

*In the opinion of Bond Counsel, subject to compliance with certain covenants, under existing law and except as described under "TAX MATTERS" herein, interest on the Series 2020 Bonds is **not** excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended. The Series 2020 Bonds and the interest thereon are exempt from taxation by the State of Michigan or by any taxing authority within the State of Michigan, except estate taxes and taxes on gains realized from the sale, payment or other disposition of the Series 2020 Bonds. See "TAX MATTERS."*



\$687,455,000
GREAT LAKES WATER AUTHORITY
Sewage Disposal System Revenue Refunding Bonds
Series 2020 (Federally Taxable)

\$594,930,000
Sewage Disposal System Revenue
Refunding Senior Lien Bonds
Series 2020A (Federally Taxable)

\$92,525,000
Sewage Disposal System Revenue
Refunding Second Lien Bonds
Series 2020B (Federally Taxable)

Dated: Date of Delivery

Due as shown on inside cover page

The Sewage Disposal System Revenue Refunding Bonds set forth above (the "Series 2020 Bonds") will be issued by the Great Lakes Water Authority (the "Authority" or "GLWA") pursuant to the Bond Ordinance (as defined herein) of the Authority to (i) refund certain Refunded Bonds (as defined herein) and (ii) pay certain costs of issuance of the Series 2020 Bonds. The Series 2020 Bonds are payable from the Pledged Assets (as defined herein) pledged as security therefor under the Bond Ordinance. See "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS."

The Authority operates the regional water supply and sewage disposal systems previously operated by the City of Detroit (the "City"). The Authority assumed all of the outstanding debt of the City relating to the regional and local water supply and sewage disposal systems and acquired all of the revenues of those systems as of January 1, 2016. See "THE GREAT LAKES WATER AUTHORITY."

The Series 2020 Bonds will be issued in fully registered form in denominations of \$5,000 or any integral multiple thereof and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York, which will act as securities depository for the Series 2020 Bonds. Bondholders will not receive certificates representing their ownership interest in the Series 2020 Bonds purchased. See "THE SERIES 2020 BONDS - Book-Entry-Only System."

The Series 2020 Bonds will bear interest at the rates and mature on the dates as set forth on the inside cover hereof. Interest on the Series 2020 Bonds will accrue from the date of delivery thereof and will be payable January 1 and July 1, commencing January 1, 2021.

The Series 2020 Bonds are subject to optional and mandatory redemption prior to maturity. See "THE SERIES 2020 BONDS - Optional Redemption" and "- Mandatory Redemption."

The Trustee for the Series 2020 Bonds is U.S. Bank National Association.

The scheduled payment of principal of and interest on the Series 2020B Bonds maturing on July 1, 2036 and July 1, 2044 (the "Insured Bonds") when due will be guaranteed under an insurance policy to be issued concurrently with the delivery of the Insured Bonds by Assured Guaranty Municipal Corp.



The Series 2020 Bonds are issued under Act 233 and Act 94 (each as defined herein). The Series 2020 Bonds are not a general obligation of the Authority and do not constitute indebtedness of the Authority within any constitutional or statutory limitation, but are payable, both as to principal and interest solely from the Pledged Assets of the Sewer System (as defined herein). The payment of the principal of and interest on the Series 2020 Bonds is secured by a statutory lien on the Pledged Assets as described herein.

By purchasing the Series 2020 Bonds, the original and all subsequent purchasers of the Series 2020 Bonds shall be deemed to have consented to the Reserve Fund Amendment (as defined herein). See "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS - Reserve Fund Amendment."

The Series 2020 Bonds are offered when, as and if issued by the Authority and received by the Underwriters, subject to prior sale, withdrawal or modification of the offer without notice, and subject to approval of legality by Bond Counsel to the Authority, Dickinson Wright PLLC, Detroit, Michigan. Certain legal matters will be passed upon by Kutak Rock LLP, Washington, D.C., counsel to the Underwriters. It is expected that the Series 2020 Bonds in book-entry form will be available for delivery against payment therefor through the facilities of The Depository Trust Company ("DTC") on or about June 16, 2020.

This cover page contains certain information for quick reference only. It is not a summary of this issue. Investors must read the entire Official Statement to obtain information essential to the making of an informed investment decision.

Citigroup

Siebert Williams Shank & Co., LLC

Goldman Sachs and Co. LLC

J.P. Morgan

Morgan Stanley

Ramirez & Co., Inc.

Wells Fargo Securities

\$594,930,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds
Series 2020A (Federally Taxable)

Serial Bonds

<u>Maturity (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Yield</u>	<u>CUSIP[†]</u>
2023	\$5,850,000	1.503%	1.503%	39081HCF7
2024	7,660,000	1.604%	1.604%	39081HCG5
2025	11,595,000	1.654%	1.654%	39081HCH3
2026	8,750,000	1.833%	1.833%	39081HCJ9
2027	2,315,000	1.883%	1.883%	39081HCK6
2028	9,625,000	2.115%	2.115%	39081HCL4
2029	12,805,000	2.165%	2.165%	39081HCM2
2030	3,305,000	2.215%	2.215%	39081HCN0
2031	10,530,000	2.315%	2.315%	39081HCP5
2032	48,370,000	2.365%	2.365%	39081HCQ3
2033	6,720,000	2.415%	2.415%	39081HCR1
2034	8,570,000	2.465%	2.465%	39081HCS9
2035	8,725,000	2.515%	2.515%	39081HCT7
2036	8,895,000	2.615%	2.615%	39081HCU4

\$332,675,000; 3.056%; Term Bond Due July 1, 2039; Yield 3.056%; CUSIP[†] 39081HCV2

\$108,540,000; 3.506%; Term Bond Due July 1, 2044; Yield 3.506%; CUSIP[†] 39081HCW0

[†] Registered trademark of American Bankers Association. CUSIP data herein is provided by Standard and Poor's CUSIP Service Bureau, a division of the McGraw Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP service. CUSIP numbers are provided for reference only. Neither the Authority, the Trustee nor the Underwriters take any responsibility for the accuracy of such numbers.

\$92,525,000
Sewage Disposal System Revenue Refunding Second Lien Bonds
Series 2020B (Federally Taxable)

Serial Bonds

<u>Maturity (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Yield</u>	<u>CUSIP[†]</u>
2021	\$4,925,000	1.442%	1.442%	39081HCX8
2022	5,750,000	1.492%	1.492%	39081HCY6

\$66,525,000; 2.615% Term Bond Due July 1, 2036*; Yield 2.615%; CUSIP[†] 39081HCZ3

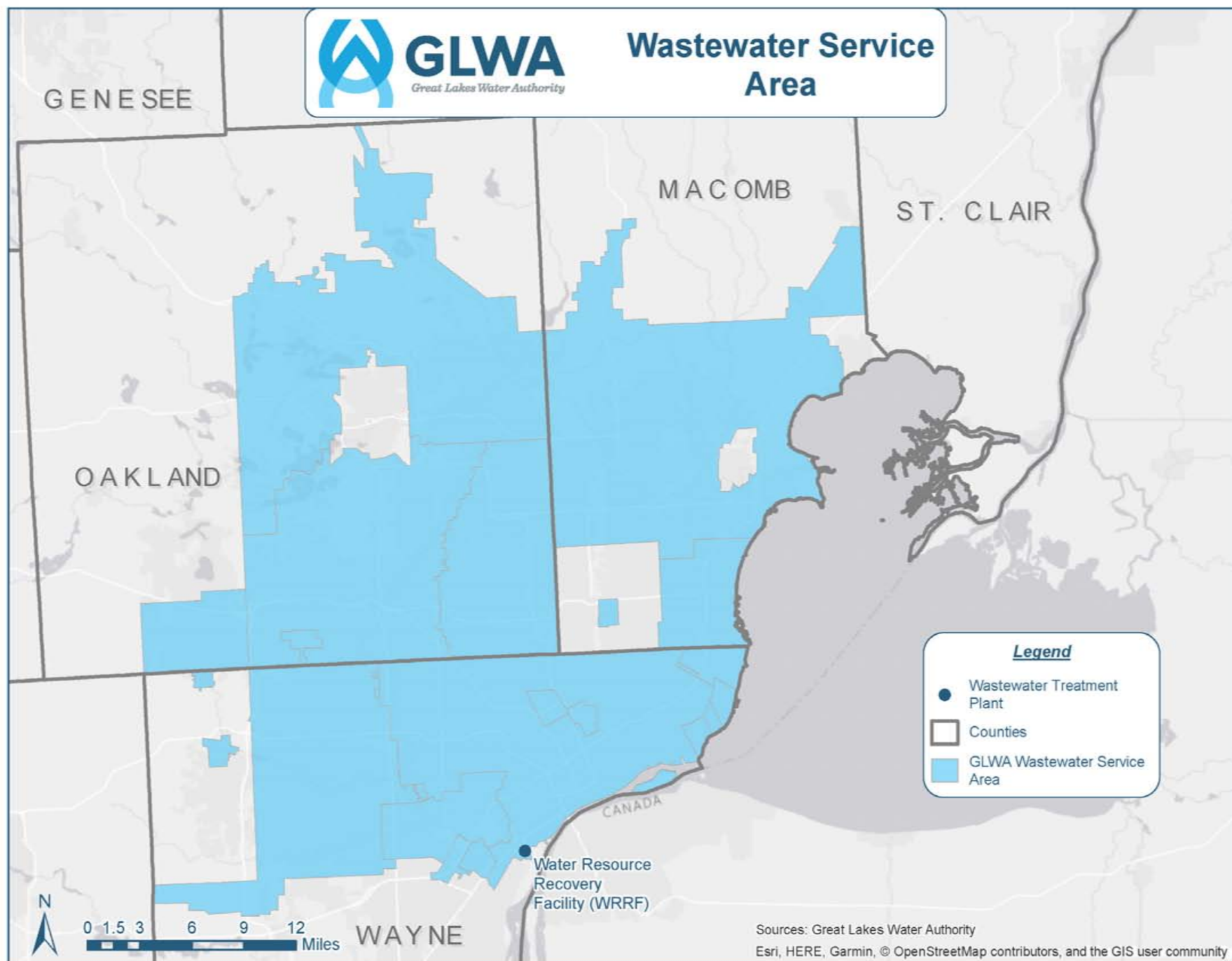
\$15,325,000; 3.606% Term Bond Due July 1, 2044*; Yield 3.606%; CUSIP[†] 39081HDA7

*Insured by the bond insurance policy issued by Assured Guaranty Municipal Corp.

[†] Registered trademark of American Bankers Association. CUSIP data herein is provided by Standard and Poor's CUSIP Service Bureau, a division of the McGraw Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP service. CUSIP numbers are provided for reference only. Neither the Authority, the Trustee nor the Underwriters take any responsibility for the accuracy of such numbers.



Wastewater Service Area



Sources: Great Lakes Water Authority

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IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS THAT STABILIZE OR MAINTAIN THE MARKET PRICES OF THE SERIES 2020 BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

THE UNDERWRITERS MAY OFFER AND SELL THE SERIES 2020 BONDS TO CERTAIN DEALERS AND DEALER BANKS ACTING AS AGENT AT PRICES LOWER THAN THE PUBLIC OFFERING PRICES STATED ON THE COVER OF THIS OFFICIAL STATEMENT. SUCH PUBLIC OFFERING PRICES MAY BE CHANGED FROM TIME TO TIME BY THE UNDERWRITERS.

Assured Guaranty Municipal Corp. (“AGM”) makes no representation regarding the Series 2020 Bonds or the advisability of investing in the Series 2020 Bonds. In addition, AGM has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding AGM supplied by AGM and presented under the heading “Bond Insurance” and “Appendix XIII - Specimen Municipal Bond Insurance Policy”.

No dealer, broker, salesperson or other person has been authorized by the Authority or the Underwriters to make any representation other than as contained in this Official Statement and, if given or made, such other information or representation must not be relied upon as having been authorized by the Authority or the Underwriters. The information set forth in this Official Statement has been obtained from the Authority, the Detroit Water and Sewerage Department (the “Department” or “DWSD”), AGM, The Depository Trust Company (“DTC”), and other sources that are deemed to be reliable, but as to information from sources other than themselves, is not to be construed as a representation by the Authority, DWSD, DTC, or the Underwriters respectively. Certain historical information in this Official Statement has been derived from information on the operations of DWSD prior to the start-up of the Authority.

The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of the transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Official Statement nor the sale of the Series 2020 Bonds shall under any circumstances create any implication that there has been no change in the affairs of the Authority, DWSD, AGM or DTC since the date of this Official Statement. None of the information contained in this Official Statement has been supplied or verified by the Trustee, and the Trustee make no representations, warranties or guarantee as to the accuracy or completeness of any information in this Official Statement.

This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Series 2020 Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale. This Official Statement is not to be construed as a contract or agreement between the Authority and the purchasers or holders of any of the Series 2020 Bonds.

IN MAKING AN INVESTMENT DECISION INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THE AUTHORITY AND THE TERMS OF THE OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED. THESE SECURITIES HAVE NOT BEEN RECOMMENDED BY ANY FEDERAL OR STATE SECURITIES COMMISSION OR

REGULATORY AUTHORITY. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT CONFIRMED THE ACCURACY OR DETERMINED THE ADEQUACY OF THIS OFFICIAL STATEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Certain statements contained in this Official Statement, including in the Appendices hereto, reflect not historical facts but forecasts and “forward-looking statements.” Such forward-looking statements can be identified, in some cases, by the terminology used, such as “may,” “will,” “should,” “expects,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” “illustrate,” “example,” and “continue,” or the singular, plural, negative or other derivations of these or other comparable terms. Purchasers and holders of any of the Series 2020 Bonds should not place undue reliance on forward-looking statements. All forward-looking statements included in this Official Statement are based on information available to the Authority on the date hereof, and the Authority does not assume any obligation to update any such forward-looking statements. Actual results could differ materially from those discussed in such forward-looking statements.

The forward-looking statements included herein are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including, but not limited to, the risks and uncertainties described herein and risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in geopolitical, military, social, economic, business, industry, market, legal or regulatory circumstances, and conditions or actions taken or omitted to be taken by third parties, including customers, suppliers, and business partners, and legislative, judicial, and other governmental authorities and officials. Any of such assumptions could be inaccurate, and the Authority cannot predict or assess the emergence and impact of new factors. Accordingly, actual results may vary from the projections, forecasts and estimates contained in this Official Statement and such variations may be material, which could affect the Authority’s ability to fulfill some or all of its obligations under the Series 2020 Bonds.

No party that has provided information for this Official Statement has any obligation to update or otherwise revise any projections, forecasts and estimates, including any revisions to reflect changes in conditions or circumstances arising after the date of this Official Statement, or to reflect the occurrence of unanticipated events.

All projections, forecasts, assumptions, expressions of opinions, estimates, and other forward-looking statements are expressly qualified in their entirety by the foregoing and the other cautionary statements set forth in this Official Statement.

NOTICE TO INVESTORS IN THE EUROPEAN ECONOMIC AREA (“EEA”)

THIS OFFICIAL STATEMENT IS NOT A PROSPECTUS FOR THE PURPOSES OF EUROPEAN COMMISSION REGULATION 809/2004 OR EUROPEAN COMMISSION DIRECTIVE 2003/71/EC (AS AMENDED, INCLUDING BY EUROPEAN COMMISSION DIRECTIVE 2010/73/EU, AS APPLICABLE) (THE “PROSPECTUS DIRECTIVE”). IT HAS BEEN PREPARED ON THE BASIS THAT ALL OFFERS OF THE SERIES 2020 BONDS WILL BE MADE PURSUANT TO AN EXEMPTION UNDER ARTICLE 3 OF THE PROSPECTUS DIRECTIVE, AS IMPLEMENTED IN MEMBER STATES OF THE EEA, FROM THE REQUIREMENT TO PRODUCE A PROSPECTUS FOR SUCH OFFERS. THIS OFFICIAL STATEMENT IS ONLY ADDRESSED TO AND DIRECTED AT PERSONS IN MEMBER STATES OF THE EEA WHO ARE “QUALIFIED INVESTORS” WITHIN THE MEANING OF ARTICLE 2(1)(E) OF THE PROSPECTUS DIRECTIVE AND ANY RELEVANT IMPLEMENTING MEASURE IN EACH MEMBER STATE OF THE EEA (“QUALIFIED INVESTORS”). THIS OFFICIAL STATEMENT MUST NOT BE ACTED ON OR RELIED ON IN ANY SUCH MEMBER STATE OF THE EEA BY PERSONS WHO ARE NOT QUALIFIED INVESTORS. ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO QUALIFIED INVESTORS IN ANY MEMBER STATE OF THE EEA AND WILL NOT BE ENGAGED IN WITH ANY OTHER PERSONS.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM

THIS OFFICIAL STATEMENT HAS NOT BEEN APPROVED FOR THE PURPOSES OF SECTION 21 OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (“FSMA”) AND DOES NOT CONSTITUTE AN OFFER TO THE PUBLIC IN ACCORDANCE WITH THE PROVISIONS OF SECTION 85 OF THE FSMA. THIS OFFICIAL STATEMENT IS FOR DISTRIBUTION ONLY TO, AND IS DIRECTED SOLELY AT, PERSONS IN THE UNITED KINGDOM THAT ARE QUALIFIED INVESTORS WITHIN THE MEANING OF ARTICLE 2(1)(E) OF THE PROSPECTUS DIRECTIVE WHO ARE ALSO (I) INVESTMENT PROFESSIONALS, AS SUCH TERM IS DEFINED IN ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005, AS AMENDED (THE “FINANCIAL PROMOTION ORDER”) OR (II) HIGH NET WORTH ENTITIES, AND OTHER PERSONS TO WHOM IT MAY LAWFULLY BE COMMUNICATED, FALLING WITHIN ARTICLE 49(2)(A) TO (D) OF THE FINANCIAL PROMOTION ORDER (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS “RELEVANT PERSONS”). THIS OFFICIAL STATEMENT IS DIRECTED ONLY AT RELEVANT PERSONS AND MUST NOT BE ACTED ON OR RELIED ON BY PERSONS WHO ARE NOT RELEVANT PERSONS, INCLUDING IN CIRCUMSTANCES IN WHICH SECTION 21(1) OF THE FSMA APPLIES TO THE AUTHORITY. THIS OFFICIAL STATEMENT AND ITS CONTENTS ARE CONFIDENTIAL AND SHOULD NOT BE DISTRIBUTED, PUBLISHED OR REPRODUCED (IN WHOLE OR IN PART) OR DISCLOSED BY RECIPIENTS TO ANY OTHER PERSONS IN THE UNITED KINGDOM. IN THE UNITED KINGDOM, ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO RELEVANT PERSONS AND WILL BE ENGAGED IN ONLY WITH RELEVANT PERSONS. ANY PERSON WHO IS NOT A RELEVANT PERSON SHOULD NOT ACT OR RELY ON THIS OFFICIAL STATEMENT OR ANY OF ITS CONTENTS.

NOTICE TO PROSPECTIVE INVESTORS IN HONG KONG

THE SERIES 2020 BONDS (EXCEPT FOR SERIES 2020 BONDS WHICH ARE A “STRUCTURED PRODUCT” AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE (CAP. 571 OF THE LAWS OF HONG KONG) (“SECURITIES AND FUTURES ORDINANCE”)) MAY NOT BE OFFERED

OR SOLD IN HONG KONG BY MEANS OF ANY DOCUMENT OTHER THAN (I) IN CIRCUMSTANCES WHICH DO NOT CONSTITUTE AN OFFER TO THE PUBLIC WITHIN THE MEANING OF THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE (CAP. 32 OF THE LAWS OF HONG KONG) (“COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE”) OR (II) TO “PROFESSIONAL INVESTORS” AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER, OR (III) IN OTHER CIRCUMSTANCES WHICH DO NOT RESULT IN THE DOCUMENT BEING A “PROSPECTUS” AS DEFINED IN THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE, AND NO ADVERTISEMENT, INVITATION OR DOCUMENT RELATING TO THE SERIES 2020 BONDS MAY BE ISSUED OR MAY BE IN THE POSSESSION OF ANY PERSON FOR THE PURPOSE OF ISSUE (IN EACH CASE WHETHER IN HONG KONG OR ELSEWHERE), WHICH IS DIRECTED AT, OR THE CONTENTS OF WHICH ARE LIKELY TO BE ACCESSED OR READ BY, THE PUBLIC OF HONG KONG (EXCEPT IF PERMITTED TO DO SO UNDER THE SECURITIES LAWS OF HONG KONG) OTHER THAN WITH RESPECT TO SERIES 2020 BONDS WHICH ARE OR ARE INTENDED TO BE DISPOSED OF ONLY TO PERSONS OUTSIDE HONG KONG OR ONLY TO “PROFESSIONAL INVESTORS” AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER.

NOTICE TO INVESTORS IN SWITZERLAND

THE SERIES 2020 BONDS MAY NOT BE PUBLICLY OFFERED IN SWITZERLAND AND WILL NOT BE LISTED ON THE SIX SWISS EXCHANGE (“SIX”) OR ON ANY OTHER STOCK EXCHANGE OR REGULATED TRADING FACILITY IN SWITZERLAND. THIS OFFICIAL STATEMENT HAS BEEN PREPARED WITHOUT REGARD TO THE DISCLOSURE STANDARDS FOR ISSUANCE PROSPECTUSES UNDER ART. 652A OR ART. 1156 OF THE SWISS CODE OF OBLIGATIONS OR THE DISCLOSURE STANDARDS FOR LISTING PROSPECTUSES UNDER ART. 27 FF. OF THE SIX LISTING RULES OR THE LISTING RULES OF ANY OTHER STOCK EXCHANGE OR REGULATED TRADING FACILITY IN SWITZERLAND. NEITHER THIS OFFICIAL STATEMENT NOR ANY OTHER OFFERING OR MARKETING MATERIAL RELATING TO THE SERIES 2020 BONDS OR THE OFFERING MAY BE PUBLICLY DISTRIBUTED OR OTHERWISE MADE PUBLICLY AVAILABLE IN SWITZERLAND.

NONE OF THIS OFFICIAL STATEMENT OR ANY OTHER OFFERING OR MARKETING MATERIAL RELATING TO THE OFFERING, THE AUTHORITY OR THE SERIES 2020 BONDS HAVE BEEN OR WILL BE FILED WITH OR APPROVED BY ANY SWISS REGULATORY AUTHORITY. IN PARTICULAR, THIS OFFICIAL STATEMENT WILL NOT BE FILED WITH, AND THE OFFER OF THE SERIES 2020 BONDS WILL NOT BE SUPERVISED BY, THE SWISS FINANCIAL MARKET SUPERVISORY AUTHORITY (“FINMA”), AND THE OFFER OF SERIES 2020 BONDS HAS NOT BEEN AND WILL NOT BE AUTHORIZED UNDER THE SWISS FEDERAL ACT ON COLLECTIVE INVESTMENT SCHEMES (“CISA”). ACCORDINGLY, INVESTORS DO NOT HAVE THE BENEFIT OF THE SPECIFIC INVESTOR PROTECTION PROVIDED UNDER THE CISA.

NOTICE TO INVESTORS IN SINGAPORE

THIS OFFICIAL STATEMENT HAS NOT BEEN AND WILL NOT BE REGISTERED AS A PROSPECTUS WITH THE MONETARY AUTHORITY OF SINGAPORE. ACCORDINGLY, THIS OFFICIAL STATEMENT AND ANY OTHER DOCUMENT OR MATERIAL USED IN CONNECTION WITH THE OFFER OR SALE, OR INVITATION FOR SUBSCRIPTION OR PURCHASE, OF THE SERIES 2020 BONDS MAY NOT BE CIRCULATED OR DISTRIBUTED, NOR MAY THE SERIES

2020 BONDS BE OFFERED OR SOLD, OR BE MADE THE SUBJECT OF AN INVITATION FOR SUBSCRIPTION OR PURCHASE, WHETHER DIRECTLY OR INDIRECTLY, TO PERSONS IN SINGAPORE OTHER THAN (I) TO AN INSTITUTIONAL INVESTOR AS DEFINED IN SECTION 4A OF THE SECURITIES AND FUTURES ACT (CHAPTER 289) OF SINGAPORE, AS MODIFIED OR AMENDED FROM TIME TO TIME (THE “SFA”) PURSUANT TO SECTION 274 OF THE SFA, (II) TO A RELEVANT PERSON (AS DEFINED IN SECTION 275(2) OF THE SFA) PURSUANT TO SECTION 275(1), OR ANY PERSON PURSUANT TO SECTION 275(1A), AND IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN SECTION 275, OF THE SFA; OR (III) OTHERWISE PURSUANT TO, AND IN ACCORDANCE WITH THE CONDITIONS OF, ANY OTHER APPLICABLE PROVISION OF THE SFA, WHERE THE SERIES 2020 BONDS ARE SUBSCRIBED OR PURCHASED UNDER SECTION 275 OF THE SFA BY A RELEVANT PERSON THAT IS: (A) A CORPORATION (WHICH IS NOT AN ACCREDITED INVESTOR (AS DEFINED IN SECTION 4A OF THE SFA)) THE SOLE BUSINESS OF WHICH IS TO HOLD INVESTMENTS AND THE ENTIRE SHARE CAPITAL OF WHICH IS OWNED BY ONE OR MORE INDIVIDUALS, EACH OF WHOM IS AN ACCREDITED INVESTOR; OR (B) A TRUST (WHERE THE TRUSTEE IS NOT AN ACCREDITED INVESTOR) WHOSE SOLE PURPOSE IS TO HOLD INVESTMENTS AND EACH BENEFICIARY OF THE TRUST IS AN INDIVIDUAL WHO IS AN ACCREDITED INVESTOR, SECURITIES OR SECURITIES-BASED DERIVATIVES CONTRACTS (EACH AS DEFINED IN SECTION 2(1) OF THE SFA) OF THAT CORPORATION OR THE BENEFICIARIES’ RIGHTS AND INTEREST (HOWSOEVER DESCRIBED) IN THAT TRUST SHALL NOT BE TRANSFERRED WITHIN 6 MONTHS AFTER THAT CORPORATION OR THAT TRUST HAS ACQUIRED THE SERIES 2020 BONDS PURSUANT TO AN OFFER MADE UNDER SECTION 275 OF THE SFA EXCEPT: (I) TO AN INSTITUTIONAL INVESTOR OR TO A RELEVANT PERSON, OR TO ANY PERSON ARISING FROM AN OFFER REFERRED TO IN SECTION 275(1A) OR SECTION 276(4)(I)(B) OF THE SFA; (II) WHERE NO CONSIDERATION IS OR WILL BE GIVEN FOR THE TRANSFER; (III) WHERE THE TRANSFER IS BY OPERATION OF LAW; (IV) AS SPECIFIED IN SECTION 276(7) OF THE SFA; OR (V) AS SPECIFIED IN REGULATION 37A OF THE SECURITIES AND FUTURES (OFFERS OF INVESTMENTS) (SECURITIES AND SECURITIES-BASED DERIVATIVE CONTRACTS) REGULATIONS 2018 OF SINGAPORE.

Notification under Section 309B(1)(C) of the SFA

IN CONNECTION WITH SECTION 309B OF THE SFA AND THE SECURITIES AND FUTURES (CAPITAL MARKETS PRODUCTS) REGULATIONS 2018 OF SINGAPORE (THE “CMP REGULATIONS 2018”), THE AUTHORITY HAS DETERMINED, AND HEREBY NOTIFIES ALL RELEVANT PERSONS (AS DEFINED IN SECTION 309A(1) OF THE SFA), THAT THE SERIES 2020 BONDS ARE ‘PRESCRIBED CAPITAL MARKETS PRODUCTS’ (AS DEFINED IN THE CMP REGULATIONS 2018) AND ARE EXCLUDED INVESTMENT PRODUCTS (AS DEFINED IN MAS NOTICE SFA 04-N12: NOTICE ON THE SALE OF INVESTMENT PRODUCTS AND MAS NOTICE FAA-N16: NOTICE ON RECOMMENDATIONS ON INVESTMENT PRODUCTS).

NOTICE TO PROSPECTIVE INVESTORS IN TAIWAN

THE OFFER OF THE SERIES 2020 BONDS HAS NOT BEEN AND WILL NOT BE REGISTERED OR FILED WITH, OR APPROVED BY, THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN AND/OR OTHER REGULATORY AUTHORITY OF TAIWAN PURSUANT TO RELEVANT SECURITIES LAWS AND REGULATIONS, AND THE SERIES 2020 BONDS MAY NOT BE OFFERED, ISSUED OR SOLD IN TAIWAN THROUGH A PUBLIC OFFERING OR IN CIRCUMSTANCES WHICH CONSTITUTE AN OFFER WITHIN THE MEANING OF THE

SECURITIES AND EXCHANGE ACT OF TAIWAN THAT REQUIRES THE REGISTRATION OR FILING WITH OR APPROVAL OF THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN. THE SERIES 2020 BONDS MAY BE MADE AVAILABLE OUTSIDE TAIWAN FOR PURCHASE BY INVESTORS RESIDING IN TAIWAN (EITHER DIRECTLY OR THROUGH PROPERLY LICENSED TAIWAN INTERMEDIARIES), BUT MAY NOT BE OFFERED OR SOLD IN TAIWAN EXCEPT TO QUALIFIED INVESTORS VIA A TAIWAN LICENSED INTERMEDIARY. ANY SUBSCRIPTIONS OF SERIES 2020 BONDS SHALL ONLY BECOME EFFECTIVE UPON ACCEPTANCE BY THE AUTHORITY OR THE RELEVANT DEALER OUTSIDE TAIWAN AND SHALL BE DEEMED A CONTRACT ENTERED INTO IN THE JURISDICTION OF INCORPORATION OF THE AUTHORITY OR RELEVANT DEALER, AS THE CASE MAY BE, UNLESS OTHERWISE SPECIFIED IN THE SUBSCRIPTION DOCUMENTS RELATING TO THE SERIES 2020 BONDS SIGNED BY THE INVESTORS.

NOTICE TO INVESTORS IN JAPAN

THE SERIES 2020 BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE FINANCIAL INSTRUMENTS AND EXCHANGE ACT OF JAPAN (NO. 25 OF 1948, AS AMENDED, THE “FIEA”). NEITHER THE SERIES 2020 BONDS NOR ANY INTEREST THEREIN MAY BE OFFERED OR SOLD, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY “RESIDENT” OF JAPAN (AS DEFINED UNDER ITEM 5, PARAGRAPH 1, ARTICLE G OF THE FOREIGN EXCHANGE AND FOREIGN TRADE ACT (ACT NO. 228 OF 1949, AS AMENDED)), OR TO OTHERS FOR RE-OFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY RESIDENT OF JAPAN, EXCEPT PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF, AND OTHERWISE IN COMPLIANCE WITH, THE FIEA AND ANY OTHER APPLICABLE LAWS, REGULATIONS AND MINISTERIAL GUIDELINES OF JAPAN.

THE PRIMARY OFFERING OF THE SERIES 2020 BONDS AND THE SOLICITATION OF AN OFFER FOR ACQUISITION THEREOF HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER PARAGRAPH 1, ARTICLE 4 OF THE FIEA. AS IT IS A PRIMARY OFFERING, IN JAPAN, THE SERIES 2020 BONDS MAY ONLY BE OFFERED, SOLD, RESOLD OR OTHERWISE TRANSFERRED, DIRECTLY OR INDIRECTLY TO, OR FOR THE BENEFIT OF CERTAIN QUALIFIED INSTITUTIONAL INVESTORS AS DEFINED IN THE FIEA (“QIIS”). A QII WHO PURCHASED OR OTHERWISE OBTAINED THE SERIES 2020 BONDS CANNOT RESELL OR OTHERWISE TRANSFER THE SERIES 2020 BONDS IN JAPAN TO ANY PERSON EXCEPT ANOTHER QII.

SUMMARY DESCRIPTION

Selected information is presented in this Summary Description for the convenience of the reader. To make an informed investment decision regarding the Series 2020 Bonds, a prospective investor should read this entire Official Statement.

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

Service Area and Customer Relationships: The Authority’s Sewer System (as defined herein) is one of the largest in the United States, both in terms of treatment capacity and population served. The Sewer System currently serves an area of 944 square miles located in three Michigan counties and an estimated population of nearly 2.8 million or approximately 28% of Michigan’s population. Suburban customers comprise approximately 76% of the population served by the Authority, and the Retail Sewer Customers (as defined herein) comprise the remainder served by the Authority. See “SERVICE AREA AND CUSTOMERS.”

Wholesale Charges and Retail Rates: The Authority is authorized to establish rates, fees and charges for its water supply and sewage disposal services. Under the Water and Sewer Services Agreement, the City is appointed as agent of the Authority for setting retail rates and for billing, collecting and enforcing the collection of charges from Retail Sewer Customers. As agent of the Authority, the City, through the Board of Water Commissioners and without further approval by the City Council, is required to set retail rates to meet the revenue requirements for the City retail portion of the Sewer System. Under certain conditions, the Authority may terminate the City’s appointment. See “SERVICE AREA AND CUSTOMERS – Service Charges to Customers” and “DWSD and Retail Customers” and APPENDIX VII - SUMMARY OF THE WATER AND SEWER SERVICES AGREEMENT.

Purpose of the Series 2020 Bonds: The Series 2020 Bonds are being issued to refund for debt service savings certain Bonds assumed by the Authority from the City pursuant to the Lease (as defined herein). See “THE SERIES 2020 BONDS - Plan of Financing.”

Redemption of the Series 2020 Bonds: The Series 2020 Bonds maturing on July 1, 2044 are subject to optional redemption on any date on and after July 1, 2030 at a redemption price of par, plus accrued interest to the redemption date. The Series 2020 Bonds maturing prior to July 1, 2044 are subject to optional redemption on any date at a Make-Whole Redemption Price (as defined herein). The Series 2020A Bonds maturing on July 1, 2039 and July 1, 2044 and the Series 2020B Bonds maturing on July 1, 2036 and July 1, 2044 are subject to mandatory sinking fund redemption at a redemption price of par. See “THE SERIES 2020 BONDS – Optional Redemption” and “– Mandatory Redemption.”

Bond Insurance: The scheduled payment of the principal of and interest on the Series 2020B Bonds maturing on July 1, 2036 (CUSIP No. 39081HCZ3) and July 1, 2044 (CUSIP No. 39081HDA7) (the “Insured Bonds”) when due will be insured by a municipal bond insurance policy (the “Policy”) to be issued

by Assured Guaranty Municipal Corp. (“AGM”) simultaneously with the delivery of the Insured Bonds. See “BOND INSURANCE.”

Pledged Security and Statutory Lien: The Series 2020 Bonds are payable from the Pledged Assets (as defined herein), which include the Net Revenues of the Sewer System. The Authority has irrevocably pledged the Net Revenues (as defined herein) of the Sewer System for payment of the Series 2020 Bonds. The payment of the principal of and interest on the Series 2020 Bonds are secured by a statutory lien on the Pledged Assets. The Series 2020 Bonds are not a general obligation of the Authority. See “SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS.”

Reserve Accounts and Reserve Requirements: The Reserve Requirement for Senior Lien Bonds currently is the lesser of (i) the Maximum Annual Debt Service (as defined herein) on all Senior Lien Bonds or (ii) the maximum amount permitted by the Internal Revenue Code of 1986, as amended (the “Code”). The Reserve Requirement for Second Lien Bonds currently is the lesser of (i) the average annual Debt Service on all Second Lien Bonds or (ii) the maximum amount permitted by the Code. Pursuant to an amendment to the Bond Ordinance that would become effective if and when approved by the holders of 51% in principal amount of Bonds of each affected priority of lien, if the Authority attains Senior Lien ratings of “Aa3” or “AA-” or higher from at least two of Moody’s, S&P, and Fitch, respectively, the Authority may, but is not required to, reduce or eliminate the Reserve Requirements for Senior Lien Bonds or the Second Lien Bonds, as the case may be. By purchasing the Series 2020 Bonds, the original and all subsequent purchasers of the Series 2020 Bonds shall be deemed to have consented to such amendment. See “SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS – Reserve Fund Amendment.”

Parity Lien and Additional Bonds: The Series 2020 Bonds are of equal standing on parity with all other Bonds assumed, issued or to be incurred under the Bond Ordinance and secured by a first lien on the Pledged Assets. The Authority may issue additional bonds on parity with the Series 2020 Bonds and other Bonds upon satisfaction of certain tests, including a coverage test requiring that either Projected Net Revenues or Historical Net Revenues, as determined by GLWA, divided by Maximum Annual Debt Service for such priority of lien and any higher priority of lien equals or exceeds the Required Coverage of 120% for Senior Lien Bonds, 110% for Second Lien Bonds and 100% for SRF Junior Lien Bonds and Pension Junior Lien Bonds. See “SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS – Issuance of Additional Bonds” and APPENDIX VI - SUMMARY OF THE BOND ORDINANCE.

Rate Covenant: The Authority covenants to fix charges to produce amounts required under the Bond Ordinance, including amounts required to meet the Required Coverage of 120% for Senior Lien Bonds, 110% for Second Lien Bonds and 100% for SRF Junior Lien Bonds and Pension Junior Lien Bonds. See “SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS – Rate Covenant” and APPENDIX VI - SUMMARY OF THE BOND ORDINANCE.

Historical and Projected Debt Service Coverage: The table below shows the historical (Fiscal Years 2017 to 2019) and projected (Fiscal Years 2020 to 2025) coverage of debt service, presented on a rate covenant basis.

<u>Historical Debt Service Coverage</u> ⁽¹⁾	<u>2017</u>	<u>2018</u>	<u>2019</u>			
Senior Lien Bonds	2.03	2.05	2.14			
Senior and Second Lien Bonds	1.51	1.57	1.65			
All Bonds, Including SRF Junior Lien	1.22	1.25	1.31			
 <u>Projected Debt Service Coverage</u>	 <u>2020</u>	 <u>2021</u>	 <u>2022</u>	 <u>2023</u>	 <u>2024</u>	 <u>2025</u>
Senior Lien Bonds	2.14	2.66	2.58	2.34	2.42	2.51
Senior and Second Lien Bonds	1.63	1.81	1.85	1.88	1.83	1.90
All Bonds, Including SRF Junior Lien	1.28	1.38	1.42	1.46	1.46	1.57

⁽¹⁾ Fiscal Years 2017-2019 are based on audited financial results.

See “AUTHORITY FINANCIAL OPERATIONS - Summary of Historical Revenues and Expenses,” “Projected Financial Plan for Fiscal Years 2020 through 2025” and APPENDIX I – FEASIBILITY CONSULTANT’S REPORT.

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INTRODUCTION

The following introductory statement is subject in all respects to the more complete information set forth in this Official Statement. The descriptions and summaries of various documents hereinafter set forth do not purport to be comprehensive or definitive and are qualified in their entirety by reference to each document. Capitalized terms used in this Official Statement that are not otherwise defined herein have the meanings set forth in APPENDIX IV – DEFINITIONS.

This Official Statement, including the cover pages and the Appendices hereto, is provided to furnish information in connection with the offering by the Great Lakes Water Authority (the “Authority” or “GLWA”) of its \$594,930,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2020A (Federally Taxable) (the “Series 2020A Bonds”) and \$92,525,000 Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2020B (Federally Taxable) (the “Series 2020B Bonds,” and together with the Series 2020A Bonds, the “Series 2020 Bonds”).

Great Lakes Water Authority

The Authority operates the Regional Water System and the Regional Sewer System (each as defined herein) for southeast Michigan. The governance structure of the Authority gives suburban water and sewer customers a substantial collaborative role in the direction of one of the largest water and wastewater utilities in the nation, while also providing the Local Water System and the Local Sewer System (each as defined herein) of the City of Detroit (the “City”) the benefits of the Authority’s regional strengths. While the Authority manages and controls all regional water and sewage services, the City and the suburban customers retain control of local water and sewage services within their respective borders. The City also acts as agent of the Authority with respect to setting, billing, collecting and enforcing local retail charges in the City. The Authority is a legally independent, regional authority created pursuant to State law, governed by its Board of Directors (“GLWA Board”) and primarily overseen, as to environmental matters, by the Michigan Department of Environment, Great Lakes, and Energy (“EGLE”), formerly the Michigan Department of Environmental Quality (“MDEQ”), as are all water and sewer service providers in the state, and the federal Environmental Protection Agency (“EPA”). See “THE GREAT LAKES WATER AUTHORITY.”

Purpose

The proceeds of the sale of the Series 2020 Bonds will be used (i) to refund certain Bonds identified in Schedule I attached hereto (the “Refunded Bonds”) and (ii) to pay certain costs of issuance of the Series 2020 Bonds. See “THE SERIES 2020 BONDS – Sources and Uses of Funds for the Series 2020 Bonds.”

Authorization

The Series 2020 Bonds have been authorized and are being issued pursuant to the provisions of (i) Act 233, Public Acts of Michigan, 1955, as amended (“Act 233”), and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”), (ii) Master Bond Ordinance No. 2015-02 adopted by the GLWA Board (as defined herein) on October 7, 2015, as amended (the “Bond Ordinance”), (iii) the Series Ordinance Authorizing Issuance and Sale of Sewage Disposal System Revenue and Revenue Refunding Bonds in a Principal Amount not to Exceed \$800,000,000, adopted by the GLWA Board on February 12, 2020 (the “2020 Series Ordinance”), and (iv) a Sale Order of the Chief Executive Officer of the Authority dated June 4, 2020 (the “2020 Sale Order,” and, collectively with the Bond Ordinance and the 2020 Series Ordinance, the “Ordinance”).

Security and Sources of Payment for the Series 2020 Bonds

The Authority has irrevocably pledged the revenues of the Sewer System, after provision is made for reasonable and necessary expenses of operation, maintenance and administration of the Sewer System (the “Net Revenues”), and the Pledged Assets (as defined herein, which includes the Net Revenues) for payment of the Series 2020 Bonds. Payment of the Series 2020 Bonds is also secured by a statutory lien on the Pledged Assets. The Series 2020A Bonds are of equal standing on parity with all other Bonds (as defined herein) assumed, issued or incurred as Senior Lien Bonds under the Bond Ordinance and secured by a first lien on the Pledged Assets. The Series 2020B Bonds are of equal standing on parity with all other Bonds assumed, issued or incurred as Second Lien Bonds under the Bond Ordinance and secured by a second lien on the Pledged Assets. See “SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS.”

The Series 2020 Bonds are issued under Act 233 and Act 94. The Series 2020 Bonds are not a general obligation of the Authority and do not constitute indebtedness of the Authority within any constitutional or statutory limitation, but are payable, both as to principal and interest solely from the Pledged Assets of the Sewer System. The payment of the principal of and interest on the Series 2020 Bonds is secured by a statutory lien on the Pledged Assets as described herein.

Trustee

U.S. Bank National Association will serve as the Trustee (the “Trustee”) for the Series 2020 Bonds, and in such capacity will act as bond register and paying agent for the Series 2020 Bonds.

Availability of Documents

The descriptions and summaries of various Authority documents set forth in this Official Statement do not purport to be conclusive or definitive and reference is made to each such document for the complete details of all terms and conditions thereof. A summary of certain provisions of the Lease (as defined herein), the Bond Ordinance, the Water and Sewer Services Agreement (as defined herein), the Shared Services Agreement (as defined herein) and the 2018 MOU (as defined herein) as described herein are set forth in Appendices V, VI, VII, VIII and IX, respectively, attached hereto. All references herein to the Series 2020 Bonds and the Bond Ordinance, the 2020 Series Ordinance, the Lease, the Water and Sewer Services Agreement, the Shared Services Agreement and the 2018 MOU are qualified in their entirety by such documents, copies of which are available on GLWA’s website at www.glwater.org or from the Underwriters prior to the execution and delivery of the Series 2020 Bonds and thereafter may be examined or obtained at the expense of the person requesting the same at the corporate trust office of the Trustee.

THE GREAT LAKES WATER AUTHORITY

GLWA was incorporated by the City and the Counties of Macomb, Oakland and Wayne (the “Counties”) on November 26, 2014 pursuant to Act 233. At the time of GLWA’s incorporation, the City, through its Detroit Water and Sewerage Department (“DWSD” or the “Department”), was providing water supply services within and outside of the City through a water supply system (the “Water System”) and drainage and sewage disposal services within and outside of the City through a sewage disposal system (the “Sewer System”). On June 12, 2015, the City and GLWA executed a Regional Water System Lease (the “Water Lease”), a Regional Sewage Disposal System Lease (the “Lease” or the “Sewer Lease” and together with the Water Lease, the “Leases”) and a Water and Sewer Services Agreement (the “Water and Sewer Services Agreement”), and as of December 1, 2015, the City and GLWA executed a Shared Services Agreement (the “Shared Services Agreement”). The foregoing agreements became effective on January 1, 2016 (the “Effective Date”), at which time GLWA, pursuant to the Lease, became responsible for the debt

obligations of the City relating to the Sewer System, including the payment of all DWSD Sewer Bonds (as defined herein), through the substitution of GLWA for the City as the sole obligor on the DWSD Sewer Bonds, the assignment to GLWA of all of the revenues of the Sewer System, and the assumption by GLWA of the DWSD Sewer Bonds. See APPENDIX V – SUMMARY OF THE LEASE, APPENDIX VII – SUMMARY OF THE WATER AND SEWER SERVICES AGREEMENT, and APPENDIX VIII – SUMMARY OF THE SHARED SERVICES AGREEMENT.

Pursuant to the Lease, GLWA acquired, and the City absolutely and irrevocably assigned, transferred and conveyed to GLWA, (i) all of the City’s right, title and interest in and to the Revenues (as defined herein), including the Retail Revenues (as defined herein), in existence on the Effective Date, and (ii) all of the City’s right, title and interest in and to the Revenues, including Retail Revenues, derived from operation of the Sewer System on and after the Effective Date and through the end of the term of the Lease. Part of the consideration for the Lease is a lease payment to the City of \$27,500,000 per year, to be funded from a portion of the common-to-all revenue requirements for the Regional Sewer System. See APPENDIX V – SUMMARY OF THE LEASE.

GLWA operates the portion of the Water System (the “Regional Water System”) that provides service to the wholesale customers thereof and the Retail Water Customers (as defined herein) up to the point of connection to the Local Water System (as defined herein) and the portion of the Sewer System (the “Regional Sewer System” and, together with the Regional Water System, the “Regional Systems”) that provides service to the wholesale customers thereof and to the Retail Sewer Customers (as defined herein) up to the point of connection to the Local Sewer System (as defined herein), all pursuant to (i) the Water Lease, (ii) the Sewer Lease, and (iii) the Water and Sewer Services Agreement.

GLWA operates as the largest regional sewer authority in the State of Michigan. GLWA serves classes of customers including communities and districts that are served under wholesale source contracts and the Retail Sewer Customers served under the Water and Sewer Services Agreement. GLWA has adopted an unwavering commitment to its customers and the region, known as “One Water,” and a mission statement of customer collaboration and engagement: *“Through regional collaboration, GLWA strives to be the provider of choice dedicated to efficiently delivering the nation’s best water and sewer service in partnership with our customers.”* See “SERVICE AREA AND CUSTOMERS - Collaboration and Customer Outreach.”

In open partnership with its customers, GLWA is focused on innovation in its business practices, with a commitment to providing the highest quality services to current and future generations. In order to further affordability for water and sewer services, GLWA launched the first program of its kind in the State of Michigan, known as the Water Residential Assistance Program or “WRAP,” to provide an ongoing funding source for assistance to qualified households throughout GLWA’s service area. See “SERVICE AREA AND CUSTOMERS - Water Residential Assistance Program.”

GLWA’s senior management team has operated the Water System and the Sewer System since 2012 and is continuing to optimize the organization through innovative job designs, lean business practices and the greater use of technology. These organizational optimization initiatives have improved operations and financial results of the Water System and the Sewer System. In 2018, GLWA further enhanced its management team’s capacity in the areas of asset management, energy efficiency, planning and research and innovation. GLWA continues to focus on its role in the economic success and the public health and safety of the region it serves.

Powers of the Authority

GLWA is a public body corporate organized pursuant to the provisions of Act 233. In addition to this statutory authority, the governance for the Authority is found in its Articles of Incorporation, By-Laws, policies, and ordinances including but not limited to its bond ordinances. The Authority has both express powers and implied powers necessary to carry out its powers, duties, and responsibilities. The Authority's express powers include the following:

- The Authority is empowered through the GLWA Board to provide wholesale water supply and sewage disposal service to the service area. The six-member GLWA Board has the authority to execute contracts, set policy for the Authority, set service charges and set the revenue requirement for the Retail Customers.
- The GLWA Board is required to appoint an Audit Committee to “review the reports related to the financial condition, operations, performance and management of the Authority” on a regular basis. Certain actions by the GLWA Board require the affirmative vote of at least five members of the GLWA Board, including, but not limited to, setting rates and charges for water supply and sewage disposal services, annual operating budgets, capital improvement programs, issuance of debt and any modification of the Lease.
- The Authority must establish biennial budgets, with the first year serving as formal authorization (including an approved schedule of service charges to support the budget) and the second year serving as an initial estimate of revenues and revenue requirements.
- The Authority has the ability to enter into water supply and sewage disposal contracts and may establish and fix a schedule of rates, fees, and other charges for its services.

Governance and Board Members

The GLWA Board is composed of six voting members. Two members are residents of the City and are appointed by the Mayor of the City. The Counties of Macomb, Oakland, and Wayne each appoint one member who is a resident of the County from which appointed and the Governor of the State of Michigan appoints one member who is a resident of an area served by the Authority outside of the Counties. All members of the GLWA Board must have at least seven years of experience in a regulated industry, a utility, engineering, finance, accounting or law. Each GLWA Board member is appointed for a four-year term and serves at the pleasure of the appointing authority.

In order to more efficiently oversee the Authority's operations, the GLWA Board has adopted a committee structure. Four committees have been established: (i) Audit, (ii) Capital Planning, (iii) Operations and Resources and (iv) Legal.

The GLWA Board and their professional backgrounds are presented below.

Beverly Walker-Griffiea, Ph.D., GLWA Board Chair; GLWA Board Representative for the State of Michigan. Dr. Walker-Griffiea has over 30 years of experience in higher education and is the current president of Mott Community College. Active in the Flint community, she is a member of the Greater Flint Health Coalition Board of Directors, McLaren Health Care of Flint Board of Trustees, the Metro Community Development Board of Directors, Carriage Town Ministries Board of Directors, Chair of the Board of Directors for the Ivy House, and is a member of the Flint Chapter of the NAACP. Dr. Walker-Griffiea formerly served as a member of the Flint City Water Response Team. Dr. Walker-Griffiea earned her Bachelor of Science from Oklahoma State University in Broadcast Communications, Master of

Education from Virginia State University, and Ph.D. in Child Development from Texas Woman's University. She was appointed to the GLWA Board of Directors by Governor Gretchen Whitmer to represent areas served by the Authority outside of the city of Detroit and the counties of Wayne, Oakland, and Macomb.

John J. Zech, GLWA Board Vice Chair; GLWA Board Representative for Wayne County. Mr. Zech has more than 40 years of experience in municipal government in Michigan and Ohio, most of which in an administrative capacity. Mr. Zech currently serves as Chairman for the St. Mary of Wayne Catholic Church Finance Council, in addition to serving on the Board of Trustees for Growth Works, Inc. He previously served on the Board of Directors for the Michigan Municipal League. Mr. Zech has earned Life Membership status with the International City Management Association (ICMA). He is a graduate of the University of Detroit with a Bachelor of Science in Business Administration.

Jaye Quadrozzi, GLWA Board Secretary; GLWA Board Representative for Oakland County. Ms. Quadrozzi is an attorney with over 15 years of experience in complex commercial litigation in both federal and state courts. She is a member of the state bars of Michigan, Illinois and California. In addition to serving on the GLWA Board, since 2013 Ms. Quadrozzi has also served as the Oakland County representative on the Huron-Clinton Metropolitan Authority Board of Commissioners. Ms. Quadrozzi earned a Bachelor of Arts degree in philosophy from the University of Michigan, and a Juris Doctor degree from the University of Michigan Law School. Among the many honors and awards she has received, Ms. Quadrozzi was named among the 2018 Michigan Top 25 Women in Business Attorneys by Super Lawyers.

Brian Baker, GLWA Board Representative for Macomb County. Mr. Baker is the Chief Deputy for the Macomb County Public Works Commissioner, Candice Miller, where he oversees a staff of 60 storm water and waste water professionals. He formerly served as the Finance and Budget Director for the City of Sterling Heights for more than 30 years. In that capacity, he directed the City of Sterling Heights' financing, procurement and debt management initiatives, and worked extensively on water and sewer rate setting process, which has resulted in the City of Sterling Heights achieving efficiencies and lowering costs, as well as on pension administration. In addition, Mr. Baker has worked regionally serving in numerous capacities, including on a municipal revenue task force established by the Governor's Office to address ongoing problems. He has also worked closely with the Southeastern Michigan Council of Governments in similar capacities. Mr. Baker earned a Master of Business Administration from Wayne State University, and a Bachelor of Arts in Economics and Political Science from the University of Michigan.

Gary A. Brown, GLWA Board Representative for the City of Detroit. Mr. Brown was appointed the Director of DWSD in October 2015. He is leading the Department toward a customer-focused, fiscally responsible operation. Previously, Mr. Brown served as the City's Group Executive for Operations and Chief Operating Officer under Mayor Mike Duggan, charged with ensuring continued improvement of city services. He was initially hired to the City's Executive Office as Chief Compliance Officer by Former Emergency Manager Kevyn Orr, after spending nearly four years as president Pro Tem of the City Council. Mr. Brown is also a former Deputy Chief of the Detroit Police Department, where he served for 26 years beginning as a patrol officer, rising through the ranks to become Commander of the 1st, 3rd, 9th and 11th Precincts, as well as the Gang Squad, Narcotics and Internal Affairs Divisions.

Freman Hendrix, GLWA Board Representative for the City of Detroit. Mr. Hendrix has extensive experience in municipal government, finance and real estate, having served as Deputy Mayor and Chief of Staff for former Detroit Mayor Dennis Archer. During his tenure with the City, Mr. Hendrix led strategic policy development and planning and assisted the City in achieving its first balanced budget in decades, as well as an unprecedented and continuous upgrading of the City's national bond rating. He is also a member of the Southeastern Michigan Regional Transit Authority Board of Directors, a member of the Wayne County Board of Ethics, and a partner in Brush Park Development LLC (a joint venture with Rock

Ventures), that is developing 8.5 acres in Detroit's Brush Park neighborhood. Mr. Hendrix is also a long-time community activist who co-founded the Rosedale-Grandmont Little League Baseball Program.

Management Team

Sue F. McCormick, Chief Executive Officer. Ms. McCormick is the Chief Executive Officer ("CEO") of GLWA. As CEO, Ms. McCormick led the successful stand up of GLWA, which began operations on January 1, 2016. Under her leadership, GLWA experienced a number of important firsts in its foundational year. This includes two sets of upgrades to its bond ratings from all three bond ratings agencies, the execution of a money saving \$1.3 billion inaugural bond sale, which will achieve more than \$309 million in savings over the life of the refinanced bonds, the creation of a leadership training academy and structured development opportunities for all team members, and the establishment of a biennial budget for GLWA. GLWA also launched its sustainable assistance program, WRAP, which provides qualifying households with help in paying current and past-due water bills and water conservation efforts. In 2018, Ms. McCormick was honored by the Southeast Michigan Council of Governments with its highest award, the Regional Ambassador Award.

Prior to her appointment with GLWA, Ms. McCormick served as Director of DWSD, guiding it through major initiatives that resulted in cost savings, regulatory compliance and improved financial performance. Before joining DWSD in 2012, she served as Public Services Administrator for the City of Ann Arbor, Michigan, where for 11 years she managed the City of Ann Arbor's entire physical infrastructure, including roads, solid waste, parks, fleet and facilities, and the water and sewer system. She first joined Ann Arbor city government as Water Utilities Director in January 2001, after 22 years with the Lansing Board of Water and Light where during her tenure, she rose steadily through the ranks serving in a variety of roles, including Environmental Chemist, Environmental Laboratory Manager, Manager of Water and Steam Planning, Water Technical Support Manager and Business Development Manager.

A native of Michigan's Upper Peninsula, Ms. McCormick earned a bachelor's degree from Lyman Briggs College at Michigan State University. She is active in the 58,000-member American Water Works Association ("AWWA"), where she has served as an AWWA-Michigan Director and as an association Vice President, and on the Water Quality Board of the International Joint Commission. Ms. McCormick is currently serving on the Board of Directors for the Association of Metropolitan Water Agencies ("AMWA"), as well as for the National Association of Clean Water Agencies ("NACWA"). She is also Chair of the State of Michigan's Water Asset Management Council and on the board of Michigan Infrastructure Council.

Nicolette N. Bateson, CPA, Chief Financial Officer/Treasurer. Ms. Bateson is the Chief Financial Officer ("CFO") and Treasurer for GLWA. Ms. Bateson's service follows her tenure as the first CFO for DWSD which began in February 2013. In that role she led the Financial Services Area through a significant transformation effort engaging cross-functional teams to achieve sustainable change. The result was a professionalized department with an unprecedented demonstration of transparency to all stakeholders. This pivotal effort supported intensive, collaborative discussions that were essential to forming the Authority.

Ms. Bateson possesses extensive financial and public administration experience. As a visiting specialist for the State and Local Government Program with Michigan State University Extension, Ms. Bateson worked with state and local officials to address the needs of cities in fiscal stress. Her research, educational programs, and writings related to public-sector financial challenges are often cited. In her roles as Assistant City Manager and Finance Director in local government, she was responsible for strategic planning, financial turnaround, information technology, labor relations, employee benefit design, project management and deploying multi-year budgeting and long-range capital planning. Ms. Bateson's

professional career began with a national accounting firm serving clients in the construction, manufacturing, and nonprofit sector.

Ms. Bateson earned a Bachelor of Business Administration in professional accountancy from the University of Michigan-Dearborn and a Master of Public Administration in Public Administration from Eastern Michigan University. In 2017, she was recognized as the Eastern Michigan University's Master of Public Administration Program Public Administrator of the Year.

William M. Wolfson, Chief Administrative and Compliance Officer. Mr. Wolfson is the Chief Administrative and Compliance Officer for GLWA. In this role, Mr. Wolfson supports GLWA's Organizational Development, Information Technology, General Counsel, Special Projects, and Enterprise Risk Management Teams. With more than 30 years of local government experience, he also provides leadership support to the entire utility in the absence of its CEO. Prior to assuming his current position, Mr. Wolfson served as Chief Administrative and Compliance Officer and General Counsel for both GLWA and DWSD. Mr. Wolfson joined the DWSD as the utility's first General Counsel in June 2012 and added the position of Chief Operating and Compliance Officer in August, 2013. Mr. Wolfson previously served as a member of the City of Detroit's Law Department working as the legal liaison to the Detroit City Council, as well as to several key regional initiatives such as the casino and stadium development projects. Upon leaving the City of Detroit, Mr. Wolfson moved to Wayne County's Department of Corporation Counsel and was appointed Deputy Corporation Counsel by County Executive Edward McNamara. The succeeding County Executive, Robert Ficano, appointed Mr. Wolfson to the position of Assistant Deputy County Executive/Director of Legal Affairs. In that position, Mr. Wolfson was responsible for the day-to-day operations of county government and its 4,500 employees. Mr. Wolfson retired from his Wayne County position in July 2009; he then went into private practice and contracted to serve as Wayne County's Interim Corporation Counsel. Mr. Wolfson is a graduate of the University of Michigan and the University of Minnesota Law School.

Randal M. Brown, General Counsel. Mr. Brown became General Counsel for GLWA in August 2017. Mr. Brown brings extensive municipal law experience to his role as General Counsel. Prior to joining GLWA, Mr. Brown served in Wayne County's Corporation Counsel Department, where he was appointed by Wayne County Executive Warren C. Evans first as the Chief-Assistant Corporation Counsel for the Real Estate, Tax and Public Services Team, and then as the Deputy Corporation Counsel. As the Deputy Corporation Counsel, Mr. Brown represented all of Wayne County's elected officials, employees and departments. During his tenure, Mr. Brown worked on several key initiatives, including Executive Evans' county reorganization plan, the disposition of Wayne County's excess real property assets, and the negotiation of contract renewals at significant cost savings without compromising service delivery to County residents. Mr. Brown began his legal career at Plunkett Cooney, where he represented Fortune 500 companies, as well as a cross-section of municipalities in state and federal courts. He is a graduate of the University of Delaware and Howard University School of Law. He currently serves as a member of the Wolverine Bar Association and Foundation's Board of Directors. He is an active member of the Wolverine Bar Association and Foundation and served as the Association and Foundation's President for the 2015-2016 bar year. He also serves as a member of the Rose Hill Center's Board of Directors.

