quarter of 2011, WFBNA entered into a settlement with various regulators regarding municipal derivatives contracts. Please see the Legal Actions section of WFC's 2011 Annual Report for additional information regarding the municipal derivatives bid practices settlement with the Office of the Comptroller of the Currency ("OCC"), SEC, the U.S. Internal Revenue Service, U.S. Department of Justice and a group of state Attorneys General. See press release dated December 8, 2011 at <https://www.sec.gov/litigation/litreleases/2011/lr22183.htm>.

WFBNA has paid municipal fines in connection with a small number of houses for alleged violations of local housing ordinances, some of which are characterized as misdemeanors.

During the third quarter of 2016, WFBNA entered into settlements with the City of Los Angeles, the Consumer Financial Protection Bureau and the Office of the Comptroller of the Currency regarding certain sales practices. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-issues-statement-agreements-related-sales>. (the "2016 Settlement").

Following the announcement of the 2016 Settlement discussed above, certain state and local governmental bodies and municipal entities have temporarily suspended or removed WFBNA MFG as underwriter from certain of such issuers' municipal underwritings.

On February 2, 2016, WFBNA MFG entered into an agreement with the SEC resulting from a self-report submitted to the SEC by WFBNA MFG pursuant to the SEC's Municipalities Continuing Disclosure Cooperation Initiative ("MCDC") (see <https://www.sec.gov/litigation/admin/2016/33-10028.pdf>).

On December 26, 2018, WFC was served with a Complaint for a qui tam action pending in San Francisco County, California, which was subsequently amended to add WFBNA as a defendant. State of California,

WFBNA Litigation Statement 4

ex rel., Edelweiss Fund, LLC v. JP Morgan Chase & Co., et al., Case No. CGC-14-540777. The California qui tam action alleges Wells Fargo and other remarketing agents conspired to inflate the interest rates on certain tax-exempt bonds issued by public entities called variable rate demand obligations issued by the State of California or its political subdivisions. In July 2019, the San Francisco Superior Court dismissed the claims against a group of defendants, including WFC, due to untimely service, and the Court of Appeals upheld that dismissal in December 2020. On June 1, 2021, the Court dismissed the Relator's, Edelweiss Fund, LLC, seventh amended complaint without leave to amend. On July 27, 2021, Relator appealed the Court's June 1, 2021 Order. On or about July 26, 2019, another qui tam action was unsealed in Mercer County, New Jersey. State of New Jersey, ex rel., Edelweiss Fund, LLC v. JP Morgan Chase & Co., et al., Docket No. L. 885-15. The New Jersey qui tam action names Wells Fargo & Co. and several other financial institutions as defendants. The allegations in the New Jersey qui tam action are substantially similar to the California qui tam action. On February 20, 2019, the City of Philadelphia filed a putative class action against WFBNA and related entities, along with six other banks and their related entities. The City of Philadelphia v. Bank of America Corporation, et al., No. 1:19-cv-01608, U.S.D.C., S.D.N.Y. The plaintiff alleges that the defendants conspired to inflate the interest rates on certain tax-exempt bonds issued by public entities called variable rate demand obligations from February 1, 2008 to June 30, 2016. On March 25, 2019, the City of Baltimore filed a similar putative class action complaint against WFBNA and related entities, along with nine other banks and related entities. Mayor and City Council of Baltimore v. Bank of America Corporation, et al., No. 1:19-cv-02667, U.S.D.C., S.D.N.Y. The City of Baltimore's allegations are substantially similar to the allegations in the City of Philadelphia case. The Philadelphia and Baltimore cases were consolidated and an amended consolidated complaint was filed on May 31, 2019, naming WFBNA and related entities, along with seven other banks and related entities. On June 2, 2021, a substantially similar class action complaint was filed in the Southern District of New York on behalf of a putative class of California issuers of variable rate demand obligations against the same defendants. (Board of Directors of the San Diego Association of Governments v. Bank of America Corporation, et al., No. 1:21-cv-4893, U.S.D.C., S.D.N.Y.) The complaint includes the same defendants and class period as the Philadelphia and Baltimore consolidated complaint, and largely tracks the allegations asserted in that complaint. In August 2021, the San Diego Association of Governments action was consolidated with the Philadelphia and Baltimore action through an amended consolidated class action complaint. In August 2021, the San Diego Association of Governments action was consolidated with the Philadelphia and Baltimore action through an amended consolidated class action complaint.