Suzanne R. Coffey, P.E., Chief Planning Officer. Ms. Coffey became the Chief Planning Officer for GLWA on January 1, 2016, a position she held at DWSD from August 24, 2015 to December 31, 2015. In her capacity as Chief Planning Officer, Ms. Coffey champions GLWA's efforts to bolster the Authority's asset management and capital improvement planning capacities as well as leading long-term planning efforts, such as the Wastewater Master Plan, member outreach and system analytics. Ms. Coffey became very familiar with GLWA through her role as Manager in Oakland County's Water Resources Commissioner's office where she worked for 12 years, and she was an integral part of the DWSD-GLWA transition efforts. Under the leadership of Oakland County Water Resources Commissioner Jim Nash, Ms.

Coffey was responsible for supervising engineers, field staff members, administrative and technical support personnel and supporting operations and maintenance of wastewater interceptor systems, as well as oversight of staff members who perform construction project management and constructions inspection. Ms. Coffey is a licensed Professional Engineer in the State of Michigan. She graduated Cum Laude from Lawrence Technological University with a Bachelor of Science in Civil Engineering and was named Young Engineer of the Year by the Northern Chapter of the Michigan Society of Professional Engineers.

Cheryl Porter, Chief Operating Officer. Ms. Porter is the Chief Operating Officer of GLWA Water and Field Services Area where she oversees five water treatment facilities and water transmission to the Authority's member partner communities, ensuring GLWA's water consistently meets and exceeds all quality standards and regulations. Ms. Porter is an active member of the American Water Works Association. In addition to serving as a Michigan Section Trustee (2018-2021) and sitting on the Section's Government Affairs Council, Ms. Porter also currently serves on AWWA's national board as Director-at-Large (2019-2022), as well as on its Finance Committees (2018-2021). In 2017, Crain's Detroit Business recognized her as one of Detroit's Women in Leadership. Ms. Porter provides leadership that's grounded in experience and manages engineers, field staff and administrative and technical support personnel. Her broad knowledge base in the water service sector began at DWSD as a Junior Chemist, where her dedication yielded eventual advancement to Water Production and Operations Manager. As the COO of the DWSD, she was part of the team that helped establish GLWA in 2016. Ms. Porter earned her BS degree from the University of Michigan, an MBA with a concentration in Human Resources Management from Madonna University, and a Juris Doctor degree from the University of Detroit Mercy School of Law. Ms. Porter maintains State of Michigan operator certifications for both Water Distribution (S-3) and Complete Treatment (F-1). Under her direction, GLWA's Water Works Park received the "2019 Directors Award for Water Treatment" from the Partnership for Safe Water.

Navid Mehram, P.E., Chief Operating Officer for Wastewater Operations. Mr. Mehram is the Chief Operating Officer for Wastewater Operating Services of GLWA. He is a licensed Professional Engineer in the State of Michigan, who brings a wealth of wastewater operations experience. Prior to assuming this position, Mr. Mehram served as the Chief Engineer at the Oakland County Water Resource Commissioner's office. During his tenure at the Oakland County WRC, he led the transitioning of the City of Pontiac's water and wastewater operations and maintenance from private contract operations to county operations. The transformation included design and construction of a new state of the art biosolids processing system. This innovative process was the first in Michigan and the third in North America. In his capacity Mr. Mehram also provided leadership for engineering, field staff member and administrative and technical support personnel providing service for a number of county facilities including three treatment facilities, over two hundred pump stations, community wells and retentions basins. Mr. Mehram brings over 10 years of extensive experience specializing in design and construction of water treatment, water resource recovery and pumping systems as a consultant. He is a licensed Professional Engineer in the State of Michigan, who graduated from Wayne State University with a Bachelor of Science in Civil Engineering, and as a member of Chi Epsilon – a National Civil Engineering Honor Society.

Terri Tabor Conerway, Chief Organizational Development Officer. Ms. Conerway is the Chief Organizational Development Officer for GLWA. Ms. Conerway brings approximately three decades of comprehensive human resources, training and development experience to her position with GLWA. Previously, Ms. Conerway was the Organizational Development Director of DWSD, a position she held since December 2013. Prior to this, Ms. Conerway served as Human Resources Director for the Detroit Public Library, and held numerous managerial positions since beginning her career with the City of Detroit in 1972. Ms. Conerway holds a Bachelor of Science in Psychology from Wayne State University and has completed post-degree work in Educational Psychology at the University of Michigan. Ms. Conerway is certified as a facilitator for Vital Smarts and Franklin Covey training platforms.

W. Barnett Jones, Chief Security and Integrity Officer. Chief Jones was appointed GLWA's Chief Security and Integrity Officer on January 1, 2016 after serving with DWSD in that capacity since 2012. His extensive experience in law enforcement and security spans over a 40-year career. Chief Jones is responsible for GLWA's entire security posture, which includes the physical security infrastructure and safety of employees, facilities and assets. In addition, Chief Jones has been pivotal in developing and implementing entity-wide integrity policies and procedures. Prior to his arrival at GLWA, Chief Jones served as Chief of Police, Police Administrator, Fire Chief, Captain, Lieutenant, Sergeant and Deputy Sheriff with large local units of government in Michigan including the supervision of both police and fire personnel. Chief Jones has a Masters in Liberal Studies from Eastern Michigan University and a Bachelor in General Studies from the University of Michigan-Dearborn. He has also received certification from the State of Michigan to be a K-12 school administrator. Additionally, Chief Jones is a graduate of the FBI National Academy and a graduate of the Secret Service Dignitary Protection training, as well as a certified firefighter.

Michelle A. Zdrodowski, Chief Public Affairs Officer. Ms. Zdrodowski became Chief Public Affairs Officer for GLWA on July 6, 2016. In her capacity as Chief Public Affairs Officer, she guides the organization's efforts to build and maintain its relationships with internal and external stakeholder communities. Ms. Zdrodowski brings 30 years of strategic communications and community engagement experience to GLWA. Immediately prior to joining the GLWA team, she served as Chief Communications Officer for Detroit Public Schools during a period of unprecedented challenge and change. Her previous public sector communications experience also includes her tenure as Deputy Press Secretary to former Detroit Mayor Dennis Archer. Ms. Zdrodowski also spent more than a decade leading the nonprofit/government practice group for a Detroit-based public relations agency. Ms. Zdrodowski holds a Bachelor of Arts in Communications from Michigan State University. She is a member of the Public Affairs Council for AWWA, and is the chair of the Communications Council for the Michigan Section of the AWWA.

Jeffrey E. Small, Chief Information Officer. Mr. Small became Chief Information Officer for GLWA on August 15, 2016. In his capacity as Chief Information Officer, Mr. Small directs and coordinates technology strategy implementation for the organization. Mr. Small brings 30 years of information technology and business process experience to GLWA. Immediately prior to joining the GLWA team, he served for four years as Deputy Chief Information Officer at Wayne County, Michigan. Prior to his work at Wayne County, Mr. Small held IT leadership roles at several multi-national companies in a cross-section of industries, including retail, sourcing, brand-management and consumer products. Mr. Small holds a Bachelor of Arts in Political Science from The George Washington University and a Masters in Computer Information Systems from Baker College.

Jonathan Wheatley, Public Finance Manager. Mr. Wheatley became Public Finance Manager for GLWA on January 1, 2016, a position he previously held at DWSD since January 2015. In addition, Mr. Wheatley is the project manager for the implementation of the WRAP program. At the time he joined DWSD, he brought over 16 years of experience in municipal securities and corporate finance. Mr. Wheatley's experience encompassed extensive advisory work with various cities, townships, counties, schools and hospitals in endeavoring to determine their capital financing requirements and included the preparation of proposals, the restructuring of securities and identifying cash flow requirements. Mr. Wheatley has also performed comprehensive utility system rate studies to ensure that local systems remain self-supporting. He is a graduate of the University of Detroit Mercy with a Bachelor of Science in Business Administration.

Collaboration - Regionally and Beyond

GLWA's vision is to be the service provider of choice in the region. The Authority collaborates with its customers through the One Water Partnership Agreement. This agreement outlines the mutual

commitments to working together for the greater good of the region, detailing the responsibilities of all parties and a commitment to a multi-jurisdictional, multi-agency approach to infrastructure renewal and investment. GLWA's collaborative relationship with its customers is foundational to its operations wherein GLWA works with its customers as member-partners.

Member Partner Benefits - The member partner concept extends beyond the traditional aspects of water and sewer utility service. GLWA provides value added services at no additional charge, including extensive training and development opportunities for member-partner team members through GLWA's One Water Institute (OWI); public communication materials related to the State of Michigan's new Lead and Copper Rule, the perils of "flushable" wipes and a range of emerging contaminants; providing a "real-time" systems analytic software tool; consecutive system water quality sampling and testing services; and community access videos on GLWA's budget and service charges.

Hub Utility - Since standing up the organization in 2016, GLWA has demonstrated its ability to serve as a connector across the region and among its sector and infrastructure partners. After learning of the EPA's hub utility concept through association with the National Association of Clean Water Agencies, GLWA joined a small number of utilities across the nation working with the EPA to more fully develop the hub utility concept. In general, utilities with capacity to strengthen the sector through services to others, peer to peer support or other means can serve as hub utilities. Examples of the types of efforts in the sector will continue to emerge. For GLWA the added member-partner benefits previously noted as well as leveraged procurements, are a few additional examples of efforts already in place.

Regional Planning - See "THE MASTER PLAN AND THE CAPITAL IMPROVEMENT PLAN – Regional Wastewater System Master Plan" for description of collaboration on master planning among GLWA and member partners.

Strategic Investment and Innovation

GLWA is focused on optimization and innovation supported by a network of cross-functional teams. Key strategic initiatives include the following.

Asset Management - In December 2019, GLWA completed a comprehensive strategic asset management plan. The next steps in implementing that plan include selection and implementation of a new enterprise asset management system, rollout of asset management improvement initiatives, and the development of tactical wastewater and water asset management plans. These programs provide streamlined and consistent processes to manage and analyze asset data to support asset management initiatives at GLWA. They will standardize GLWA's treatment across all asset types to ensure consistency of how assets are managed throughout the organization and to allow for comparison of assets across business units to improve service levels while reducing capital, maintenance and operations costs. While in the early stage of implementation, these programs are beginning to yield meaningful actions that will drive GLWA's asset management.

Capital Program Management – In 2019 GLWA invested in enhancements to the management of its capital program by dedicating a Director level position to manage the program from an enterprise-wide perspective. Additionally, in May 2019 GLWA engaged AECOM, a nationally recognized consulting firm in capital program management, to assess and recommend business process and organizational changes to improve delivery and execution of the capital program. This engagement also enables staff to assist with many elements of capital project execution.

Condition Assessment Programs – GLWA continues to institutionalize the practice of programmatic or cyclical asset condition assessments. By committing to programmed regular, periodic

assessments, proper management of an asset's lifecycle is significantly improved. Many baseline comprehensive asset condition assessments have been completed and others are either currently underway or are being planned.

Linear System Integrity Program – A Linear System Integrity Program (“LSIP”) is currently being developed. This program is intended to apply asset management principles to proactively evaluate and manage GLWA’s water transmission and sewer interceptor systems. LSIP will provide on-going decision support for water and sewer system inspections, condition assessments, monitoring and renewals, conduct water transmission system inspections and condition assessments, and develop a sewer system risk model to support decision making. In 2019, a pilot condition assessment project was performed on over nine miles of GLWA’s transmission mains. The results are currently being evaluated to determine renewal possibilities. GLWA has completed a final draft associated with a consequence of failure model for the water transmission mains that will be used to prioritize future condition assessment projects as part of the overall LSIP. GLWA’s pilot valve inspection and exercise program was completed for 450 transmission system valves (approximately 20 percent of the system) and is being expanded to assess all valves and appurtenances operated by GLWA. These valve assessments, combined with the LSIP, will provide for comprehensive management of the water transmission linear assets. GLWA has also assessed the condition of approximately 97% of the sewer interceptor system and associated manholes using National Association of Sewer Service Companies (“NASSCO”) standards, performing Pipeline Assessment Certification Program (“PACP”) and Manhole Assessment Certification Program (“MACP”) inspections, respectively. In addition, based upon this assessment, GLWA has established an inspection program based on the criticality and conditions of the sewer to minimize reliability risks.

Innovation – GLWA’s Office of Energy, Research and Innovation leverages national and federal research efforts, along with directly funded local, regional and national research university efforts, to maintain a clear understanding of the leading-edge engineering, operations, and maintenance aspects of running one of the world’s largest combined water systems. These research efforts are aligned with the corresponding GLWA engineering, operations, and maintenance business unit in order to ensure optimal “real-world” benefits. The Research and Innovation team initially leads these research efforts and any subsequent feasibility trials to understand the project benefits and shortcomings. Once the technology or process is fully vetted, the relevant business unit will direct subsequent implementation.

GLWA is actively engaged with three major Michigan universities with a \$4.5 million budgeted spend in innovation efforts. Ongoing and/or funded research projects include source water monitoring and statistical assessment; epidemiological evaluation of ecological risks of per- and polyfluoroalkyl substances (“PFAS”); the fate and transport of microplastics through water and wastewater treatment plants; the fate and transport of biosolid nutrients; energy recovery from biosolids; the construction and use of a pilot plant to evaluate alternative source water treatment methods; the impact of pressure transients on pipe condition; the full reconstruction of water mains using robots; the enhancement of biological phosphorus removal; and CSO abatement using artificial intelligence and market-based trading algorithms.

GLWA has also partnered with other regional universities and engineering firms for research involving methods to evaluate and prioritize the condition assessment of its distribution pipes; the fate and transport of PFAS through wastewater treatment plants and through wastewater biosolid incinerators, and the assessment and control of grit within wastewater operations.

Security – In January 2020, GLWA Security and Integrity Group completed and submitted its Risk and Resilience Assessment and Emergency Response Plan (“ERP”) to the EPA. The America’s Water Infrastructure Act of 2018 requires community drinking water system agencies serving more than 3,300 people to develop or update their risk assessments and ERPs. The Authority is an active participant in

regional security planning, partnering with other agencies and taskforces to maximize protection of critical assets and the public.

Cybersecurity – Like most large utilities, GLWA is faced with a variety of cybersecurity challenges daily. These challenges may range from user error to individual hackers to state sponsored cyber-attacks. In the face of these challenges GLWA’s Information Technology Security Team works proactively to maintain a safe and reliable computer environment to support the utility’s business and operations. GLWA’s cybersecurity framework is based upon five guiding principles identified by National Institute of Standards and Technology (“NIST”) cybersecurity framework as described below.

Identify - To identify potential threats, GLWA’s Information Technology Security Team works closely in coordination with GLWA’s Security and Integrity Group. In 2019, GLWA conducted a detailed cyber threat audit with support from a third-party vendor and is making adjustments to its cybersecurity protocols based upon those results.

Protect - GLWA maintains multiple networks and utilizes multiple strategies to protect them. GLWA has partnered with a third-party vendor to scan e-mail and attachments to protect against threats. Cybersecurity incidents are often caused by user error, and GLWA has focused on training. Each month, GLWA employees receive on-line security training through its vendor, Security Mentor. GLWA tracks its cybersecurity training results as a key performance indicator. During the fourth quarter of 2019, over 95% of GLWA’s employees completed the lessons within 30 days of assignment.

Detect - GLWA utilizes multiple solutions for real-time network transparency and anti-virus monitoring in order to quickly detect anomalies and events surrounding its networks.

Respond - GLWA has developed detailed emergency action plans for threat response and mitigation. To optimize its threat response, GLWA conducts multiple emergency response exercises each year, with multiple equipment in multiple locations designed to test and improve the efficiency of its emergency preparedness and response to cyber threats.

Recover - GLWA has developed recovery and continuity of operations plans to respond to a cyberattack. GLWA maintains cyber liability insurance coverage which is reviewed annually to ensure that the levels of protection are appropriate for the utility’s needs.

Although not identified in the NIST principles, GLWA’s cybersecurity efforts engage participation and partnership. GLWA participates in multiple peer-to-peer activities to identify and support best practices. Specifically, GLWA participates and is briefed on new threats and response techniques with the Department of Homeland Security’s (“DHS”) Cybersecurity & Infrastructure Security Agency (“CISA”), Michigan Cyber Command Center (“MC3”) and other similar agencies.

While GLWA has undertaken the above cybersecurity measures, no assurances can be given that such measures will be successful in guarding against all cyber attacks. The results of any successful attack on GLWA’s information technology could impact operations and damage networks and systems, and the costs of remedying any such attack could be substantial.

Awards and Recognitions

GLWA has received many awards and recognitions since it began operations in January 2016.

- *National Association of Clean Water Agencies' National Environmental Achievement Awards ("NEAA")* – In 2020, GLWA received two awards from the NEAA. The Workforce Development award recognized GLWA's Apprenticeship Program, which has launched three apprenticeships which are closing the gap in the availability of highly trained talent to adequately fill skilled trade roles. The Public Information and Education award was received for the Regional One Water Public Education Campaign, which raised awareness of and generated appreciation for water resources and infrastructure topics including drinking water, wastewater, stormwater, and the connection of these to the blue economy, recreation, quality of life, and economic prosperity in Southeast Michigan.
- *Directors Award for Water Treatment* – In 2019, the Water Works Park Water Treatment Plant received the Directors Award for Water Treatment from the Partnership for Safe Water, a program developed by the EPA and AWWA. The award recognizes utilities who demonstrate an outstanding commitment to delivering superior quality drinking water to customers. GLWA was one of six select groups in the nation honored for its long-term commitment to innovation, outstanding performance achieved, and environment and public-health protection. GLWA now has four of five water treatment facilities that have received this award.
- *Leading Utilities of the World ("LUOW") Network* – In 2019, GLWA became just the 49th member of the Leading Utilities of the World initiative. LUOW is a network of the world's most successful, forward-thinking and innovative water and wastewater utilities. LUOW's members represent the Gold Standard of utility innovation and performance throughout the developed world's water sector.
- *National Council for Public Private Partnerships Award for Infrastructure Project - Biosolids Drying Facility ("BDF") Service Project Award* – In 2019, GLWA received the National Council for Public Private Partnerships Award for Infrastructure Project - BDF Service Project Award for its biosolids thermal drying technology at the Water Resource Recovery Facility ("WRRF"). To address discharge permit requirements on solids handling capacities and modifications to EPA regulations for sewage sludge incinerators, GLWA integrated a new BDF into the WRRF solids handling process. The BDF project was implemented through a partnership with New England Fertilizer Company ("NEFCO") using a design-build-operate-maintain ("DBOM") delivery system. The solution successfully addressed the WRRF's regulatory compliance issues, improving operations, and transforming long-standing problems into overwhelming benefits.
- *Utility of the Future Today Awards* – In 2018, GLWA was recognized as a Utility of the Future Today by the Water Environment Federation, the Water Research Foundation, NACWA, Water Reuse, and the EPA. GLWA was recognized for (1) an organizational culture that supports utility of the future implementation through the use of Effective Utility Management and (2) a commitment to the principles of a Utility of the Future via the operation of its BDF. In 2019, GLWA was recognized for partnering and engagement.
- *Best Pilot Demonstration in the Water Utility Energy Challenge* – In 2018, GLWA's Lake Huron Water Treatment Plant team was recognized for Best Pilot Demonstration in the Water Utility Energy Challenge, co-sponsored by AWWA and Wayne State University. The objective of this effort is to reduce energy related pollution emissions in the Great Lakes Basin.

- *GovTech Special Districts Award for Technology Innovation* – In 2018, GLWA’s Information Technology Security Team received recognition for its Wet Weather Map that displays real-time data on its interceptors and rain gauges.
- *Gold Award for Exceptional Utility Performance* – In 2017, AWWA recognized GLWA with this award for large public drinking water systems that exhibit outstanding achievement in implementing the nationally recognized attributes of Effective Utility Management (“EUM”), and lead the nation in efforts toward sustainability through innovative management practices, executive leadership and employee engagement. GLWA was one of only three Gold Award recipients in the country.
- *Government Finance Officers’ Association Distinguished Budget Presentation Award* – In 2020, GLWA received this award for its Fiscal Years 2020 through 2024 Biennial Budget and Five-Year Financial Plan. This was GLWA’s inaugural submittal for the program.
- *Association of Public Treasurers of the United States and Canada Investment Policy Certification* – In 2019, GLWA’s investment policy was recognized for its investment policy meeting the high criteria set by professional standards.
- *Michigan Public Purchasing Officers Association Agency of the Year* – In 2018, this honor was bestowed upon GLWA in recognition of accomplishments and innovations in public procurement.

Members of GLWA’s leadership team have become highly requested speakers and have presented at a broad cross section of water sector conferences. In addition, many of GLWA’s employees have been recognized for their achievements. Chief Organizational Development Officer Terri Tabor Conerway was honored by Crain’s Detroit Business as an outstanding woman in Human Resources. Chief Information Officer Jeff Small was named IT Professional of the Year by the Michigan Government Management Information Sciences Organization. Chief Administrative and Compliance Officer, William Wolfson, was honored by Michigan Lawyers Weekly as a Leaders in the Law.

Employees

As of June 30, 2019, the Authority had approximately 1,024 employees, including persons with professional qualifications in the fields of water and wastewater operations, construction, engineering, capital planning, environmental science, facility and systems security, accounting, finance, law and management. Of that amount, approximately 635 employees were organized in collective bargaining units. The Authority believes that its relationships with its employees and their representatives are generally good.

GLWA has six active collective bargaining agreements (“CBAs”) in place for its union represented workforce. The unions and the number of full-time equivalent (“FTE”) employee members as of June 30, 2019 are:

Union	CBA	
	FTE’s	Expiration Date
American Federation of State County and Municipal Employees, Local 2920	436	June 30, 2021
Association of Professional Construction Inspectors	11	June 30, 2020
Michigan Building and Construction Trades Council	58	June 30, 2020
Senior Water Systems Chemist Association	74	June 30, 2020
Association of Municipal Engineers	50	June 30, 2021
Senior Accountants, Analysts & Appraisers Association	6	June 30, 2021

Retirement and Other Employee Benefits

GLWA offers a modernized employee benefit program which provides the flexibility to attract and retain a multi-generational workforce and ensures that GLWA will have no unfunded liabilities.

GLWA offers its employees a defined contribution retirement plan with an optional, participatory deferred compensation plan which are administered by an independent third party. GLWA contributes an amount equal to 6% of base wages for eligible employees to the defined contribution retirement plan. Employees may make voluntary pre-tax contributions to the deferred compensation plan up to the annual limits set by the Internal Revenue Service (the “IRS”). GLWA matches an employee’s voluntary contribution, per pay period, on a dollar-for-dollar basis up to 3% of base wages. Both the 6% employer contribution and the 3% employer matching contribution are subject to a three-year cliff vesting schedule. If an employee is in a new Apprenticeship classification, the vesting period is a seven-year cliff schedule. The longer vesting period is a reflection of the four-year Apprenticeship learning portion and the three actual years of regular employment.

Full-time employees of GLWA are also eligible to participate in group medical, prescription drug, dental, and vision plans offered by GLWA. Under these plans, covered employees contribute 20% of the premium costs of these benefits through employee payroll deductions based upon the plan and coverage tier selected by the employee. GLWA provides employer-paid group life insurance and disability insurance to full-time employees as well as a flexible spending account.

GLWA offers a defined contribution retiree health care savings program. GLWA contributes eighty dollars (\$80) per pay period for active full-time employees. Those employees contribute ten dollars (\$10) dollars per pay period on a pre-tax basis. GLWA’s contributions are subject to a three-year cliff vesting schedule. Vested account balances are available to pay for post-employment health care expenses for participants and their beneficiaries on a tax-free basis. The plan does not require GLWA to pay any additional amounts in connection with retiree healthcare.

Consistent with the terms of the Lease, as of January 1, 2016, GLWA assumed responsibility for a pro-rata share of DWSD’s liability for the City’s General Retirement System (“GRS”) pension plan that was frozen and terminated in 2014. For a discussion of the potential “tail” liability of GLWA after June 30, 2023 for those legacy costs, see “AUTHORITY FINANCIAL OPERATIONS—Legacy Retirement System Obligations of the Authority.”

COVID-19 IMPACT, RESPONSE AND RISK FACTORS

On March 11, 2020, the World Health Organization declared a pandemic following the outbreak of COVID-19, a respiratory disease caused by a novel strain of coronavirus. On March 13, 2020, President Donald Trump declared a national emergency to unlock federal funds to help states and local governments fight the pandemic. On March 28, 2020, President Trump, at the request of Michigan Governor Gretchen Whitmer, declared that a major disaster exists in Michigan, thereby making federal funds available for crisis counseling for affected individuals in all areas of Michigan and for emergency protective measures, including funding for transporting and pre-positioning equipment, emergency operation center related costs, medical supplies and personal protective equipment, medical care and transport, and childcare.

The State of Michigan, the Authority and DWSD have been responding to the outbreak of COVID-19 in the State. Governor Whitmer issued executive orders on March 10, 2020 (2020-04) declaring a state of emergency, on March 23, 2020 (2020-21) requiring Michigan businesses to temporarily suspend all activities that are not necessary to sustain or protect life and Michigan residents to stay at home and adhere to social distancing measures recommended by the Centers for Disease Control and Prevention unless they

are part of the critical infrastructure workforce (such as Authority employees and certain DWSD employees), and on March 28, 2020 (2020-28) requiring public water suppliers (such as DWSD and other customers of the Authority) to restore water service during the state of emergency to any occupied residence where water service has been shut off due to non-payment. On April 1, 2020, Governor Whitmer issued an executive order (2020-33) declaring a state of disaster in Michigan and requested the Michigan legislature to extend the state of emergency she declared on March 10. On April 7, 2020, the Michigan legislature approved an extension of the state of emergency through April 30, 2020. On April 8, 2020, Governor Whitmer issued an executive order (2020-42) extending and adding more restrictions to stay at home and social distancing requirements through April 30, 2020. On April 24, 2020, Governor Whitmer issued an executive order (2020-59) extending the stay at home and social distancing requirements through May 15, 2020 while easing some of the prior restrictions that were in place in connection with such requirements. On April 30, 2020, Governor Whitmer issued executive orders (2020-67 and 2020-68) effective through May 28, respectively extending the state of emergency under the Emergency Powers of the Governor Act of 1945 (“EPGA”) and declaring a state of emergency and a state of disaster in Michigan under the Emergency Management Act of 1976 (“EMA”). Subsequent executive orders issued by Governor Whitmer (2020-70 issued on May 1, 2020, 2020-77 issued on May 7, 2020, 2020-91 and 2020-92 issued on May 18, 2020, 2020-96 issued on May 21, 2020, 2020-100 issued on May 22, 2020 and 2020-110 issued on June 1, 2020) have had the cumulative effect of extending social distancing requirements indefinitely while ending the stay at home requirement and easing some of the prior restrictions that were in place in connection with social distancing requirements and permitting certain businesses to resume operations subject to compliance with protocols designed to protect employees and customers.

On May 6, 2020, the Michigan legislature filed a lawsuit in the Michigan Court of Claims challenging the validity of executive orders 2020-67 and 2020-68. On May 21, 2020, the Court of Claims issued an opinion finding that (i) executive order 2020-67 is a valid exercise of authority under the EPGA and the EPGA is constitutionally valid and (ii) executive order 2020-68 exceeded the authority of the Governor under the EMA. On June 4, 2020, the Michigan Supreme Court denied a request by the legislature to grant “emergency-bypass review” of the decision of the Court of Claims without waiting for a decision from the Michigan Court of Appeals. On May 22, 2020, Governor Whitmer also issued executive order 2020-99, which rescinded and replaced executive orders 2020-67 and 2020-68, effective through June 19, 2020, extending the state of emergency under the EPGA and, subject to the ongoing litigation, declaring a state of emergency and a state of disaster in Michigan under the EMA.

As described in the Preliminary Official Statement under “SERVICE AREA CUSTOMERS – Collections and Delinquencies,” on March 9, 2020, DWSD, Detroit Mayor Michael Duggan and Governor Whitmer announced a jointly-developed COVID-19 Water Restart Plan. To implement the program, DWSD hired a consultant to visit nearly 9,000 houses to determine if anyone living there was without water. Approximately five percent of the houses visited were confirmed to be occupied and without water. As of May 18, 2020, DWSD has restored water to more than 1,100 households through the COVID-19 Water Restart Plan.

Management Response to COVID-19

As part of its Continuity of Business Plan protocols, the Authority has implemented extensive measures to protect the health of its employees and contractors and to ensure the continuity of its business operations and the delivery of its water and sewer services to its customers. The Authority’s executive leadership team meets daily and confers with Authority departments such as Organizational Development, Security and Procurement, a practice which has permitted the Authority to successfully identify emerging needs of its employees, customers and other interested parties. The Authority has begun the process of identifying the incremental costs associated with COVID-19 and revising its business processes to enable it to seek reimbursement from the Federal Emergency Management Agency for such costs.

Most of the Authority's employees who do not work at one of the Authority's water or wastewater treatment facilities are working remotely from home. All approved visitors to an Authority facility are required to complete a questionnaire in advance of their visit, detailing their medical condition, contact with individuals infected with COVID-19 and their travel history. All employees, contractors and visitors entering the Authority's water and wastewater treatment facilities are screened upon arrival, which includes a temperature check and a series of questions pertaining to symptoms related to COVID-19. The Authority has ordered additional deep cleaning services throughout its facilities to protect the hygiene of its work areas, including paying special attention to door handles, flat surfaces and areas such as break rooms and locker rooms, and has instituted a protocol for cleaning of all shared spaces (including control rooms) at the beginning and end of each shift. The Authority has developed plans that allow it to operate all essential facilities at minimum staffing levels and, with respect to the Water Resource Recovery Facility, has an entire crew on standby ready to step in should a significant COVID-19 incident occur.

The Authority has also taken proactive steps to ensure the continuity of its supply chain and the availability of chemicals and cleaning and other essential supplies to operate its water and wastewater facilities. The Authority has requested that its suppliers confirm their commitment to continue to supply the Authority and has followed up on all leads for new suppliers and resources.

DWSD has implemented similar measures to those implemented by the Authority to protect the health of its employees and contractors and to ensure the continuity of its business operations and the delivery of its water and sewer services to its customers.

Since the declaration of a state of emergency in the State in response to COVID-19, the Authority has not experienced any material delays in implementing its CIP Program. The Authority's ongoing CIP projects involve mostly system improvement, reliability and redundancy and are not mandated by regulators, giving the Authority significant flexibility as to timing and extent of completion of its current CIP program.

Financial Impact of COVID-19

Since the declaration of a state of emergency in the State in response to COVID-19, there have been no material decreases in wholesale cash collections for the Regional Sewer System. At the GLWA Board meeting of April 22, 2020, GLWA staff presented certain financial projections arising from the impact of COVID-19. For the Regional Sewer System in Fiscal Year 2020, the revenue budget shortfall was projected to be approximately \$1.0 million, which would be more than offset by approximately \$9.9 million of projected net expense reductions.

On March 11, 2020 the GLWA Board approved sewer charge schedules for Fiscal Year 2021. Compared to existing charges, the Fiscal Year 2021 charges were designed to increase Sewer Fund revenues by approximately \$9.3 million. On April 22, 2020, the GLWA Board approved a delay in the effective date of the approved Fiscal Year 2021 charges from July 1, 2020 to October 1, 2020 to provide budget relief to Member Partner communities as a result of COVID-19 challenges. The budget impact of this delay is estimated at \$2.6 million. The GLWA budget will be amended in the first quarter of FY 2021 for this revenue reduction along with associated expense reductions which will be presented to the GLWA Board in June 2020.

The overall impact of COVID-19 has resulted in a decrease in DWSD retail sewer system collections of approximately \$2.8 million in March 2020 and \$3.8 million in April 2020 compared to 2019. Collections for May (through May 23, 2020) show an increase of \$1.4 million compared to 2019. GLWA

and DWSD staff are meeting regularly to discuss steps to mitigate this shortfall as outlined in the 2018 MOU.

It is unknown how extensive the spread of COVID-19 will be in the State, nor how long the restrictions will remain in place. There can be no assurances that the spread of COVID-19 and the implementation of restrictions on a local, state and national level will not materially impact the local, state and national economies or the ability of the Authority's customers to make timely payments to the Authority for sewage disposal services and accordingly, materially adversely affect an investment in the Series 2020 Bonds. The Authority is unable to quantify such risk at this time.

THE SERIES 2020 BONDS

General

The Series 2020 Bonds are being issued by the Authority and will mature on the dates and in the principal amounts set forth on the inside cover page of this Official Statement. The Series 2020 Bonds will bear interest from their date of delivery until maturity or prior redemption, payable semiannually on January 1 and July 1 of each year commencing January 1, 2021 at the respective interest rates set forth on the inside cover of this Official Statement. The Series 2020 Bonds will be issued as fully registered bonds in denominations of \$5,000 and integral multiples thereof.

Optional Redemption

Par Optional Redemption. The Series 2020 Bonds maturing on July 1, 2044 are subject to redemption at the option of the Authority on any date on or after July 1, 2030 in whole or in part, and, and if in part from such maturities as the Authority determines and on a pro rata basis, at par, plus accrued interest to the redemption date.

Make-Whole Optional Redemption. In addition to the foregoing, the Series 2020 Bonds maturing prior to July 1, 2044 are subject to redemption at the option of the Authority, in whole or in part, and if in part from such maturities as the Authority determines and on a pro rata basis, on any date, at a make-whole redemption price (the "Make-Whole Price") equal to the greater of:

- (1) 100% of the principal amount of the Series 2020 Bonds to be redeemed; or
- (2) the sum of the present value of the remaining scheduled payments of principal and interest to the maturity date of such Series 2020 Bonds to be redeemed, not including any portion of those payments of interest accrued and unpaid as of the date on which such Series 2020 Bonds are to be redeemed on a semi-annual basis, assuming a 360-day year consisting of twelve 30-day months, at the Comparable Treasury Yield (defined below) plus 25 basis points plus, in each case, accrued interest on such Series 2020 Bonds to be redeemed to the redemption date.

For purposes of calculating the Make-Whole Price with respect to the optional make-whole redemption of the Series 2020 Bonds, the following terms shall have the following meanings:

"Calculation Agent" means a commercial bank or an investment banking institution of national standing that is a primary dealer of United States government securities in the United States and designated by the Authority (which may be one of the institutions that served as an underwriter for the Series 2020 Bonds).

"Comparable Treasury Issue" means the United States Treasury security selected by the Calculation Agent as having a maturity comparable to the remaining term to maturity of the Series 2020

Bonds being redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term to maturity of the Series 2020 Bonds being redeemed.

“Comparable Treasury Price” means, with respect to any date on which a Series 2020 Bond or portion thereof is being redeemed, either: (a) the average of five Reference Treasury Dealer quotations for the date fixed for redemption, after excluding the highest and lowest such quotations or (b) if the Calculation Agent is unable to obtain five such quotations, the average of the quotations that are obtained. The quotations will be the average, as determined by the Calculation Agent, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of principal amount) quoted in writing to the Calculation Agent, at 5:00 p.m. New York City time at least three business days but no more than 20 business days preceding the date fixed for redemption, as selected by the Authority.

“Comparable Treasury Yield” means the yield that represents the weekly average yield to maturity for the preceding week appearing in the most recently published statistical release designated “H.15(519) Selected Interest Rates” under the heading “Treasury Constant Maturities,” or any successor publication selected by the Calculation Agent that is published weekly by the Board of Governors of the Federal Reserve System and that establishes yields on actively traded United States Treasury securities adjusted to constant maturity, for the maturity corresponding to the remaining term to maturity of the Series 2020 Bond being redeemed. The Comparable Treasury Yield will be determined at least three business days but no more than 20 business days preceding the date fixed for redemption, as selected by the Authority. If the H.15(519) statistical release sets forth a weekly average yield for United States Treasury securities that have a constant maturity that is the same as the remaining term to maturity of the Series 2020 Bonds being redeemed, then the Comparable Treasury Yield will be equal to such weekly average yield. In all other cases, the Comparable Treasury Yield will be calculated by interpolation on a straight-line basis, between the weekly average yields on the United States Treasury securities that have a constant maturity: (i) closest to and greater than the remaining term to maturity of the Series 2020 Bonds being redeemed; and (ii) closest to and less than the remaining term to maturity of the Series 2020 Bonds being redeemed. Any weekly average yields calculated by interpolation will be rounded to the nearest 1/100th of 1%, with any figure of 1/200th of 1% or above being rounded upward. If, and only if, weekly average yields for United States Treasury securities for the preceding week are not available in the H.15(519) statistical release or any successor publication, then the Comparable Treasury Yield will be the rate of interest per annum equal to the semiannual equivalent yield to maturity of the Comparable Treasury Issue (expressed as a percentage of its principal amount) assuming a price for the Comparable Treasury Issue equal to the Comparable Treasury Price (each as defined herein) as of the date fixed for redemption.

“Reference Treasury Dealer” means a primary dealer of United States Government securities in the United States (which may be one of the institutions that served as an underwriter for the Series 2020 Bonds) appointed by the Authority and reasonably acceptable to the Calculation Agent.

Mandatory Redemption

The Series 2020A Bonds maturing on July 1, 2039 and July 1, 2044 and the Series 2020B Bonds maturing on July 1, 2036 and July 1, 2044 (each a “Term Bond”) are subject to mandatory sinking fund redemption at a redemption price equal to the principal amount thereof to be redeemed on July 1 in the years and amounts as follows:

Series 2020A Bonds Maturing on July 1, 2039

<u>Year</u>	<u>Amount</u>
2037	\$107,570,000
2038	110,860,000
2039*	114,245,000

Series 2020A Bonds Maturing on July 1, 2044

<u>Year</u>	<u>Amount</u>
2040	\$20,280,000
2041	20,990,000
2042	21,725,000
2043	22,485,000
2044*	23,060,000

Series 2020B Bonds Maturing on July 1, 2036

<u>Year</u>	<u>Amount</u>
2034	\$17,475,000
2035	32,650,000
2036*	16,400,000

Series 2020B Bonds Maturing on July 1, 2044

<u>Year</u>	<u>Amount</u>
2037	\$1,690,000
2038	1,745,000
2039	1,810,000
2040	1,875,000
2041	1,945,000
2042	2,015,000
2043	2,085,000
2044*	2,160,000

*Maturity.

Whenever any Term Bond is redeemed at the option of the Authority, the principal amount thereof so redeemed shall be credited against the unsatisfied balance of future sinking fund installments or final maturity amount established with respect to such Term Bond, in such amounts and against such installments or final maturity amount as shall be determined by the Authority in the proceedings authorizing such optional redemption or, in the absence of such determination, shall be credited pro-rata against the unsatisfied balance of the applicable sinking fund installments and final maturity amount.

On or prior to the 60th day preceding any sinking fund installment date, the Authority may purchase Term Bonds that are subject to mandatory redemption on such sinking fund installment date, at such prices

(not exceeding par plus accrued interest) as the Authority shall determine. Any Term Bond so purchased shall be cancelled and the principal amount thereof so purchased shall be credited against the unsatisfied balance of the next ensuing sinking fund installment of the Term Bonds of the same series, maturity and interest rate as the Term Bond so purchased.

Redemption Procedures

Notice of Redemption

Under the Ordinance, the Trustee will mail, by first class mail, as specified in the Ordinance, a notice of redemption to the Holders of the Series 2020 Bonds to be redeemed at least 30 and not more than 60 days prior to the redemption date. If any optional redemption is to be made under the Ordinance with funds that the Authority expects to receive between the time of the giving of such notice and the redemption date, the notice will expressly condition such redemption on timely receipt of such funds. The failure of any Bondholder to receive any such notice or any defect in such notice with respect to any Series 2020 Bond or portion thereof will not affect the validity of any proceedings for the redemption of any Series 2020 Bonds.

Selection of Bonds to be Redeemed

When Series 2020 Bonds are to be redeemed in part, the Authority shall specify to the Trustee the Series designation, maturity, and Original Issue Date of the Bonds from which Series 2020 Bonds or portions of Series 2020 Bonds to be redeemed shall be selected. Subject to the Authority's specification, the particular Series 2020 Bonds or portions of Series 2020 Bonds to be redeemed will be selected by the Trustee by lot; provided however that the Trustee shall select Series 2020 Bonds to be redeemed on the basis of a pro rata pass-through distribution of principal in accordance with DTC procedures and provided that, so long as the Series 2020 Bonds are held in book-entry form the selection for redemption of such Series 2020 Bonds will be made in accordance with the operational arrangements of DTC then in effect and, if the DTC operational arrangements do not allow for redemption on the basis of a pro rata pass-through distribution of principal, the Series 2020 Bonds will be selected for redemption, in accordance with DTC Procedures by lot. The portion of any Series 2020 Bond to be redeemed in part shall be in the principal amount of \$5,000 or any integral multiple thereof.

It is the Authority's intent that redemption allocations of Series 2020 Bonds made by DTC be made on the basis of a pro rata pass-through distribution of principal as described above. However, neither the Authority nor the Underwriters can provide any assurance that DTC, DTC's Direct and Indirect Participants or any other intermediary will allocate the redemption of the Series 2020 Bonds on such basis. If the DTC operational arrangements do not allow for the redemption of the Series 2020 Bonds on the basis of a pro rata pass-through distribution of principal as described above, then the Series 2020 Bonds will be selected for redemption, in accordance with DTC procedures, by lot.

If the Series 2020 Bonds are not registered in book-entry only form, any redemption of less than all of a maturity of the Series 2020 Bonds shall be allocated among the registered owners of such Series 2020 Bonds on a pro-rata basis.

Plan of Financing

<u>Sources:</u>	<u>2020A</u>	<u>2020B</u>
Par Amount	\$594,930,000.00	\$92,525,000.00
Amounts Released from Debt Service Accounts	14,641,931.25	2,169,625.00
Amounts Released from Reserve Accounts	8,454,576.14	25,142,779.49
Total Sources	\$618,026,507.39	\$119,837,404.49
<u>Uses:</u>		
Deposit to Escrow Fund	\$615,473,375.78	\$118,896,293.34
Underwriters' Discount	1,587,708.78	246,924.44
Costs of Issuance*	965,422.83	694,186.71
Total Uses	\$618,026,507.39	\$119,837,404.49

*Includes bond insurance policy premium

A portion of the proceeds of the Series 2020 Bonds will be applied to the refunding and redemption of the Refunded Bonds, deposited into escrow funds (collectively, the "Escrow Fund") and will be held as cash or invested in non-callable direct obligations of the United States, or obligations the payment of principal and interest on which is fully and unconditionally guaranteed by, the United States (collectively, "Government Obligations"). The Escrow Fund will be held by the corporate trust office of U.S. Bank National Association, Detroit, Michigan, as escrow trustee (the "Escrow Trustee") and will be used to pay when due the principal of and interest on the Refunded Bonds when due or called for redemption. The Escrow Fund will be held by the Escrow Trustee pursuant to an escrow agreement (the "Escrow Agreement"), which irrevocably directs the Escrow Trustee to make the payment of principal of and interest on the Refunded Bonds. The Escrow Fund will be such that the cash and the principal and interest payments received on the Government Obligations will be sufficient, without reinvestment, except as provided in the Escrow Agreement, to pay the principal of and interest on the Refunded Bonds as they become due or are called for redemption, as set forth in the Escrow Agreement.

The accuracy of the mathematical computations regarding the adequacy of the cash and the Government Obligations to be held in the Escrow Fund and used, together with the earnings thereon, to pay the principal of and interest on the Refunded Bonds when due or at call for redemption will be verified by Robert Thomas, CPA LLC based upon information supplied by the Underwriters.

Replacement Bonds

In the event that the book-entry-only system is discontinued, the Trustee will authenticate and make available for delivery replacement Series 2020 Bonds in the form of fully registered bond certificates. In addition, the following provisions would apply: (i) principal of and redemption premium, if any, on the Series 2020 Bonds will be payable in lawful money of the United States of America at the corporate trust office of the Trustee or such other office as may be designated by the Authority; (ii) interest on the Series 2020 Bonds will be payable by check or draft mailed to the registered owners thereof or, upon five days written notice to the Trustee given by a Registered Owner of a Series 2020 Bonds in an aggregate principal amount of at least \$100,000, by wire transfer of funds to a bank account in the United States designated by such Registered Owner; and (iii) interest on the Series 2020 Bonds will be payable by check or draft to the Registered Owners whose names appear on the registration books of the Trustee as of the close of business on the fifteenth day of the calendar month immediately preceding the applicable interest payment date, all as provided more particularly in the Bond Ordinance ("Registered Owners").

Book-Entry Only System

The Depository Trust Company, New York, New York (“DTC”) will act as securities depository for the Series 2020 Bonds. The Series 2020 Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee). One fully-registered bond will be issued for the Series 2020 Bonds of each series and maturity in aggregate principal amount of such maturity and will be deposited with DTC. A description of the DTC procedures is set forth in APPENDIX XII.

SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS

Pursuant to the provisions of Act 94, all DWSD Sewer Bonds assumed by GLWA under the Bond Ordinance and all Additional Bonds issued and to be issued by GLWA under the Bond Ordinance, including the Series 2020 Bonds (the DWSD Sewer Bonds and all such Additional Bonds, together with Reimbursement Obligations and Junior Lien Reimbursement Obligations, the “Bonds”), are payable solely from the Pledged Assets, which include the Net Revenues of the Sewer System and amounts available in certain funds and accounts established in accordance with the Bond Ordinance. **The Bonds are secured by a statutory lien on the Pledged Assets pursuant to Act 94 and the Bond Ordinance. The Series 2020 Bonds are payable solely from the revenue pledged as security for the Series 2020 Bonds in the Bond Ordinance, including the funds and accounts established under the Bond Ordinance for the benefit of the Series 2020 Bonds. The Bonds are self-liquidating revenue bonds and are not general obligations of GLWA and do not constitute an indebtedness of GLWA within any constitutional or statutory limitation, but are payable solely from the Pledged Assets.**

The Bond Ordinance amends, restates and incorporates certain material provisions of Ordinance No. 18-01 and the related Trust Indenture of the City relating to the DWSD Sewer Bonds for the efficient administration of the Regional Sewer System, the assumption of the DWSD Sewer Bonds, and the issuance of Additional Bonds to finance additional costs of extensions, additions and improvements to the Regional Sewer System and the Local Sewer System, which may be secured by parity or subordinate lien interests in the Net Revenues with the DWSD Sewer Bonds and with the Additional Bonds issued and to be issued by GLWA. For a summary of the Bond Ordinance, see APPENDIX VI – SUMMARY OF THE BOND ORDINANCE.

Pledged Assets

“Pledged Assets” under the Bond Ordinance currently consist of:

- Net Revenues;
- The funds and accounts established by or pursuant to the Bond Ordinance except for the Operation and Maintenance Fund, the Construction Fund and the Rebate Fund and any account thereof; and
- Investments of amounts or any income or gain realized therefrom credited to any fund, account or subaccount that is a Pledged Asset.

“Revenues” are defined in the Bond Ordinance as the revenues, including the Retail Revenues, of GLWA from the Sewer System (construed in accordance with Act 94) and include (a) amounts received from a Swap Provider under a Swap Agreement, including amounts payable upon termination thereof, (b) income earned and gains realized from the investment of amounts in the various funds, accounts and subaccounts established by the Bond Ordinance (other than the Construction Fund for any Fiscal Year in which earnings on the Construction Fund are not credited to the Receiving Fund) and (c) all moneys

collected directly or indirectly by GLWA or by the City, as agent of GLWA, under the Water and Sewer Services Agreement, and deposited or to be deposited into the Receiving Fund pursuant to the Bond Ordinance. The Authority currently has no Swap Agreements outstanding.

“*Net Revenues*” are defined in the Bond Ordinance as all Revenues except for those transferred to the Operation and Maintenance Fund.

Under the Bond Ordinance, the Pledged Assets for the Bonds consisting of the trust estate (the “Trust Estate”) are pledged to the Trustee for the payment of the Bonds (including the DWSD Sewer Bonds) in accordance with the terms and provisions of Act 94 and the Bond Ordinance and any Series Ordinance relating to a Series of Bonds. This pledge was valid and binding from and after the Effective Date, and the Pledged Assets were immediately subject to the lien of such pledge without any physical delivery thereof, recordation of the Bond Ordinance or further act, and the lien of such pledge was and is valid and binding as against all parties having claims of any kind in tort, contract or otherwise against GLWA, regardless of whether such parties have notice thereof.

Flow of Funds

Under the Bond Ordinance, in accordance with the requirements of Act 94 and the Lease, GLWA has established certain funds and accounts for the Sewer System to be held in trust by the Trustee. The Bond Ordinance permits the establishment of additional funds for additional priorities of GLWA Bonds.

In accordance with the terms of Act 94 and the Bond Ordinance, all Revenues of the Sewer System shall be deposited with the Trustee and, with the exception of Revenues transferred to the GLWA Regional Operation and Maintenance Account or the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund as directed by GLWA as provided in the Bond Ordinance, held in trust pursuant to the terms of the Bond Ordinance. The Lease and the Bond Ordinance provide that, subject to the issuance of Bonds permitted by the Bond Ordinance to satisfy all or a portion of the Pension Obligation, pursuant to the provisions of paragraph 24 of the Bankruptcy Order, the contribution to the Prior GRS pension plan set forth in the Plan of Adjustment to be paid by DWSD and GLWA shall be payable as follows: (i) the portion of that contribution equal to \$24 million annually, plus the share of the annual “defined contribution” (as such term is used in the Bankruptcy Order) payments to be allocated between the Sewer System and the Water System, will be paid by the Trustee as Operation and Maintenance Expenses under priority “First” below, and (ii) the difference between the annual GRS pension plan contribution provided for in the Plan of Adjustment and \$24 million will be paid by the Trustee out of the Pension Obligation Payment Fund under priority “Fifth” below. See “AUTHORITY FINANCIAL OPERATIONS – Legacy Retirement System Obligations of the Authority.”

As of the first day of each month (or, in the case of the transfer to the respective Reserve Account, following the annual July 1 valuation of investments in such Bond Reserve Account, pursuant to the Bond Ordinance), amounts credited to the Receiving Fund, including any Lease Payment (which is to be applied to the Fund(s) and Account(s) designated by the City pursuant to the Lease) shall be transferred seriatim into the following funds and accounts but only within the respective limitations and only if the maximum amount within such limitation has been credited to the preceding fund or account:

First: to the Authority Regional Operation and Maintenance Account and the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund, 1/12 of the then current Fiscal Year’s Operation and Maintenance Expenses of the Regional Sewer System and the Local Sewer System, respectively, as determined by GLWA and certified to the Trustee by an Authorized Officer as sufficient to provide for the payment of the next month’s expenses of administration and operation of the Regional Sewer System and the Local Sewer System,

respectively, and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order;

Second: to the Senior Lien Bond Debt Service Account, an amount that, when added to all other amounts then on deposit therein, shall equal the Debt Service Installment Requirement for Senior Lien Bonds as of the first day of such month;

Third: following the annual July 1 valuation of investments in the Senior Lien Bond Reserve Account pursuant to the Bond Ordinance, to the Senior Lien Bond Reserve Account, an amount, if any, that when added to all other amounts then on deposit therein shall equal the Reserve Requirement for Senior Lien Bonds;

Fourth: to the Bond Interest and Redemption Fund established for each Priority of Lien of Junior Lien Bonds, beginning with the Second Lien Bonds and continuing in descending order of priority to, and including, each Priority of Lien of Junior Lien Bonds, as follows:

First: to the Debt Service Account established for such Priority of Lien, an amount that, when added to amounts then on deposit in such account, shall equal the Debt Service Installment Requirement for Junior Lien Bonds of such Priority of Lien as of the first day of such month; and

Second: following the annual July 1 valuation of investments in the Reserve Accounts pursuant to the Bond Ordinance, to the Reserve Account, if any, established for such Priority of Lien, an amount that, when added to amounts then on deposit in such account, shall equal the Reserve Requirement for such Priority of Lien of Junior Lien Bonds;

Fifth: except as provided in the Bond Ordinance with respect to the initial deposit to the Pension Obligation Payment Fund, to the extent Pension Junior Lien Bonds are not issued, to the Pension Obligation Payment Fund an amount that equals 1/12 of the Required Annual GRS Payment and 1/12 of the BC Note Obligation at the written direction of an Authorized Officer to the Trustee;

Sixth: except as provided in the Bond Ordinance with respect to the initial deposit to the WRAP Fund, to the WRAP Fund, 1/12 of the amount to be deposited therein for the current Fiscal Year as directed in writing by an Authorized Officer to the Trustee;

Seventh: except as otherwise provided in the Bond Ordinance with respect to the initial deposit to the Budget Stabilization Fund, for each of the Fiscal Years 2016, 2017 and 2018, to the Budget Stabilization Fund, an amount equal to 1/12 of one-third of the amount necessary to assure that the Budget Stabilization Requirement will be on deposit in the Budget Stabilization Fund within three full Fiscal Years at the written direction of an Authorized Officer to the Trustee and for subsequent Fiscal Years thereafter 1/12 of an amount that when added to amounts then on deposit in the Budget Stabilization Fund shall equal the Budget Stabilization Requirement, at the written direction of an Authorized Officer to the Trustee;

Eighth: to the Extraordinary Repair and Replacement Reserve Fund, the amount of the Extraordinary Repair and Replacement Minimum Requirement to the extent that the balance thereof is less than the Extraordinary Repair and Replacement Maximum Requirement; and

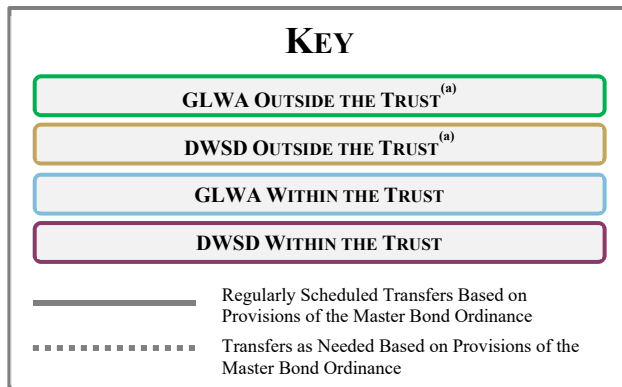
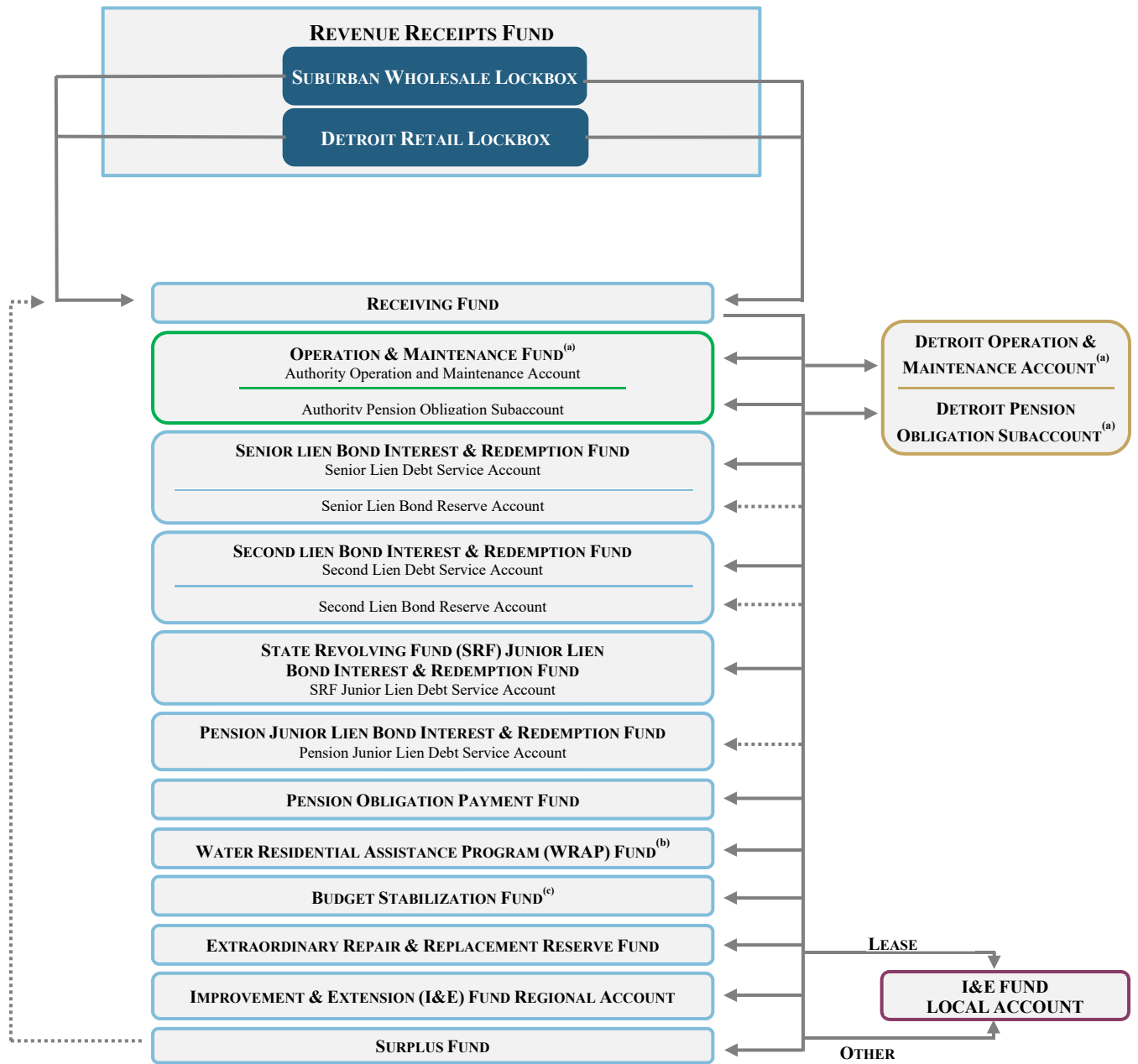
Ninth: at the written direction of an Authorized Officer to the Trustee, to the Authority Improvement and Extension Account and the Detroit Local Improvement and Extension Account of the Improvement and Extension Fund, such amounts as GLWA may deem advisable for the Regional Sewer System and Local Sewer System; provided that no amount shall be deposited in either such account for so long as a withdrawal from the Extraordinary Repair and Replacement Reserve Fund remains unpaid.

In any month, funds on deposit in the Receiving Fund in excess of the requirements set forth above may, upon the direction of GLWA, be transferred to the Improvement and Extension Fund (provided that no amount shall be deposited to the Improvement and Extension Fund or credited thereto for so long as a withdrawal from the Extraordinary Repair and Replacement Reserve Fund remains unpaid).

Any amounts remaining in the Receiving Fund as of the last day of each Fiscal Year shall be applied against future years' Revenue deposit obligations under the Bond Ordinance, unless directed by GLWA within thirty (30) days of completion of the Fiscal Year's audited financial statements to be deposited in the Surplus Fund. See summary flow of funds diagram below.

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Summary of the Flow of Funds



^(a) Except for these funds, all other funds are held in Trust by the Trustee.

^(b) Disbursing fund for WRAP.

^(c) For the Detroit Local Systems per Section 515 of the Master Bond Ordinance.

Priority of Lien

The Bonds are secured under the Bond Ordinance in accordance with their relative Priority of Lien by a statutory lien on the Pledged Assets (each of such relative priorities hereinafter referred to as a “Priority of Lien”), as described below.

- Senior Lien Sewage Disposal System Revenue Bonds (the “Senior Lien Bonds”) are secured by a first lien on the Pledged Assets and rank first in the order of payment from Net Revenues.
- Second Lien Sewage Disposal System Revenue Bonds (the “Second Lien Bonds”) are secured by a lien on the Pledged Assets second only to the Senior Lien Bonds and rank second in order of payment from Net Revenues; and
- Other Junior Lien Sewage Disposal System Revenue Bonds (the “SRF Junior Lien Bonds”) have a lien subordinate to the lien of all Senior Lien Bonds and Second Lien Bonds and rank last in order of payment from Net Revenues.

Rate Covenant

Under the Bond Ordinance, the Authority covenants that the rates shall be fixed and revised from time to time as may be expected to be necessary to produce the greater of:

- The amounts required: (1) to provide for the payment of the Operation and Maintenance Expenses of the Sewer System; and (2) to provide for the payment of all Debt Service Installment Requirements coming due during the Fiscal Year of calculation; and (3) to provide for the creation and maintenance of reserves therefor as required by the Bond Ordinance; and (4) to provide for the payment of the Lease Payment; and (5) to provide for the deposit to the WRAP Fund; and (6) to repay any withdrawals from the Extraordinary Repair and Replacement Fund; and (7) to provide for such other expenditures and funds for the Sewer System as the Bond Ordinance may require;
- Amounts so that the Rate Covenant Debt Service Coverage shall not be less than the Required Coverage; and
- Amounts required by Act 94.

The “Rate Covenant Debt Service Coverage” means, for purposes of the rate covenant in the Bond Ordinance and for each Priority of Lien, a number equal to Projected Net Revenues for the Fiscal Year of calculation divided by the aggregate Debt Service Installment Requirements on Bonds for such Fiscal Year, net of funds on hand representing capitalized interest, all for such Priority of Lien and any higher Priority of Lien.

Under Act 94, rates must be fixed and revised as necessary to comply with the Bond Ordinance. The Authority has covenanted at all times to fix and maintain charges for services furnished by the Sewer System as shall be sufficient to provide for the foregoing. Act 94 also provides that the Sewer System charges are not subject to supervision or regulation by any State bureau, board, commission or like agency or instrumentality of the State.

The coverage requirements for determining the Required Coverage under the Bond Ordinance are the following percentages:

Priority of Lien of Bonds	Percentage
Senior Lien Bonds	120%
Second Lien Bonds	110%
SRF Junior Lien Bonds and Pension Junior Lien Bonds	100%

The Authority's management team has targeted debt service coverage at levels higher than the Required Coverage for all lien priorities under the Bond Ordinance as described above. While these informal targets have not been formally established as policy positions, the long-term financial sustainability and stability objectives of the Authority include increasing debt service coverage. Notwithstanding the covenant to impose rates, fees and charges contained in the Bond Ordinance, under Michigan law, rates established by GLWA must be reasonable and nondiscriminatory and are subject to review by the courts in that regard. In establishing its service charges, the actions of GLWA are presumed by the courts to be reasonable, but the rates must not be arbitrary, discriminatory or excessive. Consequently, the rates established by GLWA pursuant to the Bond Ordinance could be subject to challenges alleging that such charges are arbitrary, discriminatory or excessive.

The ability to pay debt service on the Series 2020 Bonds depends on the ability to generate Net Revenues that meet the levels required by the Bond Ordinance. Although the Bond Ordinance contains a covenant to impose rates, fees and charges and GLWA expects that sufficient Net Revenues will be generated through the imposition and collection of such rates, fees and charges and other Net Revenues described herein, there is no assurance that Net Revenues will be generated in the amounts required by the Bond Ordinance. The Bond Ordinance covenants do not constitute a guarantee that sufficient Net Revenues will be available to pay debt service on the Series 2020 Bonds.

Issuance of Additional Bonds

Under the Bond Ordinance, prior to or concurrently with the issuance of Additional Bonds of any Priority of Lien, GLWA shall calculate a number equal to Projected Net Revenues in the then current or the next succeeding Fiscal Year, or Historical Net Revenues, all as determined by GLWA, divided by Maximum Annual Debt Service for such Priority of Lien and any higher Priority of Lien (the "Additional Bonds Debt Service Coverage"). GLWA may elect to determine Additional Bonds Debt Service Coverage on the basis of Projected Net Revenues or Historical Net Revenues. GLWA is authorized to issue Additional Bonds on parity with the Series 2020 Bonds for the purposes set forth in the Bond Ordinance if, but only if, GLWA certifies that the Additional Bonds Debt Service Coverage for each Priority of Lien (regardless of the Priority of Lien of the Additional Bonds) is not less than the Required Coverage. The determination in a Series Ordinance that the Additional Bonds Debt Service Coverage for each Priority of Lien is not less than the Required Coverage shall be conclusive.

Alternatively, GLWA may issue Additional Bonds of any Priority of Lien for refunding outstanding Bonds if the aggregate Debt Service Installment Requirements in the current Fiscal Year and each Fiscal Year until maturity on the Additional Bonds and all outstanding unrefunded Bonds of equal and higher Priority of Lien after giving effect to the refunding, is less than the aggregate Debt Service Installment Requirements in the current Fiscal Year and each Fiscal Year thereafter until maturity on all Bonds of equal and higher Priority of Lien without giving effect to the refunding. See APPENDIX VI - SUMMARY OF THE BOND ORDINANCE.

Reserve Accounts and Reserve Requirements

Pursuant to the Bond Ordinance, there has been established a Senior Lien Bond Reserve Account and a Second Lien Bond Reserve Account. Such Bond Reserve Accounts are held by the Trustee under and pursuant to the Bond Ordinance. SRF Junior Lien Bonds are not secured by any Reserve Account.

Amounts in a Bond Reserve Account shall be used solely for the payment of the principal (and premium, if any) of and interest on Bonds of the same Priority of Lien for which such Bond Reserve Account was established, as to which there would otherwise be a default.

The Reserve Requirement for Senior Lien Bonds covered by the Senior Lien Bond Reserve Account is the lesser of (i) Maximum Annual Debt Service requirements for each Series of Senior Lien Bonds then outstanding or (ii) the maximum amount permitted by the Code. “Maximum Annual Debt Service” means, with respect to any given Priority of Lien, the maximum aggregate Debt Service Installment Requirements in any future Fiscal Year on outstanding Bonds of such Priority of Lien and any Additional Bonds then being issued. The Reserve Requirement for Second Lien Bonds covered by the Second Lien Bond Reserve Account is the lesser of (i) the average annual Debt Service on all Second Lien Bonds or (ii) the maximum amount permitted by the Code. The Bond Ordinance also permits Bond Reserve Accounts to be established on a series-specific basis pursuant to a Series Ordinance. If a Reserve Account is established for any other Priority of Lien of Junior Lien Bonds, the Reserve Requirement for such other Junior Lien Bonds shall be the amount set forth in a Series Ordinance establishing such Reserve Account, and if no amount is set forth, shall be zero.

Concurrently with the issuance of a Series of Bonds of a Priority of Lien for which a Bond Reserve Account has been or is being established, the Bond Ordinance requires there be credited to such Bond Reserve Account the amount that, when added to the amount on deposit in such account or credited thereto, equals the Reserve Requirement for the Bonds then to be issued and all Bonds of the same Priority of Lien then outstanding. As of the date of this Official Statement and reflecting the issuance of the Series 2020 Bonds, the Senior Lien Bond Reserve Account and Second Lien Bond Reserve Account balances were sufficient to meet or exceed the Reserve Requirement for the outstanding Senior Lien Bonds and Second Lien Bonds, respectively. Pursuant to the Bond Ordinance, any Reserve Requirement with respect to Variable Rate Bonds is calculated at a fixed annual rate equal to the weighted average of the actual rates on such Variable Rate Bonds for each day during the 365 consecutive days (or any lesser period such Variable Rate Bonds are outstanding) ending on the last day of the month next preceding the date of calculation.

The Bond Ordinance permits the use of a letter of credit, surety bond or insurance policy (a “Reserve Account Credit Facility”) to fund any Bond Reserve Account if the provider has a credit rating at the time of issuance of such Series of Bonds not less than the credit rating of such Series of Bonds. There is no Bond Ordinance requirement that the rating of a Reserve Account Credit Facility which has been properly credited to a Reserve Account be maintained.

The following table summarizes the Reserve Requirements and the amounts in the Senior Lien Bond Reserve Account and the Second Lien Bond Reserve Account upon issuance of the Series 2020 Bonds.

	Senior Lien	Second Lien
Reserve Requirement	\$114,972,690	\$48,943,348
Funding Amounts		
Cash and Investments	14,235,280	6,043,348
Credit Facilities *	100,837,410	43,000,000
Total	<u>\$115,072,690</u>	<u>\$49,043,348</u>

* For series-specific policies, represents the lesser of (a) the maximum amount of the policy or (b) the amount of the Reserve Requirement specifically allocated to the specific series of Bonds covered by such policy.

As of the date of this Official Statement, the Senior Lien Bond Reserve Account is funded with Cash and Investments and Reserve Account Credit Facilities in the form of the following surety or insurance policies:

(a) National Public Finance Guarantee Corporation (“National”), as reinsurer of and administrative agent for MBIA Insurance Corporation (“MBIA”), policy unconditionally guaranteeing the payment of principal of and interest on the Series 1999-SRF2, Series 1999-SRF3 and Series 1999-SRF4 Bonds up to a maximum aggregate available amount of \$7,482,000 and with a termination date equal to the earlier of October 1, 2022, or the date on which all three series of such Bonds are no longer outstanding.

(b) Financial Guaranty Insurance Corporation (“FGIC”) policy unconditionally guaranteeing the payment of principal of and interest on any Senior Lien Bonds, up to a maximum aggregate available amount of \$17,301,095 and with a termination date of July 1, 2029.

(c) FGIC policy unconditionally guaranteeing the payment of principal of and interest on any Senior Lien Bonds, up to a maximum aggregate available amount of \$3,618,077 and with a termination date of July 1, 2031.

(d) Assured Guaranty Municipal Corp., formerly known as Financial Security Assurance Inc. (“AGM”), policy unconditionally guaranteeing the payment of principal of and interest on any Senior Lien Bonds up to a maximum aggregate available amount of \$51,800,000* and with a termination date of July 15, 2033.

(e) AGM policy unconditionally guaranteeing the payment of principal and interest on the Senior Lien Bonds, Series 2014C, up to a maximum aggregate available amount of \$44,617,000 and with a termination date of the earlier of July 1, 2033 or the date such bonds are no longer outstanding.

As of the date of this Official Statement (except as noted in (c) below), the Second Lien Bond Reserve Account is funded with Cash and Investments and Reserve Account Credit Facilities in the form of the following surety or insurance policies:

(a) National, as reinsurer of and administrative agent for MBIA, policy unconditionally guaranteeing the payment of the principal of and interest on any Second Lien Bonds up to a maximum aggregate available amount of \$22,000,000 and with a termination date equal to the earlier of July 1, 2035 or the date on which all of the Series 2005(A), Series 2005(B) and Series 2005(C) Bonds are no longer outstanding.

(b) FGIC policy unconditionally guaranteeing the payment of the principal of and interest on any Second Lien Bonds up to a maximum aggregate available amount of \$17,000,000 and with a termination date of July 1, 2036.

(c) AGM policy unconditionally guaranteeing the payment of the principal and interest on any Second Lien Bonds, in varying amounts, up to a maximum aggregate available amount of \$4,500,000 and with a termination date of July 1, 2024. The policy limit from July 1, 2019 to July 1, 2020 is \$4,000,000, from July 1, 2020 to July 1, 2021 is \$4,500,000, from July 1, 2021 to July 1, 2022 is \$2,750,000, from July 1, 2022 to July 1, 2023 is \$1,600,000 and from July 1, 2023 to July 1, 2024 is \$1,300,000.

* The AGM policy limit is the dollar amount of debt service reserve fund required to be maintained for the Series 2003(A) and Series 2003(B) Bonds by the related bond documents from time to time, but in no event will the policy limit exceed \$51,800,000 to July 15, 2029, \$69,200,000 from July 15, 2029 to July 15, 2031, and thereafter \$72,800,000 to the termination date.

As noted, certain of the Reserve Account requirements currently are funded through surety or insurance policies issued by MBIA, FGIC and AGM. Certain obligations of FGIC, including the surety policies listed above, have been novated to National, pursuant to the Novation Agreement between FGIC and National dated as of September 14, 2012. As a result, such obligations are now directly insured by National.

Although the Bond Ordinance requires that any Reserve Account Credit Facility be rated at the time of issuance of a Series of Bonds not less than the credit rating of such Series of Bonds at the time of its acquisition, there is no requirement that such rating be maintained. Accordingly, except for Reserve Amount Credit Facilities that relate to a specific Series of Bonds, all Reserve Account Credit Facilities are valued at their full face value for purposes of determining satisfaction of the applicable Reserve Requirement, regardless of the provider's rating. If the Reserve Account Credit Facility were determined to have no value, as for example, if a court made such a determination in connection with the dissolution of the provider, then GLWA would be required to replenish the applicable Reserve Account with cash or through a replacement Reserve Account Credit Facility, as described herein under "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS—Flow of Funds."

Reserve Fund Amendment

The Authority has authorized an amendment (the "Reserve Fund Amendment") to the Bond Ordinance which gives the Authority the option, but not the obligation, to reduce or eliminate the Reserve Requirement for the Senior Lien Bonds or the Second Lien Bonds, as the case may be, if the Authority obtains ratings of "Aa3" or "AA-" or higher on the Senior Lien Bonds from at least two of Moody's, S&P, and Fitch and confirmation that neither of such ratings will be reduced solely as a result of the change in the Reserve Requirement for such Bonds. Pursuant to the Bond Ordinance, the Reserve Fund Amendment becomes effective with respect to the Senior Lien Bonds and the Second Lien Bonds, respectively, at such time as the holders of 51% in principal amount of the Outstanding Bonds of each affected Priority of Lien shall have consented, or shall be deemed to have consented, to the Reserve Fund Amendment. See APPENDIX VI – SUMMARY OF BOND ORDINANCE.

By purchasing the Series 2020 Bonds, the original and all subsequent purchasers of the Series 2020 Bonds shall be deemed to have consented to such Reserve Fund Amendment. Upon the issuance of the Series 2020 Bonds and the refunding of the Refunded Bonds, the holders of more than the requisite amount of 51% of the outstanding principal amounts of each of the Senior Lien Bonds and the Second Lien Bonds will have consented to the Reserve Fund Amendment, and the Reserve Fund Amendment will be effective with respect to the Senior Lien Bonds and the Second Lien Bonds. The ratings threshold set forth in the Reserve Fund Amendment pursuant to which the Authority would have the option of reducing or eliminating the Reserve Requirement for the Senior Lien Bonds and the Second Lien Bonds have not yet been fully satisfied.

Remedies

Upon the happening and continuance of any Event of Default under the Bond Ordinance, the Trustee may, or upon the request of the Holders of not less than 20% in principal amount of the Outstanding Bonds shall, proceed in its own name, to protect and enforce its rights and the rights of the Bondholders, by suit, action, or other proceedings, and to protect and enforce the statutory lien on the Net Revenues and enforce and compel the performance of all duties of the officials of the Authority as set forth in the Bond Ordinance. See APPENDIX VI – SUMMARY OF THE BOND ORDINANCE.

The remedies available under the Bond Ordinance upon the occurrence of an Event of Default are in many respects dependent upon judicial actions, which are often subject to substantial discretion and

delay. Additionally, under State constitutional and statutory law and judicial decisions concerning remedies, certain of these remedies may be limited, or may not be readily available or enforceable. The enforceability of remedies or rights with respect to the Series 2020 Bonds and the Bond Ordinance also is limited by State and federal bankruptcy, reorganization, insolvency, sovereign immunity, moratorium and other similar laws regarding creditors' rights or remedies currently in effect and may be limited by such laws hereafter enacted.

Rights of Assured Guaranty Municipal Corp.

Assured Guaranty Municipal Corp. ("AGM") shall be deemed the sole holder of the Insured Bonds (as defined under "BOND INSURANCE – Bond Insurance Policy") for the purpose of exercising any voting right or privilege or giving any consent or direction or taking any other action that the holders of the Insured Bonds are entitled to take pursuant to the Bond Ordinance (including the exercise of remedies thereunder) pertaining to (i) defaults and remedies and (ii) the duties and obligations of the Trustee. Any amendment, supplement, modification to, or waiver of, the Bond Ordinance or any other transaction document, including any underlying security agreement that requires the consent of holders of Insured Bonds or adversely affect the rights of AGM shall be subject to the prior written consent of AGM. AGM is included as a third party beneficiary to the Bond Ordinance.

BOND INSURANCE

AGM has supplied the following information for inclusion in this Official Statement. No representation is made by the Authority or the Underwriters as to the accuracy or completeness of this information. Reference is made to APPENDIX XIII for the "SPECIMEN MUNICIPAL BOND INSURANCE POLICY."

Bond Insurance Policy

Concurrently with the issuance of the Series 2020B Bonds, AGM will issue its Municipal Bond Insurance Policy (the "Policy") for the Series 2020B Bonds maturing on July 1, 2036 and July 1, 2044 (the "Insured Bonds"). The Policy guarantees the scheduled payment of principal of and interest on the Insured Bonds when due as set forth in the form of the Policy included as Appendix XIII to this Official Statement.

The Policy is not covered by any insurance security or guaranty fund established under New York, California, Connecticut or Florida insurance law.

Assured Guaranty Municipal Corp.

AGM is a New York domiciled financial guaranty insurance company and an indirect subsidiary of Assured Guaranty Ltd. ("AGL"), a Bermuda-based holding company whose shares are publicly traded and are listed on the New York Stock Exchange under the symbol "AGO". AGL, through its operating subsidiaries, provides credit enhancement products to the U.S. and international public finance (including infrastructure) and structured finance markets and, as of October 1, 2019, asset management services. Neither AGL nor any of its shareholders or affiliates, other than AGM, is obligated to pay any debts of AGM or any claims under any insurance policy issued by AGM.

AGM's financial strength is rated "AA" (stable outlook) by S&P Global Ratings, a business unit of Standard & Poor's Financial Services LLC ("S&P"), "AA+" (stable outlook) by Kroll Bond Rating Agency, Inc. ("KBRA") and "A2" (stable outlook) by Moody's Investors Service, Inc. ("Moody's"). Each rating of AGM should be evaluated independently. An explanation of the significance of the above ratings may be obtained from the applicable rating agency. The above ratings are not recommendations to buy, sell or hold any security, and such ratings are subject to revision or withdrawal at any time by the rating

agencies, including withdrawal initiated at the request of AGM in its sole discretion. In addition, the rating agencies may at any time change AGM's long-term rating outlooks or place such ratings on a watch list for possible downgrade in the near term. Any downward revision or withdrawal of any of the above ratings, the assignment of a negative outlook to such ratings or the placement of such ratings on a negative watch list may have an adverse effect on the market price of any security guaranteed by AGM. AGM only guarantees scheduled principal and scheduled interest payments payable by the issuer of bonds insured by AGM on the date(s) when such amounts were initially scheduled to become due and payable (subject to and in accordance with the terms of the relevant insurance policy), and does not guarantee the market price or liquidity of the securities it insures, nor does it guarantee that the ratings on such securities will not be revised or withdrawn.

Current Financial Strength Ratings

On December 19, 2019, KBRA announced it had affirmed AGM's insurance financial strength rating of "AA+" (stable outlook). AGM can give no assurance as to any further ratings action that KBRA may take.

On November 7, 2019, S&P announced it had affirmed AGM's financial strength rating of "AA" (stable outlook). AGM can give no assurance as to any further ratings action that S&P may take.

On August 13, 2019, Moody's announced it had affirmed AGM's insurance financial strength rating of "A2" (stable outlook). AGM can give no assurance as to any further ratings action that Moody's may take.

For more information regarding AGM's financial strength ratings and the risks relating thereto, see AGL's Annual Report on Form 10-K for the fiscal year ended December 31, 2019.

Capitalization of AGM

At March 31, 2020:

- The policyholders' surplus of AGM was approximately \$2,573 million.
- The contingency reserves of AGM and its indirect subsidiary Municipal Assurance Corp. ("MAC") (as described below) were approximately \$997 million. Such amount includes 100% of AGM's contingency reserve and 60.7% of MAC's contingency reserve.
- The net unearned premium reserves and net deferred ceding commission income of AGM and its subsidiaries (as described below) were approximately \$1,997 million. Such amount includes (i) 100% of the net unearned premium reserve and deferred ceding commission income of AGM, (ii) the net unearned premium reserves and net deferred ceding commissions of AGM's wholly owned subsidiary Assured Guaranty (Europe) plc ("AGE"), and (iii) 60.7% of the net unearned premium reserve of MAC.

The policyholders' surplus of AGM and the contingency reserves, net unearned premium reserves and deferred ceding commission income of AGM and MAC were determined in accordance with statutory accounting principles. The net unearned premium reserves and net deferred ceding commissions of AGE were determined in accordance with accounting principles generally accepted in the United States of America.

Incorporation of Certain Documents by Reference

Portions of the following documents filed by AGL with the Securities and Exchange Commission (the “SEC”) that relate to AGM are incorporated by reference into this Official Statement and shall be deemed to be a part hereof:

- (i) the Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (filed by AGL with the SEC on February 28, 2020); and
- (ii) the Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2020 (filed by AGL with the SEC on May 8, 2020).

All consolidated financial statements of AGM and all other information relating to AGM included in, or as exhibits to, documents filed by AGL with the SEC pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, excluding Current Reports or portions thereof “furnished” under Item 2.02 or Item 7.01 of Form 8-K, after the filing of the last document referred to above and before the termination of the offering of the Bonds shall be deemed incorporated by reference into this Official Statement and to be a part hereof from the respective dates of filing such documents. Copies of materials incorporated by reference are available over the internet at the SEC’s website at <http://www.sec.gov>, at AGL’s website at <http://www.assuredguaranty.com>, or will be provided upon request to Assured Guaranty Municipal Corp.: 1633 Broadway, New York, New York 10019, Attention: Communications Department (telephone (212) 974-0100). Except for the information referred to above, no information available on or through AGL’s website shall be deemed to be part of or incorporated in this Official Statement.

Any information regarding AGM included herein under the caption “BOND INSURANCE – Assured Guaranty Municipal Corp.” or included in a document incorporated by reference herein (collectively, the “AGM Information”) shall be modified or superseded to the extent that any subsequently included AGM Information (either directly or through incorporation by reference) modifies or supersedes such previously included AGM Information. Any AGM Information so modified or superseded shall not constitute a part of this Official Statement, except as so modified or superseded.

Miscellaneous Matters

AGM makes no representation regarding the Bonds or the advisability of investing in the Bonds. In addition, AGM has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding AGM supplied by AGM and presented under the heading “BOND INSURANCE”.

OUTSTANDING AUTHORITY INDEBTEDNESS

The following table sets forth information with respect to outstanding Sewage Disposal System Revenue Bonds upon the issuance of the Series 2020 Bonds.

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Sewage Disposal System Revenue Bonds	Original Principal Amount	Outstanding as of June 16, 2020
Senior Lien Bonds		
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF2	\$ 46,000,000	\$ 8,445,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF3	\$ 31,030,000	\$ 1,950,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999-SRF4	\$ 40,655,000	\$ 2,550,000
Sewage Disposal System Revenue Bonds, Series 1999A (1)	\$ 33,510,118	\$ 11,335,000
Sewage Disposal System Senior Lien Revenue Bonds, Series 2003B	\$ 150,000,000	\$ 100,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2004A	\$ 101,435,000	\$ 26,130,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2006D	\$ 370,000,000	\$ 239,475,000
Sewage Disposal System Revenue & Revenue Refunding Senior Lien Bonds, Series 2012A	\$ 659,780,000	\$ 55,435,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014A	\$ 123,220,000	\$ 15,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014B	\$ 27,470,000	\$ 15,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C	\$ 446,170,000	\$ 446,170,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014D	\$ 95,165,000	\$ 18,620,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014E	\$ 143,880,000	\$ 88,900,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2016B	\$ 126,105,000	\$ 126,105,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2018A	\$ 81,595,000	\$ 81,595,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018B	\$ 131,690,000	\$ 131,690,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018C	\$ 44,180,000	\$ 44,180,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2020A	\$ 594,930,000	\$ 594,930,000
	\$ 3,246,815,118	\$ 1,877,640,000
Second Lien Bonds		
Sewage Disposal System Second Lien Revenue Bonds, Series 2001B	\$ 110,550,000	\$ 78,895,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2005A	\$ 273,355,000	\$ 100,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005B	\$ 40,215,000	\$ 17,115,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005C	\$ 63,160,000	\$ 100,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2006B	\$ 250,000,000	\$ 100,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2014F	\$ 76,715,000	\$ 70,640,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2015C	\$ 197,660,000	\$ 197,160,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2016C	\$ 295,190,000	\$ 295,190,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2020B	\$ 92,525,000	\$ 92,525,000
	\$ 1,399,370,000	\$ 751,825,000
SRF Junior Lien Bonds		
Sewage Disposal System Revenue Bonds, Series 2000-SRF1	\$ 44,197,995	\$ 7,647,995
Sewage Disposal System Revenue Bonds, Series 2000-SRF2	\$ 64,401,066	\$ 11,766,066
Sewage Disposal System Revenue Bonds, Series 2001-SRF1	\$ 82,200,000	\$ 24,545,000
Sewage Disposal System Revenue Bonds, Series 2001-SRF2	\$ 59,850,000	\$ 17,875,000
Sewage Disposal System Revenue Bonds, Series 2002-SRF1	\$ 18,985,000	\$ 3,480,000
Sewage Disposal System Revenue Bonds, Series 2002-SRF2	\$ 1,545,369	\$ 285,369
Sewage Disposal System Revenue Bonds, Series 2002-SRF3	\$ 31,549,466	\$ 8,679,466
Sewage Disposal System Revenue Bonds, Series 2003-SRF1	\$ 48,520,000	\$ 17,175,000
Sewage Disposal System Revenue Bonds, Series 2003-SRF2	\$ 25,055,370	\$ 7,430,370
Sewage Disposal System Revenue Bonds, Series 2004-SRF1	\$ 2,910,000	\$ 845,000
Sewage Disposal System Revenue Bonds, Series 2004-SRF2	\$ 18,353,459	\$ 5,318,459
Sewage Disposal System Revenue Bonds, Series 2004-SRF3	\$ 12,722,575	\$ 3,677,575
Sewage Disposal System Revenue Bonds, Series 2007-SRF1	\$ 167,540,598	\$ 90,525,598
Sewage Disposal System Revenue Bonds, Series 2009-SRF1	\$ 13,970,062	\$ 7,595,062
Sewage Disposal System Revenue Bonds, Series 2010-SRF1	\$ 4,214,763	\$ 2,530,763
Sewage Disposal System Revenue Bonds, Series 2012-SRF1	\$ 14,950,000	\$ 11,875,000
Sewage Disposal System Revenue Bonds, Series 2015A-SRF	\$ 79,500,000	\$ 66,580,000
Sewage Disposal System Revenue Bonds, Series 2015B-SRF	\$ 27,175,304	\$ 22,340,304
Sewage Disposal System Revenue Bonds, Series 2015D-SRF	\$ 15,321,478	\$ 12,356,478
Sewage Disposal System Revenue Bonds, Series 2016-SAW	\$ 10,000,000	\$ 9,610,000
Sewage Disposal System Revenue Bonds, Series 2016-SRF1 (2)	\$ 19,305,000	\$ 17,775,000
Sewage Disposal System Revenue Bonds, Series 2016-SRF2 (2)	\$ 51,310,000	\$ 49,300,000
Sewage Disposal System Revenue Bonds, Series 2017-SRF1 (2)	\$ 38,450,000	\$ 37,700,000
Sewage Disposal System Revenue Bonds, Series 2018-SRF1 (2)	\$ 17,510,000	\$ 17,510,000
Sewage Disposal System Revenue Bonds, Series 2020-SRF1 (2)	\$ 28,350,000	\$ 28,350,000
	\$ 897,887,505	\$ 482,773,505
Total Sewerage Disposal System Revenue Bonds	\$ 5,544,072,623	\$ 3,112,238,505

(1) Outstanding amount shown is the maturity value of Capital Appreciation Bonds.

(2) Outstanding amount shown for loans that have not been fully disbursed is based on full authorized amount minus principal repaid.

SOURCE: The Authority

DEBT SERVICE REQUIREMENTS

The following table sets forth the Debt Service Installment Requirements, as defined under the Master Bond Ordinance, for the outstanding Senior Lien Bonds, Second Lien Bonds and SRF Junior Lien Bonds, upon issuance of the Series 2020 Bonds.

Fiscal Year Ended June 30 ⁽¹⁾	Senior Lien Bonds						Second Lien Bonds						Outstanding SRF Junior Lien Debt Service ⁽²⁾	Total System Debt Service ⁽²⁾⁽³⁾
	Senior Lien Bonds, Series 2020A						Second Lien Bonds, Series 2020B							
	Outstanding Senior Lien Debt Service ⁽³⁾	Less: Refunded Debt Service	Principal	Interest	Total	Total Senior Lien Debt Service ⁽³⁾	Outstanding Second Lien Debt Service	Less: Refunded Debt Service	Principal	Interest	Total	Total Second Lien Debt Service		
2020 ⁽⁴⁾	147,533,762	-	-	-	-	147,533,762	45,878,850	-	-	-	-	45,878,850	53,478,399	246,891,011
2021	133,423,679	(29,283,863)	-	18,068,554	18,068,554	122,208,370	54,642,100	(4,339,250)	4,925,000	2,551,101	7,476,101	57,778,951	54,296,063	231,146,533
2022	145,133,743	(29,283,863)	-	17,345,812	17,345,812	133,195,693	48,104,250	(4,339,250)	5,750,000	2,378,038	8,128,038	51,893,038	54,319,157	235,619,100
2023	152,160,283	(29,293,863)	5,850,000	17,345,812	23,195,812	146,062,233	38,785,525	(4,339,250)	-	2,292,248	2,292,248	36,738,523	49,383,248	234,231,006
2024	148,483,309	(29,293,363)	7,660,000	17,257,886	24,917,886	144,107,833	51,434,700	(4,339,250)	-	2,292,248	2,292,248	49,387,698	47,746,851	243,289,384
2025	143,284,773	(29,292,863)	11,595,000	17,135,020	28,730,020	142,721,930	51,536,450	(4,339,250)	-	2,292,248	2,292,248	49,489,448	38,774,435	233,032,815
2026	157,639,023	(38,462,363)	8,750,000	16,943,239	25,693,239	144,869,899	54,672,350	(4,339,250)	-	2,292,248	2,292,248	52,625,348	31,011,067	230,553,316
2027	157,757,873	(31,120,438)	2,315,000	16,782,851	19,097,851	145,735,286	58,312,975	(4,339,250)	-	2,292,248	2,292,248	56,265,973	30,223,439	234,271,700
2028	157,584,245	(34,703,663)	9,625,000	16,739,260	26,364,260	149,244,842	57,802,775	(4,339,250)	-	2,292,248	2,292,248	55,755,773	30,210,992	237,258,609
2029	157,657,614	(29,907,413)	12,805,000	16,535,691	29,340,691	157,090,893	49,622,050	(4,339,250)	-	2,292,248	2,292,248	47,575,048	30,205,048	236,917,991
2030	162,498,357	(34,710,913)	3,305,000	16,258,463	19,563,463	147,350,907	61,247,050	(4,339,250)	-	2,292,248	2,292,248	59,200,048	22,589,142	231,187,099
2031	162,411,543	(41,775,413)	10,530,000	16,185,257	26,715,257	147,351,388	61,244,550	(4,339,250)	-	2,292,248	2,292,248	59,197,548	19,411,756	228,007,694
2032	162,324,076	(65,310,663)	48,370,000	15,941,487	64,311,487	161,324,901	47,270,800	(4,339,250)	-	2,292,248	2,292,248	45,223,798	19,212,195	227,807,895
2033	162,300,913	(25,399,663)	6,720,000	14,797,537	21,517,537	158,418,787	50,180,300	(4,339,250)	-	2,292,248	2,292,248	48,133,298	19,223,519	227,822,606
2034	76,807,913	(26,869,163)	8,570,000	14,635,249	23,205,249	73,143,999	141,362,050	(27,719,250)	17,475,000	2,292,248	19,767,248	133,410,048	19,226,051	233,732,100
2035	32,143,988	(26,761,488)	8,725,000	14,423,998	23,148,998	28,531,498	185,972,250	(42,445,250)	32,650,000	1,835,277	34,485,277	178,012,277	18,496,087	232,999,836
2036	32,021,888	(26,645,388)	8,895,000	14,204,565	23,099,565	28,476,065	186,033,750	(25,336,500)	16,400,000	981,480	17,381,480	178,078,730	14,985,619	229,495,434
2037	137,635,388	(132,256,388)	107,570,000	13,971,960	121,541,960	126,920,960	-	-	1,690,000	552,620	2,242,620	2,242,620	10,498,300	137,419,260
2038	137,632,538	(132,253,288)	110,860,000	10,684,621	121,544,621	126,923,871	-	-	1,745,000	491,678	2,236,678	2,236,678	10,194,231	137,118,102
2039	137,636,275	(132,254,275)	114,245,000	7,296,740	121,541,740	126,923,740	-	-	1,810,000	428,753	2,238,753	2,238,753	6,064,750	132,988,490
2040	40,175,750	(34,799,000)	20,280,000	3,805,412	24,085,412	29,462,162	-	-	1,875,000	363,485	2,238,485	2,238,485	2,804,300	32,266,462
2041	40,178,750	(34,795,250)	20,990,000	3,094,396	24,084,396	29,467,896	-	-	1,945,000	295,872	2,240,872	2,240,872	2,806,100	32,273,996
2042	40,169,750	(34,793,500)	21,725,000	2,358,486	24,083,486	29,459,736	-	-	2,015,000	225,736	2,240,736	2,240,736	2,808,075	32,267,811
2043	40,175,500	(34,795,250)	22,485,000	1,596,808	24,081,808	29,462,058	-	-	2,085,000	153,075	2,238,075	2,238,075	2,006,450	31,468,508
2044	39,961,250	(34,581,750)	23,060,000	808,484	23,868,484	29,247,984	-	-	2,160,000	77,890	2,237,890	2,237,890	434,775	29,682,759
2045	5,378,750	-	-	-	-	5,378,750	-	-	-	-	-	-	-	5,378,750
2046	5,377,500	-	-	-	-	5,377,500	-	-	-	-	-	-	-	5,377,500
2047	5,380,250	-	-	-	-	5,380,250	-	-	-	-	-	-	-	5,380,250
2048	5,381,250	-	-	-	-	5,381,250	-	-	-	-	-	-	-	5,381,250
	\$ 2,926,249,930	\$ (1,098,643,075)	\$ 594,930,000	\$ 304,217,587	\$ 899,147,587	\$ 2,726,754,441	\$ 1,244,102,775	\$ (151,911,250)	\$ 92,525,000	\$ 37,841,983	\$ 130,366,983	\$ 1,222,558,508	\$ 590,410,050	\$ 4,561,267,266

(1) Debt Service Installment Requirements calculated as defined in the Master Bond Ordinance. July 1 payments are included in the prior fiscal year.

(2) Outstanding SRF Junior Lien Bonds schedule assumes loans are currently fully drawn. In cases where SRF loans are not yet fully drawn, debt service will be lower.

(3) Interest on unhedged Senior Series 2006D (Tax-Exempt Floating Rate) calculated at 1.99285%.

(4) FY 2020 payments represent full fiscal year. FY 2020 Refunded Debt Service figures are adjusted for contributions from the debt service account related to the Refunded Bonds.

Source: The Authority

SERVICE AREA AND CUSTOMERS

The Authority provides wholesale sewage collection, treatment, and disposal services in a service area encompassing 944 square miles in three Michigan counties with an estimated population of nearly 2.8 million or approximately 28% of Michigan's population. The service area is a part of the Detroit-Warren-Dearborn Metropolitan Statistical Area (the "Detroit MSA"). See APPENDIX III – DETROIT MSA. Suburban customers comprise approximately 76% of the population served by the Authority, and the Retail Sewer Customers comprise the remainder served by the Authority. The Authority's customers include communities and districts served via wholesale service contracts and the City of Detroit retail customer class served via the terms of the Water and Sewer Services Agreement.

Wholesale Customers

The customers of the Regional Sewer System include 79 communities served through 18 wholesale sewer service contracts with municipal and other public entity customers, as well as the City, which is served by the Authority pursuant to the Water and Sewer Services Agreement. The Regional Sewer System receives wastewater from its wholesale customers at its interceptor sewer system, generally delivered at the boundaries of the City. The quantity of wastewater discharged by the wholesale customers into the Regional Sewer System is measured with a sewage meter or estimated on the basis of water consumption and other factors. In all cases, direct contract wholesale customers (first-tier) and their contracted lower-tiered customers are responsible for the construction and maintenance of their own internal sewerage systems for collecting the wastewater and delivering it to the Regional Sewer System.

The City is not a "wholesale" customer. The Detroit retail customer class is collectively the Authority's largest customer. DWSD owns and operates the Local Sewer System and serves as agent for the Authority for setting retail rates, billing, collecting and enforcing the collection of amounts due from the Detroit retail customer class. That relationship is further defined by the Water and Sewer Services Agreement, consistent with the provisions of the Lease and related agreements. The Authority may revoke or terminate its appointment of the City as agent for the Authority if the City fails to perform its duties, obligations or administrative functions in accordance with the Water and Sewer Services Agreement. See APPENDIX V – SUMMARY OF THE LEASE and APPENDIX VII – SUMMARY OF THE WATER AND SEWER SERVICES AGREEMENT.

Wholesale Contracts

Customers on 30-year Model Contract. The model sewer service contracts generally provide for (i) the receipt, transportation, treatment and disposal of wastewater generated within the wholesale customer's service area by the Authority at designated points of connection to the Authority's interceptors, at specified rates of flow and (ii) payment by the wholesale customer for all wastewater treated at reasonable charges established by the Authority. The wholesale customer is solely responsible for transmitting the wastewater from its retail customers to the Authority's interceptors, for local billing, collection and retail rate setting.

The model contracts have a 30-year initial term and automatically renew for an additional 10-year term unless a party to the contract provides written prior notice of intent to terminate at least 5 years prior to the end of the then-current contract term. In the event of an early termination by the wholesale customer, the model contracts provide that the wholesale customer is liable to GLWA for the payment of any capital costs incurred by GLWA related to the provision of services, unless the termination is for cause, in which case GLWA has cure rights.

The model contracts also provide that the Steering Committee (now called, "One Water Partnership") established to facilitate a cooperative working relationship between GLWA and its wholesale

customers, will remain in place for the contract term. In addition, the model contracts include other provisions required for the orderly operation of an integrated sewerage disposal system such as the following: (i) restrictions on sending flow from outside the limits of the particular municipality or other public entity without the consent of GLWA; (ii) measurement of sewage transmitted through meters; (iii) the metered flow of sewage as the basis for billing; (iv) prohibition against reducing flow without prior written approval of GLWA; (v) the creation of standards for construction of wastewater collection and transport facilities and GLWA approval of construction plans therefor to ensure a uniform standard throughout the area; (vi) GLWA notification of changes in annual charges; (vii) payment and late payment terms; (viii) delineation of ownership, operation and maintenance responsibilities between the regional system and the wholesale customer's retail system; and (ix) maximum allowable flow limits by the wholesale customer.

Customers not on Model Contract. Each of the seven wholesale customers not yet utilizing the model contract previously executed an agreement with the Department, assigned to the Authority under the Lease, for an initial term ranging from ten years to an indefinite duration. The agreements executed prior to 1963 without an indefinite duration have typically passed their initial term, and most of such agreements provide for automatic renewal terms or renewal terms upon the consent of the parties. As reflected on the following table entitled "Wholesale Sewage Treatment Contracts", certain wholesale agreements that require renewal upon the consent of the parties have not been formally renewed, but the parties to such contracts continue to perform in accordance with the terms of the contracts. The agreements have notice requirements for termination after the initial term of the contract, from one to three years for any reason and from sixty days to ninety days for cause. The agreements typically may also be terminated by mutual consent of the parties. Under the typical agreement, the Authority, subject to certain terms and conditions, is obligated to receive and provide treatment for the wastewater from the wholesale customers at designated points of connection. The wholesale customer is required to pay for treatment of all wastewater delivered to the Regional Sewer System at rates related to the cost incurred in providing the service. Negotiations with the remaining seven wholesale customers continue. Until such time as the model contracts are executed, the agreements currently in effect will govern the relationship between the Authority and these seven wholesale customers.

Wholesale Customer Information

Approximately 48% of the total Revenues under the Bond Ordinance for Fiscal Year 2019 were derived from suburban wholesale customers (including charges for industrial surcharges and industrial waste control services) and the balance from Retail Sewer Customers and miscellaneous other income sources. The following table lists the Authority's wholesale customers and their total billed revenues in Fiscal Year 2019.

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Wholesale Sewage Treatment Contracts

Wholesale Customers	Total Billed Revenue FY 2019 (1)	Contract Date	Term of Contract
Oakland Macomb Interceptor District	\$ 77,533,200	2009	30 Years
Wayne County- Rouge Valley	53,761,200	1961	(3) (6)
Oakland County- George W. Kuhn Drain	44,972,400	1962	(3) (6)
Oakland County- Evergreen Farmington Dist.	34,578,000	1958	(3)
Southeast Macomb Sanitary District	24,672,000	1961	(3)
Dearborn	19,372,800	2015	30 Years
Highland Park (2)	5,614,800	N/A (5)	(3)
Hamtramck	3,962,400	2014	30 Years
Grosse Pointe Farms	2,727,600	1941	(4)
Grosse Pointe Park	1,801,200	2014	30 Years
Melvindale	1,522,800	2014	30 Years
Farmington	1,143,600	2014	30 Years
Center Line	1,027,200	2014	30 Years
Grosse Pointe	889,200	2014	30 Years
Allen Park	847,200	2015	30 Years
Harper Woods	218,400	2014	30 Years
Redford Township	260,400	2014	30 Years
Wayne County # 3	49,200	1950	(3)

(1) Billed Revenue does not include surcharges to wholesale area industrial users for pollutant discharges in excess of the local ordinance limits or Industrial Waste Control charges.

(2) Account currently showing delinquent balance.

(3) Minimum term expired, automatic renewal may be canceled with one year's notice.

(4) Duration is indefinite with no initial term. Contracts with indefinite terms are generally terminable either by mutual consent or within a specified period after a notice of termination has been given.

(5) 1982 Amendment indicates that the parties are guided in their legal relationship by a Michigan Supreme Court decision from 1949.

(6) Contract indicates that the renewal is by mutual agreement of the parties. Although no formal written renewal is in place, the parties' course of conduct has been to recognize the continuing enforceability of the contract.

Service Charges to Customers

The Authority's service charges to wholesale customers and the Authority's allocated annual revenue requirement to Retail Sewer Customers under the Water and Sewer Services Agreement are reviewed and adjusted annually. Effective with Fiscal Year 2015, the wholesale service charge methodology was modified to consist entirely of fixed monthly charges and to stabilize relative customer cost responsibility for multiple year service charge periods. These modifications were implemented as part of a "Rate Simplification Initiative" effective with the Fiscal Year 2015 service charges and had the effect of stabilizing revenue levels. Since the implementation of the initiative, billed revenues have been equal to budgeted levels. See APPENDIX I – FEASIBILITY CONSULTANT'S REPORT – "Rate Simplification Initiative."

To the extent that there is bad debt expense among the wholesale customer class, it is charged to other suburban wholesale customers. The calculation includes both a true-up of actual experience through the previous fiscal year and an estimate for the current and upcoming fiscal year. For several years one

customer, City of Highland Park, generated bad debt expense for a portion of its service charges. These amounts are recovered by charges to other suburban wholesale sewer customers.

See “AUTHORITY FINANCIAL OPERATIONS—Projected Financial Plan for Fiscal Years 2020 through 2025” and “- 4% Revenue Requirement Parameter.”

DWSD and Retail Customers

The Department is established under the City Charter and is governed by a seven-member BOWC, which meets monthly. Pursuant to the Leases and the Water and Sewer Services Agreement, the Department is responsible for (i) operating and maintaining its own local water and sewer system infrastructure within the City under the direction of the BOWC and (ii) acting as the billing and collection agent for the Authority.

Pursuant to the Leases, the Authority (i) has the exclusive right to establish rates for water and sewer service it provides to customers of the Systems including Retail Customers, (ii) may delegate its rights to establish rates for those services to one or more agents, as it deems necessary or convenient, and (iii) directly or through an agent, has the exclusive right to charge, bill to and collect from such customers amounts for such services, including the retail rates and charges. Under the Water and Sewer Services Agreement, the Authority delegated to the City its rights to set and collect rates with respect to services provided by the Authority to Retail Customers of the City. The Authority may terminate its appointment of the City as agent for the Authority if the City fails to perform its duties, obligations or administrative functions in accordance with the Water and Sewer Services Agreement.

The seven members of the BOWC are appointed by and serve at the pleasure of the Mayor of the City. The Charter of the City (i) prohibits any member of the BOWC from being a City official or employee, or a principal or employee of a contractor of the City, (ii) requires that a member of the BOWC be a citizen of the United States and a resident of the State of Michigan, and (iii) requires no fewer than four members be residents of the City. The members of the BOWC serve four-year terms which are staggered so that not more than two members' terms expire each year.

DWSD is a retail water and sewer utility serving more than 225,000 Detroit residential and commercial customers. DWSD's water network consists of more than 2,700 miles of distribution mains and nearly 3,000 miles of sewer collection piping. The Department provides local water distribution services to Retail Water Customers and local sewer services to Retail Sewer Customers. Retail service includes all water and sewer service customers, including residential, commercial, and industrial. The Department also provides water supply services and sewer services to certain retail customers outside the City on a very limited basis. Pursuant to the City Charter, the Water and Sewer Services Agreement and an Order dated December 15, 2015 Order (the “December 15, 2015 Order”) of the Federal District Court in proceedings related to non-compliance with the Clean Water Act, the BOWC approves Department retail rate schedules for these customers. These customers are billed on a monthly basis and water, sewerage and drainage charges are included on the same bill. The Department also bills various governmental agencies, including the City, for service. Rate changes, once established, generally become effective the following July 1; however, certain drainage charges are being phased in over several years, commencing October 1, 2016. For information regarding current billing and collection activities of the Department, see “SERVICE AREA AND CUSTOMERS - Collections and Delinquencies – *Retail Customers*.” The Department acts as the agent of the Authority for purposes of billing, collecting and enforcing payment of bills. The Department also establishes retail rates to produce revenues sufficient to pay the Authority revenue requirement and the costs of operating, maintaining and improving the Local Water System and the Local Sewer System.

Collections and Delinquencies

Wholesale Customers

Wholesale customers are billed monthly. The late payment charge is 1.5% per month for each month that a bill remains unpaid. Payment of charges to the Authority is not contractually dependent upon collections by the wholesale customers from their respective retail customers. Wholesale customers are responsible for their own retail billing systems. In the event of a wholesale customer delinquency, the Authority has options available to it under the relevant contractual agreement, including the right to early termination costs and to obtain a judgment against the wholesale customer. Except as noted below, delinquencies are limited and often cured in one subsequent billing cycle.

As of February 28, 2020, the City of Highland Park was the only wholesale customer with a past due balance. Of the total balance past due of \$34.7 million, \$33.0 million is for sewer service charges and \$1.7 is for Industrial Waste Control (“IWC”) charges. Collection efforts for that account have resulted in legal action as described under “ENVIRONMENTAL MATTERS AND LITIGATION – GLWA Litigation.”

Retail Customers

As of June 30, 2019, active retail customer accounts receivable for water and sewer service combined were approximately \$158.8 million, representing \$13.7 million from customers on active payment plans and \$145.1 million for regular active customers. Of that amount, \$119.1 million was 60 days past due, representing \$11.5 million for customers on active payment plans and \$107.6 million for regular active customers. Total 60 day and greater past due accounts were 35.1% of the approximately 300,000 total active retail customer accounts, or 31.2% after factoring out those customers on active payment plans.

The Department operates a computerized billing system which accounts for a total of approximately 576,000 retail customer accounts, of which approximately 300,000 are active accounts. Inactive accounts remain in the billing system while the Department pursues collection. Retail customer account categories include residential, commercial, and industrial. Based on the approved Fiscal Year 2020 retail rates, the typical monthly bill is approximately \$75 for combined water and sewer service charges based on 600 cubic feet of water consumed per month and a 5/8” meter. All Retail Customers are billed monthly and are allowed 21 days to pay, after which a one-time 5% late payment charge is applied.

In accordance with State law, the December 15, 2015 Order and the Water and Sewer Services Agreement, the City, as the agent of the Authority or the Authority if such agency is terminated, has a right to discontinue the supply of water to any premises for non-payment of water or sewer bills when due. It is the Department’s policy that Retail Customers may have their service interrupted for non-payment if the account is more than thirty days in arrears. Residential customers are notified of payment plan options and financial assistance programs if they demonstrate that their account is delinquent due to financial hardship. Residential customers may be subject to constitutional safeguards regarding due process, including notice and hearing requirements in the event of discontinuation of services.

The Department’s collection efforts in the past, including shut-off for non-payment, had not kept pace with an increasing level of delinquency since 2007, resulting in a significant number of accounts with past due balances. As of June 30, 2019, the average active residential account delinquency, which includes water and sewer charges, was \$245, based on approximately 100,000 of 290,000 accounts with past due balances of 60 days or more. As of the same date, active commercial accounts, the next largest retail customer category, represented approximately 12,300 of 28,200 accounts with a past due balance of 60 days or more with an average past due amount of \$875, which includes water and sewer charges. The

Department started a commercial customer personal contact program in 2015, which has improved collections. However, for accounts that continue in non-payment status, shut-offs will continue.

The shut-off program activity has historically been reduced from December through March of each year. The shut-off program has generated active engagement with customers whose service is preserved by participation in a payment plan program, as well as payment assistance programs for those who meet certain eligibility criteria. In 2014, the City announced a ten-point plan to encourage Retail Customers to enroll in payment plans and apply to expanded payment assistance programs from new non-profit organization partnerships. Additional funding commitments for the payment assistance programs have been provided by external sources, including the WRAP program, which began in Fiscal Year 2016. The City also expanded customer service hours. The Department has been able to improve collection efforts with increased contacts with delinquent customers before shut-offs occur and earlier intervention with customers on payment plans when they become delinquent. In Fiscal Year 2019, the number of service interruptions totaled approximately 20,000, and the number of payment plans increased from 10,700 to 13,500.

DWSD's low-income customers also may seek assistance from the Authority's WRAP Fund, established by GLWA under the Bond Ordinance to assist eligible residential customers across the entire Authority service area. See "SERVICE AREA AND CUSTOMERS - Water Residential Assistance Program." An additional barrier to active customer engagement has been the absence of customer names associated with residential retail accounts. Presently, most residential retail customer accounts are addressed to "Resident," limiting the availability of other traditional collection efforts. The Department has recently initiated a program to transfer the focus from a parcel-based billing system to an individual-based billing system to leverage current technology and improve collection efforts.

In the event that an account remains delinquent for more than six months, the Municipal Water Lien Act, MCL 123.161 et seq., provides that the charges for water and sewage service furnished to premises may become a lien on such premises when the service is provided, and the lien may be placed on the property tax roll. The lien may then be enforced in the same manner as the collection of property taxes and enforcement of a lien for property taxes (assuming proper statutory notice to the party responsible for the payment of the charges). The Department historically has transmitted delinquent accounts to the City Treasurer who places the delinquent amount on the winter tax bill. If the delinquent amounts are not collected by the City Treasurer by March 1 each year, the City transfers unpaid real property tax bills to Wayne County for collection in accordance with State law. The City receives payment for such taxes from Wayne County's delinquent tax revolving fund as of March 1 each year, which is funded by the issuance of Delinquent Taxes Anticipation Notes. If the delinquent real property taxes remain uncollected after three years, the County charges the respective amount of such taxes back to the City.

Given the importance of washing of hands as an important defense to the COVID-19 virus, the Department, the City of Detroit's Mayor and the Governor of Michigan recently announced a Coronavirus Water Restart Plan. Under the jointly-developed plan, for the first 30 days, the State of Michigan will cover DWSD customers' costs to reconnect water service for Detroiters who are currently experiencing or at risk of experiencing a water service interruption due to non-payment. After 30 days, Detroiters who are at risk of a water service interruption will be able to restore or keep their water service by paying \$25 per month until the COVID-19 outbreak passes. The GLWA Board has approved an increase in the annual funding level for the WRAP program for the City from Local System Revenues, as well as expansion of the program's income eligibility criteria as described below under "Water Residential Assistance Program."

Prior to the Effective Date, the City, acting through the BOWC, and the Authority each adopted ordinances that authorize the Authority to take all such actions necessary to charge and collect rates and charges for water and sewer services as described in the Leases. Such rates and charges may be a lien on the premises for which the services have been provided. Amounts delinquent for six (6) months or more

may be certified annually to the City's Board of Assessors to be entered upon the next tax roll against the premises to which the services have been rendered. Such lien may be enforced by the City on behalf of the Authority or by the Authority directly in the manner prescribed in the City Charter or by other applicable law for the enforcement of tax liens.

Water Residential Assistance Program

The Water Residential Assistance Program or "WRAP" is the first program of its kind in Michigan and one of only a few models of sustainable assistance plans in the country, providing assistance to qualifying low-income customers in the GLWA's service area. For Fiscal Year 2020 the funding level is budgeted at \$4.9 million combined for water and sewer services. Since its start on March 1, 2016, WRAP has committed over \$14.2 million for monthly bill payment and arrearage assistance to almost 19,900 participants as of October 31, 2019. Additionally, WRAP has provided over \$1.5 million for in-home water audits, conservation measures and minor plumbing repairs.

The WRAP is available to all qualified residents who receive water and/or sewer service from GLWA and who live in a municipality that has opted into WRAP. Eligible residential customers with a past due bill and/or who are in active shut off can receive assistance with paying down arrears and receive \$25 toward monthly bill payment assistance annually up to \$1,000. High volume water users can receive a one-time home audit and home water conservation services up to an average of \$1,500 per home. Eligible seniors and disabled persons can obtain a \$25 bill credit, without an expiration date. Maximum annual assistance per household is \$2,000. To participate in WRAP an applicant must have household gross incomes at or below 200% of the federal poverty income thresholds. Clients with water usage at or above 120% of the average residential usage are eligible to participate in a water audit and install water conservation measures. WRAP participants are also encouraged to participate in both financial coaching and water conservation workshops as well as other support services.

AUTHORITY FINANCIAL OPERATIONS

Financial Statements

The financial statements of the GLWA Sewage Disposal Fund for the Fiscal Year ended June 30, 2019 have been audited by Baker Tilley Virchow Krause, LLC and are included in Appendix II of this Official Statement.

Summary of Historical Debt Service Coverage

The following table summarizes the historical reported financial results for the Sewer System for Fiscal Years 2017, 2018 and 2019, the first three full Fiscal Years of GLWA's existence. This schedule depicts results based on a cash receipts and disbursement basis, which aligns with the flow of funds concept and the definition of Net Revenues set forth in the Master Bond Ordinance. The Authority tracks actual cash receipts into the Trust Estate, and disbursements to the various funds maintained both within and outside the Trust Estate. This table summarizes calculations of debt service coverage by various liens and the use of receipts not used to fund operating expenses or debt service.

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**Summary of Historical Sewer System Receipts and Disbursements
For Fiscal Years 2017-2019 (\$)**

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Master Bond Ordinance (Cash) Basis			
Receipts			
1 Wholesale System Receipts	281,528,551	294,503,834	281,485,522
2 Wholesale System Receipts - Detroit Customers	187,304,100	178,969,200	181,159,300
3 Wholesale System Receipts from Charges	468,832,651	473,473,034	462,644,822
4 Investment Earnings - Regional System	1,384,225	4,022,582	9,592,270
5 Regional System Receipts	470,216,876	477,495,616	472,237,092
6 Local Retail System Receipts (a)	43,553,820	60,314,828	82,349,510
7 Total Receipts	513,770,696	537,810,444	554,586,602
8 Transfers to O&M Funds (b)	228,201,094	246,812,304	242,346,992
9 Net Revenues	285,569,602	290,998,140	312,239,610
<u>Debt Service Requirements</u>			
10 Senior Lien Bonds	140,854,000	141,718,836	145,795,507
11 Senior and Second Lien Bonds	188,772,600	185,708,936	189,718,107
12 All Bonds, Including SRF Junior Lien	234,554,800	232,280,832	239,172,263
13 Revenues Remaining After Debt Service	51,014,802	58,717,308	73,067,347
14 Transfers to Pension Obligation Payment Fund	14,534,238	15,185,399	14,687,492
15 Transfers to WRAP Fund	2,654,400	2,898,504	2,870,992
16 Lease Payment to Local I&E Account	27,500,000	18,333,336	23,085,004
17 Net Available for Other Purposes	6,326,164	22,300,069	32,423,859
<u>Debt Service Coverage (c)</u>			
18 Senior Lien Bonds	2.03	2.05	2.14
19 Senior and Second Lien Bonds	1.51	1.57	1.65
20 All Bonds, Including SRF Junior Lien	1.22	1.25	1.31
<hr/>			
(a) Net of wholesale portion reported on Line 2			
(b) <u>Transfers to O&M Funds</u>			
21 Net Transfers to GLWA O&M Account	172,965,094	172,614,312	171,899,072
22 Transfers to DWSD O&M Account	41,535,600	60,517,992	56,767,920
23 Subtotal O&M Transfers	214,500,694	233,132,304	228,666,992
24 Transfers to Pension Obligation O&M Fund	13,700,400	13,680,000	13,680,000
25 Total O&M for Net Revenues	228,201,094	246,812,304	242,346,992

(c) Computed consistent with Rate Covenant basis for rate determination purposes. Not applicable for purposes of Additional Bonds Test calculations.

SOURCE: GLWA

Fiscal Years 2017-2019 Operations

The following information summarizes the financial operations of the Sewer System in Fiscal Years 2017 through 2019.

Receipts

As indicated in the above table, Sewer System receipts from wholesale service charges have been steady since GLWA's inception, reflecting stability in service charges. Receipts during 2017 and 2019 were effectively equivalent. Receipts during 2018 were higher than both 2017 and 2018. All wholesale service charge revenues are related to fixed charges and are not impacted by any changes in water sales or contributed wastewater volumes. See "SERVICE AREA AND CUSTOMERS – Wholesale Customers" and APPENDIX I – FEASIBILITY CONSULTANT'S REPORT – "Rate Simplification Initiative."

The reported total receipts from customers in Detroit were approximately \$32.7 million or 14% higher in 2019 than in 2017. This increase is a result of rate increases and the implementation of new stormwater drainage rates. Miscellaneous and non-operating receipts have grown steadily. Investment earnings reported to the Trust Estate were approximately \$8.2 million higher in 2019 than in 2017.

Total receipts to the Trust Estate during 2019 were approximately \$40.8 million or 7.9% higher in 2019 than in 2017.

Operation and Maintenance Expenses

Operating expenses in the above table reflect the actual cash transfers outside of the Trust Estate to the Regional System and Local System Operation and Maintenance Accounts, irrespective of actual expenses from those accounts and irrespective of operating and maintenance expenses reported on an accrual basis. These transfers are made in equal monthly amounts throughout the year, subject to periodic budget modifications and adjustments. In general, the reported annual amounts are equal to the budgeted operation and maintenance expense, adjusted to reflect net figures after consideration of rebalancing cash management strategies implemented throughout the year.

The reported Regional System operation and maintenance expenses have been below budgeted levels for each of the Fiscal Years 2017 through 2019. Actual expenses compared to budget were approximately 86% in 2017, 92% in 2018, and 91% in 2019. The growth in these expense levels from 2017 to 2019 reflects the maturation of the GLWA planned staffing levels. The growth in the cash transfers to the Local System Operation and Maintenance Account also reflects a ramp up in DWSD operations. The 2019 figure reflects a budget amendment to reduce the original expected expense to match revised estimates.

Operation and maintenance expenses in the above table also include the monthly contributions to the Pension Obligation Subaccounts of the Operation and Maintenance Fund. These amounts reflect the portion of the pension obligation that were deemed to be treated as operating expenses by the Lease. Total disbursements to the Operation and Maintenance Funds grew by approximately \$14.1 million or 6.2% from 2017 to 2019. The increase in net operating disbursements from 2017 to 2019 is significantly less than the growth in receipts, resulting in a \$26.7 million or a 9.3% increase in Net Revenues.

Debt Service Requirements

Debt service requirements during this period have been fairly stable and were approximately \$4.6 million or 2.0% higher for 2019 than for 2017. Almost all of this increase is related to SRF Junior Lien Bonds. The Authority continues to be a regular participant in the State Clean Water Revolving Fund program, and has made draws on several loans during this period. The debt service for the Senior and Second Lien Bonds reflects an increase in original amortization schedules from existing bonds, offset by refinancing savings resulting from the refinancing transaction in 2018. While some Second Lien debt service was converted to Senior Lien via that transaction, the combined total debt service on these bonds

for Fiscal Year 2019 was less than \$1 million higher than for Fiscal Year 2017, despite issuance of new money bonds for the Local System.

Other Bond Ordinance Requirements

Lines 13 through 16 of the table present revenue requirements identified in the Bond Ordinance related to transfers to other funds within the Trust Estate that are subordinate to debt service. These include the non-operating portion of the pension obligation, the deposits to the WRAP Fund, and the annual Lease Payment. The Lease Payment amounts in these tables reflect the amounts transferred to the Local System Improvement and Extension Account. For Fiscal Years 2018 and 2019 Detroit opted to apply a portion of the annual \$27.5 million Lease Payment to fund its allocated share of debt service, rather than transfer the entire amount to the Local System Improvement and Extension Account.

The tables indicate amounts “available for other purposes” which are effectively available to transfer to the Regional System Improvement and Extension Account or to be maintained in the Regional System Operation and Maintenance Account as working capital.

Debt Service Coverage

Reported debt service coverage ratios are relatively stable throughout this period at all liens, with a moderate increase in 2019.

Liquidity

Sewer System cash balances have increased in recent years due to improving financial performance. The following table details unrestricted cash and equivalents, annual operation and maintenance expense, and resulting days cash for Fiscal Year 2017 through Fiscal Year 2019.