WFBNA was named as a defendant in an antitrust case filed in the U.S. District Court for the Middle District of Louisiana on October 21, 2019, by the City of Baton Rouge/East Baton Rouge Parish, Consolidated Parish Employees Retirement System and Police Guaranty Fund. No. 3:19-cv-00725. The plaintiffs allege that WFBNA and 11 other defendants colluded to keep the bid-offer spreads artificially wide in secondary market trading for Government Sponsored Enterprise bonds, including those issued by Fannie Mae, Freddie Mac, and Federal Home Loan Banks. WFC and Wells Fargo Securities, LLC ("WFSLLC") and 23 other parties were named as defendants in a case filed in the U.S. District Court for the Eastern District of Louisiana on July 17, 2020, by the Louisiana Asset Management Pool ("LAMP"). No. 2:20-cv-1095. WFC and WFSLLC and 22 other parties were named as defendants in a case filed in the U.S. District Court for the Eastern District of Louisiana on September 21, 2020, by the City of New Orleans, the New Orleans

WFBNA Litigation Statement 4

Municipal Employees Retirement System and the New Orleans Aviation Board. No. 2:20-cv-2570. The allegations in the LAMP and City of New Orleans cases are substantially similar to the allegations in the City of Baton Rouge case. All three cases were settled and dismissed on June 9, 2021.

On October 7, 2020, WFBNA, JPMorgan Chase & Co., and Stifel, Nicolaus & Co., Inc. were sued in the U.S. District Court for the Eastern District of Michigan federal court on behalf of children who allegedly were harmed by polluted water in the City of Flint, Michigan, LeeAnne Walters et al. v. J.P. Morgan Chase & Co., Wells Fargo Bank, N.A., and Stifel Nicolaus, No. 5:20-cv-12726. The plaintiffs allege that the banks violated their Constitutional rights and Michigan law by underwriting a 2014 municipal bond offering for a Michigan-based water authority with alleged knowledge that the bond offering would result in the City of Flint, Michigan transitioning to an unsafe water source. On March 29, 2022, the Court dismissed the plaintiffs' lawsuit. The plaintiffs have until April 26, 2022 to move for reconsideration and April 28, 2022 to appeal the Court's ruling.

Please be further advised of the following:

On February 2, 2018, WFC entered into a consent order with the Board of Governors of the Federal Reserve System, relating to governance oversight and the company's compliance and operational risk management program. This consent order does not relate to new matters, but rather to prior issues including the 2016 sales practices matter. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-commits-satisfying-consent-order-federal>.

In April 2018, WFC entered into consent orders with the Consumer Financial Protection Bureau and the Office of the Comptroller of the Currency that address matters relating to WFC's compliance risk management program and issues regarding certain interest rate-lock extensions on home mortgages and collateral protection insurance placed on certain auto loans. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-enters-consent-orders-occ-and-cfpb>.

In August 2018, WFC announced that it entered into an agreement with the U.S. Department of Justice ("DOJ") to resolve a previously disclosed investigation by the DOJ regarding claims related to certain 2005–07 residential mortgage-backed securities activities. For additional information, see the press release at <https://newsroom.wf.com/press-release/consumer-lending/wells-fargo-reaches-agreement-doj-resolve-legacy-rmbs-claims>.

On December 4, 2018, WFC reached an agreement with the Attorney General of the State of Illinois, pursuant to which it agreed to pay \$17.25 million in remediation relating to certain prior RMBS activities.

On December 28, 2018, WFC entered into a settlement with all 50 state Attorneys General and the District of Columbia regarding previously disclosed retail sales practices, auto collateral protection insurance and guaranteed asset/auto protection, and mortgage interest rate lock matters. For additional information, see the press release at <https://newsroom.wf.com/press-release/community-banking-and-small-business/wells-fargo-reaches-agreement-state-attorneys>.

WFBNA Litigation Statement 4

The SEC filed a civil lawsuit in 2016 against Wells Fargo Securities, LLC (“WFSLLC”) and a Wells Fargo employee, among others, regarding a 2010 Rhode Island Economic Development Corporation bond offering document. WFSLLC settled the matter with the SEC on March 20, 2019. The Court dismissed all claims against the Wells Fargo employee on June 11, 2019. SEC v. Rhode Island Commerce Corporation (f/k/a Rhode Island Economic Development Corporation), et al., No. 1:16-cv-107-M-PAS (D.R.I.).