Sewer System Days Cash

Fiscal Year	Cash & Equivalents ^(a)	Operation & Maintenance Expenses ^(a)	Days Cash ^(b)
2017	205.2	151.3	495
2018	208.6	176.4	432
2019	236.1	174.0	495

(a) \$ millions – as reported in audited GLWA financial statements.

(b) Days Cash = Cash & Equivalents / (O&M / 365)

Fiscal Year 2021 and 2022 Biennial Budget

The GLWA Board approved the Fiscal Year 2021 and 2022 Biennial Budget on March 11, 2020. The biennial budget establishes a formal authorization for Fiscal Year 2021, including an approved schedule of service charges to support the budget, and an initial estimate for Fiscal Year 2022. The budget includes several depictions of the overall financial plans, including a schedule that reflects “Sources of Revenues and Use of Revenue Requirements – Flow of Funds Basis per Bond Ordinance.” That consolidated schedule includes elements related to the wholesale service requirements of the Authority, as well as the retail service requirements of DWSD, and recognizes that all receipts from both organizations flow through the Bond Ordinance flow of funds.

The Fiscal Year 2021 and 2022 Biennial Budget contains detailed exhibits regarding preliminary estimated financial performance for Fiscal Year 2020 based on a review of actual activity during the first six months of the Fiscal Year. That estimate contains minor modifications from the formally adopted Fiscal Year 2020 budget, related to the updated CIP. Debt service figures have been reduced to reflect actual draws on SRF loans and recognize a deferral of a revenue bond sale. A revised estimate for investment income has been developed to reflect anticipated lower interest rates.

The approved Fiscal Year 2021 consolidated budget contains expenses or revenue requirements totaling \$486.8 million and a 1.3% increase in the budget for the Regional Sewer System over the Fiscal Year 2020 budget. The sewer service charges are designed to produce total revenues in the same amount. The Fiscal Year 2021 service charges to suburban wholesale customers include recovery of two separate amounts related to bad debt expense associated with Highland Park which offset each other. Highland Park's payment performance improved in recent years, with payments representing 73% and 93% of amounts billed during 2018 and 2019, respectively. The budget reflects approximately \$1.3 million related to projected bad debt expense (assuming 77% recovery from Highland Park) during Fiscal Year 2021 and a credit amount of \$1.3 million related to bad debt expense true-up adjustments for Fiscal Years 2018 and 2019. See APPENDIX I – FEASIBILITY CONSULTANT'S REPORT – "Rate Simplification Initiative."

Subsequent to the approval of the Fiscal Year 2021 service charges, the Authority was impacted by the global health pandemic related to the outbreak of COVID-19. On April 22, 2020, the GLWA Board approved a delay in the effective date of the approved Fiscal Year 2021 charges from July 1, 2020 to October 1, 2020 to provide budget relief to Member Partner communities. The Fiscal Year 2021 budget impact of this delay is estimated at \$2.6 million for the Sewer Fund. See "COVID-19 IMPACT, RESPONSE AND RISK FACTORS."

Projected Financial Plan for Fiscal Years 2020 through 2025

The projected revenues of the Sewer System shown in the table titled "Summary of Projected Revenues and Additional Revenue Requirements For Fiscal Years 2020-2025" below are included and are described in the Feasibility Report (the "Feasibility Report") prepared by The Foster Group, LLC (the "Feasibility Consultant"). The Feasibility Report also contains projections for Fiscal Years 2026 through 2030. The Feasibility Report also contains projections in a format that simulates the reported "Statement of Changes in Net Position" in the Authority's annual audited financial statements. See APPENDIX I — FEASIBILITY CONSULTANT'S REPORT.

The projections set forth in the following table are intended as "forward-looking statements." The Authority cautions that these projections may and often do differ materially from actual results. Some of the factors that could cause actual results to differ materially from those projected are the Authority's ability to execute the CIP as scheduled and within budget, regional climate and weather conditions, and adverse legislative, regulatory or legal decisions (including environmental laws and regulations) affecting the Authority's ability to manage the Sewer System. See "THE MASTER PLAN AND THE CAPITAL IMPROVEMENT PLAN."

As noted in the Feasibility Report, the projections summarized in the following table follow a "modified cash" approach of evaluating revenues and revenue requirements. In past years, at times significant variances between "modified cash" representations and actual cash flows for certain periods could occur, depending on seasonal patterns of billed revenues and cash receipts.

The projections in the following table reflect the modifications to the Fiscal Year 2020 estimated results and the Fiscal Year 2021 budget developed as a result of the Authority's initial reactions to the COVID-19 pandemic. The Fiscal Year 2020 estimate reflects the Authority's identification of available

operating expense reductions to offset lower estimated investment earnings than those included in the Fiscal Year 2020 Budget. The Fiscal Year 2021 projections recognize the negative revenue variance resulting from the deferred implementation of the Fiscal Year 2021 service charges, and the commitment to amend the approved operating expense budget in the first quarter of the fiscal year to balance the budget.

It is unknown how extensive the spread of COVID-19 will be in the State, or how long the restrictions will remain in place. There can be no assurances that the spread of COVID-19 and the implementation of restrictions on a local, state and national level will not materially impact the local, state and national economies or the ability of the Authority's customers to make timely payments to the Authority for sewage disposal services and accordingly, materially adversely affect an investment in the Series 2020 Bonds. The Authority is unable to quantify such risk at this time. See "COVID-19 IMPACT, RESPONSE AND RISK FACTORS."

Summary of Projected Revenues and Revenue Requirements (\$) For Fiscal Years 2020-2025

	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Revenue						
Regional System Wholesale Service Revenue (a)	471,874,500	478,533,000	493,887,200	508,954,000	524,284,700	540,195,300
Local System Retail Service Revenue - Detroit (b)	<u>91,970,000</u>	<u>101,201,300</u>	<u>111,413,300</u>	<u>110,080,400</u>	<u>108,753,000</u>	<u>113,644,900</u>
Total Projected Revenue from Sewer Charges	563,844,500	579,734,300	605,300,500	619,034,400	633,037,700	653,840,200
Miscellaneous and Non-Operating Revenue	<u>13,342,700</u>	<u>11,223,900</u>	<u>10,394,900</u>	<u>10,289,000</u>	<u>10,368,000</u>	<u>10,329,300</u>
Total Projected Revenue	577,187,200	590,958,200	615,695,400	629,323,400	643,405,700	664,169,500
Revenue Requirements						
Operation and Maintenance Expense (c)	261,617,500	265,925,800	272,372,100	279,580,800	272,562,700	278,384,500
Projected Net Revenues	315,569,700	325,032,400	343,323,300	349,742,600	370,843,000	385,785,000
Senior Lien Debt Service	147,533,800	122,208,400	133,195,700	149,249,700	153,047,500	153,574,100
Second Lien Debt Service	45,878,900	57,779,000	51,893,000	36,738,500	49,387,700	49,489,400
CWRF Junior Lien Debt Service	<u>52,927,800</u>	<u>54,916,200</u>	<u>56,102,500</u>	<u>53,494,100</u>	<u>51,324,900</u>	<u>42,059,700</u>
Total Debt Service (d)	246,340,500	234,903,600	241,191,200	239,482,300	253,760,100	245,123,200
Projected Senior Lien Debt Service Coverage	2.14	2.66	2.58	2.34	2.42	2.51
Projected Second Lien Debt Service Coverage	1.63	1.81	1.85	1.88	1.83	1.90
Projected Total Debt Service Coverage	1.28	1.38	1.42	1.46	1.46	1.57
Balance for Other Purposes	69,229,200	90,128,800	102,132,100	110,260,300	117,082,900	140,661,800
Projected Application of Balance						
Transfer to Pension Obligation Payment Fund	14,687,500	14,687,400	14,687,400	14,687,500	8,189,500	10,401,100
Transfer to WRAP Fund	3,028,900	3,762,000	3,974,400	4,041,200	4,110,700	4,251,500
Lease Payment - Transfer to Detroit Local I&E	16,083,100	25,308,200	27,500,000	27,500,000	27,500,000	27,500,000
Maintained as Operating Reserves	0	0	1,310,700	1,673,600	1,469,100	1,166,500
Available for Capital Improvements	35,429,700	46,371,200	54,659,600	62,358,000	75,813,600	97,342,700

(a) Assumes increases in wholesale charges to meet annual revenue requirement increases of 3.0%.

(b) Assumes annual growth rate of 0.25% and annual rate increases of 3.0%.

(c) Includes operating portion of Pension Obligation.

(d) Assumes bond sales in subsequent years at an annual interest rate of 4.25%.

Although the Authority may issue Additional Sewer System Bonds as Senior Lien or Second Lien Bonds, for purposes of this table future debt is assumed to be issued as Senior Lien Bonds.

SOURCE: THE FOSTER GROUP, LLC.

Future Issuance of Additional Bonds

GLWA does not expect to issue Additional Senior Lien or Second Lien Bonds to finance additional expenditures identified in the CIP until Fiscal Year 2023. See "THE MASTER PLAN AND THE CAPITAL IMPROVEMENT PLAN." GLWA intends to adjust sewer service charges, as appropriate and consistent with the Bond Ordinance. To the extent such funding is not approved or secured or sufficient funds are not available in the Authority Regional Improvement and Extension Account of the Improvement and Extension Fund, additional debt issuance may be required during this projection period.

Debt Management Policy

The Authority's Debt Management Policy was adopted by the GLWA Board on December 9, 2015. The goal of the policy is to ensure that financings undertaken by GLWA satisfy clear objective standards which allow it to protect its financial resources in order to meet its long-term capital needs and comply with the provisions of the Bond Ordinance. The policy provides guidance on the types and structures of debt instruments and the methods of sales to be considered. The policy also specifies the selection process of underwriters and other professionals for debt transactions. In addition to addressing the sale of debt, the policy also demonstrates the Authority's goal to provide debt management activities such as timely continuing disclosure filings and rating agency communications that will help the Authority to maintain and improve its credit ratings to reduce the future cost of capital.

Investment Policy

The Authority's investment policy was adopted on October 22, 2015 and amended on August 22, 2018. Funds in excess of current Regional Sewer System requirements are invested by the Authority in accordance with Michigan law. The Authority may invest in direct obligations of the United States, obligations of an agency or instrumentality of the United States, repurchase agreements, mutual funds that invest solely in such government obligations and repurchase agreements, certain grades of commercial paper, bankers acceptances of United States banks, and certificates of deposit, savings accounts or depository receipts of savings and loan associations or member banks of the Federal Deposit Insurance Corporation. This policy was amended recently to add Certificates of Deposit Account Registry Service as an eligible investment.

The investment policy purpose is to endeavor to accumulate a pool of assets sufficient to build capital for future use with the corresponding obligations to support near-term and long-term needs of the Authority. The investment policy attempts to maintain and protect investment principal while striving to maximize total return on the portfolio consistent with risk limitations, pursuant to guidelines set forth in Act 20, Public Acts of Michigan, 1943, as amended. The Authority has not experienced material investment-related losses in any Authority-managed funds. As of June 30, 2019, the Sewer Fund held cash and investments with a total market value of \$501,934,887, and the longest investment had a maturity date of July 7, 2021.

4% Revenue Requirement Parameter

In accordance with the Lease, commencing with the Fiscal Year beginning July 1, 2016, the Authority is required to adopt a two-year budget for the Regional Sewer System for the following two Fiscal Years that sets forth budgeted Revenues and expenses for each such Fiscal Year. The budgeted expenses for each Fiscal Year shall equal the sum of the projected expenses and revenue requirements for the Regional Sewer System for such Fiscal Year (the "Authority Revenue Requirement"). The Authority Revenue Requirement includes operations and maintenance costs, annual costs of financing capital improvements, debt service, replenishment of debt service reserves, an allotment for revenue-financed capital reserves, Pension Obligation commitments, WRAP funding, and the lease payment to the City for use of the Leased Sewer Facilities and such additional amounts as may be necessary to satisfy the Rate Covenant.

The Lease provides that the Regional Sewer System is assumed to experience annual increases in the Authority Revenue Requirement of not more than 4% through the Fiscal Year ending June 30, 2025; provided however, this limitation shall not be applicable if the Authority Revenue Requirement must increase beyond the 4% assumption in order to satisfy the Rate Covenant or to pay the cost of improvements to the Leased Sewer Facilities that are required to be made by Applicable Laws. The changes in the budgeted Authority Revenue Requirement for the Regional Sewer System is shown in the table below. See "AUTHORITY FINANCIAL OPERATIONS - Fiscal Year 2020 and 2021 Biennial Budget."

Board Approved Changes in the Authority's Sewer System Revenue Requirement

Fiscal Year	Percentage Change
2017	4.0%
2018	0.3%
2019	1.0%
2020	2.2%
2021 ^(a)	1.3%

(a) As approved by the GLWA Board. Does not reflect impacts of deferred implementation of the FY 2021 charges.

Lease Payment

Part of the consideration for the Lease is an allocation of \$27,500,000 per year (the "Lease Payment"), which is funded from a portion of the common-to-all revenue requirements for the Regional Sewer System. The Lease Payment will be held by GLWA under the Bond Ordinance and will flow through the flow of funds under the Bond Ordinance, together with other funding requirements, after payment of Operations and Maintenance Expenses. The Lease Payment will not be treated as an Operation and Maintenance Expense and shall be applied solely, at the City's direction and discretion, to the cost of improvements to the Local Sewer System (payable after debt service and pension liability payments in the flow of funds), or to the payment of debt service on Bonds associated with such improvements or the City's share of debt service on Bonds associated with common-to-all improvements.

2018 Memorandum of Understanding

On June 27, 2018, GLWA entered into a 2018 Memorandum of Understanding with DWSD (the "2018 MOU") to provide for clarification and adjustments contemplated by the Leases, the Water and Sewer Services Agreement and the Bond Ordinances for the Sewer System and the Water System and to address the liquidation of certain liabilities set forth in the Leases. Pursuant to the 2018 MOU, if there is a cumulative negative variance of more than two percent (2%) of the total budget for either the Local Water System or the Local Sewer System (a "Budget Shortfall") from its budget adopted pursuant to the Water and Sewer Services Agreement based on DWSD's quarterly reports to GLWA, DWSD, as the agent of GLWA, shall convene a meeting of the Reconciliation Committee and develop a plan to cure the Budget Shortfall. If the Budget Shortfall is not cured within the same Fiscal Year, DWSD shall reallocate available funds in the related DWSD Improvement and Extension Account of the Improvement and Extension Fund or reallocate any unencumbered Lease Payment to eligible debt service to satisfy the Budget Shortfall. Budget Shortfalls not cured by the end of the Fiscal Year following the year in which they arise shall be repaid in full, in installments, over a period not to exceed the next three fiscal years, plus a surcharge as set forth in the 2018 MOU, as part of the Revenue Requirement payable by DWSD. See APPENDIX IX-SUMMARY OF THE 2018 MEMORANDUM OF UNDERSTANDING.

Legacy Retirement System Obligations of the Authority

Under the Plan of Adjustment, the GRS defined benefit plan (the "GRS Plan") was frozen as of July 1, 2014 and closed to new participants; however, the City retained the responsibility to fund amounts necessary to provide adjusted (reduced) pension benefits to employees and retirees who accrued benefits under the GRS Plan. The Plan of Adjustment required DWSD to make annual contributions to the GRS Plan in the amount of \$42.9 million per year, plus \$2.5 million per year in administrative expenses, combined for both the Water System and the Sewer System, for the nine Fiscal Years beginning on July 1, 2014 and ending on June 30, 2023 (collectively, the "DWSD Pension Obligation") and also required DWSD

to pay to the City its allocated share of the BC Note Obligation related to both the Water System and the Sewer System (collectively, the “BC Note Obligation” and together with the DWSD Pension Obligation, the “Pension Obligation”). These annual payment amounts to the GRS were based upon an estimated GRS Plan contribution total of \$408.6 million for the entire nine-year period. Pursuant to the Plan of Adjustment, after the initial nine-year period through June 30, 2023 is completed, DWSD remains responsible for any unfunded accrued actuarial liability (“UAAL”) of the DWSD Pension Obligation. Under the Plan of Adjustment, in calculating the amount of the DWSD Pension Obligation an assumed investment rate of 6.75% and then-available mortality tables were utilized in calculating the potential size of the remaining liability with respect to the DWSD Pension Obligation as of June 30, 2023, then estimated to be very small, if any.

Pursuant to the Leases, the Authority assumed the obligation to pay that portion of the Pension Obligation allocable to the Regional Water System (the “Authority Water Pension Obligation”) and the Regional Sewer System (the “Authority Sewer Pension Obligation” and together with the Authority Water Pension Obligation, the “Authority Pension Obligation”) and the City retained the obligation to pay that portion of the Pension Obligation allocated to the Local Water System and the Local Sewer System. The City, the GRS and the Authority entered into an agreement on December 1, 2015 setting forth the terms for contributions and reporting of the DWSD share of the GRS pension pool. On January 24, 2017, DWSD and the Authority provided a supplement to the agreement whereby GRS is directed to allocate investments and pension liabilities of the DWSD on the basis of 70.3% to the Authority and 29.7% to DWSD effective January 1, 2016.

The Authority allocates the assumed portions of the Pension Obligation on a pro-rata basis between the Regional Water System and Regional Sewer System. The Authority Pension Obligation will be paid by the Authority from charges to users of the Regional Water System and the Regional Sewer System, respectively.

The most recent updated GRS actuarial report, calculated as of June 30, 2019 (the “Actuarial Report”), utilizes an assumed rate of return of 6.75% and updated mortality tables, and sets forth a UAAL for the DWSD Pension Obligation of approximately \$226.2 million. For Fiscal Year 2024, DWSD’s annual contribution is projected to be between \$8.2 million to \$10.5 million in the Actuarial Report, of which the Authority’s share would be between \$5.7 million to \$7.4 million. The remaining share of the UAAL of the DWSD Pension Obligation allocable to the Authority will be monitored on an annual basis, and Authority management expects to positively plan for the liability. These financial projections assume no changes in the assumed rate of return and mortality tables set forth in the Actuarial Report. Future actuarial reports may result in different estimates for the UAAL and annual contributions depending on several factors including actual experience, the assumed rate of return and mortality tables. These projections may change if such assumptions change in a future actuarial report. These financial projections assume a total annual contribution of \$10.0 million starting in Fiscal Year 2024 and assume that all of this amount will be reflected as a non-operating expense funded via transfers to the Pension Obligation Payment Fund.

The June 30, 2018 liability for the BC Note Obligation is approximately \$78.5 million, with approximately \$56.1 million allocated to the Authority as noted above. Annual payments required from the Authority average \$2.8 million from Fiscal Year 2016 through Fiscal Year 2024, increasing to \$5.29 million in Fiscal Year 2025, and then decreasing yearly to \$2.64 million for the final payment in Fiscal Year 2044. The BC Note Obligation is an obligation of the City for which the Authority makes a payment to the City for its allocable share of certain City of Detroit Financial Recovery Bonds which were issued pursuant to the Plan of Adjustment to satisfy in whole or in part claims relating to the City’s pension obligation certificates and post-retirement health benefits. This liability is a fixed commitment; and it is not expected to change in the future

As required by the Leases, the GRS, the City and the Authority entered into an Agreement re GRS Defined Benefit Plan, dated as of December 1, 2015 (the "Pension Agreement"), in which certain disclosures and calculations are required by the GRS auditors and actuaries related to (i) the DWSD Pension Pool (which is defined in the Pension Agreement to mean that portion of the undivided interest in investments and the pension liabilities of the GRS Plan that is allocated to DWSD retirees, deferred retirees and non-vested members in the Plan of Adjustment), (ii) the DWSD-R Pension Pool (defined to mean that portion of the DWSD Pension Pool that is allocated to DWSD after the Effective Date), and (iii) the Authority Pension Pool (defined to mean that portion of the DWSD Pension Pool that is allocated to the Authority after the Effective Date). This will provide for monitoring the remaining allocable share of the Authority of the DWSD Pension Pool on an annual basis so that the Authority can incorporate adjustments into its financial plan. Specifically, the Pension Agreement requires the GRS to provide to the Authority each Fiscal Year each of the following reports on or before March 1 following the end of such Fiscal Year:

(1) A summary annual report that will: (A) commencing with the Fiscal Year ending June 30, 2015, continue to track DWSD retirees, deferred retirees and active and inactive vested and non-vested members, pension benefits paid and pension liabilities accrued separately from other GRS members; and (B) commencing with the Fiscal Year ending June 30, 2016, continue to track DWSD, and then within DWSD to DWSD-R and the Authority, pursuant to written direction from DWSD-R and the Authority, the retirees, deferred retirees and active and inactive vested and non-vested members, pension benefits paid and pension liabilities accrued separately from other GRS members, to enable the Authority to verify the appropriateness of allocations to the Authority.

(2) A Statement of Changes in Fiduciary Net Position by Division to enable the Authority to verify the appropriateness of allocations to the Authority that will: (A) commencing with the Fiscal Year ending June 30, 2015, continue to track and allocate to DWSD an undivided interest in the investments net of investment expenses in the GRS Plan; and, (B) commencing with the Fiscal Year ending June 30, 2016, continue to track and allocate to DWSD, and then within DWSD to DWSD-R and the Authority, an undivided interest in investments net of investment expenses in the GRS Plan. Administrative expenses for purposes of the determination of the Fiduciary Net Position of DWSD, DWSD-R and the Authority shall be allocated as provided in the Pension Agreement.

(3) An actuarial study that sets forth as of (A) the Fiscal Year ending June 30, 2015, the undivided interest in investments in the GRS Plan allocated to the DWSD Pension Pool as set forth in the Statement of Changes in Fiduciary Net Position by Division and the actuarial accrued liability and the UAAL for the DWSD Pension Pool, and (B) each Fiscal Year ending on and after June 30, 2016, the undivided interest in investments in the GRS Plan allocated to the DWSD Pension Pool and within the DWSD Pension Pool, the DWSD-R Pension Pool and the Authority Pension Pool, respectively, as set forth in the Statement of Changes in Fiduciary Net Position by Division and the actuarial accrued liability and the UAAL for the DWSD Pension Pool and within the DWSD Pension Pool, the DWSD-R Pension Pool and the Authority Pension Pool, respectively.

(4) An audit of the Statement of Changes in Fiduciary Net Position by Division expressing an opinion on each divisional column commencing with the Fiscal Year ending June 30, 2015. In lieu of a direct audit opinion on this schedule, the parties may agree to secure an in-relation-to audit opinion on this schedule (in-relation-to the audited financial statement of the GRS) on a regular or occasional basis at any time after the Fiscal Year ending June 30, 2017. To the extent that the actual net asset amounts as reflected in the final audit report differ from the net assets utilized to determine the UAAL for the DWSD Pension Pool reflected above, the difference shall be adjusted in a future GRS actuarial report and the UAAL provided on June 30, 2014 shall be considered amended accordingly.

In addition to the foregoing reports, the Pension Agreement also requires the GRS to provide the Authority for each Fiscal Year commencing from and after July 1, 2023, on its normal schedule for determining the current Fiscal Year's contributions to the GRS, with a determination of the UAAL for the Authority Pension Pool using the market value of assets for the Authority Pension Pool and whether the Authority Pension Pool is funded at 100%. If the Authority Pension Pool is fully funded at 100% or more, no contributions for the current Fiscal Year will be required of the Authority. If the Authority Pension Pool is less than 100% funded, then the Authority is required to make such level annual contributions to the GRS as necessary to amortize such shortfall over five years (as provided in the Leases or such greater period not to exceed ten years as agreed upon by GRS and the Authority) at an interest rate equal to the then current GRS investment return assumption. Except for the additional required payments described in this paragraph, if any, the Authority shall have no further liability whatsoever to the City or the GRS in connection with any other shortfalls that that may occur with respect to the GRS Plan.

FEASIBILITY REPORT AND HISTORICAL FINANCIAL INFORMATION

In preparing the Feasibility Report, the Feasibility Consultant has relied upon certain assumptions and projections regarding future operating expenses, capital expenditures and debt service on the Series 2020 Bonds, some of which are those of the Authority or DWSD. See APPENDIX I – FEASIBILITY CONSULTANT'S REPORT. The Feasibility Consultant has also made other assumptions, including assumptions regarding water use patterns, charge increases, collection rates and customer responses to charge increases. Projected operating and financial performance of the Sewer System may not be indicative of future performance; actual results will differ from those included in the Feasibility Report, and such differences may be material. GLWA cannot give any assurance that the events assumed will materialize or that actual results will match those projected, and any such differences may be material. In addition, the future policies, operations and financing decisions of GLWA may not be the same as those assumed in the Feasibility Report. No representation is made or intended, nor should any representation be inferred, with respect to the likely existence of any particular future set of facts or circumstances, and prospective purchasers of the Series 2020 Bonds are cautioned not to place undue reliance upon the Feasibility Report or the revenue forecasts or other projections contained therein. See "COVID-19 IMPACT, RESPONSE AND RISK FACTORS."

In addition, certain historical financial information is included in this Official Statement. There can be no assurance that the financial results achieved in the future will be similar to historical results, and the financial information is expressly qualified in its entirety by the disclaimers set forth in such financial information and the disclosure in this Official Statement. Such future results will vary from historical results, and actual variations may be material. Therefore, the historical operating results of the Sewer System contained in this Official Statement cannot be viewed as a representation that sufficient revenues will be generated in the future to make timely payment of principal of, redemption premium, if any, and interest on the Series 2020 Bonds.

THE REGIONAL SEWER SYSTEM

The major components of the Regional Sewer System include the water resource recovery facility, formerly referred to as the wastewater treatment plant, and a 195 mile conveyance system consisting of eight combined sewer overflow facilities including five retention treatment basins and three flow-through type facilities, nine sewage lift stations and three interceptors, and certain major trunk and lateral sewers. All of the Regional Sewer System facilities are located in the City of Detroit. The Authority believes that the Regional Sewer System is adequate to meet the current needs of customers and to meet the current federal requirements of the EPA under the Clean Water Act. Some repairs, replacements and major improvements are necessary to improve operations and ensure continued compliance with environmental

standards. The flow of wastewater is monitored and remotely controlled by the System Control Center, which allows the Authority to remotely control most conveyance system facilities.

The Water Resource Recovery Facility

The Water Resource Recovery Facility (the “WRRF”) is one of the largest single site wastewater treatment facilities in the United States. The WRRF has treated a daily wastewater flow that has averaged 675 million gallons per day (“mgd”) over the past three years and services the needs of approximately 28% of the State’s population.

Major treatment processes at the WRRF include raw wastewater pumping and preliminary treatment (grit removal, screening and chemical addition) of the incoming wastewater; primary clarifiers, to remove material suspended in the wastewater; carbonaceous biochemical oxygen demand (“CBOD”) and phosphorous removal by chemical addition; aeration basins and secondary clarifiers to remove additional CBOD and phosphorous from the treated wastewater; gravity thickening of the solids, solids dewatering using belt filter presses and centrifuges, and final solids disposal using a combination of production of fertilizer pellets by the Biosolids Dryer Facility (“BDF”), incineration, landfilling and land application; and disinfection of the final effluent using chlorination to kill harmful bacteria followed by dechlorination to remove residual chlorine from the water prior to discharge.

The BDF was constructed using a public-private partnership where a private company, New England Fertilizer Company (“NEFCO”), designed, built, operates and maintains the BDF facility for a period of 20 years pursuant to a contract with GLWA. The BDF is currently operating at its full functional capacity. As such, it provides additional solids handling capability sufficient to meet approximately 65% of the average daily solids load as well as providing improved management of peak biosolids, and preservation of landfill capacity, reduced trucking, odors and noise, and the production of an environmentally beneficial use for biosolids.

Conveyance System

The wastewater conveyance system consists of a network of sewers and sewage lift stations which collect and transport wastewater to the WRRF. During wet weather, additional wet weather capture and treatment facilities, called combined sewer overflow (“CSO”) control facilities, are present and utilized. The conveyance system currently has a total service area of approximately 944 square miles and serves 79 communities including the City.

GLWA has completed an overall assessment of its sewers and manholes. Over 900,000 feet of pipe (approximately 97% of the system) was inspected and graded from 1 (minor defect) to 5 (most significant defect) using the PACP (Pipeline Assessment Certification Program) standards. Approximately 540 (60% of total) manholes were also inspected and graded using MACP (Manhole Assessment Certification Program) standards and updated manhole information attributes such as size, location, material and name were recorded in GLWA’s Geographic Information System (“GIS”). The information gathered from this assessment is used by GLWA, through its Linear System Integrity Program to enable GLWA to address exigent repair needs, prioritize repairs, improve accuracy using GIS to locate attributes, determine future capital repairs, and consider operations and maintenance costs.

Historical Wastewater Volumes

The treated wastewater volumes have not changed materially during the last five years largely due to the fact that only about one-third of the treated wastewater volumes are related to sanitary volumes that result from customer water use. The majority of treated wastewater volumes are related to the infiltration

into the sewer system, or the runoff into the combined sewer system, of wet weather flows. The volatility of wet weather events can dramatically affect the level of flow received at the WRRF, irrespective of population levels or water use patterns.

Prior to the Rate Simplification Initiative (as defined herein), the billed wastewater volumes for wholesale customers were affected by wet weather events because billed volumes for the majority of these customers were based on metered wastewater volumes. These customers are no longer billed based on wastewater volumes. Under the now-fully implemented Rate Simplification Initiative, bills are issued in equal monthly amounts, regardless of metered wastewater contributions. The Authority continues to meter and monitor contributed wastewater volumes from these customers, in order to understand flows in the system and to collect data for future cost allocation analyses. Billed volumes for Retail Sewer Customers are based on metered water volumes. The following table shows treated and estimated wastewater volumes from Customers during Fiscal Years 2017 to 2019.

**Regional Sewer System
Treated and Metered Wastewater Volumes**

Fiscal Year	Total Wastewater Treated	Suburban Wholesale Customers (a)	Detroit Local System Customers (b)	Total
	<i>Mg</i>	<i>mg</i>	<i>mg</i>	<i>mg</i>
2017	254,400	105,500	19,200	124,700
2018	235,600	119,400	19,500	138,900
2019	249,500	124,800	21,200	146,000

mg= million gallons

(a) Primarily metered wastewater volumes, but also includes water sales volumes for some customers whose wastewater is not metered. Volumes reflect measured and monitored wastewater flow.

(b) Reported water sales to retail customers

THE MASTER PLAN AND THE CAPITAL IMPROVEMENT PLAN

Regional Wastewater System Master Plan

The Comprehensive Regional Wastewater Master Plan (the “Wastewater Master Plan”), developed through a collaborative planning process with stakeholders from April 2017 to September 2019, is GLWA’s strategy for providing wastewater services to its member communities over the next 40 years (2020 to 2060). GLWA and its member partners will begin implementing the Wastewater Master Plan in 2020.

The Wastewater Master Plan started with identifying five key outcomes:

1. Protect public health and safety;
2. Preserve natural resources and a healthy environment;
3. Maintain reliable, high-quality service;
4. Assure value of investment; and
5. Contribute to economic prosperity.

Its collaborative nature embraced the “pipes don’t know the boundaries” concept and knit together hydraulic and hydrologic models of the member partners’ systems with the GLWA regional model to provide a solid foundation for assessing wastewater flows in wet weather conditions. The plan developed recommendations that are adaptive and opportunistic, optimizing existing infrastructure, measuring water quality benefits and reassessing the need for scope, location and technical details of future projects. Alongside this approach is integrated operations with GLWA’s member partners. GLWA is rolling out web-accessible dashboards that provide member partner utility operators critical wastewater system data and guidelines for real-time flow management. This real-time flow management includes decision making on operational elements during wet weather events. The approach, termed the Regional Operating Plan or ROP, allows the spatially varied nature of rainfall to be identified and operational decisions made to make better use of pipes in areas where the rain has had lesser effects.

The concept of investing based on best environmental value for the region has taken root and is evidenced by member partners considering that their next best infrastructure investments may be in a downstream location that is in another municipality. As these concepts have grown, the technical and planning effort has given way to consideration of cost allocation of these new and regionally focused projects. Master plan recommended projects have been placed in GLWA’s proposed Fiscal Year 2021-2025 CIP and operational initiatives such as a regional surface water quality monitoring system and formation of a watershed hub have been included in the Fiscal Year 2021 operational budget.

Capital Improvement Plan and Planning Process

The current Capital Improvement Plan for Fiscal Years 2021-2025 (“CIP”) was approved by the GLWA Board on February 26, 2019. The CIP expenditure schedule shown in the following table reflects those in the approved CIP. The CIP is dynamic and requires continual review and modification during the course of each year.

Regional Sewer System Capital Improvement Plan
Projected Expenditure Schedule (\$) - Fiscal Years 2020 through 2025

	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>Total</u>
<u>Wastewater Resource Recovery Facility</u>							
Primary Treatment	12,301,000	13,353,000	13,237,000	11,925,000	44,809,000	41,230,000	136,855,000
Secondary Treatment & Disinfection	6,793,000	6,462,000	7,992,000	8,046,000	41,517,000	15,896,000	86,706,000
Residuals Management	8,502,000	3,770,000	1,021,000	14,432,000	6,058,000	0	33,783,000
Industrial Waste Control	10,369,000	1,331,000	0	0	0	0	11,700,000
CSO RTB & SDC	147,000	4,067,000	3,226,000	2,400,000	904,000	4,669,000	15,413,000
General Purpose	7,642,000	8,516,000	9,084,000	22,282,000	18,690,000	6,081,000	72,295,000
Subtotal WRRF	45,754,000	37,499,000	34,560,000	59,085,000	111,978,000	67,876,000	356,752,000
<u>Wastewater Collection</u>							
Regional Interceptor System	17,658,000	27,310,000	18,347,000	21,270,000	31,112,000	26,704,000	142,401,000
In System Storage	0	0	32,000	86,000	3,374,000	1,984,000	5,476,000
Wastewater Lift Stations	34,916,000	12,067,000	1,041,000	9,898,000	23,830,000	30,803,000	112,555,000
Subtotal Collection	52,574,000	39,377,000	19,420,000	31,254,000	58,316,000	59,491,000	260,432,000
Metering	0	0	0	0	0	0	0
General Purpose	31,386,000	32,174,000	55,492,000	47,443,000	31,230,000	42,870,000	240,595,000
Total Sewer Direct	129,714,000	109,050,000	109,472,000	137,782,000	201,524,000	170,237,000	857,779,000
Centralized Svcs - Sewer Portion	1,986,000	1,588,000	3,285,000	3,061,000	1,734,000	1,702,000	13,356,000
GRAND TOTAL	131,700,000	110,638,000	112,757,000	140,843,000	203,258,000	171,939,000	871,135,000
CIP Spend Rate Assumption	72%	75%	75%	75%	75%	75%	75%
CIP Funding Requirement	94,826,000	82,979,000	84,568,000	105,632,000	152,444,000	128,954,000	649,403,000

GLWA's CIP supports the continuation of major capital asset investment in programs and projects that will upgrade its water and wastewater system infrastructure. The CIP is a five-year plan which identifies capital projects and programs and their respective financing options. The CIP is updated annually to reflect changing system needs, priorities and funding opportunities.

GLWA's capital replacement strategy is to increase resiliency of water and wastewater systems, adhere to long-term planning recommendations and actively solicit stakeholder input for best-in-class planning and execution. A small percentage of projects have permit and regulatory requirements, while others have been identified in master plans and condition or need assessments.

The CIP Financing Plan

The Authority uses an incremental method of capital project funding rather than funding all projects in advance. The Authority's capital financing strategy is designed to align capital project financing sources with program requirements in a framework that balances multiple goals, including to: (i) recover the costs of capital investment over the useful lives of the capital assets; (ii) minimize the impact of the capital programs on water supply and sewage disposal service charges; and (iii) protect and enhance the Authority's financial position. The Authority employs a policy of establishing capital financial plans based on a CIP spending rate assumption. This policy recognizes the difficulties of executing multiple large infrastructure projects and provides an analytical approach to bridge the total dollar amount of projects in the CIP with what can realistically be spent due to limitations beyond the Authority's control and/or delays for non-budgetary reasons. Reasons for those difficulties include coordination of work with public and private entities, interdependency of projects, and seasonal outdoor conditions. As shown in the above table, the CIP financing plan assumes a CIP spending rate assumption of (i) 75% for Fiscal Years 2021 through 2025 and (ii) 72% for Fiscal Year 2020, reflecting a review of activity in the first six months of Fiscal Year 2020. Historically the Authority has spent approximately \$56.8 million, \$69.6 million, and \$82.1 million on major Sewer System CIP projects during Fiscal Years 2017, 2018, and 2019, respectively.

The Regional Sewer System CIP is estimated to cost \$649.4 million from Fiscal Year 2020 through Fiscal Year 2025. Of this amount, no improvements are planned to be financed by the proceeds from the Series 2020 Bonds for the Regional Sewer System. The Authority expects that approximately \$225 million (net amount) will be financed with proceeds of Additional Bonds issued during the six-year planning period. In addition, the Authority recently issued SRF Junior Lien Bonds through the State of Michigan's Clean Water State Pollution Control Revolving Fund to finance approximately \$28 million of CIP expenditures for capital improvements to the Regional Sewer System. Additional SRF Junior Lien Bonds totaling approximately \$13 million have been approved and are anticipated to be issued during Fiscal Year 2021. The balance of the CIP will be financed with funds on hand and additional Revenues. See APPENDIX I – FEASIBILITY CONSULTANT'S REPORT. The Feasibility Report also contains projections for Fiscal Years 2026 through 2030.

Regional Sewer System Capital Improvement Plan Projected Funding Sources (\$) - Fiscal Years 2020 through 2025

	2020	2021	2022	2023	2024	2025	Total
Existing Improvement and Extension Funds (a)	96,648,700						96,648,700
Existing Construction Funds (a)	82,031,700						82,031,700
Current Revenues	35,429,700	46,371,200	49,623,600	61,496,200	74,310,800	93,787,800	361,019,300
DWSD Loan Receivable Payments	19,288,300	19,288,300	8,705,000	0	0	0	47,281,600
Bond Proceeds (b)	687,455,000	0	0	150,000,000	0	90,000,000	927,455,000
Plus: Available Bond & Interest Redemption Funds	50,408,900	0	0	0	0	0	50,408,900
less: Defeasance Requirements for Refunded Bonds	(734,369,700)	NA	NA	NA	NA	NA	(734,369,700)
less: Transfer to DWSD Construction Fund (c)	0	0	0	0	0	0	0
less: Issuance Expenses (d)	<u>(3,494,200)</u>	<u>0</u>	<u>0</u>	<u>(9,000,000)</u>	<u>0</u>	<u>(5,400,000)</u>	<u>(17,894,200)</u>
Net Bond Proceeds Available to Regional System	0	0	0	141,000,000	0	84,600,000	225,600,000
State Clean Water Revolving Fund Loans	40,505,000	41,200,000	25,112,000	22,128,000	0	0	128,945,000
less: Transfer to DWSD Construction Fund (e)	<u>0</u>	<u>(8,000,000)</u>	<u>(10,000,000)</u>	<u>(8,628,000)</u>	<u>0</u>	<u>0</u>	<u>(26,628,000)</u>
Net State DWRF Financing for Authority	40,505,000	33,200,000	15,112,000	13,500,000	0	0	102,317,000
Investment Income	706,800	516,400	478,100	639,200	1,439,400	755,300	4,535,200
Total Funding Sources (f)	<u>274,610,200</u>	<u>99,375,900</u>	<u>73,918,700</u>	<u>216,635,400</u>	<u>75,750,200</u>	<u>179,143,100</u>	<u>919,433,500</u>

(a) Estimated balance available June 30, 2019. (Applies only to Fiscal Year 2020).

(b) Includes projected additional future bonds semi-annually starting in 2023. Amounts reflect par value.

(c) No amounts from future bonds are projected to provide funding to the DWSD CIP.

(d) Includes Underwriter's Discount and other issuance expenses. For 2020, includes net effect of a bond premium.

(e) Reflects CWRP Loans related to capital improvements to the DWSD Local System.

(f) The difference between the total amount available to finance the capital program and the cost of the program (including budgeted capital outlay) represents funds totaling approximately \$179 million available to finance the capital program after 2025.

SOURCE: THE FOSTER GROUP, LLC.

Limits on Future Borrowing

If the Regional Sewer System does not generate sufficient Revenues to pay for the cost of capital improvements to the Regional Sewer System, or if other funds are not available, additional funds may have to be borrowed. In the event Additional Bonds are issued, such Additional Bonds would, in some cases, increase the debt service requirements to be serviced by the Revenues of the Regional Sewer System. In order for GLWA to issue Additional Bonds, certain conditions must be satisfied as described in greater detail above in "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2020 BONDS—Issuance of Additional Bonds."

Local Sewer System Capital Improvement Plan

DWSD utilizes a five-year Capital Improvement Plan (the "Local CIP" or the "Local Sewer System CIP") to maintain and improve the reliability of the Local Sewer System, meet regulatory standards as well

as to achieve greater operating and maintenance efficiency. The Local CIP must be approved by a supermajority of at least five members of the Board of Water Commissioners (“BOWC”).

Pursuant to the Water and Sewer Services Agreement, no later than February 1 of each year, the City shall develop and provide the Authority with the Local Sewer System CIP. The Local Sewer System CIP must include the capital improvements and an estimate of the costs which the City plans to undertake in the next Fiscal Year, and projected capital improvement projects and estimates for the five years following. At least three months prior to finalizing the Local Sewer System CIP and any modifications thereto, the City shall provide a copy of the proposed Local Sewer System CIP to the Authority solely for the purpose of: (A) coordinating the Local Sewer System CIP and the Regional Sewer System CIP to maximize economies of scale, minimize service disruptions and to achieve other efficiencies from a coordinated implementation effort, and (B) providing notice to the Authority of any financing requirements of the City for the Detroit Local Sewer Facilities to be satisfied from Lease Payments and/or the issuance of Additional Bonds or requests for collaboration on grant applications or other funding opportunities. Upon receipt of the adopted Local Sewer System CIP from the City, the Authority shall ensure that its financial planning and budgeting reflect the foregoing requirements.

The Local Sewer System CIP provides a framework for ensuring capital plans are consistent with DWSD’s overall organizational goals within a set of financial considerations including fiscal capacity, debt service obligations, impact on operating budgets and reserve levels. Actual project proposals are initiated and reviewed within the context of the Local Sewer System CIP. Deviations from the Local Sewer System CIP could occur as a result of factors such as actual bids versus cost estimates, unforeseen cost-benefit scenarios and grant opportunities.

The following table details the planned expenditures and the projected funding sources for the Fiscal Year 2020-2025 Local Sewer System CIP. The Feasibility Report also contains projections for Fiscal Years 2026 through 2030.

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**Local Sewer System Capital Improvement Plan
Projected Funding Sources (\$) - Fiscal Years 2020 through 2025**

	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>Total</u>
CIP Financing Requirements	45,193,000	59,913,000	45,606,500	37,750,500	29,235,000	30,495,000	248,193,000
Financing Sources							
<u>DWSD Local I&E Account</u>							
Beginning Balance	29,496,000						29,496,000
Loan Receivable Payments to GLWA	(18,841,700)	(18,841,700)	(8,441,500)	0	0	0	(46,124,900)
Lease Payment from GLWA (a)	16,083,100	25,308,200	27,500,000	27,500,000	27,500,000	27,500,000	151,391,300
Transfers from Revenues	0	0	5,036,000	861,800	1,502,800	3,554,900	10,955,500
Subtotal	26,737,400	6,466,500	24,094,500	28,361,800	29,002,800	31,054,900	145,717,900
<u>Construction Funds (GLWA Revenue Bonds)</u>							
Beginning Balance	92,704,000						92,704,000
CWRF Loan Proceeds	0	8,000,000	10,000,000	8,628,000	0	0	26,628,000
Proceeds from GLWA Revenue Bonds	0	0	0	0	0	0	0
Investment Income	1,119,400	543,100	0	0	0	0	1,662,500
Subtotal	93,823,400	8,543,100	10,000,000	8,628,000	0	0	120,994,500
Total Financing Sources	120,560,800	15,009,600	34,094,500	36,989,800	29,002,800	31,054,900	266,712,400
Annual Balance	75,367,800	(44,903,400)	(11,512,000)	(760,700)	(232,200)	559,900	18,519,400
Cumulative Balance	75,367,800	30,464,400	18,952,400	18,191,700	17,959,500	18,519,400	
<i>(a) Lease Payment Application</i>							
Total Lease Payment	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	165,000,000
less: Lease Payment applied to Debt Service	(11,416,900)	(2,191,800)	0	0	0	0	(13,608,700)
Net amount transferred to Local I&E Account	16,083,100	25,308,200	27,500,000	27,500,000	27,500,000	27,500,000	151,391,300

SOURCE: DWSD / THE FOSTER GROUP, LLC.

The current six-year Local Sewer System CIP in this table reflects amounts that the Department has indicated are appropriate for the Authority to consider for planning purposes. The six-year program is estimated to cost approximately \$248 million. The Local Sewer System CIP Financing Plan funds this amount with a combination of existing balances in the Local System Construction Fund and the Detroit Improvement and Extension Account of the Improvement and Extension Fund, draws on loans from the State Clean Water Revolving Fund, and annual transfers of Lease Payments and revenues from Retail Sewer Customers to the Detroit Improvement and Extension Account of the Improvement and Extension Fund. The Department does not expect that any capital financing will require proceeds from bond sales issued by the Authority during this forecast period. The projected financing plan anticipates that a portion of the annual Lease Payment will continue to be applied to debt service in amounts approximating the Department's allocated debt service on bonds issued after the effective date of the Authority.

ENVIRONMENTAL MATTERS AND LITIGATION

Environmental Matters

The Sewer System has continued to show improved compliance with applicable laws and regulations as it has continued to optimize its operations at the WRRF. Optimization has also benefited the environment as the treated water discharged from the WRRF is often cleaner than the surrounding water in the receiving body.

The operation of the Sewer System is subject to extensive regulation pursuant to the federal Clean Water Act, the Clean Air Act, the Michigan Natural Resources and Environmental Protection Act, and the administrative rules and regulations that have been promulgated pursuant to these statutes. These programs affect many facets of the Sewer System including the quality and quantity of wastewater discharged,

monitoring and reporting requirements, the process for disposing biosolids, design, construction and operation of treatment and collection facilities, and the handling, storage, and management of hazardous materials and hazardous wastes. These federal, state and local standards and procedures that regulate the environmental impact of the Sewer System are subject to change. These changes may arise from continuing legislative, regulatory and judicial action regarding such standards and procedures.

Included in the regulatory framework established by the Clean Water Act is the National Pollutant Discharge Elimination System (“NPDES”) permit program, which requires operation of wastewater treatment facilities according to discharge limitations and other requirements, set forth in a permit. The Authority and the City are co-permittees of an NPDES permit. The NPDES permit program is administered by the EPA through EGLE. The Sewer System’s current NPDES permit was issued July 1, 2019 and runs through October 1, 2022. The NPDES permit includes compliance schedules for several capital improvement projects relating to the control of CSOs consistent with the Department’s Long-Term CSO Control Plan (the “CSO Control Plan”). The Authority is generally in compliance with the permit deadlines.

Because the WRRF is not designed to remove cadmium, copper, lead, PCBs, mercury, or other toxic materials to the levels required by EGLE, these substances are controlled primarily through the Industrial Pretreatment Program (“IPP”). The NPDES permit incorporates requirements that the City administer the IPP to control and regulate wastewater discharged to the Sewage Disposal System by industrial users, including the adoption of local limits for various pollutants. Consistent with the Lease, the Authority operates the IPP as the City’s agent and has submitted an IPP to EGLE which is currently under review.

As an NPDES co-permittee with the City, the Authority has been added as an additional party to and will be bound by the requirements of the Administrative Consent Order previously entered into by the City and EGLE on July 8, 2011. This Administrative Consent Order requires the Authority to implement certain corrective measures to provide reliable capacity to process and dispose of biosolids. The Administrative Consent Order also identifies a series of additional corrective measures to be undertaken by the Department. The Administrative Consent Order specifies the timetable for completing activities relating to dewatering, conveyance, disposal, maintenance and other related items. The City and the Authority believe they have satisfied the requirements of the ACO and on February 7, 2020 have requested that the ACO be dismissed.

There is no assurance that facilities in operation will remain subject to the regulations currently in effect, will always be in compliance with further regulations or will always be able to obtain all required operating permits. An inability to comply with environmental standards could result in reduced operating levels and fines. Legislative, regulatory, administrative or enforcement actions involving environmental controls could also adversely affect the operation of the facilities of the Sewer System. For example, if property owned or operated by GLWA is determined to be contaminated by hazardous materials, GLWA could be liable for significant clean-up costs even if it were not responsible for the contamination.

Except as noted in this section, the Authority has not been served with or is aware of any litigation, notices of violation, orders, claims, citations, complaints, penalty assessments, suits or other environmental proceedings (“Environmental Proceedings”) begun by environmental regulators which may have a material impact on GLWA’s operations and, to the best of GLWA’s knowledge, there are no threatened Environmental Proceedings which could have a material adverse impact on GLWA’s operations.

Affordability Waiver. The median household income within the City is approximately \$26,000, and roughly 39.4% of the City’s residents live below the poverty line. Although the City’s rates for wastewater treatment are below the national average, the per household cost of wastewater treatment totaled approximately 3.5% of the median Detroit household’s income as of June 2017. The traditional guideline

for affordability is 2% of the community's median household income. EGLE has granted the Authority and the Department, as co-permittees, an affordability waiver under NPDES permit periods through October 1, 2032, thereby allowing flexibility in the schedule for implementing previously planned CSO construction. During these two permit periods, the Department and EGLE have agreed to focus on implementation of "green infrastructure" solutions and use of operational flexibility to reduce untreated CSO discharges. Evaluations will be completed during the ten-year period to determine the next steps to address CSO solutions.

GLWA Litigation

GLWA has not been served with any litigation and, to the best of GLWA's knowledge, there is no threatened litigation against GLWA seeking to restrain or enjoin the sale of the Series 2020 Bonds, affecting the security pledged therefor or questioning or affecting the validity of the proceedings or authority under which the Series 2020 Bonds were issued. Neither the creation, organization or existence of GLWA, nor the title of any of the present members or other officers of GLWA to their respective offices, is being contested. GLWA has not been served with any litigation and, to the best of GLWA's knowledge, there is no litigation threatened which in any manner questions the right of the GLWA Board to adopt the Bond Ordinance or the 2020 Series Ordinance or to assume the DWSD Sewer Bonds.

Except as noted in this section, GLWA has not been served with any litigation which may have a material impact on GLWA's operations or Revenues and, to the best of GLWA's knowledge, there is no threatened litigation against GLWA which may have a material impact on GLWA's operations or Revenues.

Detroit Water & Sewerage Department v. Highland Park, WCCC Case No. 14-001974 CK; COA Docket No. 327448; SC Docket No. 154017. DWSD filed this action against the City of Highland Park for failure to pay for water and sewer services. Responsibility for this litigation was assigned to the GLWA pursuant to the Leases.

The trial court issued a judgment on July 31, 2014 and the City of Detroit levied this judgment on the tax roll for collection. On April 30, 2015, the City of Highland Park appealed the judgment and the trial court entered an order staying enforcement of the judgment until Highland Park's appeal is resolved. The Michigan Court of Appeals and then the Michigan Supreme Court rejected Highland Park's arguments and affirmed the judgment. In December 2017, the trial court entered an amended judgment against Highland Park. However, in January 2018, the trial court issued an order staying the judgment from being placed on the tax rolls and allowing Highland Park to engage in discovery on its counter-complaint. Highland Park's counter-complaint alleges that DWSD cannot charge more than rates set in a 1996 Settlement for water and sewage disposal services and that Highland Park is only obligated to pay 65% of amounts collected by Highland Park for water supply and sewage disposal services within the City of Highland Park.

Since DWSD filed its lawsuit against Highland Park in state court, Highland Park has attempted to attack the judgment in federal court. DWSD and GLWA filed dispositive motions, which were granted by the federal district court. Highland Park appealed to the Sixth Circuit. On May 18, 2020, the Sixth Circuit affirmed the federal district court, dismissing the Highland Park's federal cases. Highland Park may file a motion for reconsideration.

GLWA is committed to continuing to seek enforcement of its judgment and collection of the debt.

General Mill Supply Co. v. The Great Lakes Water Authority and City of Detroit, by and through its Water and Sewerage Department, Wayne County Circuit Court Case No. 18-011569-CZ (Hathaway, J.). This is a class action lawsuit filed on September 10, 2018. The plaintiffs allege that DWSD's and

subsequently GLWA's Industrial Waste Control ("IWC") charge is a tax that violates the Headlee Amendment to the Michigan Constitution and Act 234 of the Public Acts of Michigan, 1964. The plaintiffs also allege claims of unjust enrichment. The plaintiffs seek damages against GLWA since it assumed operations of the IWC Program on January 1, 2016 to the present. The amount in controversy is uncertain at this point, however, revenues from the IWC Program amount to less than 3% of GLWA's annual sewer operating revenue. GLWA believes the IWC charge is permitted by law and intends to vigorously defend against the claims brought in this lawsuit. See "DWSD Litigation" below.

Midwest Valve and Fitting Company et al. v. Great Lakes Water Authority and the City of Detroit, Case No. 20-006845-CZ (unassigned). This action was filed on May 29, 2020 by the plaintiff on behalf of itself and similarly situated persons and entities for which the plaintiff seeks class certification. As of the date of this Official Statement, GLWA had not been served with the complaint. The complaint alleges that the City's drainage charges are excessive and unreasonable, that the charges violate Act 94 and the equal protection clause of the Michigan Constitution, and that the City and GLWA have been unjustly enriched by collecting the charges. Because the plaintiff believes the drainage fee is excessive and unlawful, it argues that the City and GLWA must refund the amount of the fee overcharged to the proposed class during the period from July 1, 2017 through the date on which a final judgment is entered—an amount which the plaintiff alleges to be nearly \$99 million as of the date of filing the complaint. GLWA believes that it has not been properly joined as a defendant, has good faith defenses in this action, and intends to vigorously defend against the claims brought in this lawsuit.

DWSD Litigation

The information under this "DWSD Litigation" section has been furnished solely by DWSD. No representation is made by the Authority or the Underwriters as to the completeness or accuracy of such information.

Except as noted in this section, the Department has not been served with any litigation which is expected to have a material impact on the Department's operations or revenues with respect to the Sewer System and, to the best of the Department's knowledge, there is no threatened litigation against the Department which is expected to have a material impact on the Department's operations or revenues with respect to the Sewer System.

Binns et al. v. City of Detroit et al., Michigan Court of Appeals Case No. 337609 and *Detroit Alliance Against the Rain Tax et al (DAART) v City of Detroit et al.*, Michigan Court of Appeals Case No. 339176 (Boonstra, Murphy, Riordan, JJ). These are putative class actions filed on March 28, 2017 and July 12, 2017, respectively, by property owners in the City challenging the entirety of DWSD's drainage charge as unlawful under the Headlee Amendment to the Michigan Constitution and seeking to prohibit the City from assessing the drainage charge in the future. The plaintiffs in both cases argue that the drainage charge may not be imposed at all without approval by a majority of voters in the City and because such approval has not been obtained, the City should not have been charging the drainage fee because it is an unlawful tax and thus, the City must refund the fee for the period of time from one year preceding the date of the filing of the related lawsuit to present. The City has answered the plaintiffs' complaints, and has sought dismissal of the Headlee claims as a matter of law. The *Binns* plaintiffs filed a motion for preliminary injunctive relief, which the Court denied on June 20, 2017. The plaintiffs in both cases also sought to certify the class and those motions are pending before the Court. In August 2017, the Court requested that the parties in *Binns* submit supplemental briefs regarding the merits of the lawsuit (whether the drainage charge is a tax or a fee). The two matters were consolidated on October 24, 2017. On November 6, 2018, the Court of Appeals denied class certification and ruled that the drainage charge is an appropriate fee for service and not an unlawful tax. The plaintiffs filed for leave to the Michigan Supreme Court on December 18, 2018, and all supplemental briefs were due March 19, 2020. The City intends to vigorously defend

against the claims brought in these lawsuits. The amount in controversy is uncertain at this point, but should the classes be certified, it could, at most, include a refund of the entirety of the drainage fee from a year before the date the related lawsuit was filed to present. Persons who are class members in both lawsuits will not be allowed to recover twice in both actions, and would only recover a refund for what they have paid to the City.

Trappers Properties, L.L.C. et al. v. City of Detroit by and through the Detroit Water and Sewerage Department, Wayne County Circuit Court Case No. 17-017274-CZ (Murphy, J.). This is another putative class action filed on December 6, 2017 by various property owners in the City. In particular, the plaintiffs allege that the City's drainage charges are unconstitutional taxes under the Headlee Amendment to the Michigan Constitution, that the charges violate the equal protection clause of the Michigan Constitution, and that the City has been unjustly enriched by collecting the charges. Plaintiffs also seek to enjoin the City from charging the drainage charge in the future. Because the plaintiffs believe the drainage fee is unlawful, they argue that the City must refund the fee for the period of time from six years preceding the date of the filing of the lawsuit (December 6, 2017) to present. Upon motion by the City, the Wayne County Circuit Court agreed to stay this matter pending resolution of the *Binns* and *DAART* matters before the Court of Appeals. The *Trappers* plaintiffs appeared as amicus parties in the *DAART* matter and filed supplemental briefs in the *DAART* matter addressing the merits of the *DAART* lawsuit. Once the stay is lifted, the City intends to vigorously defend against the claims brought in this lawsuit. The amount in controversy is uncertain at this point, but should the class be certified, it could, at most, include a refund of the entirety of the drainage fee from December 6, 2011 to present (persons who are class members in both *Binns* and/or *DAART* and this lawsuit will not be allowed to recover twice in both actions, and can only recover a refund for what they have paid to the City).

Fort Street Business Park II, LLC et al. v. City of Detroit by and through its agent Detroit Water and Sewerage Department, Case No. 17-017315-CZ (Murphy, J.). This action was filed on December 7, 2017 by a handful of property owners in the City alleging that the City's drainage charges are unconstitutional taxes under the Headlee Amendment to the Michigan Constitution, that the charges violate the equal protection clause of the Michigan Constitution, and that the City has been unjustly enriched by collecting the charges. Because the plaintiffs believe the drainage fee is unlawful, they argue that the City must refund the fee for the period of time from six years preceding the date of the filing of the lawsuit (December 7, 2017) to present. The parties have stipulated to an entry of a stay of the matter. The amount in controversy is approximately \$2-3 million and would not, on its own, have a material impact on the DWSD's operations or revenues; however, the plaintiffs in this matter are also seeking an injunction prohibiting the City from assessing its drainage charge in the future. In the event the parties are not able to settle this dispute, the City intends to vigorously defend against the claims brought in this lawsuit.

General Mill Supply Co. v The Great Lakes Water Authority and City of Detroit, by and through its Water and Sewerage Department, Wayne County Circuit Court Case No. 18-011569-CZ (Hathaway, J.). As noted in "GLWA Litigation" above, this is a class action lawsuit filed on September 10, 2018. The plaintiffs allege that DWSD's and subsequently GLWA's Industrial Waste Control ("IWC") charge is a tax that violates the Headlee Amendment to the Michigan Constitution and Act 234 of the Public Acts of Michigan, 1964. The plaintiffs also allege claims of unjust enrichment. The plaintiffs seek damages against DWSD from July 18, 2013 to the date GLWA assumed operations of the IWC Program, which was January 1, 2016. The amount in controversy is uncertain at this point. DWSD believes the IWC charge is permitted by law and intends to vigorously defend against the claims brought in this lawsuit.

As noted in "GLWA Litigation" above, DWSD has been named as a defendant in the state and federal actions filed by Highland Park. Pursuant to the Leases, GLWA assumed the accounts receivable owed by Highland Park and the accompanying liability.

Midwest Valve and Fitting Company et al. v. Great Lakes Water Authority and the City of Detroit, Case No. 20-006845-CZ (unassigned). This action was filed on May 29, 2020 by the plaintiff on behalf of itself and similarly situated persons and entities for which the plaintiff seeks class certification. As of the date of this Official Statement, the City had not been served with the complaint. The complaint alleges that the City's drainage charges are excessive and unreasonable, that the charges violate Act 94 and the equal protection clause of the Michigan Constitution, and that the City and GLWA have been unjustly enriched by collecting the charges. Because the plaintiff believes the drainage fee is excessive and unlawful, it argues that the City and GLWA must refund the amount of the fee overcharged to the proposed class during the period from July 1, 2017 through the date on which a final judgment is entered—an amount which the plaintiff alleges to be nearly \$99 million as of the date of filing the complaint. The City intends to vigorously defend against the claims brought in this lawsuit.

TAX MATTERS

State Tax Matters

In the opinion of Dickinson Wright PLLC, Bond Counsel to the Authority, based on its examination of the documents described in its opinion, under existing law, the Series 2020 Bonds and the interest thereon are exempt from taxation by the State of Michigan or by any taxing authority within the State of Michigan, except estate taxes and taxes on gains realized from the sale, payment or other disposition of the Series 2020 Bonds.

Federal Tax Matters – Series 2020 Bonds

General

In the opinion of Dickinson Wright PLLC, Bond Counsel to the Authority, based on its examination of the documents described in its opinion, under existing law, interest on the Series 2020 Bonds is not excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code").

The following is a summary of certain federal income tax consequences generally applicable to the acquisition, holding and disposition of the Series 2020 Bonds by U.S. Holders that acquire their Series 2020 Bonds in the initial offering. This discussion is based on the provisions of the Code, the Treasury regulations promulgated or proposed thereunder, judicial authority, published administrative positions of the Internal Revenue Service (the "IRS") and other applicable authorities, all as in effect on the date of this document, and all of which are subject to change, possibly on a retroactive basis. We have not sought, and do not expect to seek, any ruling from the IRS with respect to the statements made and the conclusions reached in this summary, and no assurances can be given that the IRS will not take a contrary position or that a court will not sustain any challenge by the IRS.

This discussion is general in nature and does not discuss all aspects of U.S. federal income taxation that may be relevant to a particular holder in light of the holder's particular circumstances or to certain types of holders subject to special treatment under U.S. federal income tax laws, such as a bank or other financial institution, tax-exempt entity, pension fund, regulated investment company, real estate investment trust, partnership or other pass-through entity or investor therein, insurance company, broker, dealer or trader in securities or currencies, a person who holds a note as part of a hedge, straddle, synthetic security, conversion transaction, constructive sale transaction or other risk reduction transaction, U.S. holder (as defined below) whose "functional currency" is not the U.S. dollar, U.S. holder that holds notes through a non-U.S. broker or other non-U.S. intermediary, former citizen or resident of the United States, "controlled foreign corporation," "passive foreign investment company," corporation that accumulates earnings to

avoid U.S. federal income tax, person required to accelerate the recognition of any item of income with respect to a note as a result of such income being recognized on an applicable financial statement, or taxpayer subject to the alternative minimum tax. Moreover, the effect of any federal tax laws other than income tax laws (such as estate and gift tax laws or the Medicare tax on net investment income) or any applicable state, local or non-U.S. tax laws is not discussed. Except when noted, this discussion deals only with Series 2020 Bonds acquired in this offering at their “issue price” (i.e., the first price at which a substantial amount of the Series 2020 Bonds is sold for cash to the public other than to bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents, or wholesalers) and that are held as “capital assets” within the meaning of section 1221 of the Code (generally, property held for investment).

EACH PROSPECTIVE INVESTOR SHOULD SEEK ADVICE BASED ON THEIR PARTICULAR CIRCUMSTANCES FROM AN INDEPENDENT TAX ADVISOR WITH RESPECT TO THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF THE ACQUISITION, OWNERSHIP AND DISPOSITION OF THE SERIES SERIESCD BONDS AND THE TAX CONSEQUENCES UNDER STATE, LOCAL, NON-U.S. AND OTHER U.S. FEDERAL TAX LAWS.

As used herein, a “U.S. Holder” is a “U.S. person” that is a beneficial owner of a Series 2020 Bond. A “Non-U.S. Holder” is a holder (or beneficial owner) of a Series 2020 Bond that is not a U.S. Person. For these purposes, a “U.S. person” is a citizen or resident (including a “deemed” resident) of the United States, a corporation or partnership created or organized in or under the laws of the United States or any political subdivision thereof (except, in the case of a partnership, to the extent otherwise provided in Treasury regulations), an estate the income of which is subject to United States federal income taxation regardless of its source or a trust if (i) a United States court is able to exercise primary supervision over the trust’s administration and (ii) one or more United States persons have the authority to control all of the trust’s substantial decisions.

Treatment of Interest

The stated interest on the Series 2020 Bonds will be included as ordinary income of a U.S. Holder at the time it is received or accrued, in accordance with such U.S. Holder’s regular method of accounting for U.S. federal income tax purposes.

If the Series 2020 Bonds’ stated principal amount exceeds their issue price by more than a specified *de minimis* amount, as determined under applicable U.S. Treasury regulations, the notes will be treated as issued with original issue discount (“OID”) in an amount equal to such excess. A U.S. holder will be required to include such OID in income as it accrues, in accordance with a constant-yield method, before the receipt of cash payments attributable to such OID, regardless of the holder’s regular method of accounting for U.S. federal income tax purposes.

Sale and Exchange; Defeasance

Upon a sale or exchange of a Series 2020 Bond, a holder generally will recognize gain or loss on the Series 2020 Bonds equal to the difference between the amount realized on the sale and its adjusted tax basis in such Series 2020 Bond. Such gain or loss generally will be capital gain (although any gain attributable to accrued market discount of the Series 2020 Bond not yet taken into income will be ordinary) if the holder holds the Series 2020 Bond as a capital asset. The adjusted basis of the holder in a Series 2020 Bond (without OID) will (in general) equal its original purchase price and decreased by any payments received on the Series 2020 Bond. In general, if the Series 2020 Bond is held for longer than one year, any gain or loss would be long term capital gain or loss, and capital losses are subject to certain limitations.

If the liability of the Authority in respect of a Series 2020 Bond ceases for example as a result of an election by the Authority to pay and discharge the indebtedness on such Series 2020 Bond by depositing with the Trustee sufficient cash and/or Government Obligations to pay or redeem and discharge the indebtedness on such Series 2020 Bond (a “legal defeasance”), under current tax law a holder will be deemed to have sold or exchanged such Series 2020 Bond. In the event of such a legal defeasance, a holder generally will recognize gain or loss on the deemed exchange of the Series 2020 Bonds. Ownership of the Series 2020 Bonds after a deemed sale or exchange as a result of a legal defeasance may have tax consequences different than those described in this “TAX MATTERS” section and each holder should consult its own tax advisor regarding the consequences to such holder of a legal defeasance of the Series 2020 Bonds.

Backup Withholding and Information Reporting

Payments on the Series 2020 Bonds to a U.S. Holder will generally be subject to U.S. information reporting, subject to certain exceptions, and may be subject to “backup withholding.” In general, a U.S. Holder will be subject to backup withholding with respect to interest and any OID on the Series 2020 Bonds, and the proceeds of a sale or other disposition (including a retirement or redemption) of the Series 2020 Bonds, at the applicable tax rate (currently 24%), unless such holder (a) is an entity that is exempt from backup withholding (including corporations and certain qualified nominees) (each, an “exempt entity”) and, when required, demonstrates this fact, or (b) provides the payor with its taxpayer identification number (“TIN”) and otherwise complies with applicable requirements of the backup withholding rules. In addition, such payments to U.S. Holders that are not exempt entities will generally be subject to information reporting requirements. A U.S. Holder who does not provide the payor with its correct TIN may be subject to penalties imposed by the IRS.

Backup withholding is not an additional tax. The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against such holder’s U.S. federal income tax liability and may entitle such holder to a refund, provided that the required information is timely furnished to the IRS.

Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act (“FATCA”) generally imposes a U.S. federal withholding tax of 30% on payments of interest on the Series 2020 Bonds to a “foreign financial institution” (an “FFI”), as the beneficial owner or as an intermediary for the beneficial owner, unless the FFI (1) enters into an agreement with the IRS (or is subject to an applicable intergovernmental agreement) to withhold on certain payments and to collect and provide to the IRS (or local revenue authorities, as required under an applicable intergovernmental agreement) information regarding U.S. persons who hold accounts with the FFI and its affiliates (including certain foreign entities owned by U.S. persons), and (2) the FFI provides the payor with a properly completed Form W-8BEN-E to document its status or the FFI otherwise qualifies for an exemption. FATCA may also impose a 30% withholding tax on payments of interest on a Series 2020 Bonds to a “non-financial foreign entity,” either as the beneficial owner or as an intermediary for the beneficial owner, unless the entity provides the withholding agent with a properly completed IRS Form W-8BEN-E certifying that it is not subject to such withholding taxes.

HOLDERS SHOULD CONSULT WITH THEIR TAX ADVISORS REGARDING THE POSSIBLE IMPLICATIONS OF FATCA WITH RESPECT TO AN INVESTMENT IN THE SERIES 2020 BONDS.

Future Developments

NO ASSURANCE CAN BE GIVEN THAT ANY FUTURE LEGISLATION OR CLARIFICATIONS OR AMENDMENTS TO THE CODE, IF ENACTED INTO LAW, WILL NOT CONTAIN PROPOSALS WHICH COULD CAUSE THE INTEREST ON THE SERIES 2020 BONDS TO BE SUBJECT DIRECTLY OR INDIRECTLY TO STATE OF MICHIGAN INCOME TAXATION, ADVERSELY AFFECT THE MARKET PRICE OR MARKETABILITY OF THE SERIES 2020 BONDS, OR OTHERWISE PREVENT THE REGISTERED OWNERS FROM REALIZING THE FULL CURRENT BENEFIT OF THE STATUS OF THE INTEREST THEREON. FURTHER, NO ASSURANCE CAN BE GIVEN THAT ANY SUCH FUTURE LEGISLATION, OR ANY ACTIONS OF THE INTERNAL REVENUE SERVICE, INCLUDING BUT NOT LIMITED TO, SELECTION OF THE SERIES 2020 BONDS FOR AUDIT EXAMINATION, OR THE AUDIT PROCESS OR RESULT OF ANY EXAMINATION OF THE SERIES 2020 BONDS OR OTHER BONDS THAT PRESENT SIMILAR TAX ISSUES, WILL NOT ADVERSELY AFFECT THE MARKET PRICE OF THE SERIES 2020 BONDS. BOND COUNSEL TO THE AUTHORITY EXPRESSES NO OPINION REGARDING ANY PENDING OR PROPOSED FEDERAL OR STATE OF MICHIGAN TAX LEGISLATION.

INVESTORS SHOULD CONSULT WITH THEIR TAX ADVISORS AS TO THE TAX CONSEQUENCES OF THEIR ACQUISITION, HOLDING OR DISPOSITION OF THE SERIES 2020 BONDS.

CERTAIN LEGAL MATTERS

The legality of the authorization, sale and delivery of the Series 2020 Bonds is subject to the approval of Bond Counsel to the Authority, whose approving opinion, substantially in the form attached as Appendix XI to this Official Statement, will be delivered upon the issuance of the Series 2020 Bonds. The fees to be received by the Bond Counsel to the Authority in connection with the issuance of the Series 2020 Bonds will be paid from the proceeds of the Series 2020 Bonds.

Certain legal matters will be passed upon for the Underwriters by their counsel, Kutak Rock LLP, Washington, D.C. Certain legal matters will be passed upon for DWSD by its counsel, Miller, Canfield, Paddock and Stone, P.L.C.

RATINGS

Moody's Investors Service, Inc. ("Moody's"), S&P Global Ratings ("S&P") and Fitch Ratings ("Fitch") have assigned (i) the Series 2020A Bonds ratings of "A1" (stable outlook), "AA-" (stable outlook), and "A+" (stable outlook), respectively, and (ii) the Series 2020B Bonds ratings of "A2" (stable outlook), "A+" (stable outlook), and "A" (stable outlook), respectively. Moody's, S&P and Kroll Bond Rating Agency, Inc. (KBRA) are expected to assign ratings of "A2" (stable outlook), "AA" (stable outlook) and "AA+" (stable outlook), respectively, to the Insured Bonds based upon delivery of the Policy by AGM. Such ratings reflect only the views of Moody's, S&P and Fitch and an explanation of the significance of such ratings may be obtained from Moody's, S&P and Fitch. The Authority has furnished to Moody's, S&P and Fitch certain information and materials with respect to the Series 2020 Bonds. There is no assurance that the ratings which have been assigned to the Series 2020 Bonds will continue for any given period of time or that either of them will not be revised or withdrawn entirely by Moody's, S&P or Fitch, if in the judgment of Moody's, S&P or Fitch circumstances so warrant. A downward revision or withdrawal of a rating may have an adverse effect on the market price of the Series 2020 Bonds. A securities rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time.

UNDERWRITING

The Series 2020 Bonds are being purchased on a negotiated basis by the underwriters set forth on the cover of this Official Statement (collectively, the “Underwriters”). The Underwriters have agreed, subject to the terms of a bond purchase agreement (the “Bond Purchase Agreement”) with the Authority dated June 4, 2020, to purchase the Series 2020 Bonds from the Authority. The Bond Purchase Agreement provides, in part, that the Underwriters, subject to certain conditions, will purchase from the Authority (i) the Series 2020A Bonds for a purchase price of \$593,342,291.22 (the aggregate principal amount, less an Underwriter’s discount of \$1,587,708.78) and (ii) the Series 2020B Bonds for a purchase price of \$92,278,075.56 (the aggregate principal amount, less an Underwriter’s discount of \$246,924.44). The initial public offering prices of the Series 2020 Bonds may be changed from time to time by the Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various investment banking and consulting services for the Authority for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the Underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Authority.

Citigroup Global Markets Inc., an Underwriter of the Series 2020 Bonds, has entered into a retail distribution agreement with Fidelity Capital Markets, a division of National Financial Services LLC (together with its affiliates, “Fidelity”). Under this distribution agreement, Citigroup Global Markets Inc. may distribute municipal securities to retail investors at the original issue price through Fidelity. As part of this arrangement, Citigroup Global Markets Inc. will compensate Fidelity for its selling efforts.

Wells Fargo Securities is the trade name for certain securities-related capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including Wells Fargo Bank, National Association, which conducts its municipal securities sales, trading and underwriting operations through the Wells Fargo Bank, NA Municipal Finance Group, a separately identifiable department of Wells Fargo Bank, National Association, registered with the Securities and Exchange Commission as a municipal securities dealer pursuant to Section 15B(a) of the Securities Exchange Act of 1934.

Wells Fargo Bank, National Association, acting through its Municipal Finance Group (“WFBNA”), one of the Underwriters of the Series 2020 Bonds, has entered into an agreement (the “WFA Distribution Agreement”) with its affiliate, Wells Fargo Clearing Services, LLC (which uses the trade name “Wells Fargo Advisors”) (“WFA”), for the distribution of certain municipal securities offerings, including the Series 2020 Bonds. Pursuant to the WFA Distribution Agreement, WFBNA will share a portion of its underwriting or remarketing agent compensation, as applicable, with respect to the Series 2020 Bonds with WFA. WFBNA has also entered into an agreement (the “WFSLLC Distribution Agreement”) with its affiliate Wells Fargo Securities, LLC (“WFSLLC”), for the distribution of municipal securities offerings, including the Series 2020 Bonds. Pursuant to the WFSLLC Distribution Agreement, WFBNA pays a portion of WFSLLC’s expenses based on its municipal securities transactions. WFBNA, WFSLLC, and WFA are each wholly-owned subsidiaries of Wells Fargo & Company.

J.P. Morgan Securities LLC (“JPMS”), one of the Underwriters of the Series 2020 Bonds, has entered into negotiated dealer agreements (each, a “Dealer Agreement”) with each of Charles Schwab & Co., Inc. (“CS&Co.”) and LPL Financial LLC (“LPL”) for the retail distribution of certain securities offerings at the original issue prices. Pursuant to each Dealer Agreement, each of CS&Co. and LPL may purchase Series 2020 Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any Series 2020 Bonds that such firm sells.

Morgan Stanley & Co. LLC., an Underwriter of the Series 2020 Bonds, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Series 2020 Bonds.

FINANCIAL ADVISOR

PFM Financial Advisors LLC is acting as Financial Advisor (the “Financial Advisor”) to the Authority in connection with the issuance of the Series 2020 Bonds. The Financial Advisor’s fee for services rendered with respect to the sale of the Series 2020 Bonds is not contingent upon the issuance and delivery of the Series 2020 Bonds. PFM Financial Advisors LLC, in its capacity as Financial Advisor, does not assume any responsibility for the information, covenants and representations contained in any of the legal documents with respect to the federal income tax status of the Series 2020 Bonds, or the possible impact of any present, pending or future actions taken by any legislative or judicial bodies. The Financial Advisor is a “*municipal advisor*” as defined in Rule 15Ba1-1-(d)(3)(vi) of the Securities and Exchange Commission.

The Financial Advisor has provided the following for inclusion in this Official Statement: The Financial Advisor has reviewed the information in this Official Statement in accordance with, and as part of, its responsibilities to the Authority and, as applicable, to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Financial Advisor does not guarantee the accuracy or completeness of such information.

CONTINUING DISCLOSURE UNDERTAKING

The Authority will covenant for the benefit of the Holders and the Beneficial Owners of the Series 2020 Bonds (as such terms are defined in the Continuing Disclosure Undertaking which the Authority expects to execute on or before the date of delivery of the Series 2020 Bonds (the “Continuing Disclosure Undertaking”), to disclose financial information and operating data, by not later than 270 days following the end of the applicable fiscal year, commencing with the report for fiscal years ending on or after June 30, 2020 (the “Annual Financial Information”) and to provide notices of the occurrence of certain listed events. The Continuing Disclosure Undertaking requires that the Annual Financial Information and notices of listed events be filed with the Municipal Securities Rulemaking Board (“MSRB”) by electronic transmission through the Electronic Municipal Market Access (“EMMA”) Dataport of the MSRB. The specific nature of the information to be contained in the Annual Financial Information and the notices of listed events are set forth in APPENDIX X - FORM OF CONTINUING DISCLOSURE UNDERTAKING. These covenants have been made in order to assist the Underwriters named on the cover page of this Official Statement to comply with paragraph (b)(5) of Rule 15c2-12 (the “Rule”) promulgated by the Securities and Exchange Commission.

Except as described in the Continuing Disclosure Undertaking the provisions of the Continuing Disclosure Undertaking will create no rights in any other person or entity. The obligation of the Authority

to comply with the provisions of the Continuing Disclosure Undertaking is enforceable by any Beneficial Owner of outstanding Series 2020 Bonds as described in the Continuing Disclosure Undertaking. The right to enforce the provisions of the Continuing Disclosure Undertaking is limited to a right, by action in mandamus or for specific performance, to compel performance of the Authority's obligations under the Continuing Disclosure Undertaking. Any failure by the Authority to perform in accordance with the Continuing Disclosure Undertaking will not constitute a default or an Event of Default under the Bond Ordinance, and the rights and remedies provided by the Bond Ordinance upon the occurrence of a default or an Event of Default will not apply to any such failure.

A failure by the Authority to comply with the Continuing Disclosure Undertaking must be reported by the Authority in accordance with the Rule and must be considered by any broker, dealer or municipal securities dealer before recommending the purchase or sale of the Series 2020 Bonds in the secondary market. Consequently, such failure may adversely affect the marketability and liquidity of the Series 2020 Bonds and the market price thereof.

The Authority failed to file audited financial statements and operating data for Fiscal Years 2016 and 2017 on a timely basis as required by its continuing disclosure undertakings in connection with certain bonds issued or assumed by the Authority for the Water System and for the Sewer System. The Authority filed notices of such failures to provide the annual financial information and has subsequently filed the required annual financial information. The failure to file timely for Fiscal Year 2016 was due to the start-up of the Authority's operations on January 1, 2016 midway through the fiscal year, as well as preparation and audit of opening balances on January 1, 2016 which were dependent on the audit of the six-month reporting period ending December 31, 2015 from DWSD. The failure to file timely for Fiscal Year 2017 was due to additional time necessary to complete the Authority's first twelve-month fiscal year of operations, including the accounting from the 2018 MOU. Although filed on time, the Authority failed to include certain information as part of its operating data for both the Water System and Sewer System for Fiscal Year 2019. Upon realizing that the tables were missing, the Authority made supplemental filings on January 21, 2020 and February 25, 2020 to remedy the failure.

In order to provide continuing disclosure with respect to the Series 2020 Bonds in accordance with the Rule, the Authority has entered into a Disclosure Dissemination Agent Agreement ("Disclosure Dissemination Agreement") with Digital Assurance Certification, L.L.C. ("DAC"), under which the Authority has designated DAC as Disclosure Dissemination Agent.

The Disclosure Dissemination Agent has only the duties specifically set forth in the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent's obligation to deliver the information at the times and with the contents described in the Disclosure Dissemination Agreement is limited to the extent the Authority has provided such information to the Disclosure Dissemination Agent as required by the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent has no duty with respect to the content of any disclosures or notice made pursuant to the terms of the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent has no duty or obligation to review or verify any information in the Annual Financial Information, Audited Financial Statements, notice of the occurrence of reportable events or voluntary disclosures, or any other information, disclosures or notices provided to it by the Authority and shall not be deemed to be acting in any fiduciary capacity for the Authority, the Bondholders or any other party. The Disclosure Dissemination Agent has no responsibility for the Authority's failure to report to the Disclosure Dissemination Agent a Notice Event or a duty to determine the materiality thereof. The Disclosure Dissemination Agent shall have no duty to determine or liability for failing to determine whether the Authority has complied with the Disclosure Dissemination Agreement. The Disclosure Dissemination Agent may conclusively rely upon certifications of the Authority at all times.

OTHER MATTERS

The summaries and explanations herein of provisions of the Bond Ordinance, the Lease, the Water and Sewer Services Agreement, the Shared Services Agreement, the 2018 MOU, Act 94, Act 233 other public acts of Michigan, and other materials are brief summaries of certain provisions thereof. Such summaries do not purport to be complete and reference is made to such instruments, documents and other materials for full and complete statements of the provisions thereof.

The information contained in this Official Statement has been compiled or prepared from sources deemed to be reliable and, while not guaranteed as to completeness or accuracy, is believed to be correct as of this date. Any statements involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact.

The attached Appendices are an integral part of this Official Statement and must be read in their entirety together with all of the foregoing information.

The execution and delivery of this Official Statement have been duly authorized by the Authority.

GREAT LAKES WATER AUTHORITY

By: /s/ Sue F. McCormick
Chief Executive Officer

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**SCHEDULE I
REFUNDED BONDS**

Series	Lien	Maturity	Par	Coupon	CUSIP [†]
2012A	Senior	7/1/2026	9,170,000	5.250%	251250AN6
2012A	Senior	7/1/2027	2,310,000	5.250%	251250AP1
2012A	Senior	7/1/2032	65,730,000	5.000%	251250AQ9
2012A	Senior	7/1/2039	292,865,000	5.250%	251250AR7
2012A	Senior	7/1/2039	49,735,000	5.000%	251250AS5
2014C-1	Senior	7/1/2044	123,200,000	5.000%	59447PZA2
2014C-2	Senior	7/1/2044	27,450,000	5.000%	59447PZB0
2005A	Second	7/1/2035	31,785,000	5.000%	2512376Z1
2006B	Second	7/1/2036	55,000,000	5.000%	2512377A5

[†] Registered trademark of American Bankers Association. CUSIP data herein is provided by Standard and Poor's CUSIP Service Bureau, a division of the McGraw Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP service. CUSIP numbers are provided for reference only. Neither the Authority, the Trustee nor the Underwriters take any responsibility for the accuracy of such numbers.

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APPENDIX I
FEASIBILITY CONSULTANT'S REPORT

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TFG
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June 4, 2020

Ms. Sue McCormick, Chief Executive Officer
Great Lakes Water Authority
735 Randolph Street
Detroit, Michigan 48226

Dear Ms. McCormick:

In accordance with our agreement with the Great Lakes Water Authority (the "Authority" and/or "GLWA"), we submit herewith our Financial Feasibility Report to be included as an appendix to the official statement (the "Official Statement") prepared by the Authority in connection with its issuance of \$687,455,000 Sewage Disposal System Revenue Refunding Senior Lien and Second Lien Bonds (the "Series 2020 Bonds"). The Series 2020 Bonds are being issued to refinance certain outstanding Bonds of the Authority. The purpose of this report is to set forth information concerning financial factors relating to the Official Statement and the Series 2020 Bonds.

The report contains financial feasibility information including analyses of sewage disposal service charges, including specific charge methodology, projections of revenues under existing charges, projection of future operation and maintenance expenses, a summary of the Regional Sewer System Capital Improvement Program (the "CIP") for fiscal years 2020 through 2030, CIP financing, the impact of projected revenue requirements on future revenues and wastewater service charges for an eleven-year forecast period, and the ability of the Authority to meet the "Additional Bonds Test" as defined in the ordinance authorizing the issuance of bonds by the Authority (the "Master Bond Ordinance.") A listing of our major opinions developed as a result of our studies is presented at the end of the report.

THE FOSTER GROUP provides financial and engineering management consulting services to a broad customer base, specializing in services for municipal utility clients in the United States. Our principal experience includes: managing financial planning, cost of service, and rate design studies for water and wastewater utilities; preparation of feasibility reports in conjunction with issuance of municipal water and sewer revenue bonds; development of other feasibility reports; design of financial management information systems; consulting assistance regarding contractual

and other relationships amongst municipalities, and expert witness services in utility litigation matters.

Principals of THE FOSTER GROUP have prepared every financial feasibility report published in conjunction with the revenue bonds issued by the Authority and the Detroit Water and Sewerage Department (the predecessor to the Authority) since 1989. Various reports have been issued in connection with work for the Authority on these matters and related matters, and are available for public inspection at the offices of the Authority.

It has been a pleasure to be of service to the Authority on this matter.

Very truly yours,

THE FOSTER GROUP

A handwritten signature in black ink, appearing to read 'Bart Foster', with a stylized flourish at the end.

Bart Foster
President

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Introduction

This report is based on our analysis of the records and capital improvement programs of the Authority, discussions with key Authority personnel, and such other investigations as we have found necessary.

In this report, where standards or requirements are indicated as being applicable, being fulfilled, or to be attained, such standards or requirements are those promulgated by the United States Environmental Protection Agency (the "EPA") and the Michigan Department of Environmental Quality (the "MDEQ") in accordance with the provisions of Federal environmental laws governing the discharge of pollutants to the nation's air and waters and the laws of the State of Michigan. Capitalized terms not otherwise defined herein shall have the same meaning as ascribed to them in the Official Statement. References made herein to specific years are for the fiscal years ending June 30, unless otherwise noted.

The Authority was incorporated by the City of Detroit (the "City") and the Counties of Macomb, Oakland and Wayne (the "Counties") on November 26, 2014 pursuant to Act 233, Public Acts of Michigan, 1955, as amended ("Act 233"). At the time of the Authority's incorporation, the City, through its Detroit Water and Sewerage Department ("DWSD"), was providing wholesale water and sewer services to suburban wholesale customer communities and wholesale and retail water and sewer services to the City and its individual residents and businesses. Sewage disposal service was provided via operation of the City's sewage disposal system ("the Sewer System") that consisted of both wholesale and retail sewage collection, treatment, and disposal facilities.

On June 12, 2015, the City and GLWA executed a Regional Water Supply System Lease, a Regional Sewage Disposal System Lease and a Water and Sewer Services Agreement, and on December 1, 2015, the City and GLWA executed a Shared Services Agreement (each as more fully described under "THE GREAT LAKES WATER AUTHORITY" in this Official Statement). These agreements became effective on January 1, 2016 (the "Effective Date"), at which time the Authority assumed responsibility for the wholesale water and sewer services to the service area via operation of the portion of the Sewer System (the "Regional Sewer System") that provides service to the wholesale sewer customers. The Authority also provides "wholesale" water and sewer service to the City of Detroit Customer class, although the City is served via a Water and Sewer Services Agreement that is different from the Authority's standard wholesale contracts, and the City of Detroit is not a wholesale customer of the Authority.

The portion of the Sewer System that provides sewer service directly to retail customers in the City of Detroit (the "Local Sewer System") continues to be operated by the City of Detroit through DWSD, just as the Authority's wholesale customers provide retail services to their individual residents and businesses. The Authority's customers (the "Customers") include communities and districts served via wholesale service contracts and the City of Detroit retail customer class, served via the terms of the Water and Sewer Services Agreement. The Authority is authorized by its Articles of Incorporation to provide retail sewer service, but does not currently provide retail service to any customers.

The revenues and revenue requirements of the Authority include wholesale amounts related to service provided by the Regional Sewer System and retail amounts related to service provided by the Local Sewer System. In this report, revenues and revenue requirements associated with the Regional Sewer System are defined as “Wholesale” and / or “Wholesale System” activities and those associated with the Local Sewer System are defined as “Retail” and / or “Retail System” activities. All revenues are deposited into a trust established under the Master Bond Ordinance. *See "GLWA Financial Planning Guiding Principles."*

All Customers, including the City of Detroit retail customer class, receive Wholesale service and provide Wholesale revenue to the trust. Only the City of Detroit retail customer class receives Retail service and provides Retail revenues to the trust. The total of the Wholesale and Retail activities are referred to herein as “Combined” and / or “Combined System” revenues and revenue requirements.

Certain portions of this report may refer to historical wholesale service performance and events as being attributable to the Authority, while in fact they were applicable to the operations of the DWSD that existed prior to the Effective Date. We consider the attribution to be technically accurate, since the Authority has assumed responsibility for such performance and events.

The proceeds from the Series 2020 Bonds will be utilized to refinance certain outstanding bonds of the Authority. None of the Series 2020 Bonds are designed to generate additional capital financing for the Authority. The capital improvement program expenditures scheduled in the Authority’s CIP through at least June 2022 are projected to be financed by available fund balances, draws from loans from the State of Michigan’s Clean Water Revolving Fund ("CWRF"), additional bond proceeds, and internally generated funds. The projections in this report include additional future bond issues to finance capital improvement expenditures for the Regional Sewer System. However, availability of projected other financing sources, along with the pace of execution of the CIP, may impact those projections. *See "Capital Improvement Program Financing."*

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. Except as otherwise and specifically noted herein, the projections in this report were developed prior to the impacts on the Authority of the global health pandemic related to the outbreak of COVID-19. *See “COVID-19 IMPACT, RESPONSE AND RISK FACTORS” in this Official Statement.* It is unknown how extensive the spread of COVID-19 will be in the State, or how long the restrictions will remain in place. There can be no assurances that the spread of COVID-19 and the implementation of restrictions on a local, state and national level will not materially impact the local, state and national economies or the ability of the Authority’s customers to make timely payments to the Authority for water supply and sewage disposal services and accordingly, materially adversely affect an investment in the Series 2020

Bonds. The Authority is unable to quantify such risk at this time, and the projections in tis report to not attempt to quantify such risks. *See "Financial Feasibility for the Series 2020 Bonds."*

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Regional Sewer System Summary

Introduction

The Regional Sewer System consists of a wastewater treatment plant (the "Plant") providing primary and secondary treatment of wastewater and a sewage collection and interceptor main network within the City through which wastewater is conveyed to the Plant for treatment. The Authority's Customers, including the City of Detroit, own and operate their own collection systems and discharge their wastewater into the Regional Sewer System's interceptors.

Service Area

The Authority is responsible for the control and treatment of wastewater from most of southeast Michigan. The Regional Sewer System presently serves an approximately 944 square mile area in Wayne, Oakland, and Macomb Counties. Wholesale sewage collection, treatment, and disposal service is provided to 79 communities, including the City of Detroit. *See map, inside cover.*

Approximately 20 percent of the wholesale Customers service area is served by combined sewer lines, designed to convey both sanitary sewage and storm water drainage to the Authority's wholesale (interceptor) collection system, with the remaining 80% utilizing separate sanitary sewers and storm sewers for drainage. The City of Detroit's local collection system is almost entirely comprised of combined sewers.

The Regional Sewer System currently serves approximately 2.8 million people, or one-third of the population of the State of Michigan, with suburban wholesale customers comprising approximately 75% of the total.

Capital Improvement Program

The Authority's System Planning Division is responsible for coordinating the evaluation of capital needs and developing programs to meet those needs. This division formally reviews the Capital Improvement Program and incorporates revisions into the five-year capital agenda on an annual basis.

In accordance with the terms of the Articles of Incorporation, the CIP must be approved by a supermajority of at least five members of the Authority's Board of Directors. The Authority can modify individual projects within the CIP during the year to address changing costs and management decisions on specific project scope as long as the changes are within the basic framework approved by the Board. The Fiscal Year 2021-2025 CIP was approved by the Board on February 26, 2020, and forms the basis for the long-term CIP reflected in this forecast period.

The CIP is dynamic and requires continual review and modification during the course of each year. As additional cost information is developed from design work being performed on the various projects, cost estimates are adjusted accordingly.

A summary of the sewer CIP is presented in Table 1. The CIP is divided into major categories. The Wastewater Resource Recovery Facility categories identify specific functions at the Plant. The Wastewater Collection categories include the Regional Sewer System (improvements to interceptor sewers), and Wastewater Lift Stations. Categories are also included to represent Metering and General Purpose projects, as well as the Sewer System's allocated share of Centralized Services projects. See *"THE MASTER PLAN AND THE CAPITAL IMPROVEMENT PLAN – Regional Wastewater Master Plan"* in this Official Statement. **Table 1 does not include any capital improvements to the Local Sewer System facilities owned and managed by DWSD.**

Line No.	Fiscal Year Ending June 30,											
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
<u>Wastewater Resource Recovery Facility</u>												
1 Primary Treatment	12.3	13.4	13.2	11.9	44.8	41.2						136.9
2 Secondary Treatment & Disinfection	6.8	6.5	8.0	8.0	41.5	15.9						86.7
3 Residuals Management	8.5	3.8	1.0	14.4	6.1	-						33.8
4 Industrial Waste Control	10.4	1.3	-	-	-	-						11.7
5 CSO RTB & SDC	0.1	4.1	3.2	2.4	0.9	4.7						15.4
6 General Purpose	<u>7.6</u>	<u>8.5</u>	<u>9.1</u>	<u>22.3</u>	<u>18.7</u>	<u>6.1</u>						72.3
7 Subtotal WRRF	45.8	37.5	34.6	59.1	112.0	67.9	58.9	59.5	57.1	64.3	69.5	666.1
<u>Wastewater Collection</u>												
8 Regional Interceptor System	17.7	27.3	18.3	21.3	31.1	26.7						142.4
9 In System Storage	-	-	0.0	0.1	3.4	2.0						5.5
10 Wastewater Lift Stations	<u>34.9</u>	<u>12.1</u>	<u>1.0</u>	<u>9.9</u>	<u>23.8</u>	<u>30.8</u>						112.6
11 Subtotal Collection	52.6	39.4	19.4	31.3	58.3	59.5	51.6	52.1	50.1	56.4	60.9	531.5
12 General Purpose	<u>31.4</u>	<u>32.2</u>	<u>55.5</u>	<u>47.4</u>	<u>31.2</u>	<u>42.9</u>	<u>37.2</u>	<u>37.6</u>	<u>36.1</u>	<u>40.6</u>	<u>43.9</u>	435.9
13 Total Sewer Direct	129.7	109.1	109.5	137.8	201.5	170.2	147.8	149.2	143.3	161.3	174.2	1,633.5
14 Centralized Svcs - Sewer Portion	<u>2.0</u>	<u>1.6</u>	<u>3.3</u>	<u>3.1</u>	<u>1.7</u>	<u>1.7</u>	<u>1.5</u>	<u>1.5</u>	<u>1.4</u>	<u>1.6</u>	<u>1.7</u>	21.1
15 GRAND TOTAL	131.7	110.6	112.8	140.8	203.3	171.9	149.3	150.7	144.7	162.9	176.0	1,654.6
16 CIP Spend Rate Assumption	72%	75%	75%	75%	75%	75%	90%	90%	95%	95%	95%	83%
17 CIP Funding Requirement	94.8	83.0	84.6	105.6	152.4	129.0	134.3	135.6	137.5	154.7	167.2	1,378.7

(a) Estimated CIP requirements for 2026 through 2030 are not currently assigned to specific facilities.

The published CIP document contains specific project descriptions and summaries for planned activity through 2025, including that represented in Table 1. The planning documents that produce the published CIP also contain initial estimates for infrastructure investment from 2026 through 2030. Those amounts are also reflected in Table 1, but without the detailed assignment to individual wastewater treatment areas and other categories.

The Authority employs a policy of establishing capital financial plans based on a CIP Spend Rate Assumption. This policy recognizes the difficulties of executing multiple large infrastructure projects, and provides an analytical approach to bridge the total dollar amount of projects in the CIP with what can realistically be spent due to limitations beyond the Authority's control and/or delayed for non-budgetary reasons. Based on review of historical records, the Authority has spent approximately \$56.8 million, \$69.6 million, and \$82.1 million on major Sewer CIP projects during 2017, 2018, and 2019, respectively. As shown in Table 1, the CIP financing

plan assumes a CIP Spend Rate Assumption of 75% for 2021 through 2025, increasing to 90% in 2026 and 98% in 2028. The estimate for 2020 represents a review of activity during the first six months of the current fiscal year. The overall CIP funding requirements shown on Line 17 of Table 1 reflect a reasonable expectation of CIP investments throughout the forecast period.

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Financial Feasibility for the Series 2020 Bonds

The financial data used in the analyses presented herein were obtained from the financial records of the Authority, and of DWSD. The financial records of the prior DWSD were audited annually and maintained in conformity with generally accepted accounting principles for water and wastewater utilities, and financial records of both the Authority and DWSD are subject to annual audits.

The projections set forth herein are intended as “forward-looking statements”. In formulating these projections, THE FOSTER GROUP has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized by THE FOSTER GROUP in performing these analyses follows generally accepted practices for such projections. Such methodologies are summarized in this report and are reasonable and appropriate for the purpose for which they are used. While THE FOSTER GROUP believes the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by conditions, events, and circumstances that may actually occur. Such factors may include the Authority’s ability to execute the CIP as scheduled and within budget, regional climate and weather conditions affecting the demand for water, and adverse legislative, regulatory or legal decisions (including environmental laws and regulations) affecting the Authority’s ability to manage the Regional Sewer System and maintain water quality.

As noted in the introduction to this report, except as otherwise and specifically noted herein, the projections in this report were developed prior to the impacts on the Authority of the global health pandemic related to the outbreak of COVID-19. *See “COVID-19 IMPACT, RESPONSE AND RISK FACTORS” in this Official Statement.* It is unknown how extensive the spread of COVID-19 will be in the State, or how long the restrictions will remain in place. There can be no assurances that the spread of COVID-19 and the implementation of restrictions on a local, state and national level will not materially impact the local, state and national economies or the ability of the Authority’s customers to make timely payments to the Authority for water supply and sewage disposal services and accordingly, materially adversely affect an investment in the Series 2020 Bonds. The Authority is unable to quantify such risk at this time, and the projections herein to not attempt to quantify such risks.

GLWA Financial Planning Guiding Principles

The financial plans developed for the Authority’s Water and Sewer Funds follow the guiding principles set forth in the various organizational documents, including the Articles of Incorporation, the Authority By-Laws, the Leases, the Water and Sewer Services Agreement with the City of Detroit, and the Master Bond Ordinances. In addition, in June 2018 DWSD and GLWA entered into a 2018 Memorandum of Understanding (the “2018 MOU”) that provides for clarification and implementation guidance for several elements of the organizational documents. The financial projections presented herein embrace these principles, which include:

- The Authority is empowered through its Board of Directors (the "Board") to provide wholesale water and wastewater service to the service area. The six member Board has the authority to execute contracts, to set policy for the Authority, to establish service

charges for wholesale water and wastewater service, and to set a revenue requirement for the Detroit retail customer class¹.

- The Board must appoint an Audit Committee to “review the reports related to the financial condition, operations, performance and management of the Authority” on a regular basis.
- Certain actions by the Authority Board require “the affirmative vote of at least 5 members of the Board.” The elements which require this supermajority approval include, but are not limited to, service charge schedules, annual operating budgets, capital improvement programs, and issuance of debt.
- The Authority must establish biennial budgets, with the first year serving as formal authorization (including an approved schedule of service charges to support the budget) and the second year serving as an initial estimate of revenues and revenue requirements.
- Through 2025, the Sewer (and Water) System “is assumed to experience annual increases in the Authority Revenue Requirement of not more than 4%; provided however, this limitation shall not be applicable if the Authority Revenue Requirement must increase beyond the 4% assumption in order to satisfy the Rate Covenant or to pay the cost of improvements to the Leased Sewer Facilities that are required to be made by Applicable Laws.”²
 - The Authority has expressed a commitment to adhere to the 4% limitation beyond 2025. The forecast presented in this report assumes annual revenue requirement increases of 3%.
- In accordance with the City’s Plan of Adjustment resulting from its bankruptcy, the Authority will provide annual contributions for Pension Obligations in an amount of \$45.4 million (which includes annual administrative fees of \$2.5 million) through 2023. \$24 million of this amount will be treated as an operating expense, and funded via the Pension Obligation sub account of the Operation and Maintenance Fund. The remaining \$21.4 million will be treated as non-operating expense and funded via the Pension Obligation Payment Fund, which is subordinate to the debt service payment funds. The Sewer System’s share of the amounts above are \$13.7 million and \$12.2 million, respectively.
 - The agreement contemplates a “true-up” adjustment after 2023 to reconcile with final actuarial analyses and to finalize the Authority’s Pension Obligation. Based on the most recent actuarial estimates, the annual requirement is projected to be reduced from \$45.4 million to \$10.0 million annually, all of which is assumed to be treated as non-operating expense and funded via the Pension Obligation Payment Fund, which is subordinate to the debt service payment funds. The Sewer System’s share is assumed to be \$5.7 million in the projections in this report.
- ALL revenues, including revenues from retail customers of the City of Detroit, are deposited into a trust established under the Master Bond Ordinance (the “Trust”) and

¹ The Authority has engaged the City of Detroit as its agent to establish retail water and sewer rates for the Detroit Customer class, and to bill and collect for service from that class. The Authority retains oversight responsibility for these activities through monitoring of the agency relationship.

² The “not more than 4%” increase commitment has been achieved for every year of the Authority’s existence. See “AUTHORITY FINANCIAL OPERATIONS - 4% Revenue Requirement Parameter” section of this Official Statement.

held by a trustee and subsequently applied to a flow of funds as set forth in summary fashion below:

- Operation and Maintenance Fund, including separate accounts for the Authority Regional Sewer System and Detroit Local Sewer System operations, and including separate subaccounts for the “operating portion” of the Pension Obligation, separated by Authority Regional and Detroit Local portions; ***The accounts of the Operation and Maintenance Fund are the only monies held outside the Trust;***
- Bond and Interest Redemption Funds, in cascading lien order, and including debt service accounts and bond reserve accounts;
- Pension Obligation Payment Fund, to provide for funding of the Sewer System’s share of the “non-operating portion” of the Pension Obligation and obligation for the B and C Notes;
- Water Residential Assistance Program (WRAP) Fund established to provide bill payment assistance to residents throughout the service area;
- Budget Stabilization Fund established as a reserve to manage collection performance of the Detroit retail customer class;
- Extraordinary Repair and Replacement Reserve Fund established as a reserve to pay the costs of making major unanticipated repairs or replacements;
- Improvement and Extension (I&E) Fund established to pay for improvements, enlargements, or extensions; separate subaccounts established for the Regional Sewer System and the Local Sewer System.
- Surplus Fund established to accommodate flexibility in managing the overall flow of funds.
- An annual common-to-all Lease Payment of \$50 million (of which the Regional Sewer System’s share is \$27.5 million). The Lease Payment is to be deposited into the Local Sewer System I&E Account, except in circumstances whereby the City applies a portion of the annual Lease Payment to pay a portion of its share of debt service. If the City elects to apply a portion of the Lease Payment to pay debt service, the total revenue requirement allocated to the City of Detroit retail customer class would be reduced accordingly.

These principles have been embraced in the financial plans established by the Authority, which serves as the guiding platform for the projections presented in this report. A discussion regarding the funding requirements of each element of the funds within the Trust is presented in the financial plan. See “*Operational Financing Plan.*”

The Board approved the Great Lakes Water Authority 2021 and 2022 Biennial Budget on March 11, 2020. The biennial budget establishes a formal authorization for 2021, including an approved schedule of service charges to support the budget, and an initial estimate for 2022. The budget includes several depictions of the overall financial plans, including a schedule that reflects “Sources of Revenues and Use of Revenue Requirements – Flow of Funds Basis per Master Bond Ordinance.” That Combined System schedule includes elements related to the entire Sewer System, including Wholesale service requirements of the Authority, as well as the Retail service requirements of DWSD, and recognizes that all receipts from both organizations flow through the

Master Bond Ordinance flow of funds. The projections in this report reflect the Combined System revenues and revenue requirements described above.

[Additional information regarding organizational documents and related initiatives is contained in “THE GREAT LAKES WATER AUTHORITY” section of this Official Statement.]

Service Charge Methodology and Existing Service Charges

The Authority's sewage disposal service charges are developed to provide sufficient levels of revenue to meet all operation and maintenance expenses of the Sewer System, debt service requirements on obligations issued for the Sewer System, capital improvement expenditures to be funded from current revenues, and other specific bond ordinance and revenue requirements. A schedule of wholesale sewer service charges is developed for each wholesale Customer, and an annual wholesale revenue requirement is established for the City of Detroit retail customer class, by determining the total costs of service and individual customer service requirements.

The general philosophy employed to develop the Authority's wholesale service charges has been consistent for many years. All Customers are proportionally allocated costs of service based on their use of the Regional Sewer System, as measured by estimates of contributed wastewater volumes and loadings and related data. Allocation of treatment plant costs to Customers reflect the relative pollutant loadings in the various flow types (sanitary, dry weather infiltration, wet weather inflow) contributed by each Customer. Costs associated with major interceptors and pump stations are allocated to Customers based solely on estimated contributed volume, and partially based on the geography and use of the collection system in certain areas.

The Authority also establishes industrial waste control charges, applicable to all non-residential retail customers in the Service Area, and industrial surcharges, applicable to each commercial, governmental, and industrial user of the Regional Sewer System whose wastewater discharge exceeds the domestic equivalency of certain pollutant parameters.

On March 11, 2020 the Board approved a new schedule of wholesale sewage disposal service charges for 2021, which were originally designed to become effective July 1, 2020. The proposed 2021 sewer service charges were designed to generate an overall revenue increase of approximately 2.0 percent over revenues generated by the current year's charges. Approximately 1.3% of this increase is designed to support an overall increase in the Sewer System's annual revenue requirement for 2021. The remaining 0.7% is designed to address a forecasted decline in investment income in the 2021 budget associated with forecasted lower interest rates.

Subsequent to the approval of the 2021 wholesale sewage disposal service charges, the Authority was impacted by the global health pandemic related to the outbreak of COVID-19. In order to provide budget relief to all Customers, on April 22, 2020, the Board approved a delay in the effective date of the approved 2021 wholesale sewage disposal service charges from July 1, 2020 to October 1, 2020. The budget impact of this delay for 2021 is approximately \$2.6 million, and the projected revenues presented herein reflect that amount. The decision to delay the implementation date does not impact future baseline revenue levels, and the projections in this

report anticipate that future charge adjustments will be effective on the first day of the fiscal year. See *“COVID-19 IMPACT, RESPONSE AND RISK FACTORS”* in this Official Statement.

Rate Simplification Initiative

The proposed schedule of charges represents the seventh year following the Authority’s “Rate Simplification Initiative”, which was designed to greatly improve the efficiency, understanding, and stability of the process of establishing sewer service charges. Four key strategies define the Rate Simplification Initiative:

1. **Simplified Calculation of SHAREs** - Each Customer is assigned a share of various cost pools that make up the annual revenue requirement for the Regional Sewer System. These individual shares are based on a review of historical wastewater contributions to the Sewer System, and when taken in concert result in a consolidated SHARE for each Customer. SHAREs were locked in for an initial period of three years, although the protocol allows for appeals for interim adjustments should demographic changes or other circumstances merit.
2. **Simplified Flow Balancing** - Previously, significant efforts and costs were expended in pursuit of precise estimates of wastewater volumes and loadings, and the cost allocation principles were focused on updating these data annually. The parties realized that such pursuit was fruitless and wasteful, and that efforts were better directed towards higher value added initiatives. A much more streamlined approach to evaluating wastewater contribution data was developed and implemented.
3. **Simplified Estimates of Cost Pools** – Similarly, prior approaches to cost allocation sought precision in determining annual costs of service to specific cost categories, beyond the financial system’s ability to track and report such costs. The Rate Simplification Initiative relies on historical data to establish relative assignment of operating and capital revenue requirements to cost pools from which to apply SHAREs.
4. **Simplified Charge Structure** – The prior wholesale charge structure consisted of fixed monthly or quarterly charges for each customer, and a unique commodity charge for each customer. Based on individual characteristics, the relative revenues recovered from fixed and commodity charges varied widely, and created confusion. In general, approximately 35% of revenues were collected via fixed charges and the remaining 65% via commodity charges. Under Rate Simplification, all wholesale Customers are billed monthly, and all costs from wholesale Customers are recovered via fixed monthly charges – irrespective of the metered or estimated contributed wastewater for that month. Data on contributed wastewater continues to be collected and monitored for purposes of evaluating future SHAREs for a subsequent rate period after the initial three-year rate period concludes.

The Rate Simplification Initiative has delivered many benefits to both the Authority and its Customers. It further aligns allocation and recovery of costs with realistic expectations of precision. The Rate Simplification solution preserves the basic relative historical allocation of revenue requirements to Customers, which had not changed materially despite the rigorous annual review of wastewater volumes and loadings. It aligns cost recovery with cost allocation principles, recognizing that over 90% of the annual revenue requirement is fixed irrespective of variable flow volumes and weather conditions. And finally, the Rate Simplification Initiative results in stability

for both the Authority and its Customers. Customers know what the bill will be every month, and that annual changes in charges will be much more homogenous than prior experience. The stability and regularity of the Authority's revenue stream is dramatically enhanced, particularly since all customers are now billed monthly. Prior to Rate Simplification approximately 65% of the revenues from the wholesale class were billed and paid quarterly, creating cash management challenges.

The initial rate period SHAREs were in place for 2015, 2016, and 2017. A second period of SHAREs were developed and implemented in a phased approach for 2018 and 2019, and are the foundation for the existing and proposed service charges. The Authority and its Customers continue efforts to review and update SHAREs for a third rate period, currently scheduled to commence with the 2022 sewer service charges. New technical information regarding wastewater flows and pollutant contributions is being analyzed and reviewed with Customer representatives as part of the Authority's Customer Outreach Process. That initiative is also exploring potential modifications to the core charge methodology. While this update may result in moderate variances between Customers, the overarching goal of maintaining stability should preclude any volatile impacts on individual Customers.

As part of the process of implementing the Rate Simplification Initiative, the parties agreed to modify and consolidate the relevant terms of the existing "Rate Settlement Agreements" that have governed the manner by which sewage disposal charges were determined for suburban wholesale Customers. The basic premises of these agreements were maintained, but updated to align with the general Rate Simplification approach.

The sewer service charge methodology continues to implement the agreement that bad debt expense associated with a suburban wholesale Customer is chargeable to the suburban wholesale class at large. The 2021 proposed budget assumes that the 2021 projected bad debt expense (assuming 77% recovery from Highland Park) will be approximately \$1.3 million. The cumulative bad debt expense true-up adjustments for 2013 – 2019 yields a "credit due" to suburban wholesale Customers of approximately \$1.3 million. As such, the proposed charges do not include any "net" amounts related to bad debt expense associated with the City of Highland Park.

Modifications Resulting from the Lease

One of the surviving terms from the Rate Settlement Agreements was an adjustment in the cost of service allocations that reflected the "Payment for Indirect Benefits or Services" that was established as part of the 1978 Rate Settlement Agreement. This provision recognized that the City was entitled to a *"payment to reflect the cost of indirect benefits or services provided by the City of Detroit to DWSD for common use facilities within the City of Detroit, such as police and fire protection, the risk of tort liability, the loss of tax base that the City loses as a result of the Department's tax exemption, and the fact that the suburbs receive sewage treatment without having to devote any of their land to a tax free utility."*

The value of the payment was originally established at \$1 million annually, and the agreement stipulated that it be increased by five percent annually. In effect, the adjusted amount is added to the revenue requirements allocated to the suburban wholesale Customer class and deducted from the Detroit retail customer class. No payment was made to the City General Fund, but the "ownership benefit" was reflected in charges to customers in the City of Detroit retail class.

The Lease contains a directive to “lock in” the ownership benefit at the \$5.516 million figure. The sewer service charges adopted for 2016 reflected the first year that formally reflects this provision. The \$5.516 million adjustment was also applied in development of the proposed 2021 sewer service charges. This \$5.516 million annual amount is fixed for the term of the Lease and not subject to escalation.

Projection of Revenues

Table 2 presents actual reported revenues from sewer charges for 2017 through 2019, and estimated and projections for 2020, 2021, and 2022. The 2020 estimate is based on a review of activity during the first ten months of the fiscal year and is computed based on application of the current sewer service charges. The 2021 forecast reflects application of the current wholesale sewage disposal service charges for three months, and application of the approved 2021 charges for the remaining nine months. The 2022 forecast is computed based on application of the approved 2021 wholesale sewage disposal service charges for an entire year, and serves as the forecast basis for the remainder of the forecast period. These figures are net of reported and estimated bad debt expense.

Line No.		Fiscal Year Ending June 30,					
		<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u> <i>estimate</i> (c)	<u>2021</u> <i>forecast</i> (d)	<u>2022</u> <i>forecast</i> (e)
	Wholesale Service Charge Revenues						
1	Suburban Wholesale Customers (a) (b)	263.3	269.0	272.8	272.3	275.5	277.0
2	Industrial Specific Charges (a)	19.6	21.2	15.0	13.7	14.0	14.0
3	Detroit Retail Customer Class	<u>187.3</u>	<u>179.0</u>	<u>181.2</u>	<u>185.8</u>	<u>189.0</u>	<u>190.1</u>
4	Total Wholesale Service Charges	470.2	469.2	469.0	471.9	478.5	481.2
5	Detroit Retail Local Charges (a)	<u>45.6</u>	<u>78.9</u>	<u>66.5</u>	<u>91.6</u>	<u>102.8</u>	<u>102.8</u>
6	Total Revenue from Service Charges	515.8	548.1	535.4	563.5	581.3	583.9
7	Total Detroit Customer Class (3) + (5)	232.9	257.9	247.6	277.5	291.8	292.9

(a) Net of bad debt expense.
(b) All wholesale sewer charges are fixed monthly charges.
(c) Based on existing 2020 charges and rates.
(d) Based on existing FY 2020 wholesale charges for 3 months and approved FY 2021 wholesale charges for 9 months, and proposed FY 2021 retail rates for the entire year.
(e) Based on approved FY 2021 wholesale charges and approved FY 2022 retail rates. Serves as forecast basis for FY 2023 - FY 2030.

“Baseline” suburban wholesale revenues for 2022 reflect application of the approved fixed monthly charges. The Authority's financial records account for revenue based on when service is provided, as such approximately reflect wastewater contributions treated and disposed of during the fiscal year. For instance, bills issued in August are reflective of service provided in July and

are accounted for as July revenue. The projections shown in Table 1 are developed on the same basis.

Projected revenues from suburban wholesale Customers reflect continued application of the fixed monthly charges associated with the Rate Simplification Initiative. As such, there is no need to rely on projected billable wastewater volumes to develop these projections.

These revenue projections assume that revenues from the City of Highland Park will reflect 77% of the amounts billed to that Customer. Highland Park's payment performance has improved in recent years, and represented 73% of amounts billed during 2018 and 93% of amounts billed during 2019. However, Highland Park's wholesale sewer delinquency continues to grow and is currently over \$32 million. The Authority has taken legal action to recover the delinquent balance and ongoing bills for service, having received a favorable lower court judgment, subsequently stayed, pending action by the Michigan Supreme Court.

As noted above, the sewer service charges to suburban wholesale Customers include recovery of amounts related to forecasted bad debt associated with Highland Park. The forecasted revenues in this report continue to include the estimated future bad debt expense related to Highland Park. In effect, the Regional Sewer System and the suburban wholesale Customers are fully "hedged" against lack of payment of bills by Highland Park. The current service charges already include prospective and true-up amounts, and any recovery from Highland Park that is higher than the assumed collection rate will serve to reduce the amounts currently being carried by other Customers.

Table 2 also presents revenue figures associated with Local System retail sewer rates charged to the Detroit Customer class. These figures are also net of reported and estimated bad debt expense. The 2020 estimate and the 2021 forecast were developed in consultation with DWSD and align with the long-term forecast prepared by DWSD. The portion of these revenues that are related to Wholesale service are shown on Line 3 and are included in the wholesale service charge revenues shown on Line 4. These amounts from Detroit are fixed annually as part of the development of wholesale service charges and the Authority effectively "bills" Detroit monthly in equal installments³. While annual cost allocations may change in future years related to implementation of SHARE adjustments, none have been anticipated for purposes of these projections.

The balance of revenues from the Detroit Customer class are Retail revenues and are available to be applied to Retail revenue requirements, as shown on Line 5.

Total projected revenue from Wholesale sewer charges (and Local System Retail sewer rates) available to the Trust is shown on Line 6. In summary, while we have conducted detailed evaluations on potential sales growth for the Local System, these projections assumed a static level of "baseline" revenues under the proposed 2021 rates and charges throughout the forecast period. This is particularly appropriate for the suburban wholesale Customers, since the charge structure consists entirely of fixed monthly charges, and revenue levels are not subject to varying levels of

³ All receipts from Detroit retail customers are deposited into the Trust, so the bill prepared for the Detroit Customer class is solely to assist in the accounting practices.

water purchases or sewage contributions. Revenues presented later in in Table 5 “Combined Wholesale and Retail System Financing Plan and Debt Service Coverage” reflect an assumed series of annual charge and rate increases of 3.0%.

Operation and Maintenance Expense Projections

Table 3 presents projected operation and maintenance expense, and certain non-operating expenses related to financing legacy employee benefit obligations, for 2020 through 2030. The expenses in this table are those of the Combined System and reflect the total of Wholesale and Retail amounts.

The GLWA Wholesale System estimates for 2020, and projections for 2021 and 2022 are based on a review of the amounts reflected in the biennial budget adopted by the Authority. The 2020 estimate reflects the Authority’s preliminary identification of available operating expense reductions during the current year. These reductions offset lower estimated investment earnings than included in the Fiscal Year 2020 Budget. We have also made adjustments to the 2021 budgeted amounts to reflect the Authority’s stated intent to reduce the 2021 operating expense in the first quarter of the fiscal year to address the negative revenue variance resulting from the deferred implementation of the 2021 service charges. Projections for 2022 through 2025 also reflect amounts included in that planning document, adjusted to incorporate the lower baseline established by the 2021 estimates. Forecasted amounts for 2026 through 2030 assume an overall 2% increase in annual Wholesale System operating expenses.

Table 3 Projected Sewer Operation and Maintenance Expense and Selected Non-Operating Expenses (\$ millions)											
Line No.	Fiscal Year Ended June 30,										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<u>GLWA Wholesale System</u>											
1 Sewer System Operations	116.0	115.7	118.2	124.6	129.1	132.7	133.5	136.1	138.9	141.6	144.5
2 Allocated Centralized Services	56.3	53.4	54.5	52.8	52.5	52.1	52.4	53.5	54.5	55.6	56.7
3 Allocated Administrative Services	14.8	15.9	16.3	16.6	16.9	17.2	17.3	17.6	18.0	18.3	18.7
4 Net GLWA Regional O&M Expense	187.1	184.9	188.9	194.0	198.5	202.0	203.2	207.2	211.4	215.6	219.9
5 DWSD Retail System O&M (a)	70.8	69.9	72.4	74.6	76.9	79.2	81.6	84.1	86.6	89.2	91.9
6 Combined Total "Normal" O&M	257.9	254.9	261.4	268.6	275.4	281.2	284.8	291.3	298.0	304.8	311.8
<u>Operating Pension Obligation (b)</u>											
7 GLWA Wholesale System	10.8	10.8	10.8	10.8	-	-	-	-	-	-	-
8 DWSD Retail System	2.9	2.9	2.9	2.9	-	-	-	-	-	-	-
9 Total	13.7	13.7	13.7	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 GRAND TOTAL O&M	271.5	268.5	275.0	282.3	275.4	281.2	284.8	291.3	298.0	304.8	311.8
<u>Non-Operating Expense (c)</u>											
11 Non-Operating Portion of Pension Obligation	12.2	12.2	12.2	12.2	5.7	5.7	5.7	5.7	5.7	5.7	5.7
12 B & C Note Non-Operating Payments	2.5	2.5	2.5	2.5	2.5	4.7	4.6	4.1	3.7	3.6	3.5
13 Transfer to Pension Obligation Payment Fund	14.7	14.7	14.7	14.7	8.2	10.4	10.3	9.8	9.4	9.3	9.2
14 Total Pension Obligation (9) + (11)	25.9	25.9	25.9	25.9	5.7	5.7	5.7	5.7	5.7	5.7	5.7
(a) Excludes DWSD's allocated Wholesale revenue requirement to avoid duplication of expenses.											
(b) Transferred to Pension Obligation sub-account of the Operation and Maintenance Fund, and treated as Operation and Maintenance Expense for Net Revenue determination.											
(c) Not treated as Operation and Maintenance Expense for Net Revenue determination.											