On February 21, 2020, WFC entered into settlement agreements with the U.S. Department of Justice and the U.S. Securities and Exchange Commission to resolve these agencies’ investigations into Community Bank sales practices and related disclosures. For additional information, see the press release at <https://newsroom.wf.com/press-release/corporate-and-financial/wells-fargo-reaches-settlements-resolve-outstanding-doj-and>.

WFC also reached an agreement with the Attorney General of the State of Maryland on June 15, 2020, pursuant to which it agreed to pay \$20 million in remediation to resolve claims relating to certain prior RMBS activities.

On January 5, 2021, the Office of the Comptroller of the Currency terminated a 2015 consent order related to WFC’s anti-money laundering compliance program. For additional information, please see the press release at newsroom.wf.com/English/news-releases/news-release-details/2021/Wells-Fargo-Announces-Termination-of-AML-Related-Consent-Order/default.aspx.

On September 9, 2021, WFC announced that the Office of the Comptroller of the Currency issued an enforcement action against WFBNA related to loss mitigation practices in the bank’s Home Lending business, as well as a civil monetary penalty related to those loss mitigation practices and insufficient progress in addressing requirements under the OCC’s April 2018 Compliance Risk Management and Customer Remediation consent order. For additional information, see the press release at Wells Fargo Newsroom - Wells Fargo Issues Statement on OCC Enforcement Action, Expiration of CFPB Consent Order ([wf.com](https://www.wellsfargo.com)).

On September 27, 2021, WFBNA reached an agreement with the United States District Court for the Southern District of New York pursuant to which WFBNA paid \$37.5 million to the United States and provided customer remediation in order to resolve an investigation related to certain activities in WFBNA’s foreign exchange business, including whether customers may have received pricing inconsistent with commitments made to those customers. Furthermore, no member of the proposed deal team identified in this RFP has a reportable item on his or her broker check report (available online through FINRA’s Broker Check), regarding investigations during his or her tenure with WFBNA MFG.

Many of the actions that Wells Fargo has taken in connection with these settlements are described at <https://www.wellsfargo.com/assets/pdf/commitment/progress-report.pdf>

To the extent any litigation or regulatory matters are required to be reported, they are disclosed in WFC’s SEC filings and are matters of public record.

WFBNA Litigation Statement 4

Copies of the (i) Legal Proceedings sections from Wells Fargo & Company recent public filings and (ii) Wells Fargo & Company's most recent periodic reports are available via the internet link below:

https://www.wellsfargo.com/invest_relations/filings

Wells Fargo & Company Annual Report Link:

https://www.wellsfargo.com/invest_relations/annual



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Document Title: Business Inclusion and Diversity Program	Document Owner/Department: Procurement Team
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Business Inclusion and Diversity (B.I.D.) Program

In accordance with GLWA’s Procurement Policy, amended on November 25, 2020, all vendors responding to solicitations budgeted at \$1 million or greater will be required to submit a Business Inclusion and Diversity Plan. Please note that this requirement is applicable to all vendors whether certified as small, disadvantaged, minority-owned, women-owned, or other.

The goal of the vendor’s Diversity Plan is to demonstrate how they presented and maximized economic opportunities for qualified small, minority-owned, and economically disadvantaged business enterprises within the Great Lakes Water Authority’s service territory area.

Under the awarded contract, the plan will become part of the executed contract and may be negotiated during contract finalization. Vendor performance and B.I.D. Program compliance monitoring will be assessed during the length and completion of the contract.

B.I.D. Program Submission Requirements

1.1. B.I.D. Diversity Plan (Pass/Fail Requirement)

1.1.1. Proposed Diversity Plan — Each vendor shall provide their method for maximizing opportunities for inclusion and diversity participation for this solicitation. Good faith efforts in reporting will include the firms contacted and why they declined as well as firms recommended for award and other pertinent information.

Please complete the form included at the end of this document and attach all supporting documentation.

1.1.2. Certification Review and Assessment — Vendors must submit a copy of any certifications that they currently hold. If a vendor has certified subcontractors, then submit the subcontractor’s certifications as well.

The following certifications from a federal agency, the state of Michigan, or a Michigan local unit of government (including certifications upon which those entities might rely) will be accepted and must be submitted with the vendor’s plan. This list is not exclusive, and vendors may include other types of diversity certifications.