The annual “normal” operating expenses of the Wholesale System are reflected on Lines 1 through 4. Consistent with the Authority’s budget presentation, Wholesale System amounts are reflected in direct Sewer System operations, and allocated Centralized and Administrative support services for the Sewer System. As noted above, for purposes of our projections we have not made any changes to the five-year plan prepared by the Authority. The Authority continues to pursue implementation of programs designed to improve efficiency and produce operating expense savings, and it is possible that such savings will emerge during the projection period.

The projected operating budget for DWSD Retail System operation and maintenance expense is shown on Line 5. This line item reflects amounts collected via Retail rates charged to the Detroit retail customer class and transferred to the Detroit Local Operation and Maintenance Account to fund local operating expenses. The amounts are effectively “pass through” revenue requirements for the Authority. For purposes of these projections we have relied upon detailed budget plans developed by DWSD. Line 6 indicates the projected Combined “normal” annual operation and maintenance expense for both entities, and represents the projected amount of revenues that will be transferred to the Operation and Maintenance Fund for each year related to current operating expenses of the Sewer System.

As noted above, the operation and maintenance expenses also include deposits to the Pension Obligation subaccounts of the Operation and Maintenance Fund, shown on Lines 7 through 9 of Table 3. These amounts total \$13.7 million annually for the Sewer System through 2023, consistent with the original agreement related to the Plan of Adjustment. The forecast in this report assumes that all Sewer System amounts subsequent to 2023 will be treated as a non-operating expense and funded via the Pension Obligation Payment Fund.

The Sewer System’s allocated share of the non-operating portion of the annual Pension Obligation payment is shown on Line 11. Subsequent to 2023 this amount, which is assumed to total \$5.7 million annually, represents the projected entire Sewer System contribution. The total Pension Obligation revenue requirement is summarized on Line 14, and the Sewer System’s allocated share of the B and C Notes issued by the City of Detroit to finance other post-employment benefits settled by Detroit’s Plan of Adjustment are shown on Line 12.

Capital Improvement Program Financing Plan

Projected capital financing plans for both the Wholesale Sewer System and the Retail Sewer System are presented in Tables 4a and 4b, respectively.

Wholesale System CIP Financing Plan

The projected plan for financing the Wholesale Sewer System CIP for the study period is set forth in Table 4a. Prior to the establishment of the Authority, the Sewer System’s capital financing requirements were predominantly financed with bond proceeds. Authority management (with support of the Board) continues to employ a more balanced debt/revenue financing approach to achieve the objective of reducing the Sewer System’s significant reliance on debt. The capital financing plan presented herein is designed to continue implementation of that more balanced approach. Customer representatives have embraced this planning strategy as being essential to improving the financial position of the Sewer System.

Total capital financing requirements are shown on Lines 1 through 3 of the table, and include budgeted capital outlay (minor replacements and equipment) and the major CIP expenditures from Table 1.

Table 4a GLWA Wholesale System Capital Improvement Program Financing Plan (\$ millions)												
Line No.	Fiscal Year Ended June 30,											
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Financing Requirements												
1 Budgeted Capital Outlay	20.1	20.5	15.8	9.8	10.4	14.8	15.1	15.4	15.7	16.0	16.3	169.8
2 Major Capital Improvement Program (a)	94.8	83.0	84.6	105.6	152.4	129.0	134.3	135.6	137.5	154.7	167.2	1,378.7
3 Total Financing Requirements	114.9	103.5	100.4	115.4	162.8	143.7	149.4	151.0	153.2	170.7	183.5	1,548.5
Financing Sources												
<u>GLWA Regional System Improvement & Extension Account</u>												
4 Beginning Balance (b)	96.6	106.2	106.4	99.0	90.7	89.6	88.7	91.1	90.8	90.1	88.9	96.6 (i)
5 Transfers from Sewer Receiving Fund	35.4	46.4	49.6	61.5	74.3	93.8	105.0	112.7	120.0	132.3	149.2	980.2
6 Other Sources - DWSD Loan Receivable Pmts	19.3	19.3	8.7	-	-	-	-	-	-	-	-	47.3
7 Subtotal - Improvement & Extension Fund	151.4	171.9	164.8	160.5	165.0	183.4	193.7	203.7	210.8	222.4	238.2	1,124.1
<u>Construction Bond Funds</u>												
8 Beginning Balance (b)	82.0	53.4	49.2	30.2	139.7	53.7	90.1	44.2	82.0	50.5	84.5	82.0 (i)
Bond Proceeds												
9 Sewer System Revenue Bonds (c)	687.5	-	-	150.0	-	90.0	-	80.0	-	75.0	-	1,082.5
10 Plus: Available Bond Reserve Funds	50.4	-	-	-	-	-	-	-	-	-	-	50.4
11 Less: Defeasance Requirements (d)	(734.4)	-	-	-	-	-	-	-	-	-	-	(734.4)
12 Less: Transfer to DWSD Const. Fund (e)	-	-	-	-	-	-	-	-	-	-	-	-
13 Less: Issuance Expenses (f)	(3.5)	-	-	(9.0)	-	(5.4)	-	(4.8)	-	(4.5)	-	(27.2)
14 Net Bond Proceeds Available	0.0	0.0	0.0	141.0	0.0	84.6	0.0	75.2	0.0	70.5	0.0	371.3
15 State Clean Water Revolving Fund Loans	40.5	41.2	25.1	22.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.9
16 Less: Transfer to DWSD Constr. Fund	-	(8.0)	(10.0)	(8.6)	-	-	-	-	-	-	-	(26.6)
17 Net State CWRP Financing for Authority	40.5	33.2	15.1	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	102.3
18 Investment Income	0.7	0.5	0.5	0.6	1.4	0.8	1.0	0.7	1.0	0.7	1.0	8.9
19 Subtotal - Construction Bond Funds	123.2	87.1	64.7	185.3	141.1	139.0	91.1	120.1	83.0	121.8	85.5	564.6
20 Total Financing Sources Available	274.6	259.0	229.5	345.8	306.1	322.5	284.8	323.8	293.8	344.2	323.7	1,688.7
Application of Financing Sources												
21 I&E Funds - Budgeted Capital Outlay	20.1	20.5	15.8	9.8	10.4	14.8	15.1	15.4	15.7	16.0	16.3	169.8
22 I&E Funding of Debt Eligible Projects	25.0	45.0	50.0	60.0	65.0	80.0	87.5	97.5	105.0	117.5	132.5	865.0
23 Project Expenditures from Construction Funds	69.8	38.0	34.6	45.6	87.4	49.0	46.8	38.1	32.5	37.2	34.7	513.7
24 Total Financing Sources Applied	114.9	103.5	100.4	115.4	162.8	143.7	149.4	151.0	153.2	170.7	183.5	1,548.5
Financing Sources Available for Future Requirements												
25 Improvement & Extension Funds (g)	106.2	106.4	99.0	90.7	89.6	88.7	91.1	90.8	90.1	88.9	89.4	89.4 (j)
26 Construction Bond Funds (h)	53.4	49.2	30.2	139.7	53.7	90.1	44.2	82.0	50.5	84.5	50.9	50.9 (j)
27 Financing Sources Available for Future Req'ts	159.7	155.6	129.1	230.4	143.3	178.7	135.3	172.8	140.6	173.5	140.2	140.2 (j)

(a) From Table 1.

(b) Estimated balance available June 30, 2019 (applies only to Fiscal Year 2020).

(c) Par value for the Series 2020 Bonds (for Fiscal Year 2020) and projected additional future bonds.

(d) Amounts required to defease the 2020 Refunded Bonds.

(e) There are not currently any projected additional bonds to provide funding to the DWSD CIP.

(f) For 2020, includes net effect of a bond premium, release of accrued debt service reserve amounts, and other issuance expenses. For future years assumes amounts will be required from bond proceeds to fund debt service reserve fund.

(g) Line 7 minus Lines 21 and 22.

(h) Line 19 minus Line 23.

(i) Total column reflects estimated balance available June 30, 2019.

(j) Total column reflects estimated balance available June 30, 2030.

Lines 4 through 20 outline the sources available to meet the CIP financing requirements. The 2020 amount on Line 4 shows the estimated net balance in the Authority Improvement and Extension ("I&E") Fund as of June 30, 2019, which is available to fund the CIP. Annual transfers of Sewer System revenues to the I&E Fund are shown on Line 5. For planning purposes, these

amounts are not assumed to be eligible to finance capital improvements until at least the year subsequent to their generation. As such, they are effectively treated as a “year-end” transfer when establishing capital financing plan. See *“Combined System Financing Plan and Debt Service Coverage” and Table 5*. Line 6 shows repayments of the DWSD loan receivable, which serve as an additional source of funding to the GLWA I&E Account.

The capital financing available from the Authority Construction Fund is indicated on Lines 8 through 14. The 2020 amount on Line 8 shows the estimated net balance in the Construction Fund as of June 30, 2019, which is available to fund the CIP. Lines 9 through 14 reflect the projected financing sources generated via the issuance of revenue bonds. The par amount of the Series 2020 Bonds totals approximately \$687 million as shown in 2020 on Line 9. Amounts required to defease the Refunded Bonds are shown on Line 11. The Series 2020 Bonds are being issued entirely as revenue refunding bonds and are not designed to produce any proceeds to finance capital improvements for either the Wholesale Sewer System or the Local Sewer System. The issuance expenses on Line 12 include the net effect of premium and discount elements and any deposits to debt service reserve amounts that will result from the refinancing plan for the Series 2020 Bonds and future bonds.

The capital financing plan presented in Table 4a reflects strategic application of existing available fund balances, draws on loans from State Clean Water Revolving Fund (CWRF) Loans, and transfers from revenues to the Authority I&E Fund to pay for improvements, and to then rely on this issuance of additional revenue bonds to the extent necessary. The basic strategy is based on maintaining projected minimum year end balances of approximately \$90 million and \$50 million in the I&E Fund and the Construction Fund, respectively.

Line 15 presents the proceeds from CWRF Loans. As the Authority incurs expenditures for CWRF funded projects, invoices are transmitted to the state administrators of the CWRF for remittance. As such, the amounts shown on Line 15 reflect the projected expenditure schedule of CWRF funded projects. In March 2020 the Authority issued approximately \$28 million of SRF Junior Lien Bonds to finance Regional System capital improvements through the CWRF. The Authority has also received approval for an additional \$40 million of new CWRF funding for projects commencing in 2021. Approximately \$13 million of this amount is related to Regional System improvements. The balance is related to Local System improvements. The relevant amounts are shown to be transferred to the DWSD Construction Fund on Line 16. While the Authority is responsible for the debt service on these Junior Lien Bonds, the annual principal and interest requirements are included in the Retail revenue requirements assigned to the City of Detroit Customer class.

These new CWRF loans, coupled with the large level of existing balances of available capital financing resources and transfers of annual revenues, are projected to be sufficient to finance the Wholesale Sewer System CIP through 2022. The projection approach applied in this forecast results in projected bond sales every two years starting in 2023 to provide financing for the Wholesale Sewer System CIP. No additional bond sales are forecasted to finance expenditures in the Retail Sewer System CIP. See *“Local System CIP Financing Plan” and Table 4b*.

Lines 21 through 24 illustrate the projected application of financing sources to meet the Authority's CIP financing requirements. The strategic approach applies I&E Funds to finance budgeted capital outlay and certain specifically designated, short lived major capital improvements, as noted on Lines 21 and 22. In addition, a strategic application of I&E Funds is planned for a portion of the "debt eligible" projects in the CIP, and also included in the amounts shown on Line 22. All other major CIP expenditures are financed from available Construction Funds, which include the amounts funded via CWRP loans.

The balances of projected funds available for subsequent years is shown on Lines 25 through 27 and are carried forward to Lines 4 and 8 in the next year. These forecasted amounts are consistent with the strategic minimum year end balances noted above.

Local System CIP Financing Plan

The projected plan for financing the Retail Sewer System CIP for the study period is set forth in Table 4b. The general format and approach is similar to that presented for the Wholesale System CIP in Table 4a.

Table 4b													
DWSD Retail System Capital Improvement Program Financing Plan (\$ millions)													
Line No.		Fiscal Year Ended June 30,											
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
	Financing Requirements												
1	DWSD Local System CIP	45.2	59.9	45.6	37.8	29.2	30.5	30.5	30.5	30.5	30.5	30.5	400.7
	Financing Sources												
	<u>DWSD Local System Improvement and Extension Account</u>												
2	Beginning Balance (a)	29.5	17.7	15.2	19.0	18.2	18.0	18.5	20.2	23.1	27.2	32.5	29.5 (e)
3	Loan Receivable Payments to GLWA	(18.8)	(18.8)	(8.4)	-	-	-	-	-	-	-	-	(46.1)
4	Deposits from Lease Payment (b)	16.1	25.3	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	288.9
5	Deposits from DWSD Local System Revenues	-	-	5.0	0.9	1.5	3.6	4.6	5.9	7.1	8.3	9.7	46.6
6	Subtotal - Improvement & Extension Fund	26.7	24.2	39.3	47.3	47.2	49.0	50.7	53.6	57.7	63.0	69.7	318.9
	<u>Construction Bond Funds</u>												
7	Beginning Balance (a)	92.7	57.7	15.3	-	-	-	-	-	-	-	-	92.7 (e)
8	Net Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-	0.0
9	State Clean Water Revolving Fund Loans	-	8.0	10.0	8.6	-	-	-	-	-	-	-	26.6
10	Investment Income	1.1	0.5	-	-	-	-	-	-	-	-	-	1.7
11	Subtotal - Construction Bond Funds	93.8	66.2	25.3	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	121.0
12	Total Financing Sources Available	120.6	90.4	64.6	55.9	47.2	49.0	50.7	53.6	57.7	63.0	69.7	439.9
	Application of Financing Sources												
13	Project Expenditures from I&E Funds	9.0	9.0	20.3	29.1	29.2	30.5	30.5	30.5	30.5	30.5	30.5	279.7
14	Project Expenditures from Construction Funds	36.2	50.9	25.3	8.6	-	-	-	-	-	-	-	121.0
15	Total Financing Sources Applied	45.2	59.9	45.6	37.8	29.2	30.5	30.5	30.5	30.5	30.5	30.5	400.7
	Financing Sources Available for Future Requirements												
16	Improvement & Extension Fund (c)	17.7	15.2	19.0	18.2	18.0	18.5	20.2	23.1	27.2	32.5	39.2	39.2 (f)
17	Construction Bond Funds (d)	57.7	15.3	-	-	-	-	-	-	-	-	-	(f)
18	Total Financing Sources Available for Future Req	75.4	30.5	19.0	18.2	18.0	18.5	20.2	23.1	27.2	32.5	39.2	39.2 (f)
(a) Estimated allocated balance available June 30, 2019. (applies only to FY 2020).													
(b) Total Lease Payment													
	less: Lease Payment applied to Debt Service	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	302.5
		(11.4)	(2.2)	-	-	-	-	-	-	-	-	-	(13.6)
	Net Lease Payment transferred to Local I&E Account	16.1	25.3	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	288.9
(c) Line 6 minus Line 13.													
(d) Line 11 minus Line 14.													
(e) Total column reflects estimated balance available June 30, 2019.													
(f) Total column reflects estimated balance available June 30, 2030.													

An estimated level of major capital improvements is presented on Line 1. These projected expenditures reflect a levelized expectation of capital financing requirements, based on discussions with DWSD principals.

Lines 2 through 12 illustrate projected financing sources. Funds available to the Retail System I&E Account include existing balances and deposits related to the portion of annual deposits from the Lease Payment that are not directed to fund debt service. These funds must also provide repayment of the DWSD loan receivable to GLWA, as shown on Line 3. Based on discussions with DWSD principals, we have assumed that Detroit will direct a portion of future Lease Payments to fund their debt service responsibility. In general, Detroit has opted to utilize a portion of the Lease Payment to finance all “post bifurcation” Local System debt service - unless revenues are sufficient to not do so. In addition, the portion of the annual Lease Payment used for debt service must also consider any amounts required to balance the Local System revenues and revenue requirements. These projections assume that the “Lease Payment applied to Debt Service” amounts will be equivalent to the amounts necessary to carry out that approach. The forecast anticipates that a portion of the Lease Payment will need to be used for debt service allocable to the Local System through 2021. In these years the deposit to the Local System I&E Account are limited by the amounts directed to debt service. *See Footnote (b).*

Funds available to the Retail System Construction Fund include existing balances remaining from the allocated proceeds from the Series 2018 Bonds. As noted earlier, these projections do not anticipate the need for any additional bond issuances during the forecast period.

Financing sources are applied (on Lines 13 through 15) in this forecast in a manner to utilize Construction Funds in a timely manner, adhere to scheduled draws of CWRP loans, and financed the remaining capital improvements through the funds available in the Local System I&E Account, while maintaining projected minimum year end balances in that account that are at least equivalent to the annual Lease Payment transfer. For planning purposes, we assumed that such amounts are not eligible to finance capital improvements until at least the year subsequent to their generation. The balances of funds available for subsequent years is shown on Lines 16 through 18 and are carried forward to Lines 2 and 7 in the next year.

Combined System Financing Plan and Debt Service Coverage

Projected financing plans for the annual operating and capital revenue requirements of the Sewer System for the 2020 through 2030 study period are presented in Table 5. This Combined System presentation includes all Wholesale and Retail revenues and revenue requirements, consistent with the MBO flow of funds. The table provides an indication of the adequacy of the Authority's revenues and the feasibility of the 2020 Bonds and future anticipated revenue bond sales and the associated capital financing plans.

The financing plan represented in this forecast reflects a combination of assumptions regarding future budgeted revenue requirement and charge levels for both the Regional Sewer System and the Local Sewer System. The assumptions applied for the Local Sewer System in this forecast have been developed in consultation with DWSD and align with the long-term forecast prepared by DWSD.

Table 5
Combined Wholesale and Retail System Financing Plan and Debt Service Coverage (\$ millions)

Line No.		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Fiscal Year Ended June 30,												
Revenue (a)												
1	Regional System Wholesale Service Revenue (a)	471.9	478.5	493.9	509.0	524.3	540.2	556.5	573.3	590.6	608.4	626.8
2	Local System Retail Service Revenue - Detroit (b)	92.0	101.2	111.4	110.1	108.8	113.6	117.2	120.9	124.5	128.4	132.5
3	Total Projected Revenue from Sewer Charges	563.8	579.7	605.3	619.0	633.0	653.8	673.6	694.1	715.1	736.8	759.3
4	Miscellaneous Operating Revenue	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
5	Total Operating Revenue	569.5	585.4	610.9	624.7	638.7	659.5	679.3	699.8	720.7	742.5	764.9
6	Non-Operating Revenue	7.7	5.6	4.8	4.7	4.7	4.7	4.7	4.8	4.8	4.8	4.9
7	Total Revenue Available	577.2	591.0	615.7	629.3	643.4	664.2	684.0	704.6	725.6	747.3	769.8
Revenue Requirements												
8	Transfer to GLWA Regional O&M Account	177.1	182.3	186.3	191.3	195.7	199.2	203.2	207.2	211.4	215.6	219.9
9	Transfer to DWSD Local O&M Account	70.8	69.9	72.4	74.6	76.9	79.2	81.6	84.1	86.6	89.2	91.9
10	Transfer to GLWA Pension O&M Account	10.8	10.8	10.8	10.8	-	-	-	-	-	-	-
11	Transfer to DWSD Pension O&M Account	2.9	2.9	2.9	2.9	-	-	-	-	-	-	-
12	Total O&M Expense	261.6	265.9	272.4	279.6	272.6	278.4	284.8	291.3	298.0	304.8	311.8
Debt Service - Bond Interest and Redemption Deposits												
Senior Lien Bonds												
13	Outstanding Bonds	147.5	104.1	115.8	122.9	119.2	114.0	119.2	126.6	122.9	127.8	127.8
14	The 2020 Bonds	-	18.1	17.3	23.2	24.9	28.7	25.7	19.1	26.4	29.3	19.6
15	Future Bonds (assumed Sr. Lien)	-	-	-	3.2	8.9	10.9	14.3	16.0	19.1	20.7	23.5
16	Total Senior Lien Debt Service	147.5	122.2	133.2	149.2	153.0	153.6	159.2	161.7	168.3	177.8	170.9
Second Lien Bonds												
17	Outstanding Bonds	45.9	50.3	43.8	34.4	47.1	47.2	50.3	54.0	53.5	45.3	56.9
18	The 2020 Bonds	-	7.5	8.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
19	Total Second Lien Debt Service	45.9	57.8	51.9	36.7	49.4	49.5	52.6	56.3	55.8	47.6	59.2
20	Subtotal Debt Service	193.4	180.0	185.1	186.0	202.4	203.1	211.8	218.0	224.1	225.3	230.1
21	SRF Junior Lien Bonds	52.9	54.9	56.1	53.5	51.3	42.1	34.3	33.5	33.5	33.5	25.9
22	Total Debt Service	246.3	234.9	241.2	239.5	253.8	245.1	246.1	251.5	257.6	258.8	256.0
23	Non-Operating Portion of Pension Obligation	12.2	12.2	12.2	12.2	5.7	5.7	5.7	5.7	5.7	5.7	5.7
24	B & C Note Non-Operating Payments	2.5	2.5	2.5	2.5	2.5	4.7	4.6	4.1	3.7	3.6	3.5
25	Transfer to Pension Obligation Payment Fund	14.7	14.7	14.7	14.7	8.2	10.4	10.3	9.8	9.4	9.3	9.2
26	Transfer to WRAP Fund	3.0	3.8	4.0	4.0	4.1	4.3	4.4	4.5	4.6	4.8	4.9
27	Lease Payment - Transfer to Detroit Local I&E	16.1	25.3	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Transfers to I&E Fund to Finance Capital Improvements												
28	Transfer to GLWA Regional I&E Account	35.4	46.4	49.6	61.5	74.3	93.8	105.0	112.7	120.0	132.3	149.2
29	Transfer to DWSD Local I&E Account	-	-	5.0	0.9	1.5	3.6	4.6	5.9	7.1	8.3	9.7
30	Total Transfers to I&E Fund	35.4	46.4	54.7	62.4	75.8	97.3	109.7	118.6	127.1	140.7	158.9
31	Operating Reserves	-	-	1.3	1.7	1.5	1.2	1.3	1.4	1.4	1.4	1.4
32	Total Revenue Requirements	577.2	591.0	615.7	629.3	643.4	664.2	684.0	704.6	725.6	747.3	769.8
33	Indicated Balance (Deficiency)	-	-	-	-	-	-	-	-	-	-	-
Debt Service Coverage Projections												
34	Senior Lien for Rate Covenant Purposes	2.14	2.66	2.58	2.34	2.42	2.51	2.51	2.56	2.54	2.49	2.68
35	Second Lien for Rate Covenant Purposes	1.63	1.81	1.85	1.88	1.83	1.90	1.89	1.90	1.91	1.96	1.99
36	SRF Junior Lien for Rate Covenant Purposes	1.28	1.38	1.42	1.46	1.46	1.57	1.62	1.64	1.66	1.71	1.79
37	Net Revenues (7) - (12)	315.6	325.0	343.3	349.7	370.8	385.8	399.3	413.3	427.6	442.5	458.0
38	Revenues Remaining after Debt Service (37)-(22)	69.2	90.1	102.1	110.3	117.1	140.7	153.2	161.8	170.0	183.7	202.0
39	Applied to MBO Reserve Funds (25,26)	(17.7)	(18.4)	(18.7)	(18.7)	(12.3)	(14.7)	(14.7)	(14.3)	(14.1)	(14.1)	(14.2)
40	Applied as Lease Payment to DWSD I&E Acct (27)	(16.1)	(25.3)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)	(27.5)
41	Applied to Operating Reserves (31)	-	-	(1.3)	(1.7)	(1.5)	(1.2)	(1.3)	(1.4)	(1.4)	(1.4)	(1.4)
42	Available for I&E Fund Accounts (38) - (39,40,41)	35.4	46.4	54.7	62.4	75.8	97.3	109.7	118.6	127.1	140.7	158.9

(a) Assumes increases in wholesale charges to meet annual revenue requiremet increases of 3.0%.

(b) Assumes annual growth rate of 0.25% and annual rate increaes of 3.0%.

The forecast period begins with a preliminary estimate of 2020 results based on a review of reported financial performance for the first ten months of the current fiscal year, and recognizes the Authority's identification of available operating expense reductions to offset lower estimated wholesale service revenues and investment earnings than included in the Fiscal Year 2020 Budget. The forecast for 2021 through 2025 was developed in close consultation with the GLWA biennial budget development, and is consistent with the approved budget document, as adjusted to reflect the deferred implementation of the 2021 service charge schedule.

The overall financial plan summarized by these projections is designed to embrace the Authority's long-term financial stability strategy, which leverages efficiency savings and optimized infrastructure plans coupled with annual revenue adjustments, to produce increasing amounts of "unrestricted cash" that remains after providing for payment of operation and maintenance expenses, debt service payments, and funding of the various non-operating elements set forth in the foundational documents for the Authority. *See "GLWA Financial Planning Guiding Principles."*

The "baseline" revenues from Wholesale service charges and Detroit Retail rates and charges in 2020 and 2021 were presented in Table 2. The forecast for the remaining years assumes annual increases in wholesale service charge revenues in amounts required to meet annual Regional System revenue requirement increase of 3.0 percent. The forecast beyond 2021 for the Local Retail System assumes annual retail sewer rate increases of 3.0 percent, and annual growth in accounts of approximately 0.25%. These projected charge and rate adjustments continue to be lower than those experienced by the utility industry in general.

Projected non-operating revenues of the Wholesale Sewer System include investment earnings from all eligible Sewer System funds and have been projected based on an analysis of funds on hand, construction schedules, and average fund balances. An annual interest rate of 1.5 percent has been assumed in projecting interest income for all funds.

The Revenue Requirements in this table are presented in a manner that follows the flow of funds set forth in the Master Bond Ordinance. Operation and maintenance expenses are provided for first, followed by debt service separated by the various liens, followed by deposits to the Pension Obligation Payment Fund, the WRAP Fund, the Extraordinary Repair and Replacement Reserve Fund, and finally the I&E Fund (including the Lease Payment), as further described below.

The projected operation and maintenance expenses shown on Lines 8 through 12 reflect the total projected transfers to the Wholesale System and Retail System Operation and Maintenance Accounts, including amounts to provide for the operating expense portion of the Pension Obligation, as summarized in Table 3. As noted in that discussion, starting in 2024 the forecast assumes that none of the annual Pension Obligation revenue requirement will be treated as an operating expense.

The Authority's projected debt service is depicted on Lines 13 through 22, separated by priorities of lien. The debt service on outstanding bonds excludes debt service on the Refunded Bonds. Debt service on Senior Lien Bonds is summarized on Lines 13 through 16, and includes

existing debt service on outstanding bonds, plus debt service on the Series 2020A Bonds, plus estimated debt service on future bond sales indicated in Table 4a. For purposes of these projections, a scale assuming level debt service based on a 30-year term and an interest rate of 4.25 percent has been assumed on all future projected bond sales. While no strategic designation as to the lien status of future bonds has been made nor contemplated, for purposes of these projections it is assumed that any additional bonds would be issued as senior lien. A similar presentation of debt service on second lien bonds is presented on Lines 17 through 19. Line 18 presents the debt service on the Series 2020B Bonds. Projected repayments of CWRP Junior Lien Bonds are shown on Line 21. These figures reflect repayments of existing loans, as well as the projected debt service on newly approved, but not yet issued, CWRP loans discussed in the CIP Financing Plan. CWRP Loans issued prior to 2000 are treated as Senior Lien Bonds and debt service on these remaining bonds are included with the senior lien debt service on Line 13. All subsequent CWRP Loans are treated as Junior Lien Bonds.

Transfers to the Pension Obligation Payment Fund are shown on Lines 23 through 25. These amounts reflect the Sewer System's allocated share of the non-operating expense portion of the legacy Pension Obligation payments and the B and C Note payments. As noted in that discussion, starting in 2024 the forecast assumes that the total Pension Obligation requirement will be materially reduced, and that all of the annual requirement will be treated as a non-operating expense.

Transfers to the WRAP Fund, shown on Line 26, are established at 0.5% of total projected revenues from wholesale service charges, plus 1.0% of total projected revenues from retail rates (starting with 2021). For purposes of these projections, we've assumed that annual amounts deposited into the WRAP Fund will be fully exhausted in the year they are transferred, and therefore these projections do not track WRAP Fund balances or activities.

As part of the 2018 MOU implementation, the Budget Stabilization Fund and the Extraordinary Repair and Replacement Reserve ("ER&R") Fund requirement were fully funded from existing cash and investment balances. As such, no future deposits to those funds are projected to be required during the study period.

The next revenue requirement relates to the Sewer System's share of the \$50 million Lease Payment, which was initially established as \$27.5 million. For purposes of establishing the Wholesale System Operational Financing Plan, the entirety of the \$27.5 million payment is recognized as a Wholesale System revenue requirement from Wholesale service charges, irrespective of how it is utilized. However, if the City of Detroit opts to apply a portion of the Lease Payment to effectively fund a portion of its allocated debt service responsibility, that decision results in a reduction of revenue to the Combined System, and a corresponding reduction in the Lease Payment cash transfer to the Retail System I&E Account. As noted in the discussion of the "*Local System CIP Financing Plan*", Detroit has opted to utilize a portion of the Lease Payment to finance all "post bifurcation" Local System debt service - unless revenues are sufficient to not do so. In addition, the portion of the annual Lease Payment used for debt service must also consider any amounts required to balance the Local System revenues and revenue requirements. These projections assume that the "Lease Payment applied to Debt Service" amounts will be equivalent to the amounts necessary to carry out that approach. The forecast anticipates that a

portion of the Lease Payment will need to be used for debt service allocable to the Local System in 2020 and 2021. In these years the deposit to the Local System I&E Account, as shown on Line 27, are limited by the amounts directed to debt service and are lower than the full \$27.5 million Lease Payment.

All remaining balances are then available to be maintained as operating reserves in the Authority Wholesale Operation and Maintenance Account or transferred to the Authority Wholesale and Detroit Retail I&E subaccounts of the I&E Fund held within the Trust. Our projections assume that the Operation and Maintenance Account will be maintained at a level equivalent to 120 days of annual Authority operation and maintenance expense, including the operating portion of the transfer to the GLWA Pension O&M Account, in order to provide adequate working capital. Line 31 of Table 6 presents a revenue requirement established to ensure that this funding level is maintained.

For purposes of these projections we have assumed funding of the Detroit Retail I&E Account (other than that provided by the Lease Payment) will be generated in years for which forecasted Local System revenues are sufficient to meet revenue requirements without utilizing a portion of the Lease Payment for debt service. Therefore starting in 2022 increasing deposits to the Detroit Retail I&E Account are forecasted on Line 29. All other remaining amounts are projected to be transferred to the Authority Wholesale I&E subaccount of the I&E Fund held within the Trust, as shown on Line 28. In effect, the projected amounts on this line reflect the total annual Wholesale System revenue requirement, as determined by the indexed 3.0 percent annual adjustments, less all other Wholesale System revenue requirements. The projected amounts are available to finance capital improvements and appear as a CIP financing source in Tables 4a and 4b.

Pursuant to the Rate Covenant of the Master Bond Ordinance, sewer service charges must be established to maintain debt service coverage ratios of at least 1.20 for Senior Lien Bonds, 1.10 for Second Lien Bonds, and 1.00 for SRF Junior Lien Bonds. The Authority's management team has targeted higher minimum planning targets for each lien of debt. While these informal targets have not yet been formally established as policy positions, the long-term financial sustainability and stability objectives include increasing levels of debt service coverage as a strategic objective.

Projections of annual debt service coverage levels are summarized on Lines 34 through 36. These coverage levels are calculated on the same basis as required by the rate covenant contained in the Master Bond Ordinance. As indicated, annual coverage levels, assuming the revenue adjustments shown, are projected to be in excess of the amounts required by the Master Bond Ordinance, and are forecasted to experience material increases throughout the forecast period. Since (for purposes of these projections) future bond sales are assumed to be issued at a senior lien, forecasted senior lien debt service coverage ratios do not reflect the same growth as second lien and total coverage ratios.

Projected Wholesale System Fund Balances

Table 6 presents a summary of the projected cash and investment balances in the Wholesale Sewer System's Operating, Budget Stabilization, ER&R, and I&E Funds. It does not reflect any

of the funds that are effectively “exhausted” in the year they are transferred, such as the Debt Service Accounts within the Bond and Interest Redemption Funds, the Pension Obligation Payment Fund, and the WRAP Fund.

Table 6
Projected Cash and Investment Fund Balances - Wholesale System (\$ millions) (a)

Line No.	Fiscal Year Ended June 30,										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<u>Operating Fund</u>											
1 Beginning Balance	67.3	67.3	67.3	68.6	70.3	71.8	72.9	74.2	75.6	77.0	78.4
2 Deposit from Operations	-	-	1.3	1.7	1.5	1.2	1.3	1.4	1.4	1.4	1.4
3 Ending Balance	67.3	67.3	68.6	70.3	71.8	72.9	74.2	75.6	77.0	78.4	79.8
<u>Budget Stabilization Fund (a)</u>											
4 Beginning Balance	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5 Deposits / (Withdrawals)	-	-	-	-	-	-	-	-	-	-	-
6 Ending Balance	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<u>ER&R Fund (a)</u>											
7 Beginning Balance	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
8 Transfers In	-	-	-	-	-	-	-	-	-	-	-
9 Ending Balance	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
<u>I&E Fund (b)</u>											
10 Beginning Balance	96.6	106.2	106.4	99.0	90.7	89.6	88.7	91.1	90.8	90.1	88.9
11 Budgeted Capital Outlay	(20.1)	(20.5)	(15.8)	(9.8)	(10.4)	(14.8)	(15.1)	(15.4)	(15.7)	(16.0)	(16.3)
12 Capital Expenditures	(25.0)	(45.0)	(50.0)	(60.0)	(65.0)	(80.0)	(87.5)	(97.5)	(105.0)	(117.5)	(132.5)
13 Subtotal prior to Revenue Transfer	51.5	40.8	40.6	29.2	15.3	(5.1)	(13.9)	(21.8)	(29.9)	(43.4)	(59.9)
14 Deposits from Revenues (b)	35.4	46.4	49.6	61.5	74.3	93.8	105.0	112.7	120.0	132.3	149.2
15 Other Deposits (c)	19.3	19.3	8.7	-	-	-	-	-	-	-	-
16 Ending Balance	106.2	106.4	99.0	90.7	89.6	88.7	91.1	90.8	90.1	88.9	89.4
<u>Total Revenue Generated Funds (c)</u>											
17 Beginning Balance	212.9	222.5	222.7	216.6	210.0	210.4	210.6	214.3	215.4	216.1	216.3
18 Net Sources and Uses	(9.7)	(19.1)	(14.9)	(6.6)	0.4	0.2	3.7	1.1	0.7	0.2	1.9
19 Ending Balance	203.3	203.4	207.9	210.0	210.4	210.6	214.3	215.4	216.1	216.3	218.2
20 Days Cash on Hand (e)	409	397	398	391	383	377	376	371	365	358	354
<u>Other Funds</u>											
21 Bond Reserve (excludes Surety)	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
22 Construction Fund	53.4	49.2	30.2	139.7	53.7	90.1	44.2	82.0	50.5	84.5	50.9
23 Total Funds	685.5	670.1	655.9	761.1	667.4	697.7	654.9	688.3	651.4	678.9	643.2
24 Subtotal w/o Construction Funds	632.1	621.0	625.7	621.4	613.8	607.6	610.7	606.3	600.9	594.4	592.3

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

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

(c) Repayment of DWSD loan receivable.

(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.

The figures on Lines 1 through 18 represent those funds that are entirely generated by revenues, and exclude any amounts funded by bond proceeds. The mechanics of these funds have already been discussed. For planning purposes, operating revenues generated to finance capital improvements are transferred to the I&E Fund and assumed to be not be eligible for capital financing until at least the following year. These funds are technically available to be transferred to a Surplus Fund and to other Sewer System funds for any Sewer System use.

The Bond Reserve and Construction Fund balances on Lines 21 and 22 are generated via issuance of debt. The Bond Reserve amounts reflect the release of existing reserves as part of the Series 2020 Bonds plan of finance. Table 6 illustrates the projected stability in cash and investment balances, and the strategic use of liquidity to finance capital improvements.

Projected Wholesale System Income Statement

A component of the Authority's long-term financial sustainability objectives is the goal of improving the "net position" of the Regional Sewer System, as reported on the GAAP basis annual audited financial reports. Table 7a and 7b present a recent historical summary of audited results, and the impact of the forecasted results on future statements of net position.

Table 7a					
<u>Reported</u> Statement of Changes in Net Position (\$ millions)					
Line No.		Fiscal Year Ended June 30,			
		Actual			
		2016	2017	2018	2019
1	Total operating revenues	230.5	505.8	473.6	469.5
2	Operating expenses	84.4	151.3	176.4	174.0
3	Depreciation/Amortization	<u>86.0</u>	<u>185.6</u>	<u>187.3</u>	<u>168.5</u>
4	Total operating expenses	170.4	336.9	363.6	342.6
5	Operating income	60.1	168.9	110.0	126.9
	<u>Nonoperating revenue (expenses)</u>				
6	Earnings on investments	1.1	2.2	5.3	11.8
7	Interest Expense - Bonded Debt	(56.5)	(113.7)	(118.2)	(136.8)
8	Other Non-Operating	(17.2)	(51.7)	(46.9)	(7.5)
9	Special Item	<u>-</u>	<u>(61.5)</u>	<u>-</u>	<u>-</u>
10	Change in net position	(12.6)	(55.8)	(50.0)	(5.6)
11	Net position (deficit), beginning of year	-	(12.6)	(68.4)	(118.3)
12	Net position (deficit), end of year	(12.6)	(68.4)	(118.3)	(123.9)
	<u>GAAP Basis Net Revenues</u>				
13	Regional System		345.0	290.4	294.2
14	Local System		5.8	20.8	11.7
15	Combined		350.8	311.2	305.9
	<u>GAAP Basis Debt Service Coverage</u>				
16	Senior Lien Bonds		2.49	2.20	2.10
17	Senior and Second Lien Bonds		1.86	1.68	1.61
18	All Bonds, Including SRF Junior Lien		1.50	1.34	1.28

As reported elsewhere in this Official Statement, the "cash basis" financial performance of Regional Sewer System has been sound and has generated increased liquidity levels and debt service coverage ratios. However, the GAAP basis annual "changes in net position" have been negative for each of the four years of the Authority's existence, and have resulted in a current negative net position of approximately \$124 million. This is primarily due to the manner by which annual revenue requirements differ between the two separate, but related, depictions of financial performance.

Several “revenue requirements” (such as operating expenses, and debt service interest) are identical between the two approaches. Others are materially different. For instance the cash basis capital revenue requirements include principal payments on bonds and deposits to the I&E Fund. The GAAP basis capital revenue requirement is predominantly related to depreciation expense. In general, if “cash basis” non-common capital items (which are used to establish charges and revenue levels) exceed their GAAP basis elements, a net gain will result, and vice versa. In recent years, the GAAP basis elements have exceeded the cash basis elements, and decreases in Net Position have resulted. The actual reported results are summarized for this period in Table 7a. Table 7a also contains summary of “GAAP Basis” debt service coverage ratios for 2017 through 2019, as shown on Lines 16 through 18. These ratios require combining GAAP basis results from financial statements for the GLWA Regional and DWSD Local Systems. The Authority now computes those ratios based on a cash receipts and disbursements analysis. *Note that Fiscal Year 2016 reflects a 6 month period from January 1, 2016 through June 30, 2016.*

The forecasted changes in net position are presented in Table 7b, and illustrate the impact of depreciation expense on the GAAP basis financial results. *See Line 3.* When GLWA “acquired” its capital assets, a total asset value and depreciation schedule was established via a valuation study. The nature of the analysis produced a material increase in asset value (from what was on the DWSD books) and a corresponding acceleration of depreciation schedules for the acquired assets. Many of the originally acquired assets will be fully depreciated during the early part of the forecast period, particularly in 2021 and 2025. The relatively high level of depreciation expense in the first four years contributed significantly to the reported negative changes in net position, and is forecasted to continue to do so through 2020. The forecast adds projected depreciation expense on new assets (from annual capital outlay and the CIP) but that level of depreciation does not make up for the drop off of depreciation on existing assets. As a result, positive changes in net position are forecasted starting in 2021. The cumulative net position is forecasted to turn positive starting in 2024 and climb steadily throughout the forecast period.

Table 7b
Forecasted Statement of Changes in Net Position (\$ millions)

Line No.	Fiscal Year Ended June 30,										
	<u>Est</u>	<u>Forecasted</u>									
	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
1 Total operating revenues	471.9	478.5	493.9	509.0	524.3	540.2	556.5	573.3	590.6	608.4	626.8
2 Operating expenses	177.1	182.3	186.3	191.3	195.7	199.2	203.2	207.2	211.4	215.6	219.9
3 Depreciation/Amortization	<u>151.4</u>	<u>145.8</u>	<u>146.0</u>	<u>144.9</u>	<u>144.2</u>	<u>127.0</u>	<u>130.0</u>	<u>130.9</u>	<u>131.1</u>	<u>132.2</u>	<u>135.6</u>
4 Total operating expenses	328.5	328.1	332.3	336.2	339.9	326.2	333.2	338.1	342.5	347.8	355.5
5 Operating income	143.4	150.4	161.6	172.7	184.4	214.0	223.3	235.1	248.1	260.6	271.3
<u>Nonoperating revenue (expenses)</u>											
6 Earnings on investments	8.2	6.1	5.4	6.1	5.5	5.7	5.4	5.8	5.6	5.9	4.9
7 Interest Expense - Bonded Debt	(136.6)	(120.8)	(112.7)	(111.3)	(109.7)	(106.0)	(102.3)	(98.8)	(94.7)	(89.9)	(85.2)
8 Other Non-Operating	(21.6)	(21.7)	(21.7)	(22.1)	(22.6)	(23.0)	(23.5)	(24.0)	(24.6)	(25.1)	(25.7)
9 Special Item	—	—	—	—	—	—	—	—	—	—	—
10 Change in net position	(6.5)	14.0	32.6	45.5	57.6	90.6	102.9	118.1	134.4	151.5	165.4
11 Net position (deficit), beginning of year	(123.9)	(130.5)	(116.5)	(83.8)	(38.4)	19.2	109.8	212.7	330.8	465.2	616.7
12 Net position (deficit), end of year	(130.5)	(116.5)	(83.8)	(38.4)	19.2	109.8	212.7	330.8	465.2	616.7	782.0

Compliance with Additional Bonds Test

The "Additional Bonds Test" (the "ABT") of the Master Bond Ordinance governing issuance of the Series 2020 Bonds provides two approaches for certifying eligibility to issue the bonds. For any bonds that are structured to provide new capital financing proceeds, the test requires a net revenues analysis to show coverage of maximum annual future debt service. An alternate test is available for bonds that are issued solely for refunding purposes.

Coverage Test

The coverage test portion of the Additional Bonds Test states that the Authority may not issue additional securities to finance system improvements unless the applicable net revenues of the Sewer System generate sufficient coverage of the maximum future annual principal and interest requirements on the outstanding bonds and on the additional bonds issued. The coverage requirement for each lien of priority includes debt service for the lien in question, plus debt service on all bonds (if any) of all higher lien priorities. Sufficient coverage is defined as being equal to or greater than 1.20 for Senior Lien Bonds, 1.10 for Second Lien Bonds, and 1.00 for all bonds, including Junior Lien Bonds. For purposes of determining the "applicable" net revenues, the Authority may utilize either (a) the historical net revenues for the most recently completed fiscal year for which there is an audit report (so long as the fiscal year has been completed within 16 months of the issuance date of the bonds in question); (b) the current fiscal year; or (c) the immediately succeeding fiscal year. To the extent that a historical year is chosen as the "applicable" year, and to the extent that any changes in rates, fees and charges has been authorized prior to the issuance of the bonds being evaluated, net revenues may be augmented by an amount reflecting the effect of such changes had the Sewer System's billings during such fiscal year been at the increased charges.

Table 8 presents the level of ABT coverage provided for the Series 2020 Bonds. For purposes of the test, we have prepared calculations of "ABT Net Revenues" for the immediate proceeding, current and immediately succeeding fiscal years (2019, 2020 and 2021). The projected revenue and net revenue figures are consistent with those presented in Table 5. While the ABT technically only requires compliance with any one of the applicable test periods, this table presents capacity under the historical test period and both applicable "projected" test periods.

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Table 8
Ability of the Sewer System to Meet the Additional Bonds Test
or Issuance of the Bonds (\$ millions)

Line No.			Historical Test	Prospective Test	
			Audited Year <u>FY 2019</u>	Current Year <u>FY 2020</u>	Succeeding Year <u>FY 2021</u>
1	Revenues		550.4	577.2	591.0
2	Operating Expenses		<u>(244.5)</u>	<u>(261.6)</u>	<u>(265.9)</u>
3	Net Revenues		305.9	315.6	325.0
	<u>Allowable Max Future Debt Service</u>				
4	Senior Lien Bonds	<i>1.20</i>	254.9	263.0	270.9
5	Senior and 2nd Lien Bonds	<i>1.10</i>	278.1	286.9	295.5
6	All Bonds, Including SRF Jr Lien	<i>1.00</i>	305.9	315.6	325.0
	<u>Maximum Future Debt Service</u>				
7	Senior Lien Bonds	<i>in 2032</i>	161.3	161.3	161.3
8	2nd Lien Bonds	<i>in 2036</i>	206.6	206.6	206.6
9	SRF Jr Lien Bonds	<i>in 2020</i>	246.3	246.3	246.3
	<u>Additional Bonds Test Coverage Ratio</u>				
10	Senior Lien Bonds		1.90	1.96	2.01
11	2nd Lien Bonds		1.48	1.53	1.57
12	SRF Jr Lien Bonds		1.24	1.28	1.32

Alternate Test for Refundings

The alternate test simply requires that any bonds that are issued solely for refunding purposes may also be issued “without regard to” the coverage test summarized above, so long as debt service savings can be illustrated in all future years. As the Series 2020 Bonds are being issued solely as refunding bonds, compliance with the "ABT" of the Bond Ordinance can be achieved if such savings can be demonstrated.

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Opinions

As a result of our investigations and analysis, we have formulated the following opinions:

1. While faced with additional capital expenditures to ensure reliability of service and implement recommendations from the Authority's Sewer System master plan, the projected increases in the Authority's wholesale sewer charges through 2030 are comparable to what has recently been experienced by other large wholesale providers.
2. The Authority's organizational documents establish financial planning guiding principles that are designed to ensure responsible financial performance, balancing service requirements and impacts on Customers, and to result in continued improvements in the current financial position of the Sewer System, including reported debt service coverage and liquidity balances.
3. The Authority's financial plan is sound, supported by gradual revenue adjustments, and is expected to be sufficient to adequately fund the CIP and other programs necessary to meet Sewer System obligations.
4. The revenues pledged as security for the Series 2020 Bonds are projected to be sufficient to comply with debt service coverage ratios set forth in the rate covenant required by the Master Bond Ordinance and the targets established by Authority policy. Debt service savings resulting from the Series 2020 Bonds have produced enhanced debt service coverage ratios compared to prior debt service levels.
5. The requirements contained in the Master Bond Ordinance authorizing the issuance of the Series 2020 Bonds have been met, as debt service savings are evident in fiscal year 2021 and all future years as a result of issuance of the Series 2020 Bonds.

APPENDIX II
AUDITED FINANCIAL STATEMENTS OF THE GREAT LAKES WATER AUTHORITY
SEWAGE DISPOSAL FUND FOR THE YEAR ENDED JUNE 30, 2019

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Sewage Disposal Fund

Fiscal Year Ended June 30, 2019

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

*Prepared by
Great Lakes Water Authority Financial Services Area*

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GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

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GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

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FINANCIAL SECTION

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INDEPENDENT AUDITORS' REPORT

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

Report on the Financial Statements

We have audited the accompanying financial statements of the Sewage Disposal Fund (Sewage Disposal Fund) of the Great Lakes Water Authority, as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the Sewage Disposal Fund's financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

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

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Sewage Disposal Fund of the Great Lakes Water Authority as of June 30, 2019 and the respective changes in financial position and, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 1, the financial statements present only the Sewage Disposal Fund and do not purport to, and do not, present fairly, the financial position of the Great Lakes Water Authority, as of June 30, 2019, and the changes in financial position, or cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

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

Great Lakes Water Authority Sewage Disposal Fund has omitted the Management's Discussion and Analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the financial statements. Such missing information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. Our opinion on the financial statements is not affected by this missing information. We note the significant financial events of the Sewage Disposal Fund are included in the Management's Discussion and Analysis of the Great Lakes Water Authority's Comprehensive Annual Financial Report.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Sewage Disposal Fund's financial statements. The supplemental information as listed in the table of contents are presented for purposes of additional analysis and are not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplemental information is fairly stated in all material respects, in relation to the financial statements as a whole.

Other Information

Our audit was conducted for the purpose of forming an opinion on the Sewage Disposal Fund financial statements. The statistical section is presented for purposes of additional analysis and is not a required part of the financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Prior-Year Comparative Information

The financial statements of the Sewage Disposal Fund, as of and for the year ended June 30, 2018, were audited by other auditors whose reported dated December 14, 2018, expressed an unmodified opinion on those statements. The summarized comparative information presented herein as of and for the year ended June 30, 2018, is consistent, in all material respects, with the audited financial statements from which it has been derived.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 20, 2019 on our consideration of the Great Lakes Water Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Great Lakes Water Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Great Lakes Water Authority's internal control over financial reporting and compliance.

Baker Tilly Virchow Krause, LLP

Madison, Wisconsin
December 20, 2019

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FINANCIAL STATEMENTS

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

STATEMENT OF NET POSITION As of June 30, 2019 With Comparative Amounts at June 30, 2018

	2019	2018
Assets		
Current Assets		
Cash and cash equivalents	\$ 160,371,766	\$ 199,056,556
Restricted cash and cash equivalents	95,931,528	54,832,050
Restricted cash for the benefit of DWSD	627,919	-
Investments	75,685,362	9,506,712
Restricted investments	33,384,445	31,790,386
Receivables, net	50,265,895	46,499,593
Due from other governments	179,585	24,339,106
Due from water fund	12,568	3,447,927
Contractual obligation receivable, current portion	12,089,779	11,253,800
Loan receivable - DWSD	17,542,669	9,367,355
Prepaid items and other assets	2,801,271	1,683,659
Inventories	5,445,981	8,471,626
Total Current Assets	<u>454,338,768</u>	<u>400,248,770</u>
Noncurrent Assets		
Restricted cash and cash equivalents	62,030,778	30,001,353
Restricted investments	73,903,089	143,261,763
Contractual obligation receivable	414,766,953	335,574,500
Loan receivable - DWSD	26,503,010	19,932,645
Prepaid lease	13,750,000	13,750,000
Assets not subject to depreciation	318,574,902	271,362,100
Capital assets being depreciated, net	2,357,018,353	2,485,098,172
Prepaid insurance on debt	13,880,254	16,931,255
Total Noncurrent Assets	<u>3,280,427,339</u>	<u>3,315,911,788</u>
Total Assets	<u>3,734,766,107</u>	<u>3,716,160,558</u>
Deferred Outflows of Resources		
Deferred charge on refunding	159,370,167	186,544,140
Deferred pension amounts	<u>20,347,789</u>	<u>33,369,917</u>
Total Deferred Outflows of Resources	<u>179,717,956</u>	<u>219,914,057</u>

	2019	2018
Liabilities		
Current Liabilities		
Accounts and contracts payable	\$ 38,004,322	\$ 34,077,602
Other accrued liabilities	627,919	-
Due to other governments	-	47,539
Due to water fund	2,876,954	330,293
Interest payable	44,130,602	41,108,994
Current portion of		
Long-term debt	88,357,662	61,186,207
Leases payable	6,134,481	5,884,359
Obligation payable	396,291	377,419
Accrued compensated absences	757,328	717,086
Claims and judgments	56,111	334,392
Total Current Liabilities	<u>181,341,670</u>	<u>144,063,891</u>
Noncurrent Liabilities		
Long-term debt	3,163,394,353	3,168,566,028
Long-term leases payable	509,018,588	515,153,064
Obligation payable	38,061,886	38,458,178
Claims and judgments	7,500,000	7,500,000
Other noncurrent liabilities	6,291,681	6,003,540
Net pension liability	84,670,705	114,810,555
Total Noncurrent Liabilities	<u>3,808,937,213</u>	<u>3,850,491,365</u>
Total Liabilities	<u>3,990,278,883</u>	<u>3,994,555,256</u>
Deferred Inflows of Resources		
Deferred amounts for swap terminations	165,223	189,808
Deferred gain on refunding	47,982,938	46,654,836
Deferred pension amounts	-	12,994,118
Total Deferred Inflows of Resources	<u>48,148,161</u>	<u>59,838,762</u>
Net Position		
Net investment in capital assets	(62,382,494)	289,946,091
Restricted for debt service	117,246,259	101,996,536
Restricted for capital acquisition	-	102,506,361
Restricted for payment assistance program	4,631,494	3,308,896
Unrestricted (deficit)	<u>(183,438,240)</u>	<u>(616,077,287)</u>
TOTAL NET POSITION	<u>\$ (123,942,981)</u>	<u>\$ (118,319,403)</u>

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

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GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

For the Year Ended June 30, 2019

With Comparative Amounts for the Year Ended June 30, 2018

	2019	2018
Operating Revenues		
Wholesale customer charges	\$ 272,772,460	\$ 268,978,831
Local system charges	181,159,300	178,969,200
Industrial waste charges	9,106,274	14,334,979
Pollutant surcharges	5,932,550	6,908,404
Other revenues	<u>506,323</u>	<u>4,391,145</u>
Total Operating Revenues	<u>469,476,907</u>	<u>473,582,559</u>
Operating Expenses		
Operating expenses before depreciation		
Personnel	56,503,053	53,680,162
Contractual services	58,660,680	64,082,761
Utilities	25,147,527	26,823,299
Chemicals	8,187,033	8,073,045
Supplies and other expenses	25,323,636	24,982,773
Capital adjustment	2,258,351	-
Capital program allocation	(1,325,842)	(969,671)
Shared services allocation	<u>(713,633)</u>	<u>(292,965)</u>
Total operating expenses before depreciation	174,040,805	176,379,404
Depreciation	<u>168,544,370</u>	<u>187,250,583</u>
Total Operating Expenses	<u>342,585,175</u>	<u>363,629,987</u>
Operating Income	<u>126,891,732</u>	<u>109,952,572</u>
Nonoperating Revenues (Expenses)		
Earnings on investments	11,763,401	5,266,255
Interest on loan and obligations receivable	18,856,322	15,505,300
Interest expense	(159,893,300)	(161,052,102)
Amortization of debt related items and cost of issuance	(6,776,707)	(5,153,300)
Legacy pension expense	10,763,940	(15,988,471)
WRAP (Water Residential Assistance Program)	(1,168,664)	(2,248,980)
Other	305,723	(709,537)
Sewer lookback - MOU adjustment	(6,527,200)	-
Gain on disposal of capital assets	516,379	2,469,703
Loss on impairment of capital assets	<u>(355,204)</u>	<u>-</u>
Total Nonoperating Expenses	<u>(132,515,310)</u>	<u>(161,911,132)</u>
Change in net position	(5,623,578)	(51,958,560)
NET POSITION (DEFICIT), Beginning of Year	<u>(118,319,403)</u>	<u>(66,360,843)</u>
NET POSITION (DEFICIT), END OF YEAR	<u>\$ (123,942,981)</u>	<u>\$ (118,319,403)</u>

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

STATEMENT OF CASH FLOWS For the Year Ended June 30, 2019 With Comparative Amounts for the Year Ended June 30, 2018

	2019	2018
Cash Flows From Operating Activities		
Cash received from customers	\$ 463,309,071	\$ 469,355,447
Cash payments to suppliers for goods and services	(114,736,847)	(120,179,052)
Cash payments for employee services	(55,136,969)	(52,672,665)
Cash received (paid) for interfund services	5,982,020	(3,117,634)
Cash payments to other governments for:		
MOU and bifurcation liabilities	(6,574,739)	(30,924,662)
B&C obligation payable	(1,969,294)	(6,832,237)
Cash payments for WRAP	(1,168,664)	(2,248,980)
Cash payments for GLWA share pension agreement	(20,475,400)	(20,475,400)
Cash received for DWSD nonoperating pension	3,066,800	3,370,621
Cash paid for DWSD nonoperating pension	(3,066,808)	(4,095,900)
Cash received for DWSD WRAP	496,900	369,000
Cash payments for DWSD WRAP	(208,759)	(348,661)
Cash received (paid) for DWSD budgetary surplus (shortfall)	848,690	(18,480,620)
Nonoperating cash received (paid)	710,028	(867)
Cash payments from fire remediation for operations	-	3,685,867
Principal payments received on obligation receivable	11,253,800	11,262,300
Interest received on obligation receivable	18,001,600	15,505,300
Principal payments received on loan receivable	9,367,355	-
Interest received on loan receivable	1,104,242	-
Payments of long-term debt proceeds to DWSD	(91,000,000)	-
Payments for bond issuance costs on DWSD debt	(526,443)	-
Net Cash Provided by Operating Activities	<u>219,276,583</u>	<u>244,171,857</u>
Cash Flows From Noncapital Financing Activities		
Proceeds from long-term debt for DWSD	91,531,771	-
Principal payments	(11,253,800)	(11,262,300)
Interest payments	(15,017,704)	(15,505,300)
Net Cash Provided by Noncapital Financing Activities	<u>65,260,267</u>	<u>(26,767,600)</u>
Cash Flows From Capital and Related Financing Activities		
Proceeds from fire remediation	2,935,582	200,533
Proceeds from sale of assets	2,772,950	-
Proceeds from issuance of long-term refunding debt	198,255,349	-
Proceeds from state revolving fund loans	45,258,446	34,750,504
(Payments) returns of bond issuance costs	(1,295,066)	45,000
Principal payments on bonds	(275,115,056)	(91,087,700)
Principal payments on lease	(5,884,354)	(5,644,435)
Interest payments	(140,892,194)	(142,805,295)
Purchase of capital assets	(88,728,673)	(67,808,804)
Net Cash Used in Capital and Related Financing Activities	<u>(262,693,016)</u>	<u>(272,350,197)</u>

	2019	2018
Cash Flows From Investing Activities		
Investment purchases	\$(456,010,212)	\$ (453,549,077)
Investment maturities	462,431,278	383,480,724
Interest received	<u>6,807,132</u>	<u>4,562,898</u>
Net Cash Provided by (Used in) Investing Activities	<u>13,228,198</u>	<u>(65,505,455)</u>
Net change in cash and cash equivalents	35,072,032	(120,451,395)
CASH AND CASH EQUIVALENTS, Beginning of Year	<u>283,889,959</u>	<u>404,341,354</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 318,961,991</u>	<u>\$ 283,889,959</u>
STATEMENT OF NET POSITION CLASSIFICATION OF CASH		
Cash and cash equivalents	\$ 160,371,766	\$ 199,056,556
Restricted cash and cash equivalents	95,931,528	54,832,050
Restricted cash for the benefit of DWSD	627,919	-
Noncurrent restricted cash and cash equivalents	<u>62,030,778</u>	<u>30,001,353</u>
	<u>\$ 318,961,991</u>	<u>\$ 283,889,959</u>
NONCASH FINANCING AND INVESTMENT ACTIVITIES		
Change in unrealized gain on investments	<u>\$ 2,684,646</u>	
Interest expense due to accretion	<u>\$ 863,930</u>	
Amortization expense	<u>\$ 5,481,641</u>	

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

STATEMENT OF CASH FLOWS For the Year Ended June 30, 2019 With Comparative Amounts for the Year Ended June 30, 2018

	2019	2018
Reconciliation of Operating Income to Net		
Cash Provided by Operating Activities:		
Operating income	\$ 126,891,732	\$ 109,952,572
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	168,544,370	187,250,583
Miscellaneous nonoperating income (expense)	710,028	(867)
Miscellaneous nonoperating income (expense)-MOU related	(6,527,200)	-
Legacy pension expense and administrative fee	10,359,635	(16,697,141)
WRAP (Water Residential Assistance Program)	(1,168,664)	(2,248,980)
Interest income on contractual obligation receivable	17,752,080	15,505,300
Interest income on loan receivable	1,104,242	-
Interest expense on obligation payable	(1,482,494)	(1,596,417)
Changes in:		
Receivables	(6,701,884)	5,036,468
Due from other governments	24,159,521	(24,177,778)
Due from water fund	3,435,359	11,262,300
Contractual obligation receivable	(80,028,432)	(3,447,927)
Loan receivable	(14,745,679)	-
Prepaid items and other assets (excludes investing item)	(996,444)	(401,099)
Inventories	3,025,646	37,828
Accounts and contracts payable (excludes capital items)	2,366,264	(67,562)
Other accrued liabilities (excludes capital items)	627,919	(898,800)
Due to other governments (excludes non-capital financing)	(47,539)	(35,801,034)
Due to water fund	2,546,661	330,293
Obligation payable including accrued interest	(486,800)	(359,448)
Accrued compensated absences	40,242	37,826
Claims and judgments	(278,281)	3,794,830
Other noncurrent liabilities	288,141	20,339
Net pension liability and deferred items	(30,111,840)	(3,359,429)
NET CASH PROVIDED BY OPERATING ACTIVITIES	\$ 219,276,583	\$ 244,171,857

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

NOTES TO FINANCIAL STATEMENTS

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

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

The term “Regional System Leases” is used throughout the financial statements to represent the agreements that transferred the regional water system and sewage disposal system assets and operations from the City of Detroit to GLWA. The Regional System Leases are not considered a lease as defined by the Government Auditing Standards Board (GASB) in GASB Statement No. 87, Leases.