DBE - Disadvantaged Business Enterprise	MBE - Minority Business Enterprise
WBE- Woman Business Enterprise	SBE - Small Business Enterprise

1.1.3. Small Business Directory Resources/Registrations —

U.S. SBA - https://web.sba.gov/pro-net/search/dsp_search-help.cfm

State of Michigan - <https://sigma.michigan.gov/webapp/PRDVSS2X1/AltSelfService>

Michigan United Certification Program - www.michigan.gov/mucp

MDOT Certification Program - www.michigan.gov/mdotdbe



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1.2. Economic Equity (Scored Categories) — To receive the economic equity credit, complete the B.I.D. questionnaire in Bonfire and submit with your solicitation response. A maximum of 3% points can be added to the vendor’s overall score based on the requirements below.

1.2.1. **Business Presence in the State of Michigan — 1%** — A business presence in the State of Michigan means that a business is eligible to be a Certified Michigan Based Business as defined by the state of Michigan law: a) files a Michigan single business tax return; b) has a Michigan income tax return statement showing income generated in, or attributed to, the state of Michigan or c) withheld Michigan income tax from compensation paid to the vendors/owners and remitted the tax to the Michigan Department of Treasury. (MCL 18.1268).

1.2.2. **Business Presence in a GLWA Service Territory Area — 1%** — GLWA is a regional utility that serves communities in as many as eight counties. A business presence in a GLWA Service Territory Area indicates that the vendor’s business is located in one of the following GLWA Service Territory Areas.

Community	County
City of Flint	Genesee
Village of Almont	Lapeer
Imlay Township	Lapeer
City of Imlay City	Lapeer
City of Lapeer	Lapeer
Mayfield Township	Lapeer
Bruce Township	Macomb
City of Center Line	Macomb
Chesterfield Township	Macomb
Clinton Township	Macomb
City of Eastpointe	Macomb
City of Fraser	Macomb
Harrison Township	Macomb
Lenox Township	Macomb
Macomb Township	Macomb
Village of New Haven	Macomb
Village of Romeo	Macomb
City of Roseville	Macomb
Shelby Township	Macomb
City of St Clair Shores	Macomb



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Community	County
City of Sterling Heights	Macomb
City of Utica	Macomb
City of Warren	Macomb
Washington Township	Macomb
Ash Township	Monroe
Berlin Township	Monroe
Village of South Rockwood	Monroe
Village of Carleton	Monroe
Village of Estral Beach	Monroe
Commerce Township	Oakland
City of Farmington	Oakland
City of Farmington Hills	Oakland
City of Ferndale	Oakland
City of Hazel Park	Oakland
City of Keego Harbor	Oakland
City of Madison Heights	Oakland
City of Novi	Oakland
City of Oak Park	Oakland
Royal Oak Township	Oakland
City of Sylvan Lake	Oakland
City of Troy	Oakland
City of Walled Lake	Oakland
West Bloomfield Township	Oakland
City of Wixom	Oakland
Village of Lake Orion	Oakland
City of Rochester Hills	Oakland
City of Auburn Hills	Oakland
Orion Township	Oakland
City of Pontiac	Oakland
City of Rochester	Oakland
City of Berkley	Oakland
Village of Beverly Hills	Oakland
Village of Bingham Farms	Oakland
City of Birmingham	Oakland



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Community	County
Bloomfield Township	Oakland
City of Bloomfield Hills	Oakland
City of Clawson	Oakland
City of Huntington Woods	Oakland
City of Lathrup Village	Oakland
City of Pleasant Ridge	Oakland
City of Royal Oak	Oakland
City of Southfield	Oakland
Southfield Township	Oakland
City of Orchard Lake Village	Oakland
Burtchville Township	St. Clair
Greenwood Township	St. Clair
Augusta Township	Washtenaw
Pittsfield Township	Washtenaw
Superior Township	Washtenaw
York Township	Washtenaw
City of Ypsilanti	Washtenaw
Ypsilanti Township	Washtenaw
City of Allen Park	Wayne
City of Belleville	Wayne
Brownstown Township	Wayne
Canton Township	Wayne
City of Dearborn	Wayne
City of Dearborn Heights	Wayne
City of Detroit	Wayne
City of Ecorse	Wayne
City of Flat Rock	Wayne
City of Garden City	Wayne
City of Gibraltar	Wayne
Grosse Ile Township	Wayne
City of Grosse Pointe Park	Wayne
City of Grosse Pointe Shores	Wayne
City of Grosse Pointe Woods	Wayne
City of Hamtramck	Wayne



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Community	County
City of Harper Woods	Wayne
City of Highland Park	Wayne
Huron Township	Wayne
City of Inkster	Wayne
City of Lincoln Park	Wayne
City of Livonia	Wayne
City of Melvindale	Wayne
Northville Township	Wayne
City of Northville	Wayne
City of Plymouth	Wayne
Plymouth Township	Wayne
Redford Township	Wayne
City of River Rouge	Wayne
City of Riverview	Wayne
City of Rockwood	Wayne
City of Romulus	Wayne
City of Southgate	Wayne
Sumpter Township	Wayne
City of Taylor	Wayne
City of Trenton	Wayne
Van Buren Township	Wayne
City of Wayne	Wayne
City of Westland	Wayne
City of Woodhaven	Wayne



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1.2.3. Business Presence in an Economically Disadvantaged GLWA Service Territory Area — 1% — A business presence in an Economically Disadvantaged Service Territory Area means the vendor is in a municipality designated as having one of the five lowest median household incomes in that respective county as defined by the U.S. Census Bureau every five years.

Community
Center Line
Roseville
Eastpointe
Lapeer
Imlay
Flint
Royal Oak Charter Township
Pontiac
Hazel Park
Keego Harbor
Oak Park
Hamtramck
River Rouge
Ecorse
Detroit
Ypsilanti
Ypsilanti Charter Township
Superior Charter Township



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Please complete the following form and attach all supporting documentation.

A. Prime Vendor: Name and Contact Information (mandatory)

1. Vendor Name(s):

2. Vendor Mailing Address(es):

3. Contact Person(s) and Title(s):

4. Contact Email(s):

5. Contact Phone/Cell:

B. Prime Vendor: Diversity Certifications (if applicable)

Vendor Name	Certifying Organization	Certifying Public Agency (if applicable)	Date of Certification

C. Prime Vendor: Diversity and Inclusion Efforts Summary (mandatory)

Instructions: Provide a summary of diversity and inclusion efforts undertaken or strategies employed to maximize opportunities for small, minority-owned, and disadvantaged subcontractors on the specific GLWA solicitation to which you are responding.



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D. Prime Vendor: Targeted Outreach Efforts Summary (mandatory)

Instructions: Provide a summary of the targeted outreach efforts undertaken or strategies employed to encourage participation by small, minority-owned, and disadvantaged subcontractors on the specific GLWA solicitation to which you are responding.

E. Prime Vendor: Targeted Outreach Communications Log (mandatory)

Subcontractor Name	Certifying Organization	Date of Outreach	Subcontractor Response (bid, no bid, and why)



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F. Prime Vendor: Resources Utilized (*mandatory*)

Instructions: Please note the resources used to identify small, minority-owned, and disadvantaged subcontractors (e.g., Federal or Michigan-based databases, certification programs, websites, listservs, or advertisements).

G. Prime Vendor: Additional Diversity and Inclusion Efforts Summary (*optional*)

Instructions: Please describe or summarize below any additional diversity and inclusion efforts undertaken (as related to the specific GLWA solicitation to which you are responding) that are not addressed in the above fields.

H. Prime Vendor: Internal Diversity and Inclusion Efforts Summary (*optional*)

Instructions: Please describe below any inclusion and diversity efforts, programs, initiatives, professional associations, or awards that your organization has undertaken, belonged to, or won.



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I. Proposed Subcontractor(s) Information (mandatory)

Subcontracted Goods and/or Services	Subcontractor Name	Certifying Organization

J. Supporting Documentation (mandatory)

Instructions: Provide a short description of any supporting or supplemental documentation included with this form.

Document No.	Description
1.	
2.	
3.	
4.	
5.	
6.	

Investing in Michigan

Helping local communities grow

Wells Fargo is committed to local Michigan communities

Nearly **\$2.7 million** donated to state nonprofits, schools, and community organizations in 2020, as well as **\$750,000** from its Open for Business Fund

Nearly **600** employees

More than **\$3.27 million** in Small Business Administration loans in fiscal year 2019

\$152.6 million for nearly **2,080** small business loans in 2019

\$2.6 billion in more than **12,390** home mortgage loans in 2019, including low- and moderate-income families and individuals



Critical repairs in Vassar lead a 74-year-old veteran home again

Habitat for Humanity of Lapeer-Tuscola rushed to finish a home for a homeless veteran in Vassar, and 16 Wells Fargo volunteers stepped in to help make sure that happened before the snow piled up.

Marjorie, a 74-year-old Vietnam veteran, had been homeless for more than five years. She inherited her parents' home after they passed away, but had issues keeping up with the maintenance.