The Sewage Disposal Fund separately accounts for activities of the Authority for the operation of the sewage disposal system. The Authority’s sewage disposal system is one of the largest in the United States, both in terms of treatment capacity and population served. The sewer disposal system currently serves an area of 944 square miles located in three Michigan counties and an estimated population of approximately 2.8 million or approximately 28% of Michigan’s population. Suburban customers comprise approximately 76% of the population in the service area, and the DWSD retail sewer customers comprise the remainder.

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

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS **As of and for the Year Ended June 30, 2019**

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

REPORTING ENTITY

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

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

BASIS OF PRESENTATION

The Authority presents a sewage disposal enterprise fund for its financial statements which consists of a statement of net position, statement of revenues, expenses and changes in net position, and a statement of cash flows.

BASIS OF ACCOUNTING

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

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

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION

Cash Deposits and Investments

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION (cont.)

Cash Deposits and Investments (cont.)

Investments are reported at fair value or estimated value. The Authority maintains and adheres to a formal investment policy in accordance with Michigan Public Act 20 of 1943, Investment of Surplus Funds of Political Subdivisions. Michigan State law allows the Authority to deposit in the accounts of federally insured banks, credit unions and savings and loan associations and to invest in obligations of the U.S. Treasury, certain commercial paper, repurchase agreements, bankers' acceptances and mutual funds composed of otherwise legal investments. These investments are subject to interest rate risk and credit risk which may affect the value at which these investments are recorded.

Restricted Assets

Restricted assets are those assets set aside as required by the Authority's Master Bond Ordinance (MBO), funds held on behalf of another entity, or where legally restricted for a particular purpose such as bond proceeds for the capital program. See Note 5 for further details.

Accounts Receivable

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

The Sewage Disposal Fund recognizes an estimate of uncollectible accounts for its customer accounts receivable related to its sewage disposal services.

Due from Other Governments

Amounts owed to the Authority by DWSD for shared services and accrued interest receivable on the contractual obligation receivable.

Due to and Due from Water Fund

An amount owed between the Water and Sewage Disposal Funds based on shared centralized and administrative services administered by the Water Fund and allocated to the Sewage Disposal Fund. Any water system usage of inventory in the Sewage Disposal Fund is charged through an interfund payable to the Sewage Disposal Fund.

Contractual Obligation Receivable

Pursuant to the Water and Sewer Services Agreement, the City is responsible for paying the portion of debt service on the bonds assumed by the Authority that were issued to finance the cost of improvements to the Detroit local facilities. The resulting contractual obligation is a receivable recorded by the Authority and is repaid by DWSD based upon an agreed upon schedule. Any new debt issued on behalf of the City and DWSD is also included in the contractual obligation receivable.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS **As of and for the Year Ended June 30, 2019**

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION (cont.)

Loan Receivable – DWSD

The balance represents loan receivables from DWSD established per the 2018 Memorandum of Understanding (MOU) dated June 27, 2018 executed between DWSD and the Authority to cure any shortfall created from difference between cash receipts and the MBO obligations. An annual loan amount and interest rate is determined based on any shortfalls during each fiscal year. There was no shortfall for the fiscal year ending June 30, 2019.

Prepaid Items and Other Assets

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in the financial statements. Prepaid insurance on debt is amortized over the life of the debt. Other assets include accrued interest receivable on investments.

Inventories

Inventories consist of operating, maintenance and repair parts for sewage disposal system assets and are valued at the lower of cost or market, with cost being determined on an average cost method. Inventory is recorded as expense when consumed rather than when purchased.

Prepaid Lease

As described in Note 13, the Authority has recorded a prepaid lease for cash paid to DWSD on the date GLWA began operations equivalent to six months of lease payments. As noted in the 2018 MOU dated June 2018, this amount will be applied at the end of the 40-year term and, hence, it is classified as a noncurrent asset.

Capital Assets

Capital assets are recorded at historical cost. All acquisitions of land and land improvements are capitalized regardless of cost. The capitalization threshold is \$5,000 for capital assets with the exception of certain information technology which is \$1 million dollars. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized. Major outlays for capital assets and improvements are capitalized as projects are constructed.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION (cont.)

Capital Assets (cont.)

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

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

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

Deferred Outflows of Resources

In addition to assets, the statement of net position reports a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net position that applies to future periods. At that time, the activity will be recognized as an outflow of resources (or expense). The Authority reports deferred outflows of resources for two items: deferred charges on refunding and pension amounts. Deferred charges on refunding results from the difference in the carrying value of refunded debt and its reacquisition price; these amounts are deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred outflows of resources from pension amounts relate to the net pension liability. A portion of these costs represent contributions to the plan subsequent to the plan measurement date. More detailed information on pension amounts can be found in Note 16.

Other Accrued Liabilities

Other accrued liabilities represents amounts held for specific purposes or other parties as described below:

Current

- Under the terms of the MBO, the Authority retains cash on hand for the benefit of DWSD to be used for current revenue requirements.

Noncurrent

- Under the terms of the MBO, the Authority retains cash on hand for the benefit of DWSD for budget stabilization funds to be used if DWSD has cash shortfalls.
- DWSD's local share of the Water Residential Assistance Program (WRAP) funds that have not been remitted to the administrator of the WRAP program.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS **As of and for the Year Ended June 30, 2019**

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION (cont.)

Arbitrage Rebate Payable

Certain bonds are subject to arbitrage rebate requirements in accordance with regulations issued by the U.S. Treasury Department. The requirements generally stipulate that earnings from the investment of the tax-exempt bond proceeds that exceeds related interest costs on the bonds must be remitted to the Federal government on every fifth anniversary of each bond issue. The Authority did not have an arbitrage rebate liability as of June 30, 2019.

Long-Term Debt

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

Leases Payable

The effective date of the Regional System leases by the City to the Authority for the leased water and sewage disposal facilities was January 1, 2016. See Note 13 for the details of the regional system leases.

Obligation Payable

Under the terms of the lease agreements with the City, the Authority is required to pay a portion of the City's B and C notes allocated to the regional water and sewage disposal systems. See "Obligation Payable - City of Detroit 2014 Financial Recovery Bonds" in Note 11.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION (cont.)

Compensated Absences

The Authority has a paid time off (PTO) policy which has an annual accrual period ending September 30 each year. Employees are allowed to carry over a maximum bank of 80 hours to the next accrual period. Balances greater than 80 hours up to a maximum of 160 hours are converted to the retiree health saving program at 50% of the value of the PTO time. Hours in excess of 160 hours are forfeited if unused by September 30 of each accrual period. The accrued compensated absence for PTO accrual is approximately \$757,000 for the Sewage Disposal Fund on June 30, 2019.

The Authority also has an accrued compensated absence liability assumed on January 1, 2016 relating to the accumulated unpaid vacation and sick leave balances for those employees who retired from the City or resigned from the City and accepted employment with the Authority on January 1, 2016. The June 30, 2019 balance of the accrued compensated absences for the liability assumed on January 1, 2016 is approximately \$2,190,000 of which \$140,000 is current. This liability is recorded in the Water Fund as the disbursements for payment will be processed from the Water Fund with reimbursement from the Sewage Disposal Fund. The accrued compensated absences includes the employers' share of Social Security and Medicare taxes.

Claims and Judgements

The Authority has accrued in its financial statements for known asserted claims in which future settlements may be necessary.

Net Pension Liability

Under the terms of the Regional System leases, the Authority participates in the City of Detroit General Employee's Retirement system (GRS) Component II plan in a special funding situation. For the purposes of measuring the net pension liability, deferred outflows, and pension expense, information about the fiduciary net position of the Component II plan of the GRS and additions to/ deductions from the plan's net position have been determined on the same basis as they are reported by GRS. The GRS combined plan uses the economic resources measurement focus and the full accrual basis of accounting. Revenue is recorded when earned and expenses are recorded when a liability is incurred. Plan member contributions are recognized in the period in which the contributions are due. Benefits are recognized when due and payable in accordance with the terms of the plan. Investments are reported at fair value or estimated fair value. Refer to Note 16 for additional information on the net pension liability.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

ASSETS, DEFERRED OUTFLOWS OF RESOURCES, LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION (cont.)

Deferred Inflows of Resources

In addition to liabilities, the statement of net position includes a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net position that applies to future periods. At that time, the activity will be recognized as an inflow of resources (or revenues). The Authority has included the deferred amounts on swap terminations, deferred gain on refunding and pension inflows in this reporting category. The deferred amounts on swap terminations were assumed as part of the regional system lease agreements with the City. The amounts will be fully amortized for both funds by fiscal 2035. Deferred gain on refunding results from the difference in the carrying value of refunded debt and its reacquisition price; these amounts are deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred pension inflows result when there is a change in total pension liability due to benefit changes, differences between expected and actual experience, changes in actuarial assumptions, or differences between expected and actual investment returns. The amount for the changes in actuarial assumptions is deferred and amortized over the estimated remaining service life. The amount for the difference between actual and projected assumptions in investment earnings is deferred and amortized over five years.

Net Position

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

Net Investment in Capital Assets - consists of capital assets, net of accumulated depreciation and reduced by the balance of outstanding related debt including the share of the regional system lease liability allocable to the net investment in capital assets acquisition value of the regional systems recorded under GASB 69.

Restricted – consists of amounts that are legally restricted by outside parties or by law through constitutional provisions or enabling legislation. The net position consists of restricted assets reduced by liabilities related to those assets.

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

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION (cont.)

Classification of Revenues and Expenses

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

Operating revenues are those revenues generated from providing services in connection with the Authority's principal ongoing operations. The principal operating revenues of the Sewage Disposal Fund are wholesale charges for providing wastewater treatment. The local system charges are the wholesale charges to the City of Detroit under the Water and Sewer Services Agreement (WSSA), dated June 12, 2015. Wholesale customer charges are shown net of bad debt expense of \$2,181,140 for the Sewage Disposal Fund.

Operating expenses include the direct costs of operating the sewage disposal system, centralized support, utilities, administrative expenses and depreciation on capital assets. Costs related to shared facilities and personnel are allocated to the Water and Sewage Disposal Funds on a basis that relates costs incurred to the system benefited. By agreement, the Authority provides shared services to DWSD, which are shown as a reduction to operating expenses.

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

Capital Adjustment

As part of the Authority's capital improvement program the Authority incurs costs to design capital improvement projects. Periodically, the actual construction project may not be completed due to changes in plans or environmental requirements. Once it has been determined that construction will not proceed related costs are charged to the capital adjustment operating expense, including any costs previously recorded in construction in progress.

Taxes

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

Interest Income on Loan and Obligations Receivable

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

Amortization of Debt Related Items and Cost of Issuance

Bond premiums, discounts, and gains or losses on refunding are deferred and amortized over the life of the bonds. Bond premiums, discounts and GASB 69 debt value adjustment are amortized using the effective interest method. The deferred amounts on refunding are amortized using the straight-line method. Debt cost of issuance is expensed when incurred.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION (cont.)

Legacy Pension Expense

GLWA is legally responsible for making substantial contributions to a legacy pension plan of another entity, see Note 16 for additional information on this Plan.

Centralized Services and Administrative Services

Various common costs incurred by the Authority are allocated between the Water and Sewage Disposal Funds. The allocations are based on an annual cost allocation analysis and may change from year to year based upon that analysis. The following table shows the allocation of these common costs for the year ended June 30, 2019:

Common Costs	Water % Allocation	Water Allocation	Sewer % Allocation	Sewer Allocation	Total Common Costs
Centralized services	43.3%	\$ 35,961,327	56.7%	\$ 47,102,279	\$ 83,063,606
Administrative services	50.0%	12,559,593	50.0%	12,559,594	25,119,187

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

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

Use of Estimates

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

Effect of New Accounting Standards on Current Period Financial Statements

GASB Statement No. 83, *Certain Asset Retirement Obligations* and Statement No. 88, *Certain Disclosures Related to Debt, including direct borrowings and Direct Placements* became effective for years beginning after June 15, 2018. Both of these have been implemented during the fiscal year.

GASB has approved GASB Statement No. 84, *Fiduciary Activities*, Statement No. 87, *Leases*, Statement No. 90, *Majority Equity Interests – an amendment of GASB Statement No. 14 and No. 61*, and Statement No. 91, *Conduit Debt Obligations*. When they become effective, application of these standards may restate portions of these financial statements.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION (cont.)

Reclassifications

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

NOTE 2 – BUDGETARY INFORMATION

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

BUDGET PROCESS

GLWA adopts a biennial budget for the regional water and sewage disposal systems as required by its Articles of Incorporation. The revenue requirements budget is adopted separately for the water and sewerage disposal systems. It is the sum of: a) operation and maintenance expenses; b) amounts necessary to pay the principal of and interest on all bonds and to fund any reserves required by the Master Bond Ordinance; c) the lease payment, which shall be a common-to-all charge; d) GLWA's portion of the GRS net pension liability and the B&C obligation payable; e) the required deposit to the Water Residential Assistance Program (WRAP) Fund, which shall be a common-to-all charge equal to 0.5% of the base budgeted operating revenues for the regional water and sewage disposal systems for each fiscal year; f) the amounts needed to make the required deposits to the regional Extraordinary Repair and Replacement Reserve Fund and the regional Improvement and Extension Fund as defined in the Master Bond Ordinance; and g) the amount necessary to satisfy the coverage ratios required by the rate covenant in the Master Bond Ordinance.

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

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 2 – BUDGETARY INFORMATION (cont.)

SCHEDULE OF CHARGES PROCESS

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

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

NOTE 3 – CASH DEPOSITS AND INVESTMENTS

The deposits and investments of the Sewage Disposal Fund at June 30, 2019 are reported in the financial statements as follows:

Statement of Net Position

Cash and cash equivalents	\$ 160,371,766
Restricted cash and cash equivalents	95,931,528
Restricted cash for the benefit of DWSD	627,919
Investments	75,685,362
Restricted investments	33,384,445
Noncurrent restricted cash and cash equivalents	62,030,778
Noncurrent restricted investments	<u>73,903,089</u>
Total	<u>\$ 501,934,887</u>

Cash Deposits and Investments

Bank deposits – checking and savings accounts	\$ 77,696,814
Money market accounts	241,265,177
Investments in securities	<u>182,972,896</u>
Total	<u>\$ 501,934,887</u>

CUSTODIAL CREDIT RISK – DEPOSITS AND MONEY MARKET ACCOUNTS

Deposits and money market accounts are exposed to custodial credit risk if they are not covered by depository insurance. At year-end, the carrying amount of the Authority's deposits and money market accounts was \$318,961,991 for the Sewage Disposal Fund. The bank balance of the Sewage Disposal Fund deposits and money markets was \$318,257,839 of which \$251,099,839 was uninsured and uncollateralized.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 3 – CASH DEPOSITS AND INVESTMENTS (cont.)

CUSTODIAL CREDIT RISK – DEPOSITS AND MONEY MARKET ACCOUNTS (cont.)

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

CUSTODIAL CREDIT RISK – INVESTMENTS

Following is a summary of the Sewage Disposal Fund's investments as of June 30, 2019:

U.S. treasury notes	\$	106,695,967
U.S. government agencies		33,321,262
Commercial paper		<u>42,955,667</u>
Total	\$	<u>182,972,896</u>

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

CREDIT RISK

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

As of June 30, 2019, all of the Sewage Disposal Fund's investments in securities of U.S. agencies were rated AA+ by Standard & Poor's and Aaa by Moody's. The Sewage Disposal Fund's commercial paper was rated A1 by Standard and Poor's and P1 by Moody's. U.S treasury notes are explicitly guaranteed by the U.S. government and not considered to have credit risk. The Sewage Disposal Fund's money market accounts were not rated.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 3 – CASH DEPOSITS AND INVESTMENTS (cont.)

CONCENTRATION OF CREDIT RISK

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

At June 30, 2019, the Sewage Disposal Fund had greater than 5% of its total investment portfolio concentrated as follows:

Investment Type	Issuer	% of Portfolio
U.S. government agencies	Federal National Mortgage Association	8.06%
U.S. government agencies	Federal Home Loan Mortgage Company	8.01%
Commercial paper	MUFG Bank New York	10.16%

INTEREST RATE RISK

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

As of June 30, 2019, the Sewage Disposal Fund's fixed income investments had the following maturities:

	< 1 Year	1-5 Years	Total
U.S. treasury notes	\$ 80,298,633	\$ 26,397,334	\$ 106,695,967
U.S. government agencies	15,135,364	18,185,898	33,321,262
Commercial paper	42,955,667	-	42,955,667
Total	<u>\$ 138,389,664</u>	<u>\$ 44,583,232</u>	<u>\$ 182,972,896</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 3 – CASH DEPOSITS AND INVESTMENTS (cont.)

FAIR VALUE MEASUREMENTS

The Authority categorizes investments measured at fair value within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the assets. Level 1 inputs are quoted at prices in active markets for identical assets; Level 2 inputs are observable for the asset or liability, such as interest rates and yield curves observable at commonly quoted intervals; and Level 3 inputs are unobservable in the market and are the least reliable. The Sewage Disposal Fund had the following fair value measurements as of June 30, 2019:

	Level 1	Level 2	Total
Investments by fair value level:			
U.S. treasury notes	\$ 106,695,967	\$ -	\$ 106,695,967
U.S. government agencies	-	33,321,262	33,321,262
Commercial paper	-	42,955,667	42,955,667
Total	<u>\$ 106,695,967</u>	<u>\$ 76,276,929</u>	<u>\$ 182,972,896</u>

The fair value of U.S. treasury and U.S. government agencies at June 30, 2019 was based primarily on Level 2 inputs. The Authority estimates the fair value of these securities using other inputs such as interest rates and yield curves, which are observable at commonly quoted intervals.

The Sewage Disposal Fund has investments in commercial paper that meets the criteria to be valued at amortized cost at June 30, 2019.

The Sewage Disposal Fund has no Level 3 inputs at June 30, 2019.

NOTE 4 – RECEIVABLES

The following is a summary of the net receivables as of June 30, 2019:

Receivables, net:	
Billed	\$ 60,549,471
Unbilled	24,297,140
Other	<u>221,452</u>
Subtotal	85,068,063
Allowance for doubtful accounts	<u>(34,802,168)</u>
Total	<u>\$ 50,265,895</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 5 – RESTRICTED ASSETS

Restricted assets, comprised of cash and investments, are available for debt service on revenue bonds and to provide funds for improvements, enlargements, extensions and construction. In accordance with the provisions of the Master Bond Ordinance and Regional System Leases, the Authority follows a sequential flow of funds in segregated accounts through which revenue receipts are deposited and are maintained at certain levels in satisfaction of all legal requirements.

The following schedules provide, in the order of the flow of funds per the Master Bond Ordinance, the assignment of cash and investments between restricted and unrestricted assets based on the source of the monies as of June 30, 2019.

	Funded from Revenue and Other		Funded from Debt Issuance	
	Unrestricted	Restricted	Restricted	Total
Receiving fund	\$ 44,656,229*	\$ -	\$ -	\$ 44,656,229
Operations and maintenance	50,441,139	10,277,436**	-	60,718,575
Senior lien debt service	-	66,147,036	-	66,147,036
Senior lien bond reserve	-	-	128,570,253	128,570,253
Second and junior lien debt service	-	39,842,744	-	39,842,744
Second and junior lien debt reserve	-	-	74,210,746	74,210,746
Pension obligation	-	614,746	-	614,746
Water residential assistance program (WRAP)	-	5,423,176	-	5,423,176
Budget stabilization	-	5,525,914	-	5,525,914
Extraordinary repair and replacement	44,311,080	-	-	44,311,080
Improvement and extension – regional	96,648,680	-	-	96,648,680
Subtotal – Reserves Defined by Ordinance	236,057,128	127,831,052	202,780,999	566,669,179
Less: Funded by surety (noncash)	-	-	(147,393,918)	(147,393,918)
Total – Reserves Defined by Ordinance (net of surety coverage)	236,057,128	127,831,052	55,387,081	419,275,261
Cash held for the benefit of DWSD	-	627,919	-	627,919
Unspent construction bond proceeds	-	12,434,013***	69,597,694	82,031,707
Total Cash, Cash Equivalents and Investments	<u>\$ 236,057,128</u>	<u>\$ 140,892,984</u>	<u>\$ 124,984,775</u>	<u>\$ 501,934,887</u>

*Balance for July 1, 2019 required transfers

**Construction retainage and deposits

*** Amount for current liabilities related to construction funds

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 5 – RESTRICTED ASSETS (cont.)

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

Restricted assets from schedule above:	
From revenue and other	\$ 140,892,984
From debt issuance	124,984,775
Amounts payable to liabilities and debt	<u>(144,000,006)</u>
 Restricted Net Position	 <u><u>\$ 121,877,753</u></u>
 Restricted net position for:	
Debt service	\$ 117,246,259
Payment assistance program	<u>4,631,494</u>
 Total	 <u><u>\$ 121,877,753</u></u>

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

	<u>Unrestricted</u>	<u>Restricted Current</u>	<u>Restricted Noncurrent</u>	<u>Total</u>
Cash and cash equivalents	\$ 160,371,766	\$ 95,931,528	\$ 62,030,778	\$ 318,334,072
Cash held for the benefit of DWSD	-	627,919	-	627,919
Investments	<u>75,685,362</u>	<u>33,384,445</u>	<u>73,903,089</u>	<u>182,972,896</u>
 Total	 <u><u>\$ 236,057,128</u></u>	 <u><u>\$ 129,943,892</u></u>	 <u><u>\$ 135,933,867</u></u>	 <u><u>\$ 501,934,887</u></u>

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 6 – DUE FROM OTHER GOVERNMENTS

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

Billed shared services	\$ <u>179,585</u>
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NOTE 7 – LOAN RECEIVABLE – DWSD

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

In accordance with the 2018 MOU, budget shortfalls not cured by the end of the fiscal year following the year in which they arise shall be repaid in full, in installments, over a period not to exceed the next three fiscal years, plus a surcharge calculated as provided below, as part of the revenue requirement payable by DWSD. The surcharge factor on the portion of the budget shortfall for the Sewage Disposal Fund which remains unpaid shall be based on the three-year U.S. treasury note rate plus 150 basis points. The combined 2016 and 2017 budget shortfall and the 2018 budget shortfall had remaining balances of \$19,932,645 and \$24,133,034, respectively. The surcharge factor for the combined 2016 and 2017 budget shortfall and the 2018 budget shortfall were 4.125% and 3.209%, respectively.

Budget shortfall loan receivable to be paid by DWSD is as follows:

<u>Year Ended June 30,</u>	2017 DWSD Loan Receivable		
	Principal	Interest	Total
2020	\$ 9,761,148	\$ 639,047	\$ 10,400,195
2021	<u>10,171,497</u>	<u>228,699</u>	<u>10,400,196</u>
Total	<u>\$ 19,932,645</u>	<u>\$ 867,746</u>	<u>\$ 20,800,391</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 7 – LOAN RECEIVABLE – DWSD (cont.)

<u>Year Ended June 30,</u>	2018 DWSD Loan Receivable		
	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2020	\$ 7,781,521	\$ 660,000	\$ 8,441,521
2021	8,034,935	406,585	8,441,520
2022	8,296,578	144,918	8,441,496
Total	<u>\$ 24,113,034</u>	<u>\$ 1,211,503</u>	<u>\$ 25,324,537</u>

Total loan receivable to be paid by DWSD for 2016, 2017 and 2018 budget shortfalls:

<u>Year Ended June 30,</u>	Total DWSD Loan Receivable		
	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2020	\$ 17,542,669	\$ 1,299,047	\$ 18,841,716
2021	18,206,432	635,284	18,841,716
2022	8,296,578	144,918	8,441,496
Total	<u>\$ 44,045,679</u>	<u>\$ 2,079,249</u>	<u>\$ 46,124,928</u>

NOTE 8 – INTERFUND RECEIVABLES AND PAYABLES

Interfund balances result from the time lag between the dates interfund goods and services are provided or reimbursable expenditures occur and the payment between funds are made. Interfund balances for the year ended June 30, 2019 consisted of the following:

	<u>Water Fund - Due from Sewage Disposal Fund</u>	<u>Sewage Disposal Fund - Due from Water Fund</u>	<u>Total Due to - Due from</u>
Water Fund - Due to Sewage Disposal Fund	\$ -	\$ 12,568	\$ 12,568
Sewage Disposal Fund - Due to Water Fund	<u>2,876,954</u>	<u>-</u>	<u>2,876,954</u>
Total	<u>\$ 2,876,954</u>	<u>\$ 12,568</u>	<u>\$ 2,889,522</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 9 – CAPITAL ASSETS

Capital assets activity for the year ended June 30, 2019 was as follows:

	Beginning Balance	Additions	Disposals	Transfers	Ending Balance
Nondepreciable capital assets					
Land	\$ 28,984,633	\$ -	\$ (337,713)	\$ -	\$ 28,646,920
Easements	96,211,323	-	-	-	96,211,323
Construction in progress	146,166,144	82,133,524	-	(34,583,009)	193,716,659
Total Nondepreciable Assets	<u>271,362,100</u>	<u>82,133,524</u>	<u>(337,713)</u>	<u>(34,583,009)</u>	<u>318,574,902</u>
Depreciated capital assets					
Site improvements	38,584,812	442,585	(255,573)	848,883	39,620,707
Buildings and structures	1,133,361,703	667,783	(2,017,726)	6,598,959	1,138,610,722
Infrastructure	597,177,020	-	-	12,506,554	609,683,574
Machinery and equipment	1,170,781,940	6,528,267	(2,738,616)	13,470,909	1,188,042,500
Vehicles	2,328,916	269,001	(8,306)	-	2,589,611
Leasehold improvements	1,363,821	279,483	-	1,157,704	2,801,008
Total Depreciable Assets	<u>2,943,598,212</u>	<u>8,187,119</u>	<u>(5,020,218)</u>	<u>34,583,009</u>	<u>2,981,348,122</u>
Less: Accumulated depreciation					
Site improvements	(16,989,190)	(5,161,193)	175,704	-	(21,974,679)
Buildings and structures	(133,328,604)	(46,534,680)	579,179	-	(179,284,105)
Infrastructure	(34,521,589)	(13,687,577)	-	-	(48,209,166)
Machinery and equipment	(272,394,586)	(102,788,667)	1,951,452	-	(373,231,801)
Vehicles	(1,258,465)	(279,451)	8,306	-	(1,529,610)
Leasehold improvements	(7,606)	(92,802)	-	-	(100,408)
Total Accumulated Depreciation	<u>(458,500,040)</u>	<u>(168,544,370)</u>	<u>2,714,641</u>	<u>-</u>	<u>(624,329,769)</u>
Total Capital Assets					
Being Depreciated, Net	<u>2,485,098,172</u>	<u>(160,357,251)</u>	<u>(2,305,577)</u>	<u>-</u>	<u>2,357,018,353</u>
Net Capital Assets	<u>\$ 2,756,460,272</u>	<u>\$ (78,223,727)</u>	<u>\$ (2,643,290)</u>	<u>\$ -</u>	<u>\$ 2,675,593,255</u>

ASSET IMPAIRMENT

Capital assets are evaluated annually to determine if any asset impairments exist, defined as a significant, unexpected decline in the service utility of a capital asset. The Authority recorded impairments of \$355,204 in the Sewage Disposal Fund.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 9 – CAPITAL ASSETS (cont.)

ASSET IMPAIRMENT (cont.)

As part of the Authority's capital improvement program the Authority incurs costs to design capital improvement projects. Periodically the actual construction project may not be completed due to changes in plans or environmental requirements. Once it has been determined that construction will not proceed related costs are charged to the capital adjustment operating expense, including any costs previously recorded in construction in progress. The Authority recorded capital adjustments of \$2,258,351 in the Sewage Disposal Fund for the year ended June 30, 2019.

NOTE 10 – OTHER ACCRUED LIABILITIES

As described in Note 1, other accrued liabilities in the statement of net position as of June 30, 2019 are as follows:

Current

Cash held for the benefit of DWSD	\$ 627,919
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Noncurrent

Cash held for the benefit of DWSD budget stabilization	\$ 5,500,000
DWSD local system WRAP	791,681

Total	\$ 6,291,681
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GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT

Changes in long-term debt and accrued compensated absences for the year ended June 30, 2019 were as follows:

	Beginning Balance	Increase	Decrease*	Debt Forgiveness	Ending Balance	Due Within One Year
Revenue bonds	\$2,584,065,000	\$ 257,465,000	\$ (237,140,000)	\$ -	\$2,604,390,000	\$ 29,415,000
Capital appreciation bonds	17,250,000	-	(2,470,000)	-	14,780,000	3,445,000
State revolving loan	475,677,540	45,258,446	(46,758,858)	-	474,177,128	49,675,000
Total Installment Debt	<u>3,076,992,540</u>	<u>302,723,446</u>	<u>(286,368,858)</u>	<u>-</u>	<u>3,093,347,128</u>	<u>82,535,000</u>
Discount on capital appreciation bonds	<u>(2,265,958)</u>	<u>-</u>	<u>863,930</u>	<u>-</u>	<u>(1,402,028)</u>	<u>(734,587)</u>
Deferred amounts for:						
Unamortized premiums	254,859,637	32,322,120	(38,629,898)	-	248,551,859	16,926,225
Unamortized discounts	<u>(99,833,984)</u>	<u>-</u>	<u>11,089,040</u>	<u>-</u>	<u>(88,744,944)</u>	<u>(10,368,976)</u>
Total Debt, Net	<u>3,229,752,235</u>	<u>335,045,566</u>	<u>(313,045,786)</u>	<u>-</u>	<u>3,251,752,015</u>	<u>88,357,662</u>
Obligation payable	38,835,597	-	(377,420)	-	38,458,177	396,291
Compensated absences	<u>717,086</u>	<u>1,666,278</u>	<u>(1,626,036)</u>	<u>-</u>	<u>757,328</u>	<u>757,328</u>
Total	<u>\$3,269,304,918</u>	<u>\$ 336,711,844</u>	<u>\$ (315,049,242)</u>	<u>\$ -</u>	<u>\$ 3,290,967,520</u>	<u>\$ 89,511,281</u>

* Of the \$237,140,000 decrease in the revenue bonds, \$207,690,000 relates to refundings. Of the \$38,629,898 decrease in unamortized premiums, \$22,504,960 relates to refundings.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

As of June 30, 2019, aggregate debt service requirements of the Authority's debt (fixed and variable-rate) instruments were as follows. These amounts assume that current interest rates on variable-rate bonds will remain the same for their respective terms. As these rates vary, interest payments on variable-rate bonds will vary.

Year Ended June 30	Bonds		Notes from Direct Borrowings and Direct Placements		Total
	Principal	Interest	Principal	Interest	
2020	\$ 32,860,000	\$ 101,793,611	\$ 49,675,000	\$ 10,488,897	\$ 194,817,508
2021	62,860,000	120,855,730	50,355,000	9,313,653	243,384,383
2022	64,825,000	117,986,033	47,150,000	8,179,578	238,140,611
2023	74,080,000	114,706,548	48,204,430	7,073,824	244,064,802
2024	77,635,000	111,058,537	38,930,000	6,057,758	233,681,295
2025 - 2029	539,930,000	487,257,781	137,589,058	19,614,532	1,184,391,371
2030 - 2034	711,365,000	349,392,760	78,256,580	7,734,041	1,146,748,381
2035 - 2039	745,045,000	165,795,419	24,017,060	832,427	935,689,906
2040 - 2044	254,345,000	37,506,012	-	-	291,851,012
2045 - 2049	56,225,000	3,848,375	-	-	60,073,375
Total	<u>\$ 2,619,170,000</u>	<u>\$ 1,610,200,806</u>	<u>\$ 474,177,128</u>	<u>\$ 69,294,710</u>	<u>\$ 4,772,842,644</u>

For bonds issued through the Michigan Finance Authority (MFA) in 2014 and 2015, the Authority is required to make payment on these obligations to the MFA depository account five business days prior to the actual due date of the bond principal and interest payments. Therefore, the payments for principal and interest due on July 1, 2019 are not included in the debt service requirements amounts above as they were paid on June 24, 2019.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

REVENUE AND CAPITAL APPRECIATION BONDS PAYABLE

Net revenues of the Authority are pledged to repayment of bonds; following are the revenue bonds payable at June 30, 2019:

Issue	Bond Date	Amount Issued	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance	Callable
Series 1999A**	12/01/99	\$ 33,510,118	-	7/01/19-21	\$ 13,377,972	
Series 2001B	9/15/01	110,550,000	5.50%	7/01/23-29	78,895,000	
Series 2001C-1	6/17/09	6,360,000	5.25%	7/01/19	605,000	
Series 2003B	6/17/09	150,000,000	7.50%	7/01/33	100,000	c
Series 2004A	2/12/04	101,435,000	5.25%	7/01/19-24	35,010,000	
Series 2005A	3/17/05	237,805,000	4.50%	7/01/35	100,000	c
Series 2005A	3/17/05	31,785,000	5.00%	7/01/34-35	31,785,000	c
Series 2005B	3/17/05	40,125,000	5.50%	7/01/21-22	17,115,000	
Series 2005C	4/05/05	41,095,000	5.00%	7/01/25	100,000	c
Series 2006B	8/10/06	183,150,000	5.00%	7/01/36	100,000	c
Series 2006B	8/10/06	55,000,000	5.00%	7/01/34-36	55,000,000	c
Series 2006D	12/14/06	370,000,000	Variable(*)	7/01/26-32	239,475,000	c
Series 2012A	6/26/12	95,445,000	5.00%	7/01/19-22	57,380,000	
Series 2012A	6/26/12	564,335,000	5.00-5.50%	7/01/23-39	437,795,000	c
Series 2014C-1	9/04/14	20,000	5.00%	7/01/20-22	15,000	
Series 2014C-1	9/04/14	123,200,000	5.00%	7/01/23-44	123,200,000	c
Series 2014C-2	9/04/14	20,000	5.00%	7/01/20-22	15,000	
Series 2014C-2	9/04/14	27,450,000	5.00%	7/01/23-44	27,450,000	c
Series 2014C-3	9/04/14	142,600,000	5.00%	7/01/21-24	142,600,000	
Series 2014C-3	9/04/14	303,570,000	5.00%	7/01/25-33	303,570,000	c
Series 2014C-5	9/04/14	95,165,000	5.00%	7/01/20	18,620,000	
Series 2014C-6	9/04/14	88,900,000	5.00%	7/01/32-33	88,900,000	c
Series 2014C-7	9/04/14	32,650,000	5.00%	7/01/20-24	26,575,000	
Series 2014C-7	9/04/14	44,065,000	5.00%	7/01/25-36	44,065,000	c
Series 2015C	12/15/15	197,160,000	5.00%	7/01/26-35	197,160,000	c
Series 2016B	10/27/16	14,445,000	5.00%	7/01/24-26	14,445,000	
Series 2016B	10/27/16	111,660,000	5.00%	7/01/27-34	111,660,000	c
Series 2016C	10/27/16	295,190,000	4.00-5.00%	7/01/27-36	295,190,000	c
Series 2018A	10/03/18	14,555,000	3.00-5.00%	7/1/20-28	14,555,000	
Series 2018A	10/03/18	67,040,000	5.00%	7/1/29-48	67,040,000	c
Series 2018B	10/03/18	131,690,000	5.00%	7/1/24-49	131,690,000	
Series 2018C	10/03/18	44,180,000	3.152-3.613%	7/1/20-24	44,180,000	
Total Revenue and Capital Appreciation Bonds Payable					<u>\$ 2,617,767,972</u>	

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

REVENUE AND CAPITAL APPRECIATION BONDS PAYABLE

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

- * Interest rates are reset quarterly based upon a formula specified in the bond using the three-month LIBOR rate.
- ** Bonds are capital appreciation bonds. The outstanding balance represents the discounted present value.
- c Indicates bonds are callable under terms specified in the indenture; all other bonds are noncallable.

REVENUE BONDS – PLEDGES OF FUTURE REVENUE

The Authority has pledged assets to secure the repayment of the revenue bonds and State of Michigan revolving fund loans. The Water System bonds and loans are paid solely from the net revenues of the Water System and the Sewer System bonds and loans are paid solely from the net revenues of the Sewer System. Net revenues are defined in the Great Lakes Water Authority Water and Sewer Master Bond Ordinances as all revenues except those transferred to the Operation and Maintenance funds. These revenues are further defined to include the revenues from the Retail Customers who are serviced under the Water and Sewer Services Agreement with the City of Detroit which are reported in the financial statements of the City of Detroit Water and Sewerage Department. The pledged revenues calculation for the fiscal year ending June 30, 2019 includes revenues reported by the Great Lakes Water Authority and the City of Detroit Water and Sewerage Department as this revenue is pledged for payment of the bonds and loans of the Great Lakes Water Authority.

The general purpose of the Sewer System bonds is to provide funding for various wastewater treatment and collection activities, capital improvements, refund certain sewage disposal revenue bonds, pay termination amounts for interest rate swap agreements and fund reserve requirements. The term of pledge commitment for the sewage disposal bonds is through 2049.

See table below for pledged revenue coverage as of June 30, 2019 for the Sewage Disposal Fund:

Remaining principal and interest requirement	\$ 4,772,842,644
Principal and interest funding requirement for the year ending June 30, 2019 (computed consistent with rate covenant basis for rate determination purposes. Not applicable for purpose of additional bond test)	\$ 239,172,263
Pledged revenue for the year ending June 30, 2019	\$ 305,584,160
Pledged revenue collected as a percentage of funding requirement	127.8%

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

STATE REVOLVING LOANS PAYABLE

The Authority participates in direct borrowings through the Clean Water Revolving Fund (CWRF) to finance qualified sewage disposal system projects. Net revenues of the Authority are pledged to repayment of bonds. The following is a schedule of the state revolving loans payable at June 30, 2019:

Issue	Bond Date	Amount Issued	Range of Interest Rates	Maturity Dates	Outstanding Ending Balance
Series 1999 SRF-1	6/24/99	\$ 21,475,000	2.50%	4/01/20	\$ 1,340,000
Series 1999 SRF-2	9/30/99	46,000,000	2.50%	10/01/19-22	11,125,000
Series 1999 SRF-3	9/30/99	31,030,000	2.50%	10/01/19-20	3,850,000
Series 1999 SRF-4	9/30/99	40,655,000	2.50%	10/01/19-20	5,040,000
Series 2000 SRF-1	3/30/00	44,197,995	2.50%	10/01/19-22	9,847,995
Series 2000 SRF-2	9/28/00	64,401,066	2.50%	10/01/19-22	15,501,066
Series 2001 SRF-1	6/28/01	82,200,000	2.50%	10/01/19-24	29,095,000
Series 2001-SRF-2	12/20/01	59,850,000	2.50%	10/01/19-24	21,190,000
Series 2002 SRF-1	6/27/02	18,985,000	2.50%	4/01/20-23	4,585,000
Series 2002 SRF-2	6/27/02	1,545,369	2.50%	4/01/20-23	375,369
Series 2002 SRF-3	12/19/02	31,549,466	2.50%	10/01/19-24	10,289,466
Series-2003 SRF-1	6/26/03	48,520,000	2.50%	10/01/19-25	19,795,000
Series 2003 SRF-2	9/25/03	25,055,370	2.50%	4/01/20-25	8,810,370
Series-2004 SRF-1	6/24/04	2,910,000	2.125%	10/01/19-24	1,005,000
Series 2004 SRF-2	6/24/04	18,353,459	2.125%	4/01/20-25	6,318,459
Series 2004 SRF-3	6/24/04	12,722,575	2.125%	4/01/20-25	4,367,575
Series 2007 SRF-1	9/20/07	167,540,598	1.625%	10/01/19-29	98,800,598
Series 2009 SRF-1	4/17/09	13,970,062	2.50%	4/01/20-30	8,260,062
Series 2010 SRF-1	1/22/10	4,214,763	2.50%	4/01/20-31	2,730,763
Series 2012 SRF-1	8/30/12	14,950,000	2.50%	10/01/19-34	12,520,000
Series 2015A SRF	3/20/15	79,500,000	2.50%	4/01/20-36	69,930,000
Series 2015B SRF	3/20/15	27,175,304	2.50%	10/01/19-35	23,465,304
Series 2015D SRF	12/11/15	15,321,478	2.50%	10/01/19-35	12,981,478
Series 2016 SRF-1	9/16/16	19,305,000	2.50%	4/01/20-38	14,455,854
Series 2016 SRF-2	9/16/16	51,310,000	2.50%	4/01/20-33	32,840,157
Series 2016 SAW-1	5/25/16	10,000,000	2.50%	10/01/19-38	10,000,000
Series 2017 SRF-1	6/23/17	38,450,000	2.50%	10/01/19-36	31,309,424
Series 2018 SRF-2	9/14/18	17,510,000	2.00%	10/01/19-28	4,348,188
Total State Revolving Loans Payable					<u>\$ 474,177,128</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

STATE REVOLVING LOANS PAYABLE (cont.)

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

REFUNDED DEBT AND NEW MONEY BOND

In prior years, the Authority's Sewage Disposal Fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts for the purpose of generating resources for all future debt service payments on the refunded debt. As a result, the refunded bonds are considered to be defeased and the trust fund assets and related liabilities have been removed from the statement of net position. At June 30, 2019, the balance of the bonds considered to be defeased are \$25,550,000 for Series 2003B revenue bonds. These bonds were called July 1, 2019.

On October 3, 2018, the Authority issued \$81,595,000 in Series 2018A senior lien revenue bonds, \$131,690,000 in Series 2018B senior lien refunding bonds and \$44,180,000 in Series 2018C taxable senior lien refunding bonds. The net proceeds of the Series 2018A revenue bonds will be used to pay certain costs of improvements, enlargements and extensions and repairs to the Local Water System. The net proceeds of the Series 2018B and 2018C bonds were used to purchase securities that were placed in an irrevocable trust with an escrow agent to refund bonds. On October 6, 2018, \$16,665,000 Series 1998A, \$18,260,000 Series 1998B, \$107,045,000 Series 2001C-2 and \$25,015,000 Series 2012A revenue bonds were called. The remaining funds in the trust will be used to refund \$40,705,000 Series 2001C-1 revenue bonds. As a result, the refunded bonds are considered to be defeased and the trust fund assets and related liabilities have been removed from the statement of net position. The refunding resulted in a savings of \$54,048,882 over the next 11 years and an economic gain of \$34,519,422.

ISSUANCE OF STATE REVOLVING LOANS

The Authority's Sewage Disposal Fund received loans from the State of Michigan Revolving Loan Fund totaling \$45,258,446 during the year ended June 30, 2019. The proceeds of the Sewage Disposal Fund loans were used to pay costs of acquiring, constructing extensions, and making certain repairs and improvements to the regional sewage disposal system. At June 30, 2019, \$42,866,377 for the Sewage Disposal Fund was authorized and unissued.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

DEBT RATINGS

In September 2018, Standard & Poor's Global Ratings Services upgraded the ratings on the sewage disposal system senior lien debt by two notches to A+ and the sewage disposal system second lien debt by two notches to A. Both with a positive outlook. Moody's Investor Services upgraded the ratings on the sewage disposal system senior lien debt by one notch to A2 and second lien debt by one notch to A3. All were assigned a stable outlook. Fitch affirmed the ratings on the sewage disposal system senior lien debt at an A and second lien debt at an A-. Both with positive outlooks.

The Authority was asked by the State to seek a rating for the junior lien debt, as this is the debt category of the state revolving fund bonds. In November 2018, S&P Global Ratings assigned an A rating to the Authority's junior lien sewage disposal system SRF bonds.

CONTRACTUAL OBLIGATION RECEIVABLE – DEBT ALLOCATION FOR DWSD RETAIL OPERATIONS

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

Per the lease agreements, the WSSA and the MBO, the Detroit retail class continues to pay its common-to-all share of debt service revenue requirements and its allocated share of debt service revenue requirements associated with improvements to the local water and sewage disposal systems. Payments on the debt service incurred by GLWA on the outstanding revenue bonds assumed as of December 31, 2015 are to be allocated using an agreed-upon percentage of total debt service associated with bond-financed local improvements over the life of such bonds, though the bonds themselves continue to be secured by the net revenue of GLWA, and the revenues of the Detroit retail class. The MOU dated June 27, 2018 defines an agreed upon allocation and amortization schedule. The total obligation receivable at June 30, 2019 is \$426,856,732 for the Sewage Disposal Fund.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

OBLIGATION PAYABLE – CITY OF DETROIT 2014 FINANCIAL RECOVERY BONDS

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

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

In 2018, the governing body of the City of Detroit authorized the use of general funds for the full redemption of the General Obligation Bonds, 2014 Series C, including the amount allocated to the Authority. The 2014 Series C debt was fully redeemed on April 13, 2018. In addition, on December 13, 2018, the City issued Financial Recovery Refunding Bonds to redeem a portion of the 2014 Series B. The Authority will repay the City of Detroit General Fund under the terms of the original debt payment schedules for the 2014 Series B & C General Obligation Bonds, with principal and interest due on June 30 each year.

The following is a schedule of the obligation payable for the Financial Recovery Bonds at June 30, 2019:

Bond Issue	Original Issue Amount	Range of Interest Rates	Maturity Date	Outstanding Ending Balance
Series 2014-B	\$ 44,233,463	4.00% and variable	4/1/44	\$ 34,990,439
Series 2014-C	6,382,990	5.00%	6/30/27	<u>3,467,738</u>
Total				<u>\$ 38,458,177</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 11 – LONG-TERM DEBT (cont.)

OBLIGATION PAYABLE – CITY OF DETROIT 2014 FINANCIAL RECOVERY BONDS (cont.)

As of June 30, 2019, debt service requirements of the Financial Recovery Bonds were as follows:

Year Ended June 30	Principal	Interest	Total
2020	\$ 396,291	\$ 1,573,005	\$ 1,969,296
2021	416,106	1,553,190	1,969,296
2022	436,911	1,532,385	1,969,296
2023	458,757	1,510,539	1,969,296
2024	481,694	1,487,601	1,969,295
2025 - 2029	10,025,594	6,406,145	16,431,739
2030 - 2034	8,747,608	4,548,756	13,296,364
2035 - 2039	8,747,608	4,198,851	12,946,459
2040 - 2044	8,747,608	1,574,569	10,322,177
Total	<u>\$ 38,458,177</u>	<u>\$ 24,385,041</u>	<u>\$ 62,843,218</u>

INTEREST EXPENSE

The following represents the amounts recorded as interest expense for the year ended June 30, 2019:

Bonded debt	\$ 136,815,609
Obligation payable	1,482,494
Lease payable	<u>21,595,197</u>
Total	<u>\$ 159,893,300</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 12 – NET INVESTMENT IN CAPITAL ASSETS

The composition of net investment in capital assets as of June 30, 2019 was as follows:

Capital Assets	
Capital assets not being depreciated	\$ 318,574,902
Capital assets being depreciated, net	<u>2,357,018,353</u>
Total Capital Assets	<u>2,675,593,255</u>
Less: Related Debt	
Total debt, net (see Note 11)	3,251,752,015
Less: Portion of bonds used for SWAP termination agreements	(263,770,610)
Less: Obligation receivable-local share of debt	(426,856,732)
Less: Bonds applicable to unspent construction proceeds	(69,597,694)
Deferred charge on refunding	(159,370,167)
Deferred gain on refunding	47,982,938
Deferred amounts for SWAP terminations	165,223
Capital portion of lease payable	<u>357,670,776</u>
Total Related Debt	<u>2,737,975,749</u>
Net Investment in Capital Assets	<u>\$ (62,382,494)</u>

During 2019, the Authority reevaluated the classifications of net position. The following changes in classifications were made for the year ended June 30, 2019, from the prior year ended June 30, 2018:

- The lease payable was analyzed for purposes of net position classifications pursuant to the application of GASB 69 for the Authority's acquisition and the amounts in fiscal year ended June 30, 2019 are reported prospectively. The impact of this change resulted in a decrease in net investment in capital assets and an increase in unrestricted net position of \$357,670,776 for the Sewage Disposal Fund for the fiscal year ended June 30, 2019. For fiscal year ended June 30, 2018, this analysis would have resulted in a decrease in net investment in capital assets and an increase in unrestricted net position of \$361,756,283 for the Sewage Disposal Fund.
- For fiscal year ended June 30, 2019, the restricted unspent construction bond proceeds in the amount of \$69,597,694 for the Sewage Disposal Fund is offset by the related bond liability, resulting in no classification of net position restricted for capital acquisition. In fiscal year June 30, 2018, the unspent construction bond proceeds were reported in the restricted for capital acquisition net position classification.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 13 – LONG-TERM LEASES PAYABLE AND RELATED PREPAID LEASE

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

The regional system leases were recorded under GASB 69 to record the acquisition of the operations of the City of Detroit water and sewage disposal systems. The liability for the leases is allocated in the computation of net position based upon the components of net position acquired. Under the definitions of the regional system leases all improvements, additions and replacements to the original facilities acquired are considered to be leased facilities.

Amounts reported as a liability at year-end represent the net present value of all future lease payments. Changes in long-term leases payable for the year ended June 30, 2019 were as follows:

Beginning Balance	Increase	Decrease	Ending Balance	Amount due Within One Year*
\$ 521,037,423	\$ -	\$ (5,884,354)	\$ 515,153,069	\$ 6,134,481

* The current portion of the long-term leases payable represents the 12 monthly payments required from July 1, 2019 through June 30, 2020. Future revenues are intended to cover these payments.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 13 – LONG-TERM LEASES PAYABLE AND RELATED PREPAID LEASE (cont.)

As of June 30, 2019, aggregate requirements of the Authority's leases were as follows:

Year Ended June 30	Principal	Interest	Total
2020	\$ 6,134,481	\$ 21,365,519	\$ 27,500,000
2021	6,395,235	21,104,765	27,500,000
2022	6,667,073	20,832,927	27,500,000
2023	6,950,466	20,549,534	27,500,000
2024	7,245,904	20,254,096	27,500,000
2025 - 2029	41,119,796	96,380,204	137,500,000
2030 - 2034	50,634,250	86,865,750	137,500,000
2035 - 2039	62,350,194	75,149,806	137,500,000
2040 - 2044	76,777,018	60,722,982	137,500,000
2045 - 2049	94,541,976	42,958,024	137,500,000
2050 - 2054	116,417,456	21,082,544	137,500,000
2055 - 2056	39,919,220	1,330,780	41,250,000
Total	<u>\$ 515,153,069</u>	<u>\$ 488,596,931</u>	<u>\$1,003,750,000</u>

As part of the 2018 MOU, the MBO requirement for six months of lease payments made to DWSD on January 1, 2016 will be treated as a prepaid lease payment. The initial term of the regional system leases began on the effective date and ends on December 31, 2055. GLWA's last monthly payment shall be June 1, 2055 and GLWA's \$25 million lease pre-payment on January 1, 2016 shall be applied to the period of July 1, 2055 through December 31, 2055. Of the \$25 million recorded as a prepaid on the statement of net position, \$13,750,000 was recorded in the Sewage Disposal Fund.

NOTE 14 – RISK MANAGEMENT/SELF-INSURANCE PROGRAMS

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 14 – RISK MANAGEMENT/SELF-INSURANCE PROGRAMS (cont.)

The Authority transfers risk via the purchase of a variety of insurance policies the most significant of which are shown in the table below (alphabetical by coverage):

Coverage	Limits	Retention Per Occurrence
Aviation	\$5,000,000	5% of insured value
Cyber Breach	\$10,000,000	\$100,000
Fiduciary	\$5,000,000	\$1,000
General and Auto Liability	\$10,000,000	\$1,000,000
Pollution Legal Liability	\$25,000,000	\$500,000
Property Damage	\$750,000,000	\$1,000,000
Public Officials and Employment Practices	\$25,000,000	\$250,000
Workers' Compensation	Statutory	\$1,250,000

Settled claims relating to commercial insurance have not exceeded the amount of insurance coverage since inception of the Authority.

The Authority assumes all risk for motor vehicle physical damage.

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

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 14 – RISK MANAGEMENT/SELF-INSURANCE PROGRAMS (cont.)

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

	<u>2019</u>	<u>2018</u>
Unpaid claims, beginning of year	\$ 1,044,067	\$ 1,026,178
Incurred claims (including change in IBNR provisions)	10,655,927	8,598,908
Claims payments	<u>(10,698,796)</u>	<u>(8,581,019)</u>
Unpaid Claims, End of Year	<u>\$ 1,001,198</u>	<u>\$ 1,044,067</u>

Workers' compensation. The Authority maintains a self-insurance program for workers' compensation coverage up to the amount of its retention. The program is administered by a third party who provides claim review and medical bill review services. The unpaid claims estimate is accrued within the Water Fund's accrued workers' compensation account on the Statement of Net Position.

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

	<u>2019</u>	<u>2018</u>
Unpaid claims, beginning of year	\$ 303,239	\$ 250,000
Incurred claims (including change in IBNR provisions)	246,138	254,899
Claims payments	<u>(256,897)</u>	<u>(201,660)</u>
Unpaid Claims, End of Year	<u>\$ 292,480</u>	<u>\$ 303,239</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 15 – DEFINED CONTRIBUTION PENSION PLANS

DEFINED CONTRIBUTION PLANS

The Great Lakes Water Authority Defined Contribution Retirement Plan is a 401(a) governmental money purchase plan administered by ICMA Retirement Corporation (the “Administrator”) to provide benefits at retirement to all full-time employees of the Authority. The Authority contributes 6.0% of earnings to the plan. The Authority will make an additional contribution to the 401(a) plan to match employee contributions under the Great Lakes Water Authority 457 Plan up to 3% of compensation. Employees are 100% vested after three years of service (cliff vesting). Employees who transferred to the Authority on or around January 1, 2016 from DWSD retain their years of service for vesting purposes. The Authority recognized expense of \$4,605,975, which is net of forfeitures of \$351,582, for the year ended June 30, 2019. The Authority has accrued approximately \$197,000 of expense on the accrued payroll at June 30, 2019. At June 30, 2019, there were 1,104 plan members.

The Great Lakes Water Authority Defined Contribution Plan Make-Up Benefit is a 401(a) governmental money purchase plan administered by ICMA Retirement Corporation (the “Administrator”) to provide benefits at retirement to all employees who terminated employment with DWSD on or around January 1, 2016 and were not vested in the City of Detroit General Retirement System (GRS). Eligible employees are required to rollover to the Authority’s Section 457 Deferred Compensation Plan their refunded employee mandatory contribution from GRS. The amount of the make-up benefit determined by an actuary based on the present value of the lost GRS benefit was \$791,113 which was expensed in fiscal year 2018. The actual funding of the plan occurred in fiscal 2019. An additional employer contribution for \$32,492 was expensed in fiscal year 2019 for an eligible employee. Employees are 100% vested after one year of service. At June 30, 2019 there are 36 participants in the plan.

The Authority has a Section 457 Deferred Compensation Plan which employees can make pre-tax contributions which are immediately 100% vested. The Authority added a Roth provision (post-tax) to the 457 plan effective January 1, 2019. At June 30, 2019 there were 953 plan members.

The Authority adopted a Roth IRA Plan during the fiscal year which allows employees to make post-tax contributions which are immediately 100% vested. At June 30, 2019 there were 25 plan members.

RETIREMENT HEALTH SAVINGS PLAN

The Authority also provides a Retirement Health Savings Program for full-time employees. Employees are required to contribute \$10 per pay period and the Authority contributes \$80 per pay period. Employees are 100% vested after three years of service (cliff vesting). Employees who transferred to the Authority on or around January 1, 2016 from DWSD retain their years of service for vesting purposes. The Authority recognized an expense \$1,907,629, which is net of forfeitures of \$180,773, for the year ended June 30, 2019. The Authority has accrued approximately \$80,000 of expense on the accrued payroll at June 30, 2019. Employee contributions were \$251,160 for the year ended June 30, 2019. At June 30, 2019, there were 1,350 plan members.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 16 – NET PENSION LIABILITY (SPECIAL FUNDING SITUATION)

As part of the City of Detroit bankruptcy plan of adjustment (POA) and the Regional System Leases (Section 4.3), the City, the City of Detroit General Employees' Retirement system (GRS or the System) and the Authority entered into an agreement on December 1, 2015 that set forth the terms for contributions and reporting of the DWSD share of the GRS pension pool. GRS provides the information necessary for the Authority and DWSD to report the proportionate share separately in their respective statements. On January 24, 2017, DWSD and the Authority provided a supplement to the agreement whereby GRS is directed to allocate investments and pension liabilities of the DWSD division on the basis of 70.3% to the Authority and 29.7% to DWSD effective January 1, 2016. This agreement constitutes a special funding situation pursuant to the provisions of GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*. As such, while no Authority employees earn service credit in the legacy or hybrid plans, GLWA is legally responsible for making substantial contributions to a legacy pension plan of another entity and, accordingly, must record a net pension liability for its proportion and make the following disclosures regarding the plan as required by the standard. Information is available in a separate audit report for the "Combined Plan for the General Retirement System of the City of Detroit" as well as "The General Retirement System of the City of Detroit GASB Statement Nos. 67 and 68 Accounting and Financial Reporting for Pension Plans of Component II" as of June 30, 2018 which are available by contacting the Authority's management.

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

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

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

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 16 – NET PENSION LIABILITY (SPECIAL FUNDING SITUATION) (cont.)

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

During fiscal year 2018, employer contributions were not actuarially determined, but are determined by the provisions of the POA. Included within contributions for fiscal year 2018 are contributions from the Foundation for Detroit's Future in the amount of \$375,000 and approximately \$67.9 million of contributions from the City, City-related entities, and GLWA. Employer contributions were also made into the Income Stabilization Fund for \$88,494 from the UTGO Stub Bond proceeds.

The POA obligates DWSD to pay \$2,500,000 per year towards administrative costs and annual plan contributions of \$42,900,000 per year in total for both water and sewer employees, until 2023. Pursuant to the Regional System leases, the Authority is obligated to pay its allocable share of such liability. The portion allocated to the Authority is \$31,916,200 for fiscal year 2019. This includes a contribution to the GRS pension plan of \$19,347,900 for the Sewage Disposal Fund. The contribution was made subsequent to the measurement date and has been recorded as a deferred outflow. It also includes an administrative fee of \$1,757,500, with \$1,127,500 paid by the Sewage Disposal Fund. Part of the administrative fee is considered a prepayment based on actual administrative expenses incurred by the plan as reported in the other supplemental information of the audited financial report of the GRS Plan.

Subsequent to 2023, DWSD and the Authority will be responsible for paying their allocable share of any additional amounts that are actuarially determined to be payable. An estimate of the 2024 contribution was included in the GRS annual actuarial valuation of Component II dated June 30, 2018. The total share for the DWSD is estimated to be between \$5.7 million and \$7.3 million. GLWA's share of the 2024 estimated contribution will be between \$4.0 million and \$5.1 million with approximately \$2.6 million to \$3.3 million allocated to the Sewage Disposal Fund.

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

DWSD Employee Contributions. Contribution requirements of plan members are established and may be amended by the GRS Board of Trustees in accordance with the City Charter, union contracts, and plan provisions. For the year ended June 30, 2018, there were no employee contributions into Component II, as the plan was frozen as of June 30, 2014; contributions into Component I began thereafter.

Net Pension Liability. As permitted by GASB Statement No. 68, the net pension liability was measured as of June 30, 2018, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 16 – NET PENSION LIABILITY (SPECIAL FUNDING SITUATION) (cont.)

Actuarial Assumptions. The total pension liability was actuarially determined as of June 30, 2017, which used updated procedures to roll forward the estimated liability to June 30, 2018. The actuarial valuation used the following actuarial assumptions applied to all periods included in the measurement.