When the roof started falling in, Marjorie moved into a 1960s trailer on the property with an extension cord as her only source of electricity. She would go back into the home to use the bathroom and washing machine, but had to be careful because it was so cold, there was ice on the floor. She then saw a newspaper story about Habitat's Critical Repair program and called about her roof.

"The icing on the cake of this experience was the caliber of folks who work for Wells Fargo," said Carolyn Nestor, executive director of Habitat Lapeer-Tuscola. "They came at every opportunity. They came early, stayed late, worked hard physically in ice, snow, rain and vicious cold of the Michigan winter — and no one complained." ■



Detroit Rock City gets remodeled, thanks to 10,000 volunteers

When the Detroit-based nonprofit Life Remodeled deployed its army of volunteers for its annual neighborhood cleanup marathon, organizers wanted to do more than they had done in years past.

During the six-day project, volunteers went beyond blight removal and beautified 316 city blocks, boarded up 396 houses, cleared 102 alleyways, and planted more than 700 trees, shrubs, and perennials.

Senior Private Banker Nicole Moten volunteered for the project alongside 10,000 volunteers representing 100 companies. "This is the second year Wells Fargo has participated in this project," said Moten. "Both times it felt so good to be part of such a huge initiative in Detroit."

The ambitious project also had a ripple effect. Neighboring homeowners saw the volunteers working and started weeding and repairing tattered fences, making everything look better. ■



Supporting disaster relief efforts in Houghton County

Michigan flooding impacted more than 600 homes, washed out roads and bridges in three counties, and created as many as 60 sinkholes. To aid in the relief and recovery efforts, Wells Fargo donated \$75,000 to the Portage Health Foundation's Flood with Love initiative in Houghton County.

The Flood with Love project helped get flood victims back into clean, safe living environments. It provided financial assistance for homeowners, minimizing their cleanup costs, and helped them work with vetted, licensed contractors to ensure their homes were repaired safely. The initiative also provided emotional support for flood victims by partnering with Dial Help, an organization that promotes physical, emotional, and social well-being with problem assistance, crisis intervention, referrals, education, and training.

"It is because of partnerships like this with Wells Fargo that we are able to work together to get the community back on its feet," said Chelsea Goodreau, marketing and communications coordinator for Portage Health Foundation. "One hundred percent of the funds received will be passed through to the flood relief efforts." ■



\$500,000 boost for diverse small business owners

Wells Fargo provided a boost to diverse small businesses with \$7.9 million in grants from its Diverse Community Capital program, which offers capital and technical assistance to minority-owned small businesses through Community Development Financial Institutions (CDFIs).

Northern Initiatives in Marquette, Mich., used their \$500,000 to increase the number of diverse borrowers who have access to small business training and to improve its online bilingual business education portal called Initiate. These services focused on the Grand Rapids area and Western Michigan.

"Access to capital is one of the leading barriers minority entrepreneurs face when looking to start a business," comments Dennis West, President of Northern Initiatives. "This significant investment is vital to our ability to position diverse small businesses owners to successfully launch and grow."

With a portion of the funding from Wells Fargo, Northern Initiatives will make Initiate more accessible to its Spanish-speaking customers in addition to offering it as a resource to other CDFIs, micro lenders and other supporters of small business growth and development.

Wells Fargo has been a strong supporter of Northern Initiative's work surrounding business education, one-on-one business assistance, financial capability programming and access to fair capital. Wells Fargo has invested a little more than \$850,000 in Northern Initiatives' strong community programming since 2012. ■

Our history in Michigan

Wells Fargo's history in Michigan began in 1864 with the company's predecessor, the First National Bank of Marquette.

In 1909, Wells Fargo opened offices in Calumet, Copper City, Escanaba, Houghton, Iron Mountain, Menominee, and more than 30 other Michigan locations along the tracks of the Chicago, Milwaukee and St. Paul railways.

By 1912, Wells Fargo had opened additional offices in Ann Arbor, Detroit, and several other locations.



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Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Quantity Required	Numeric	
					\$\$ Per Bond	Total Cost
Success: All values provided	Bid	#0-1	Management Fee	1	\$ 0.00	\$ 0.00
Success: All values provided	Bid	#0-2	Risk Fee \$\$ Per Bond (if applicable)	1	\$ 0.00	\$ 0.00
Success: All values provided	Bid	#0-3	Other Fee \$\$ Per Bond (if applicable)	1	\$ 0.00	\$ 0.00

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Numeric	Text	Numeric	Total Cost
				Quantity anticipated	Expense Description	Unit Price	
Success: All values provided	Bid	#0-1	Expense	350000	CUSIP Fee (assumes 89 CUSIPs)	\$ 0.0111	\$ 3,887.00
Success: All values provided	Bid	#0-2	Expense	350000	DTC Fee	\$ 0.0023	\$ 800.00
Success: All values provided	Bid	#0-3	Expense	350000	IPREO Fee	\$ 0.0821	\$ 28,735.00
Not Bidding	No Bid	#0-4	Expense				-
Not Bidding	No Bid	#0-5	Expense				-
Not Bidding	No Bid	#0-6	Expense				-
Not Bidding	No Bid	#0-7	Expense				-
Not Bidding	No Bid	#0-8	Expense				-
Not Bidding	No Bid	#0-9	Expense				-
Not Bidding	No Bid	#0-10	Expense				-

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-1	Uninsured \$ per Bond	1	Per Bond	\$ 2.25	\$ 2.25
Success: All values provided	Bid	#0-2	Uninsured \$ per Bond	2	Per Bond	\$ 2.25	\$ 4.50
Success: All values provided	Bid	#0-3	Uninsured \$ per Bond	3	Per Bond	\$ 2.25	\$ 6.75
Success: All values provided	Bid	#0-4	Uninsured \$ per Bond	4	Per Bond	\$ 2.25	\$ 9.00
Success: All values provided	Bid	#0-5	Uninsured \$ per Bond	5	Per Bond	\$ 2.25	\$ 11.25
Success: All values provided	Bid	#0-6	Uninsured \$ per Bond	6	Per Bond	\$ 2.25	\$ 13.50
Success: All values provided	Bid	#0-7	Uninsured \$ per Bond	7	Per Bond	\$ 2.25	\$ 15.75
Success: All values provided	Bid	#0-8	Uninsured \$ per Bond	8	Per Bond	\$ 2.25	\$ 18.00
Success: All values provided	Bid	#0-9	Uninsured \$ per Bond	9	Per Bond	\$ 2.25	\$ 20.25
Success: All values provided	Bid	#0-10	Uninsured \$ per Bond	10	Per Bond	\$ 2.25	\$ 22.50
Success: All values provided	Bid	#0-11	Uninsured \$ per Bond	11	Per Bond	\$ 2.25	\$ 24.75
Success: All values provided	Bid	#0-12	Uninsured \$ per Bond	12	Per Bond	\$ 2.25	\$ 27.00
Success: All values provided	Bid	#0-13	Uninsured \$ per Bond	13	Per Bond	\$ 2.25	\$ 29.25
Success: All values provided	Bid	#0-14	Uninsured \$ per Bond	14	Per Bond	\$ 2.25	\$ 31.50
Success: All values provided	Bid	#0-15	Uninsured \$ per Bond	15	Per Bond	\$ 2.25	\$ 33.75

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-16	Uninsured \$ per Bond	16	Per Bond	\$ 2.25	\$ 36.00
Success: All values provided	Bid	#0-17	Uninsured \$ per Bond	17	Per Bond	\$ 2.25	\$ 38.25
Success: All values provided	Bid	#0-18	Uninsured \$ per Bond	18	Per Bond	\$ 2.25	\$ 40.50
Success: All values provided	Bid	#0-19	Uninsured \$ per Bond	19	Per Bond	\$ 2.25	\$ 42.75
Success: All values provided	Bid	#0-20	Uninsured \$ per Bond	20	Per Bond	\$ 2.25	\$ 45.00
Success: All values provided	Bid	#0-21	Uninsured \$ per Bond	21	Per Bond	\$ 2.25	\$ 47.25
Success: All values provided	Bid	#0-22	Uninsured \$ per Bond	22	Per Bond	\$ 2.25	\$ 49.50
Success: All values provided	Bid	#0-23	Uninsured \$ per Bond	23	Per Bond	\$ 2.25	\$ 51.75
Success: All values provided	Bid	#0-24	Uninsured \$ per Bond	24	Per Bond	\$ 2.25	\$ 54.00
Success: All values provided	Bid	#0-25	Uninsured \$ per Bond	25	Per Bond	\$ 2.25	\$ 56.25
Success: All values provided	Bid	#0-26	Uninsured \$ per Bond	26	Per Bond	\$ 2.25	\$ 58.50
Success: All values provided	Bid	#0-27	Uninsured \$ per Bond	27	Per Bond	\$ 2.25	\$ 60.75
Success: All values provided	Bid	#0-28	Uninsured \$ per Bond	28	Per Bond	\$ 2.25	\$ 63.00
Success: All values provided	Bid	#0-29	Uninsured \$ per Bond	29	Per Bond	\$ 2.25	\$ 65.25
Success: All values provided	Bid	#0-30	Uninsured \$ per Bond	30	Per Bond	\$ 2.25	\$ 67.50

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-31	Insured \$ per Bond	1	Per Bond	\$ 2.25	\$ 2.25
Success: All values provided	Bid	#0-32	Insured \$ per Bond	2	Per Bond	\$ 2.25	\$ 4.50
Success: All values provided	Bid	#0-33	Insured \$ per Bond	3	Per Bond	\$ 2.25	\$ 6.75
Success: All values provided	Bid	#0-34	Insured \$ per Bond	4	Per Bond	\$ 2.25	\$ 9.00
Success: All values provided	Bid	#0-35	Insured \$ per Bond	5	Per Bond	\$ 2.25	\$ 11.25
Success: All values provided	Bid	#0-36	Insured \$ per Bond	6	Per Bond	\$ 2.25	\$ 13.50
Success: All values provided	Bid	#0-37	Insured \$ per Bond	7	Per Bond	\$ 2.25	\$ 15.75
Success: All values provided	Bid	#0-38	Insured \$ per Bond	8	Per Bond	\$ 2.25	\$ 18.00
Success: All values provided	Bid	#0-39	Insured \$ per Bond	9	Per Bond	\$ 2.25	\$ 20.25
Success: All values provided	Bid	#0-40	Insured \$ per Bond	10	Per Bond	\$ 2.25	\$ 22.50
Success: All values provided	Bid	#0-41	Insured \$ per Bond	11	Per Bond	\$ 2.25	\$ 24.75
Success: All values provided	Bid	#0-42	Insured \$ per Bond	12	Per Bond	\$ 2.25	\$ 27.00
Success: All values provided	Bid	#0-43	Insured \$ per Bond	13	Per Bond	\$ 2.25	\$ 29.25
Success: All values provided	Bid	#0-44	Insured \$ per Bond	14	Per Bond	\$ 2.25	\$ 31.50
Success: All values provided	Bid	#0-45	Insured \$ per Bond	15	Per Bond	\$ 2.25	\$ 33.75
Success: All values provided	Bid	#0-46	Insured \$ per Bond	16	Per Bond	\$ 2.25	\$ 36.00
Success: All values provided	Bid	#0-47	Insured \$ per Bond	17	Per Bond	\$ 2.25	\$ 38.25
Success: All values provided	Bid	#0-48	Insured \$ per Bond	18	Per Bond	\$ 2.25	\$ 40.50
Success: All values provided	Bid	#0-49	Insured \$ per Bond	19	Per Bond	\$ 2.25	\$ 42.75

Primary Responses

Success: All data is valid!

Status	Bid/No Bid Decision	#	Item	Years to Maturity	Unit of Measure	Numeric	Total Cost
						Unit Price	
Success: All values provided	Bid	#0-50	Insured \$ per Bond	20	Per Bond	\$ 2.25	\$ 45.00
Success: All values provided	Bid	#0-51	Insured \$ per Bond	21	Per Bond	\$ 2.25	\$ 47.25
Success: All values provided	Bid	#0-52	Insured \$ per Bond	22	Per Bond	\$ 2.25	\$ 49.50
Success: All values provided	Bid	#0-53	Insured \$ per Bond	23	Per Bond	\$ 2.25	\$ 51.75
Success: All values provided	Bid	#0-54	Insured \$ per Bond	24	Per Bond	\$ 2.25	\$ 54.00
Success: All values provided	Bid	#0-55	Insured \$ per Bond	25	Per Bond	\$ 2.25	\$ 56.25
Success: All values provided	Bid	#0-56	Insured \$ per Bond	26	Per Bond	\$ 2.25	\$ 58.50
Success: All values provided	Bid	#0-57	Insured \$ per Bond	27	Per Bond	\$ 2.25	\$ 60.75
Success: All values provided	Bid	#0-58	Insured \$ per Bond	28	Per Bond	\$ 2.25	\$ 63.00
Success: All values provided	Bid	#0-59	Insured \$ per Bond	29	Per Bond	\$ 2.25	\$ 65.25
Success: All values provided	Bid	#0-60	Insured \$ per Bond	30	Per Bond	\$ 2.25	\$ 67.50