Inflation	Not applicable
Salary increases	Not applicable
Investment rate of return	7.38%, net of investment expense and including inflation

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

The actuarial assumptions other than mortality and the investment rate of return used in the June 30, 2017 valuation to calculate the total pension liability as of June 30, 2018 were based on the results of an actuarial experience study for the period from 2002-2007.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each asset class. These real ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each asset class that is included in the pension plan's target asset allocation as of June 30, 2018, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return	Expected Money-Weighted Rate of Return
Global equity	43.0%	5.23%	2.25%
Global fixed income	19.0%	3.04%	0.58%
Private equity	8.0%	7.18%	0.57%
Cash	1.0%	25.00%	0.25%
Real estate	10.0%	4.46%	0.45%
Global asset allocation/risk parity/real assets	14.0%	4.30%	0.60%
Hedge funds	5.0%	4.06%	0.20%
	<u>100%</u>		<u>4.90%</u>
Inflation			<u>2.48%</u>
			<u>7.38%</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 16 – NET PENSION LIABILITY (SPECIAL FUNDING SITUATION) (cont.)

Discount Rate. The discount rate used to measure the total pension liability was 7.38%, however the single discount rate used at the beginning of the year was 6.91%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that City of Detroit's contributions will be made at rates equal to the difference between actuarially determined contribution rates and the employee rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees both at the beginning of the year, as well as at the end of the year. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

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

Total pension liability	\$	333,951,176	
Plan fiduciary net position		<u>(249,280,471)</u>	
Net Pension Liability	\$	<u>84,670,705</u>	
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at June 30, 2018	\$ 354,791,535	\$ 239,980,980	\$ 114,810,555
Changes for the year:			
Interest	23,465,553	-	23,465,553
Difference between expected and actual experience	(205,683)	-	(205,683)
Changes in assumptions	(13,693,822)	-	(13,693,822)
Employer contributions	-	19,347,900	(19,347,900)
Net investment income	-	19,468,812	(19,468,812)
Benefit payments, including refunds of employee contributions	(30,406,407)	(30,406,407)	-
Other changes	-	889,186	(889,186)
Net changes	<u>(20,840,359)</u>	<u>9,299,491</u>	<u>(30,139,850)</u>
Balances at June 30, 2019	\$ 333,951,176	\$ 249,280,471	\$ 84,670,705

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 16 – NET PENSION LIABILITY (SPECIAL FUNDING SITUATION) (cont.)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate. The following presents the net pension liability of the Authority, calculated using the discount rate of 7.38%, as well as what the Sewage Disposal Fund's net pension liability would be if it were calculated using a discount rate that is 1% lower (6.38%) or 1% higher (8.38%) than the current rate:

1% Decrease (6.38%)	Current Discount Rate (7.38%)	1% Increase (8.38%)
<u>\$ 109,592,763</u>	<u>\$ 84,670,705</u>	<u>\$ 63,373,522</u>

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

Pension Expense and Deferred Outflows and Inflows of Resources Related to Pensions. For the year ended June 30, 2019, the Authority recognized positive pension expense of \$10,763,940 for the Sewage Disposal Fund. At June 30, 2019, the Sewage Disposal Fund reported deferred outflows and inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
Net difference between projected and actual earnings on pension plan investments	\$ 999,889	\$ -	\$ 999,889
Employer contributions to the plan subsequent to the measurement date	<u>19,347,900</u>	<u>-</u>	<u>19,347,900</u>
Total	<u>\$ 20,347,789</u>	<u>\$ -</u>	<u>\$ 20,347,789</u>

The amount reported as deferred outflows of resources resulting from contributions subsequent to the measurement date will be recognized as a reduction in the net pension liability for the year ending June 30, 2020. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pension will be recognized in pension expense as follows:

Year Ended June 30	
2020	\$ 2,665,862
2021	1,408,716
2022	(2,427,193)
2023	<u>(647,496)</u>
Total	<u>\$ 999,889</u>

Payable to the Pension Plan. At June 30, 2019, the Authority did not have any outstanding contributions payable to the pension plan for the year then ended.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 17 – COMMITMENTS AND CONTINGENCIES

CAPITAL IMPROVEMENT PROGRAM

The Authority is engaged in a variety of projects that are part of its five-year capital improvement program (the Program). The total cost of this Program is anticipated to be approximately \$733.6 million for the Sewage Disposal Fund through fiscal year 2024. The Program is being financed primarily from revenue bond proceeds in addition to the Improvement and Extension Funds. As of June 30, 2019, the Sewage Disposal Fund has unspent bond proceeds of \$69.6 million and Improvement and Extension funds of \$96.6 million available for use in addition to state revolving loan resources of \$42,866,377 in funding these commitments.

The total amount of construction contract commitments outstanding at June 30, 2019 was approximately \$76 million for the Sewage Disposal Fund.

CONTINGENCIES

The Authority is subject to various government environmental laws and regulations. GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, established accounting and financial reporting standards for pollution (including contamination) remediation obligations, which are obligations to address the current or potential detrimental effects of existing pollution by participating in pollution remedial activities such as site assessments and cleanups. The standard excludes pollution prevention or control obligations with respect to current operations, and future pollution remediation activities that are required upon retirement of an asset, such as landfill closure and post-closure care. The Authority determined that there were no estimated pollution remediation obligations to be recorded at June 30, 2019.

GASB Statement No. 83, *Certain Asset Retirement Obligations*, established accounting and financial reporting standards for legally enforceable liabilities related to the retirement of tangible capital asset(s) where the tangible capital asset is permanently removed from service. The retirement of a tangible capital asset can occur via sale, abandonment, recycling or disposal in some other manner and excludes the temporary idling of a tangible capital asset. An asset retirement obligation does not apply to obligations resulting from the disposal, or plan to dispose, of a tangible capital asset; obligation(s) associated with using a tangible capital asset for a different purpose; obligation(s) for pollution remediation; obligation(s) from regular maintenance or the cost to replace a component. The Authority determined there were no legally enforceable asset retirement obligations to be recorded at June 30, 2019.

The Sewage Disposal Fund's operations are subject to regulation pursuant to the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (collectively, the Clean Water Act). Included in the regulatory framework established by the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) permit program, which requires operation of wastewater system facilities according to discharge limitations and other requirements as set forth in permits issued to each facility. The Environmental Protection Agency (EPA) has authorized the Michigan Department of Environmental Quality (MDEQ) to implement and enforce the federal NPDES permit program. The Sewage Disposal Fund operates pursuant to the NPDES Permit. The Authority's current NPDES permit was issued July 1, 2019 and expires on October 1, 2022.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO FINANCIAL STATEMENTS As of and for the Year Ended June 30, 2019

NOTE 17 – COMMITMENTS AND CONTINGENCIES (cont.)

CONTINGENCIES (cont.)

The Authority is a defendant in numerous alleged claims, lawsuits, billing disputes, and other stated and pending demands. The Authority's Legal Department has estimated a reserve of \$7,556,111 for the Sewage Disposal Fund, which is included in the accompanying financial statements, for the potential outcome of such claims or the amount of potential damages in the event of an unfavorable outcome for the above contingencies. The Authority's management believes that any differences in reserved amounts and final settlement, after consideration of claims covered by insurance, resulting from such litigation will not materially impact the Authority's financial position or results of operations.

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

NOTE 18 – SUBSEQUENT EVENTS

OAKLAND-MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT CAPITAL CONTRIBUTION

In March 2019, the Great Lakes Water Authority (GLWA) and the Oakland-Macomb Interceptor Drain Drainage District (OMIDDD) executed a contract amendment that redefined the operation, maintenance, repair and improvement responsibilities of each entity regarding the Northeast Sewer Pump Station (NESPS), interceptor PCI-5 and the North Interceptor East Arm (NIEA). The agreement is effective July 1, 2019. As part of this agreement, OMIDDD is required to pay GLWA a one-time contribution in aid of capital in the amount of \$11,920,000, which generally reflects GLWA's determination of net book value of the assets as of the effective date related to the NESPS. Receipt of this capital contribution in support of revenue requirements will be reflected in the GLWA June 30, 2020 and June 30, 2021 annual financial statements.

REQUIRED SUPPLEMENTARY INFORMATION

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

REQUIRED SUPPLEMENTARY INFORMATION

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

	Fiscal Year Based on Measurement Date			
	2018*	2017*	2016*	2015**
Share of Total Pension Liability				
Interest	\$ 23,465,553	\$ 24,268,718	\$ 25,906,278	\$ 32,970,738
Differences between expected and actual experience	(205,683)	1,519,917	(3,248,690)	(274,022)
Changes in assumptions	(13,693,822)	9,721,266	11,308,613	(12,695,976)
Benefit changes	-	-	-	(97,749,668)
Benefit payments, including refunds of employee contributions	(30,406,407)	(32,770,558)	(44,676,314)	(34,831,342)
Net change	(20,840,359)	2,739,343	(10,710,113)	(112,580,270)
Share of total pension liability, beginning of year	354,791,535	352,052,192	362,762,305	475,342,575
Share of Total Pension Liability, End of Year	333,951,176	354,791,535	352,052,192	362,762,305
Share of Plan Fiduciary Net Position				
Employer contributions	19,347,900	19,347,900	19,347,900	19,342,889
Employee contributions	-	-	-	84,010
Net investment income (loss)	19,468,812	24,899,462	(841,679)	11,085,930
Benefit payments, including refunds of employee contributions	(30,406,407)	(32,770,558)	(44,676,314)	(34,831,342)
Administrative expense	-	-	-	(13,661)
Other changes	889,186	958,487	161,836	17,808,122
Net change	9,299,491	12,435,291	(26,008,257)	13,475,948
Share of plan fiduciary net position, beginning of year	239,980,980	227,545,689	253,553,946	240,077,998
Share of Plan Fiduciary Net Position, End of Year	249,280,471	239,980,980	227,545,689	253,553,946
SHARE OF NET PENSION LIABILITY	\$ 84,670,705	\$ 114,810,555	\$ 124,506,503	\$ 109,208,359
Nonemployer contributing entity share of collective net pension liability - Sewage Disposal Fund	10.2%	12.2%	12.5%	13.2%
Plan fiduciary net position as a percentage of total pension liability	74.6%	67.6%	64.6%	69.9%

*As described in Notes 1 and 16 GLWA was established on January 1, 2016. At that time, GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. This reflects only the portion allocated to GLWA.

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

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

The accompanying notes to required supplementary information are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

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

	Fiscal Year Based on Measurement Date		
	2018*	2017*	2016*
Contractually required contribution**	\$ 19,347,900	\$ 19,347,900	\$ 19,347,900
Actual contribution	19,347,900	19,347,900	19,347,900
Contribution deficiency (excess)	\$ -	\$ -	\$ -

*As described in Notes 1 and 16 GLWA was established on January 1, 2016, and GLWA assumed a portion of the net position and liabilities of the City of Detroit Water and Sewerage Department. This reflects only the portion allocated to GLWA.

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

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

The accompanying notes to required supplementary information are an integral part of these financial statements.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

Nonemployer Contributing Entity Share of City of Detroit General Employees' Retirement System –
Component II

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION For the Year Ended June 30, 2019

Changes in Assumptions

In 2016, amounts reported as changes in assumptions resulted from adjustment of the discount rate from 7.61 percent to 7.23 percent.

In 2017, amounts reported as changes of assumptions resulted from adjustment of the discount rate from 7.23 percent to 6.91 percent.

In 2018, amounts reported as changes of assumptions resulted from adjustment of the discount rate from 6.91 percent to 7.38 percent.

Note: Great Lakes Water Authority is required to present the last ten fiscal years of data; however, accounting standards allow the presentation of as many years as are available until ten fiscal years are presented.

SUPPLEMENTARY INFORMATION

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COMBINING AND INDIVIDUAL FUND SCHEDULES

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

COMBINING SCHEDULE OF NET POSITION SEWAGE DISPOSAL FUND As of June 30, 2019

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Fund	Sewage Disposal Total
Assets				
Current Assets				
Cash and cash equivalents	\$ 95,103,104	\$ 65,268,662	\$ -	\$ 160,371,766
Restricted cash and cash equivalents	73,233,588	52,519	22,645,421	95,931,528
Restricted cash for the benefit of DWSD	627,919	-	-	627,919
Investments	44,305,344	31,380,018	-	75,685,362
Restricted investments	33,384,445	-	-	33,384,445
Receivables:				
Billed	60,549,471	-	-	60,549,471
Unbilled	24,297,140	-	-	24,297,140
Other	221,452	-	-	221,452
Allowance for doubtful accounts	(34,802,168)	-	-	(34,802,168)
Due from other governments	179,585	-	-	179,585
Due from other funds	-	-	12,568	12,568
Due from other sewage disposal funds	260,762	-	64,415	325,177
Contractual obligation receivable, current portion	12,089,779	-	-	12,089,779
Loan receivable - DWSD	17,542,669	-	-	17,542,669
Prepaid items and other assets	2,562,363	153,579	85,329	2,801,271
Inventories	5,445,981	-	-	5,445,981
Total Current Assets	<u>335,001,434</u>	<u>96,854,778</u>	<u>22,807,733</u>	<u>454,663,945</u>
Noncurrent assets				
Restricted cash and cash equivalents	24,044,432	-	37,986,346	62,030,778
Restricted investments	42,291,740	-	31,611,349	73,903,089
Contractual obligation receivable	414,766,953	-	-	414,766,953
Loan receivable - DWSD	26,503,010	-	-	26,503,010
Prepaid lease	13,750,000	-	-	13,750,000
Assets not subject to depreciation	318,574,902	-	-	318,574,902
Capital assets being depreciated, net	2,357,018,353	-	-	2,357,018,353
Prepaid insurance on debt	13,880,254	-	-	13,880,254
Total Noncurrent Assets	<u>3,210,829,644</u>	<u>-</u>	<u>69,597,695</u>	<u>3,280,427,339</u>
Total Assets	<u>3,545,831,078</u>	<u>96,854,778</u>	<u>92,405,428</u>	<u>3,735,091,284</u>
Deferred Outflows of Resources				
Deferred charge on refunding	159,370,167	-	-	159,370,167
Deferred pension amounts	20,347,789	-	-	20,347,789
Total Deferred Outflows of Resources	<u>179,717,956</u>	<u>-</u>	<u>-</u>	<u>179,717,956</u>

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Fund	Sewage Disposal Total
Liabilities				
Current Liabilities				
Accounts and contracts payable	\$ 14,325,607	\$ 1,033,292	\$ 22,645,423	\$ 38,004,322
Other accrued liabilities	627,919	-	-	627,919
Due to other funds	1,726,059	1,150,895		2,876,954
Due to other sewage disposal funds	-	225,798	99,379	325,177
Interest payable	44,130,602	-	-	44,130,602
Current portion of:				
Long-term debt	88,357,662	-	-	88,357,662
Lease payable	6,134,481	-	-	6,134,481
Obligation payable	396,291	-	-	396,291
Accrued compensated absences	757,328	-	-	757,328
Claims and judgments	56,111	-	-	56,111
Total Current Liabilities	<u>156,512,060</u>	<u>2,409,985</u>	<u>22,744,802</u>	<u>181,666,847</u>
Noncurrent Liabilities				
Long-term debt	3,163,394,353	-	-	3,163,394,353
Long-term lease payable	509,018,588	-	-	509,018,588
Obligation payable	38,061,886	-	-	38,061,886
Claims and judgments	7,500,000	-	-	7,500,000
Other noncurrent liabilities	6,291,681	-	-	6,291,681
Net pension liability	84,670,705	-	-	84,670,705
Total Noncurrent Liabilities	<u>3,808,937,213</u>	<u>-</u>	<u>-</u>	<u>3,808,937,213</u>
Total Liabilities	<u>3,965,449,273</u>	<u>2,409,985</u>	<u>22,744,802</u>	<u>3,990,604,060</u>
Deferred Inflows of Resources				
Deferred amounts for swap terminations	165,223	-	-	165,223
Deferred gain on refunding	47,982,938	-	-	47,982,938
Deferred pension amounts	-	-	-	-
Total Deferred Inflows of Resources	<u>48,148,161</u>	<u>-</u>	<u>-</u>	<u>48,148,161</u>
Net Position				
Net investment in capital assets	(132,043,120)	-	69,660,626	(62,382,494)
Restricted for debt service	117,246,259	-	-	117,246,259
Restricted for payment assistance program	4,631,494	-	-	4,631,494
Unrestricted (deficit)	<u>(277,883,033)</u>	<u>94,444,793</u>	<u>-</u>	<u>(183,438,240)</u>
TOTAL NET POSITION	<u>\$ (288,048,400)</u>	<u>\$ 94,444,793</u>	<u>\$ 69,660,626</u>	<u>\$ (123,942,981)</u>

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

COMBINING SCHEDULE OF REVENUES, EXPENSES AND CHANGES IN NET POSITION SEWAGE DISPOSAL FUND For the Year Ended June 30, 2019

	Sewer Operations	Sewer Improvement and Extension	Sewer Construction Fund	Sewage Disposal Total
Operating Revenues				
Wholesale customer charges	\$ 272,772,460	\$ -	\$ -	\$ 272,772,460
Local system charges	181,159,300	-	-	181,159,300
Industrial waste charges	9,106,274	-	-	9,106,274
Pollutant surcharges	5,932,550	-	-	5,932,550
Other revenues	506,323	-	-	506,323
Total Operating Revenues	469,476,907	-	-	469,476,907
Operating Expenses				
Operating expenses before depreciation				
Personnel	56,503,053	-	-	56,503,053
Contractual services	58,639,680	21,000	-	58,660,680
Utilities - gas	5,460,329	-	-	5,460,329
Utilities - electric	14,640,343	-	-	14,640,343
Utilities - sewage	1,417,575	-	-	1,417,575
Utilities - water	3,629,280	-	-	3,629,280
Chemicals	8,187,033	-	-	8,187,033
Supplies and other expenses	25,323,636	-	-	25,323,636
Capital adjustment	2,258,351	-	-	2,258,351
Capital program allocation	(1,325,842)	-	-	(1,325,842)
Shared services allocation	(713,633)	-	-	(713,633)
Total Operating Expenses Before Depreciation	174,019,805	21,000	-	174,040,805
Depreciation	168,544,370	-	-	168,544,370
Total Operating Expenses	342,564,175	21,000	-	342,585,175
Operating Income	126,912,732	(21,000)	-	126,891,732
Nonoperating Revenues (Expenses)				
Earnings on investments	7,786,861	1,805,409	2,171,131	11,763,401
Interest on obligations receivable	18,856,322	-	-	18,856,322
Interest expense	(159,893,300)	-	-	(159,893,300)
Amortization of debt related items and cost of issuance	(6,776,707)	-	-	(6,776,707)
Legacy pension expense	10,763,940	-	-	10,763,940
WRAP (Water Residential Assistance Program)	(1,168,664)	-	-	(1,168,664)
Other	305,723	-	-	305,723
Sewer lookback - MOU adjustment	(6,527,200)	-	-	(6,527,200)
Capital outlay	90,320,655	(10,889,201)	(79,431,454)	-
Gain (loss) on disposal of capital assets	516,379	-	-	516,379
Gain (loss) on asset impairment	(355,204)	-	-	(355,204)
Total Nonoperating Revenues (Expenses)	(46,171,195)	(9,083,792)	(77,260,323)	(132,515,310)
Income (Loss) Before Transfers	80,741,537	(9,104,792)	(77,260,323)	(5,623,578)
Transfer in	1,205,194	35,790,817	44,414,588	81,410,599
Transfer out	(80,238,358)	(1,172,241)	-	(81,410,599)
Change in net position	1,708,373	25,513,784	(32,845,735)	(5,623,578)
NET POSITION (DEFICIT), Beginning of Year	(289,756,773)	68,931,009	102,506,361	(118,319,403)
NET POSITION (DEFICIT), END OF YEAR	\$ (288,048,400)	\$ 94,444,793	\$ 69,660,626	\$ (123,942,981)

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

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF INTERFUND RECEIVABLES AND PAYABLES For the Year Ended June 30, 2019

Interfund balances result from the time lag between the dates interfund goods and services are provided or reimbursable expenditures occur and when the payment between funds are made. Interfund balances for the year ended June 30, 2019 consisted of the following:

Sewage Disposal Fund due to Water Fund				
	Sewer Operations	Sewer Improvement and Extension	Sewer Bond	Total
Water Operations	\$ 1,726,059	\$ 11,653	\$ -	\$ 1,737,712
Water Improvement and Extension	-	1,139,242	-	1,139,242
Water Construction Fund	-	-	-	-
TOTALS	<u>\$ 1,726,059</u>	<u>\$ 1,150,895</u>	<u>\$ -</u>	<u>\$ 2,876,954</u>

Water Fund due to Sewage Disposal Fund				
	Water Operations	Water Improvement and Extension	Water Bond	Total
Sewer Operations	\$ -	\$ -	\$ -	\$ -
Sewer Improvement and Extension	-	-	-	-
Sewer Construction Fund	12,568	-	-	12,568
TOTALS	<u>\$ 12,568</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 12,568</u>

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF OPERATIONS AND MAINTENANCE EXPENSE FOR SEWAGE DISPOSAL OPERATIONS COST TYPE CATEGORY - BUDGET TO ACTUAL

For the Year Ended June 30, 2019

	Original Budget	Amended Budget	Administrative and Centralized Services Reclassification
Operating Expenses			
Personnel	\$ 35,144,950	\$ 36,921,650	\$ 25,890,236
Contractual services	27,755,585	26,247,397	31,378,637
Utilities	28,995,099	25,713,599	125,109
Chemicals	10,946,830	8,293,670	-
Supplies and other expenses	13,832,909	16,152,587	8,798,996
Capital adjustment	-	-	-
Capital program allocation	(921,500)	(1,257,121)	-
Shared services allocation	(6,444)	(431,000)	-
Centralized services allocation	56,455,486	56,455,486	(56,455,486)
Administrative services allocation	16,305,000	16,305,000	(16,305,000)
Capital outlay	131,000	-	-
Unallocated reserve	<u>2,440,485</u>	<u>6,678,132</u>	<u>6,567,508</u>
TOTAL OPERATING EXPENSES	<u>\$ 191,079,400</u>	<u>\$ 191,079,400</u>	<u>\$ -</u>

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

Final Amended Budget	Actual	Amount Variance Actual-Budget	Percent Under (Over) Budget
\$ 62,811,886	\$ 56,503,053	\$ 6,308,833	10.04%
57,626,034	58,639,680	(1,013,646)	-1.76%
25,838,708	25,147,527	691,181	2.67%
8,293,670	8,187,033	106,637	1.29%
24,951,583	25,323,636	(372,053)	-1.49%
-	2,258,351	(2,258,351)	-100.00%
(1,257,121)	(1,325,842)	68,721	-5.47%
(431,000)	(713,633)	282,633	-65.58%
-	-	-	0.00%
-	-	-	0.00%
-	-	-	0.00%
<u>13,245,640</u>	<u>-</u>	<u>13,245,640</u>	100.00%
 \$ 191,079,400	 \$ 174,019,805	 \$ 17,059,595	 8.93%

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF REVENUE REQUIREMENT BUDGET TO ACTUAL - SEWAGE SYSTEM OPERATIONS For the Year Ended June 30, 2019

The Great Lakes Water Authority Board adopts a budget using a revenue requirement method for its operating funds that aligns with water and wastewater revenue charges. This method applies an accrual basis of accounting for revenues and operating expenses in addition to a cash basis of accounting for other commitments, such as debt service, Detroit General Retirement closed pension commitment, lease payment, reserves and certain other payments.

The schedule below presents the Board adopted budgeted, adjusted for amendments, for comparison with actual revenues, expenses, and other payments. Overall, the Sewage System experienced a positive variance of approximately \$20.2 million.

	2019 Adopted Budget	2019 Amended Budget	2019 Actual	Amount Variance Over (Under) Budget
Revenues				
Revenue from Charges - Suburban Wholesale Customers	\$ 271,296,300	\$ 271,296,300	\$ 272,772,460	\$ 1,476,160
Revenue from Charges - Detroit Customers	181,159,300	181,159,300	181,159,300	-
Revenue from Charges - Industrial Waste Control	15,000,800	15,000,800	9,106,274	(5,894,526)
Pollutant Surcharges	-	-	5,932,550	5,932,550
Total Revenue from Charges	<u>467,456,400</u>	<u>467,456,400</u>	<u>468,970,584</u>	<u>1,514,184</u>
Other Operating Revenue	-	-	506,323	506,323
Nonoperating Revenue	<u>4,570,900</u>	<u>6,878,800</u>	<u>9,592,270</u>	<u>2,713,470</u>
Total Revenues	<u>\$ 472,027,300</u>	<u>\$ 474,335,200</u>	<u>\$ 479,069,177</u>	<u>\$ 4,733,977</u>
Revenue Requirements				
Operations and Maintenance Regional System Wholesale [2]	191,079,400	191,079,400	174,019,805	(17,059,595)
General Retirement System Legacy Pension	10,824,000	10,824,000	10,824,000	-
Debt Service	214,600,700	208,389,300	210,008,452	1,619,152
General Retirement System Accelerated Pension	11,620,700	11,620,700	11,620,692	(8)
Water Residential Assistance Program Contribution	2,374,100	2,374,100	2,374,092	(8)
Lease Payment to Local System Improvement & Extension Fund	27,500,000	27,500,000	27,500,004	4
Transfer to the Regional System Improvement & Extension Fund [1]	<u>14,028,400</u>	<u>22,547,700</u>	<u>22,547,700</u>	<u>-</u>
Total Revenue Requirements	<u>\$ 472,027,300</u>	<u>\$ 474,335,200</u>	<u>\$ 458,894,745</u>	<u>\$ (15,440,455)</u>
Revenue Requirement Variance	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 20,174,432</u>	<u>\$ 20,174,432</u>

[1] DWSD loan receivable payments are transferred directly to the Improvement & Extension Fund. They are excluded from this schedule because they are not part of the revenue requirement methodology used to set charges.

[2] Refer to the Combining Schedule of Revenues, Expenses and Changes in Net Position for the Sewage Disposal Fund. Operations and Maintenance expenses in this schedule are based on activities relating only to the Sewer Operations Fund.

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF REVENUE REQUIREMENT TO STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION CROSSWALK For the Year Ended June 30, 2019

The Great Lakes Water Authority establishes a Revenue Requirement budget for the purpose of establishing charges for services which follows a modified accrual basis of accounting. Conversely, the annual financial report is prepared in accordance with Generally Accepted Accounting Principles for enterprise funds of a local government. Because the budget and the financial report are prepared using different bases of accounting, a crosswalk is prepared to reconcile fiscal year financial performance from the budget basis of accounting to the financial statement basis of accounting.

Key areas of reconciliation include the following:

- Defined Benefit Pension related to the City of Detroit General Employees Retirement System. Annual contributions are an expense for the budget basis while the accrual basis financial report reflects the current year payment as a deferred outflow.
- Debt Service (principal and interest) is an expense for the budget basis while the accrual basis financial report treats interest as an expense and principal payments as a reduction of a liability.
- Lease payments (principal and interest) are an expense for the budget basis while the accrual basis financial report treats interest as an expense and principal payments as a reduction of a liability.
- Contributions to the Regional System Improvement & Extension Fund are an expense for the budget basis while the accrual basis financial report treats this activity as an increase in assets.
- Depreciation and amortization are not a components of the budget basis while the accrual basis financial report treats these as an expense.

Revenue Requirement Variance from Schedule of Revenue Requirement

\$ 20,174,432

Budgetary categories adjustments to financial reporting basis

Pension delayed accounting election adjustments	
Current year pension transfers/ payments recorded as deferral	19,347,900
Prior year pension contribution accounted for in current year	10,763,940
Administrative prepaid adjustment	723,195
Debt service	90,941,232
Accelerated pension and B&C notes obligation	490,300
Lease payment	5,905,004
Water Residential Assistance Program	1,205,428
Improvement & Extension fund	22,547,700

Nonbudgeted financial reporting categories adjustments

Depreciation	(168,544,370)
Amortization	(6,776,707)
Other nonoperating income	(4,712,938)
Gain (loss) on disposal of capital assets	516,379
Loss on impairment of capital assets	(355,204)
Investment earnings construction fund	2,171,131
Improvement & Extension fund operating expenses	(21,000)

Change in Net Position per Statement of Revenues, Expenses and Changes in Net Position

\$ (5,623,578)

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF DAYS CASH - LIQUIDITY June 30, 2019

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016*</u>
Cash and investments - Unrestricted	\$ 236,057,128	\$ 208,563,268	\$ 205,179,312	\$ 188,063,375
Operating Expense				
Operating expense	\$ 342,585,175	\$ 363,629,987	\$ 336,946,731	\$ 170,401,050
Less: depreciation	<u>(168,544,370)</u>	<u>(187,250,583)</u>	<u>(185,628,465)</u>	<u>(86,021,029)</u>
Net Operating Expense	<u>\$ 174,040,805</u>	<u>\$ 176,379,404</u>	<u>\$ 151,318,266</u>	<u>\$ 84,380,021</u>
Operating Expense per Day (365 days)	<u>\$ 476,824</u>	<u>\$ 483,231</u>	<u>\$ 414,571</u>	<u>\$ 466,188</u>
Days Cash				
Number of days cash	<u>495</u>	<u>432</u>	<u>495</u>	<u>403</u>

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

The accompanying notes to the supplementary information are an integral part of this schedule.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO SUPPLEMENTARY INFORMATION For the Year Ended June 30, 2019

Note 1 – Combining and Individual Fund Schedules

The Combining and Individual Fund Schedules presented combined the three funds the Authority maintains in the Financial Statements. The following describes the three funds and the purpose of each fund.

Sewer Operations & Maintenance (O&M) – All sewer revenues are credited to this fund. All expenses for the operations and maintenance of the wastewater system are paid from this fund. This fund aligns with the revenue requirement for establishing service charges.

Sewer Improvement & Extension Fund (I&E) - Amounts that are budgeted in the wastewater revenue requirement to reduce debt financing are transferred to this fund as well as any other wastewater funds that management has determined are available for this use. This fund is used for wastewater system capital improvements. Expenditures under the operating expenses category are expenditures incurred for the betterment of the system, which may lead to capital expenditures but are not necessarily applicable to any current capital improvement.

Sewer Construction Fund – This fund is used for the proceeds of sewer debt obligations and investment earnings thereon. Funds are used to pay for the wastewater system capital improvements in accordance with the debt obligations.

Note 2 – Budget to Actual Schedules

Schedule of Operations and Maintenance Expense Cost Type Activity – Budget to Actual

The schedule of operations and maintenance expense (O&M) for the Sewage Disposal System operations provides the detail of the major expense categories of the O&M budget compared to the actual results. The actual expenditures are the operating expenses before depreciation for the Sewer Operations reported in the Combining Schedule of Revenues, Expenses and Changes in Net Position for the Sewage Disposal Fund.

Schedule of Revenue Requirement – Budget to Actual

The revenue requirement is the basis for GLWA's budget and calculating Member Partner service charges. The revenue requirement is presented to align with the Master Bond Ordinance flow of funds categories. The budget basis reflects revenues and operations and maintenance expenses on an accrual basis in addition to cash payments for debt service, legacy pension obligations, and lease related activities.

The revenue requirement basis is foundational to GLWA's daily operations and long-term financial planning. The budget is adopted by the GLWA Board of Directors by resolution. The Board's action establishes the total operations and maintenance budget, total debt service requirements and total capital expenditures for the Regional Sewer System. The legal level of budgetary control is at this level. Administratively, the budget may be modified within these categories. Modifications to the budget beyond those established levels would be presented to the Audit Committee, and subsequently to the Board.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

NOTES TO SUPPLEMENTARY INFORMATION For the Year Ended June 30, 2019

Note 3 – Schedule of Revenue Requirement to Statement of Revenues, Expenses and Changes in Net Position Crosswalk

The Great Lakes Water Authority establishes a revenue requirements budget for the purposes of establishing charges, which follows a modified accrual basis of accounting. The financial report is prepared in accordance with Generally Accepted Accounting Principles for enterprise funds of a local government. Because the budget and the financial report are prepared using different basis of accounting, the crosswalk reconciles the Revenue Requirement to the Change in Net Position in the Statement of Revenues, Expenses and Changes in Net Position.

STATISTICAL SECTION

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GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

STATISTICAL SECTION TABLE OF CONTENTS

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

The statistical section information is presented in the following categories:

		<u>Page</u>
Financial Trends Schedules 1 through 2	Financial trends information is intended to show how the Sewage Disposal Fund's financial position has changed over time.	68
Revenue Capacity Schedules 3 through 6	Revenue capacity information is intended to show the factors affecting the Sewage Disposal Fund's ability to generate its own-source revenue.	71
Debt Capacity Information Schedules 7 through 12	Debt capacity information is intended to show the Sewage Disposal Fund's debt burden and its ability to issue additional debt.	76
Demographic and Economic Schedules 13 through 14	Demographic and economic information is intended to show the socioeconomic environment within which the Sewage Disposal Fund operates.	85
Operating Information Schedules 15 through 16	Operating information is intended to show contextual information about operations and resources to provide understanding and assessing the Sewage Disposal Fund's economic condition.	87

Sources: Unless otherwise noted, information presented in these schedules was obtained from GLWA's comprehensive annual financial reports, the prior financial reports of DWSD or other internal information systems.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF NET POSITION - SEWAGE DISPOSAL FUND As of June 30, 2019

	2019	2018	2017	2016
Assets				
Current Assets				
Cash and cash equivalents	\$ 160,371,766	\$ 199,056,556	\$ 203,748,704	\$ 156,022,295
Restricted cash and cash equivalents	95,931,528	54,832,050	72,213,813	81,181,424
Restricted cash for the benefit of DWSD	627,919	-	-	51,648
Investments	75,685,362	9,506,712	1,430,608	32,041,080
Restricted investments	33,384,445	31,790,386	31,371,834	28,843,000
Receivables				
Billed	60,549,471	50,439,450	52,234,778	48,046,934
Unbilled	24,297,140	25,200,108	24,279,170	23,037,391
Other	221,452	3,723,036	3,157,050	92,748,989
Allowance for doubtful accounts	(34,802,168)	(32,863,001)	(30,410,232)	(98,968,630)
Due from other governments	179,585	24,339,106	29,461,328	66,202,143
Due from other funds	12,568	3,447,927	-	65,971
Contractual obligation receivable, current portion	12,089,779	11,253,800	11,262,300	5,077,675
Loan receivable - DWSD	17,542,669	9,367,355	-	-
Prepaid items and other assets	2,801,271	1,683,659	1,089,521	407,359
Inventories	5,445,981	8,471,626	8,509,454	9,984,063
Total Current Assets	<u>454,338,768</u>	<u>400,248,770</u>	<u>408,348,328</u>	<u>444,741,342</u>
Noncurrent Assets				
Restricted cash and cash equivalents	62,030,778	30,001,353	128,378,837	155,488,780
Restricted investments	73,903,089	143,261,763	81,177,748	62,186,734
Contractual obligation receivable	414,766,953	335,574,500	346,828,300	366,254,075
Loan receivable - DWSD	26,503,010	19,932,645	-	-
Prepaid lease	13,750,000	13,750,000	13,750,000	-
Assets not subject to depreciation	318,574,902	271,362,100	278,286,118	295,876,258
Capital assets being depreciated, net	2,357,018,353	2,485,098,172	2,591,023,442	2,699,891,145
Prepaid insurance on debt	13,880,254	16,931,255	18,581,897	27,822,085
Total Noncurrent Assets	<u>3,280,427,339</u>	<u>3,315,911,788</u>	<u>3,458,026,342</u>	<u>3,607,519,077</u>
Total Assets	<u>3,734,766,107</u>	<u>3,716,160,558</u>	<u>3,866,374,670</u>	<u>4,052,260,419</u>
Deferred Outflows of Resources				
Deferred charge on refunding	159,370,167	186,544,140	198,351,942	212,147,508
Deferred pension amounts	<u>20,347,789</u>	<u>33,369,917</u>	<u>38,462,972</u>	<u>24,376,481</u>
Total Deferred Outflows of Resources	<u>179,717,956</u>	<u>219,914,057</u>	<u>236,814,914</u>	<u>236,523,989</u>

	2019	2018	2017	2016
Liabilities				
Current Liabilities				
Accounts and contracts payable	\$ 38,004,322	\$ 34,077,602	\$ 27,546,558	\$ 36,152,087
Other accrued liabilities	627,919	-	898,800	674,458
Due to other governments	-	47,539	35,848,573	24,225,013
Due to other funds	2,876,954	330,293	-	-
Interest payable	44,130,602	41,108,994	41,011,198	43,912,888
Current portion of:				
Long-term debt	88,357,662	61,186,207	65,920,307	60,902,189
Leases payable	6,134,481	5,884,359	5,644,435	5,414,293
Obligation payable	396,291	377,419	359,448	342,331
Accrued compensated absences	757,328	717,086	679,260	454,630
Accrued workers' compensation	-	-	-	390,165
Claims and judgments	56,111	334,392	3,852,062	269,250
Total Current Liabilities	<u>181,341,670</u>	<u>144,063,891</u>	<u>181,760,641</u>	<u>172,737,304</u>
Noncurrent Liabilities				
Long-term debt	3,163,394,353	3,168,566,028	3,236,016,730	3,387,291,190
Long-term leases payable	509,018,588	515,153,064	521,037,424	526,681,859
Obligation payable	38,061,886	38,458,178	38,835,597	39,195,045
Accrued workers' compensation	-	-	-	4,390,938
Claims and judgments	7,500,000	7,500,000	187,500	25,914,350
Other noncurrent liabilities	6,291,681	6,003,540	5,983,201	5,912,693
Net pension liability	84,670,705	114,810,555	124,506,503	109,208,359
Total Noncurrent Liabilities	<u>3,808,937,213</u>	<u>3,850,491,365</u>	<u>3,926,566,955</u>	<u>4,098,594,434</u>
Total Liabilities	<u>3,990,278,883</u>	<u>3,994,555,256</u>	<u>4,108,327,596</u>	<u>4,271,331,738</u>
Deferred Inflows of Resources				
Deferred amounts for swap terminations	165,223	189,808	214,393	238,978
Deferred gain on refunding	47,982,938	46,654,836	49,257,784	-
Deferred pension amounts	-	12,994,118	11,750,654	27,805,977
Total Deferred Inflows of Resources	<u>48,148,161</u>	<u>59,838,762</u>	<u>61,222,831</u>	<u>28,044,955</u>
Net Position				
Net investment in capital assets	(62,382,494)	289,946,091	393,956,399	451,547,037
Restricted for debt service	117,246,259	101,996,536	107,931,677	108,742,193
Restricted for capital acquisition	-	102,506,361	150,930,508	164,326,618
Restricted for payment assistance program	4,631,494	3,308,896	3,117,744	-
Unrestricted (deficit)	<u>(183,438,240)</u>	<u>(616,077,287)</u>	<u>(722,297,171)</u>	<u>(735,208,133)</u>
TOTAL NET POSITION	<u>\$ (123,942,981)</u>	<u>\$ (118,319,403)</u>	<u>\$ (66,360,843)</u>	<u>\$ (10,592,285)</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

CHANGES IN NET POSITION - SEWAGE DISPOSAL FUND

	2019	2018	2017	2016*
Operating Revenues				
Wholesale customer charges	\$ 272,772,460	\$ 268,978,831	\$ 263,311,745	\$ 121,106,353
Local system charges	181,159,300	178,969,200	187,304,100	95,826,900
Industrial waste charges	9,106,274	14,334,979	14,381,106	6,910,192
Pollutant surcharges	5,932,550	6,908,404	5,206,294	2,423,910
Bad debt recovery	-	-	35,065,030	-
Other revenues	506,323	4,391,145	538,807	4,197,614
Total Operating Revenues	469,476,907	473,582,559	505,807,082	230,464,969
Operating Expenses				
Personnel	56,503,053	53,680,162	47,894,911	13,289,741
Contractual services	58,660,680	64,082,761	55,878,440	13,875,756
Utilities	25,147,527	26,823,299	27,191,866	12,668,942
Chemicals	8,187,033	8,073,045	9,424,428	4,006,941
Supplies and other expenses	25,323,636	24,982,773	12,180,128	16,462,711
Capital adjustment	2,258,351	-	-	-
Capital program allocation	(1,325,842)	(969,671)	(1,150,316)	-
Shared services allocation	(713,633)	(292,965)	(101,191)	-
Centralized services	-	-	-	16,733,431
Administrative services	-	-	-	7,342,499
Depreciation	168,544,370	187,250,583	185,628,465	86,021,029
Total Operating Expenses	342,585,175	363,629,987	336,946,731	170,401,050
Operating Income	126,891,732	109,952,572	168,860,351	60,063,919
Nonoperating Revenues (Expenses)				
Earnings on investments	11,763,401	5,266,255	2,209,872	1,089,367
Interest on loan and obligations receivable	18,856,322	15,505,300	17,062,678	8,831,250
Interest expense	(159,893,300)	(161,052,102)	(159,157,152)	(82,489,347)
Amortization of debt related items and cost of issuance	(6,776,707)	(5,153,300)	(17,340,200)	(363,167)
Legacy pension expense	10,763,940	(15,988,471)	(4,504,230)	-
WRAP (Water Residential Assistance Program)	(1,168,664)	(2,248,980)	(1,243,006)	-
Other	305,723	(709,537)	(455,970)	-
Sewer lookback - MOU adjustment	(6,527,200)	-	-	-
Gain (loss) on disposal of capital assets	516,379	2,469,703	(42,926)	275,693
Loss on impairment of capital assets	(355,204)	-	-	-
Total Nonoperating Expenses	(132,515,310)	(161,911,132)	(163,470,934)	(72,656,204)
Income (loss) before contributions and special item	(5,623,578)	(51,958,560)	5,389,417	(12,592,285)
Capital Contributions	-	-	320,707	2,000,000
Special Item - memorandum of understanding with DWSD	-	-	(61,478,682)	-
Change in net position	(5,623,578)	(51,958,560)	(55,768,558)	(10,592,285)
NET POSITION (DEFICIT), Beginning of Year	(118,319,403)	(66,360,843)	(10,592,285)	-
NET POSITION (DEFICIT), END OF YEAR	\$ (123,942,981)	\$ (118,319,403)	\$ (66,360,843)	\$ (10,592,285)

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

OPERATING REVENUES AND CHARGE INCREASES

	Budgeted 2020	Actual 2019	Actual 2018	Actual 2017	Actual 2016* [3]
Operating Revenues:					
Wholesale customer charges	\$ 272,323,600	\$ 272,772,460	\$ 268,978,831	\$ 263,311,745	\$ 121,106,353
Local system charges	185,807,300	181,159,300	178,969,200	187,304,100	95,826,900
Industrial waste and surcharges	13,743,600	15,038,824	21,243,383	19,587,400	9,334,102
Bad debt recovery	-	-	-	35,065,030	-
Other revenues	8,730,800	506,323	4,391,145	538,807	4,197,614
Total Operating Revenues	\$ 480,605,300	\$ 469,476,907	\$ 473,582,559	\$ 505,807,082	\$ 230,464,969
Change in budgeted revenue requirement	2.2%	1.0%	0.3%	4.0%	4.0%
Average annual charge increase:					
All customers	1.4%	0.1%	-0.6%	8.3%	1.5%
Suburban wholesale customers	-0.1%	1.3%	1.9%	4.9%	-1.1%
Detroit wholesale customers [5]	2.5%	1.2%	-2.2%	-9.3%	n/a [4]
Detroit retail rate increase [2]	2.0%	10.2%	1.7%	3.5%	8.6%
Number of wholesale customers [1]	18	18	18	18	21

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

[1] Does not include the City of Detroit.

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

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

[4] Due to the establishment of the Authority and DWSD as separate entities during FY 2016, this information is not applicable.

[5] Represents the annual change in the effective "wholesale service charge" to the Detroit customer class. Does not include any impact of Detroit local system (retail) costs or charges. Also does not include any impact of Detroit's use of the regional system lease payment to finance allocated debt service obligations.

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

TEN LARGEST WHOLESALE SEWER CUSTOMERS / TOTAL BILLED REVENUE Last Ten Years

	2010*	2011*	2012*	2013*
Operating Revenues				
Oakland Macomb Interceptor Drainage District	\$ 52,780,322	\$ 51,216,403	\$ 59,379,605	\$ 62,302,424
Wayne County - Rouge Valley	35,175,971	41,807,733	47,309,391	44,972,847
Oakland County-George W Kuhn Drainage District	27,820,025	35,810,320	39,620,971	38,148,325
Evergreen Farmington	22,080,501	24,951,389	28,097,941	27,556,982
NE Wayne County	14,760,986	19,146,923	20,532,777	19,293,968
Dearborn	12,752,026	14,441,467	15,884,591	15,292,901
Highland Park	3,965,206	4,490,709	4,840,249	5,007,724
Hamtramck	4,386,331	3,249,930	3,437,744	3,586,927
Grosse Pointe Farms	1,605,103	1,857,469	1,922,441	2,462,068
Grosse Pointe Park	976,896	1,151,516	1,413,363	1,273,953
TOTAL	<u>\$ 176,303,367</u>	<u>\$ 198,123,859</u>	<u>\$ 222,439,073</u>	<u>\$ 219,898,119</u>
Operating revenues - DWSD	\$ 365,537,390	\$ 410,719,075	\$ 437,654,891	\$ 440,863,260
Operating revenues - GLWA	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total operating revenues	<u>\$ 365,537,390</u>	<u>\$ 410,719,075</u>	<u>\$ 437,654,891</u>	<u>\$ 440,863,260</u>
% of total operating revenues	<u>48.23%</u>	<u>48.24%</u>	<u>50.83%</u>	<u>49.88%</u>

*GLWA assumed operations on January 1, 2016. The information in this table from 2010-2015 is based on operations under the City of Detroit Water and Sewerage Department (DWSD). Data for 2016 includes six months of operation under DWSD and 6 months of operation under GLWA.

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

2014*	2015*	2016*	2017	2018	2019
\$ 71,972,397	\$ 74,853,600	\$ 69,206,904	\$ 69,627,600	\$ 72,816,000	\$ 77,533,200
51,181,360	50,930,400	51,784,039	55,486,800	55,022,400	53,761,200
41,658,188	42,046,800	42,804,155	45,682,800	45,751,200	44,972,400
29,198,838	29,686,800	30,177,613	32,179,200	33,733,200	34,578,000
20,406,419	22,585,200	22,993,819	24,120,000	24,637,200	24,672,000
16,406,661	18,190,800	18,368,762	19,603,200	19,628,400	19,372,800
6,887,428	5,569,200	5,616,167	5,818,800	5,642,400	5,614,800
3,941,094	4,054,800	3,936,205	4,086,000	3,958,800	3,962,400
2,502,113	2,449,200	2,486,773	2,667,600	2,696,400	2,727,600
1,244,951	1,465,200	1,492,206	1,626,000	1,740,000	1,801,200
<u>\$ 245,399,449</u>	<u>\$ 251,832,000</u>	<u>\$ 248,866,643</u>	<u>\$ 260,898,000</u>	<u>\$ 265,626,000</u>	<u>\$ 268,995,600</u>
\$ 475,770,844	\$ 505,671,614	\$ 282,415,566	\$ -	\$ -	\$ -
-	-	230,464,969	505,807,082	473,582,559	469,476,907
<u>\$ 475,770,844</u>	<u>\$ 505,671,614</u>	<u>\$ 512,880,535</u>	<u>\$ 505,807,082</u>	<u>\$ 473,582,559</u>	<u>\$ 469,476,907</u>
<u>51.58%</u>	<u>49.80%</u>	<u>48.52%</u>	<u>51.58%</u>	<u>56.09%</u>	<u>57.30%</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF WHOLESALE SEWER MONTHLY CHARGES* AND TOTAL REVENUE REQUIREMENT FOR THE DETROIT RETAIL CLASS

	<u>Total</u>
Oakland Macomb Interceptor District (OMID)	\$ 6,461,100
Rouge Valley	4,480,100
Oakland County - George W. Kuhn (GWK)	3,747,700
Evergreen Farmington	2,881,500
Northeast Wayne County	2,056,000
Dearborn	1,614,400
Grosse Pointe Farms	227,300
Grosse Pointe Park	150,100
Melvindale	126,900
Farmington	95,300
Center Line	85,600
Allen Park	70,600
Highland Park	467,900
Hamtramck	330,200
Grosse Pointe	74,100
Harper Woods	18,200
Redford Township	21,700
Wayne County #3	4,100

Annual Detroit Wholesale Revenue Requirement \$181,159,300 - Effective July 1, 2018

*Wholesale charges went into effect July 1, 2018

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

INDUSTRIAL WASTE CONTROL CHARGES AND POLLUTANT SURCHARGES

		Charge per Month
Industrial Waste Control Charges		
Meter size - inches:		
5/8	\$	3.55
3/4		5.34
1		8.89
1 1/2		19.56
2		28.44
3		51.55
4		71.10
6		106.64
8		177.74
10		248.84
12		284.38
14		355.48
16		426.58
18		497.67
20		568.77
24		639.86
30		710.96
36		782.06
48		853.15
		Charge per Pound
Pollutant Surcharges		
Biochemical Oxygen Demand (BOD) for concentrations > 275 mg/l	\$	0.483
Total Suspended Solids (TSS) for concentrations > 350 mg/l	\$	0.490
Phosphorus (P) for concentrations > 12 mg/l	\$	7.228
Fats, Oil and Grease (FOG) for concentrations > 100 mg/l	\$	0.465
Septage Disposal Fee \$ per 500 gallons of disposal	\$	47.00

Charges went into effect July 1, 2018

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GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

RATIOS OF OUTSTANDING DEBT BY TYPE

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016*</u>
Revenue bonds [1]	2,764,196,915	2,739,090,653	2,797,168,264	2,922,089,599
Capital appreciation bonds [1]	13,377,972	14,984,042	19,501,737	19,668,138
State revolving loans	<u>474,177,128</u>	<u>475,677,540</u>	<u>485,267,036</u>	<u>506,435,742</u>
 Total	 <u>\$ 3,251,752,015</u>	 <u>\$ 3,229,752,235</u>	 <u>\$ 3,301,937,037</u>	 <u>\$ 3,448,193,479</u>
 Total taxable value **	 n/a	 n/a	 n/a	 n/a
Total population served[2]	2,800,000	2,800,000	2,800,000	2,800,000
Total debt per capita	\$ 1,161	\$ 1,153	\$ 1,179	\$ 1,231
Per capital income [3]	\$ 53,748	\$ 51,493	\$ 50,863	\$ 48,692
Total debt as a percentage of income	2.16%	2.24%	2.32%	2.53%

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

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

[3] Source: FRED Economic Data, St. Louis Fed and Michigan State University Center for Economic Analysis.

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

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

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

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

DEBT BY LIEN
As of June 30, 2019

	Original Principal Amount [1]	Outstanding as of 6/30/2019	Total Future Debt [2]
Sewage Disposal System Revenue Bonds			
Senior Lien Bonds (Revenue and SRF)			
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-1	\$ 21,475,000	\$ 1,340,000	\$ 1,340,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-2	46,000,000	11,125,000	11,125,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-3	31,030,000	3,850,000	3,850,000
Sewage Disposal System Revenue Bonds (Senior), Series 1999 SRF-4	40,655,000	5,040,000	5,040,000
Sewage Disposal System Revenue Bonds, Series 1999A	33,510,118	14,780,000	14,780,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2001C-1	154,870,000	605,000	605,000
Sewage Disposal System Senior Lien Revenue Bonds, Series 2003B	150,000,000	100,000	100,000
Sewage Disposal System Senior Lien Revenue Refunding Bonds, Series 2004A	101,435,000	35,010,000	35,010,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2006D	370,000,000	239,475,000	239,475,000
Sewage Disposal System Revenue & Revenue Refunding Senior Lien Bonds, Series 2012A	659,780,000	495,175,000	495,175,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014C-1	123,220,000	123,215,000	123,215,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2014C-2	27,470,000	27,465,000	27,465,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-3	446,170,000	446,170,000	446,170,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-5	95,165,000	18,620,000	18,620,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2014C-6	143,880,000	88,900,000	88,900,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2016B	126,105,000	126,105,000	126,105,000
Sewage Disposal System Revenue Senior Lien Bonds, Series 2018A	81,595,000	81,595,000	81,595,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018B	131,690,000	131,690,000	131,690,000
Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018C	44,180,000	44,180,000	44,180,000
	<u>2,828,230,118</u>	<u>1,894,440,000</u>	<u>1,894,440,000</u>
Second Lien Bonds			
Sewage Disposal System Second Lien Revenue Bonds, Series 2001B	110,550,000	78,895,000	78,895,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2005A	273,355,000	31,885,000	31,885,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005B	40,215,000	17,115,000	17,115,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2005C	63,160,000	100,000	100,000
Sewage Disposal System Revenue Second Lien Bonds, Series 2006B	250,000,000	55,100,000	55,100,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2014C-7	76,715,000	70,640,000	70,640,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2015C	197,660,000	197,160,000	197,160,000
Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2016C	295,190,000	295,190,000	295,190,000
	<u>1,306,845,000</u>	<u>746,085,000</u>	<u>746,085,000</u>

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

DEBT BY LIEN
As of June 30, 2019

	Original Principal Amount [1]	Outstanding as of 6/30/2019	Total Future Debt [2]
Sewage Disposal System Revenue Bonds (concluded)			
Junior Lien Bonds (SRF)			
Sewage Disposal System Revenue Bonds, Series 2000 SRF-1	\$ 44,197,995	\$ 9,847,995	\$ 9,847,995
Sewage Disposal System Revenue Bonds, Series 2000 SRF-2	64,401,066	15,501,066	15,501,066
Sewage Disposal System Revenue Bonds, Series 2001 SRF-1	82,200,000	29,095,000	29,095,000
Sewage Disposal System Revenue Bonds, Series 2001 SRF-2	59,850,000	21,190,000	21,190,000
Sewage Disposal System Revenue Bonds, Series 2002 SRF-1	18,985,000	4,585,000	4,585,000
Sewage Disposal System Revenue Bonds, Series 2002 SRF-2	1,545,369	375,369	375,369
Sewage Disposal System Revenue Bonds, Series 2002 SRF-3	31,549,466	10,289,466	10,289,466
Sewage Disposal System Revenue Bonds, Series 2003 SRF-1	48,520,000	19,795,000	19,795,000
Sewage Disposal System Revenue Bonds, Series 2003 SRF-2	25,055,370	8,810,370	8,810,370
Sewage Disposal System Revenue Bonds, Series 2004 SRF-1	2,910,000	1,005,000	1,005,000
Sewage Disposal System Revenue Bonds, Series 2004 SRF-2	18,353,459	6,318,459	6,318,459
Sewage Disposal System Revenue Bonds, Series 2004 SRF-3	12,722,575	4,367,575	4,367,575
Sewage Disposal System Revenue Bonds, Series 2007 SRF-1	167,540,598	98,800,598	98,800,598
Sewage Disposal System Revenue Bonds, Series 2009 SRF-1	13,970,062	8,260,062	8,260,062
Sewage Disposal System Revenue Bonds, Series 2010 SRF-1	4,214,763	2,730,763	2,730,763
Sewage Disposal System Revenue Bonds, Series 2012 SRF-1	14,950,000	12,520,000	12,520,000
Sewage Disposal System Revenue Bonds, Series 2015A SRF	79,500,000	69,930,000	69,930,000
Sewage Disposal System Revenue Bonds, Series 2015B SRF	27,175,304	23,465,304	23,465,304
Sewage Disposal System Revenue Bonds, Series 2015D SRF	15,231,478	12,981,478	12,981,478
Sewage Disposal System Revenue Bonds, Series 2016 SAW-1	10,000,000	10,000,000	10,000,000
Sewage Disposal System Revenue Bonds, Series 2016 SRF-1	19,305,000	14,455,854	18,550,000
Sewage Disposal System Revenue Bonds, Series 2016 SRF-2	51,310,000	32,840,157	51,310,000
Sewage Disposal System Revenue Bonds, Series 2017 SRF-1	38,450,000	31,309,424	38,450,000
Sewage Disposal System Revenue Bonds, Series 2018 SRF-2	17,510,000	4,348,188	17,510,000
	<u>869,447,505</u>	<u>452,822,128</u>	<u>495,688,505</u>
TOTAL SEWAGE DISPOSAL SYSTEM REVENUE BONDS	<u>\$ 5,004,522,623</u>	<u>\$ 3,093,347,128</u>	<u>\$ 3,136,213,505</u>

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

[2] Includes the full purchase contract amounts not drawn by June 30, 2019 from state revolving funds. Final amounts will be determined after project close-out.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SCHEDULE OF DEBT SERVICE REQUIREMENTS

As of June 30, 2019

Fiscal Year Ending [1]	Senior Lien Bonds (in \$1,000s)			Second Lien Bonds (in \$1,000s)		
	Principal	Interest	Total Debt Service	Principal	Interest	Total Debt Service
2020 [2]	\$ 41,270	\$ 71,390	\$ 112,660	\$ -	\$ 30,849	\$ 30,849
2021	61,770	83,753	145,523	8,335	37,335	45,670
2022	50,125	81,430	131,555	17,515	36,663	54,178
2023	65,060	78,858	143,918	11,905	35,885	47,790
2024	74,420	75,573	149,993	3,215	35,485	38,700
2025	74,965	72,058	147,023	16,035	34,971	51,006
2026	73,315	68,457	141,772	16,995	34,087	51,082
2027	91,335	64,598	155,933	21,040	33,075	54,115
2028	95,140	60,828	155,968	25,795	31,840	57,635
2029	98,670	56,882	155,552	26,640	30,462	57,102
2030	102,975	52,589	155,564	19,860	29,230	49,090
2031	112,020	48,283	160,303	32,550	27,883	60,433
2032	116,030	44,024	160,054	34,175	26,215	60,390
2033	120,220	39,268	159,488	21,910	24,813	46,723
2034	125,710	33,447	159,157	25,915	23,641	49,556
2035	46,505	29,138	75,643	118,345	20,155	138,500
2036	4,170	27,868	32,038	168,680	13,076	181,756
2037	4,260	27,654	31,914	177,175	4,429	181,604
2038	110,090	24,679	134,769	-	-	-
2039	115,820	18,797	134,617	-	-	-
2040	121,855	12,609	134,464	-	-	-
2041	30,740	8,667	39,407	-	-	-
2042	32,280	7,092	39,372	-	-	-
2043	33,885	5,438	39,323	-	-	-
2044	35,585	3,701	39,286	-	-	-
2045	37,150	1,882	39,032	-	-	-
2046	4,425	843	5,268	-	-	-
2047	4,645	616	5,261	-	-	-
2048	4,880	378	5,258	-	-	-
2049	5,125	128	5,253	-	-	-
Total	<u>\$ 1,894,440</u>	<u>\$ 1,100,928</u>	<u>\$ 2,995,368</u>	<u>\$ 746,085</u>	<u>\$ 510,094</u>	<u>\$ 1,256,179</u>

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

[2] For bonds issued through the Michigan Finance Authority (MFA) in 2014 and 2015, the Authority is required to make payment on these obligations to the MFA depository accounts five business days prior to the due date of the bond principal and interest payments. Therefore, the payments for the principal and interest due on July 1, 2019, are not included in the debt service requirement amounts above as they were paid June 24, 2019.

Schedule 9

Junior Lien Bonds (in \$1,000s)			Total (in \$1,000s)		
Principal	Interest	Total Debt Service	Total Debt Service as of June 30, 2019	Additional Future Junior Lien Debt Service on undrawn SRF Loans	Total Future Debt Service including undrawn SRF Loans
\$ 41,265	\$ 10,043	\$ 51,308	\$ 194,817	\$ 1,014	\$ 195,831
43,110	9,081	52,191	243,384	1,006	244,390
44,335	8,072	52,407	238,140	1,006	239,146
45,319	7,038	52,357	244,065	1,006	245,071
38,930	6,058	44,988	233,681	1,006	234,687
39,816	5,166	44,982	243,011	1,006	244,017
26,035	4,392	30,427	223,281	1,006	224,287
23,485	3,860	27,345	237,393	1,006	238,399
23,970	3,355	27,325	240,928	1,006	241,934
24,283	2,841	27,124	239,778	1,201	240,979
24,191	2,324	26,515	231,169	1,804	232,973
13,981	1,881	15,862	236,598	1,802	238,400
14,060	1,530	15,590	236,034	1,806	237,840
14,080	1,177	15,257	221,468	2,143	223,611
11,945	823	12,768	221,481	4,638	226,119
11,691	522	12,213	226,356	5,188	231,544
10,432	240	10,672	224,466	5,769	230,235
654	39	693	214,211	8,025	222,236
610	23	633	135,402	8,086	143,488
630	8	638	135,255	6,842	142,097
-	-	-	134,464	1,062	135,526
-	-	-	39,407	1,062	40,469
-	-	-	39,372	1,061	40,433
-	-	-	39,323	1,060	40,383
-	-	-	39,286	-	39,286
-	-	-	39,032	-	39,032
-	-	-	5,268	-	5,268
-	-	-	5,261	-	5,261
-	-	-	5,258	-	5,258
-	-	-	5,253	-	5,253
<u>\$ 452,822</u>	<u>\$ 68,473</u>	<u>\$ 521,295</u>	<u>\$ 4,772,842</u>	<u>\$ 60,611</u>	<u>\$ 4,833,453</u>

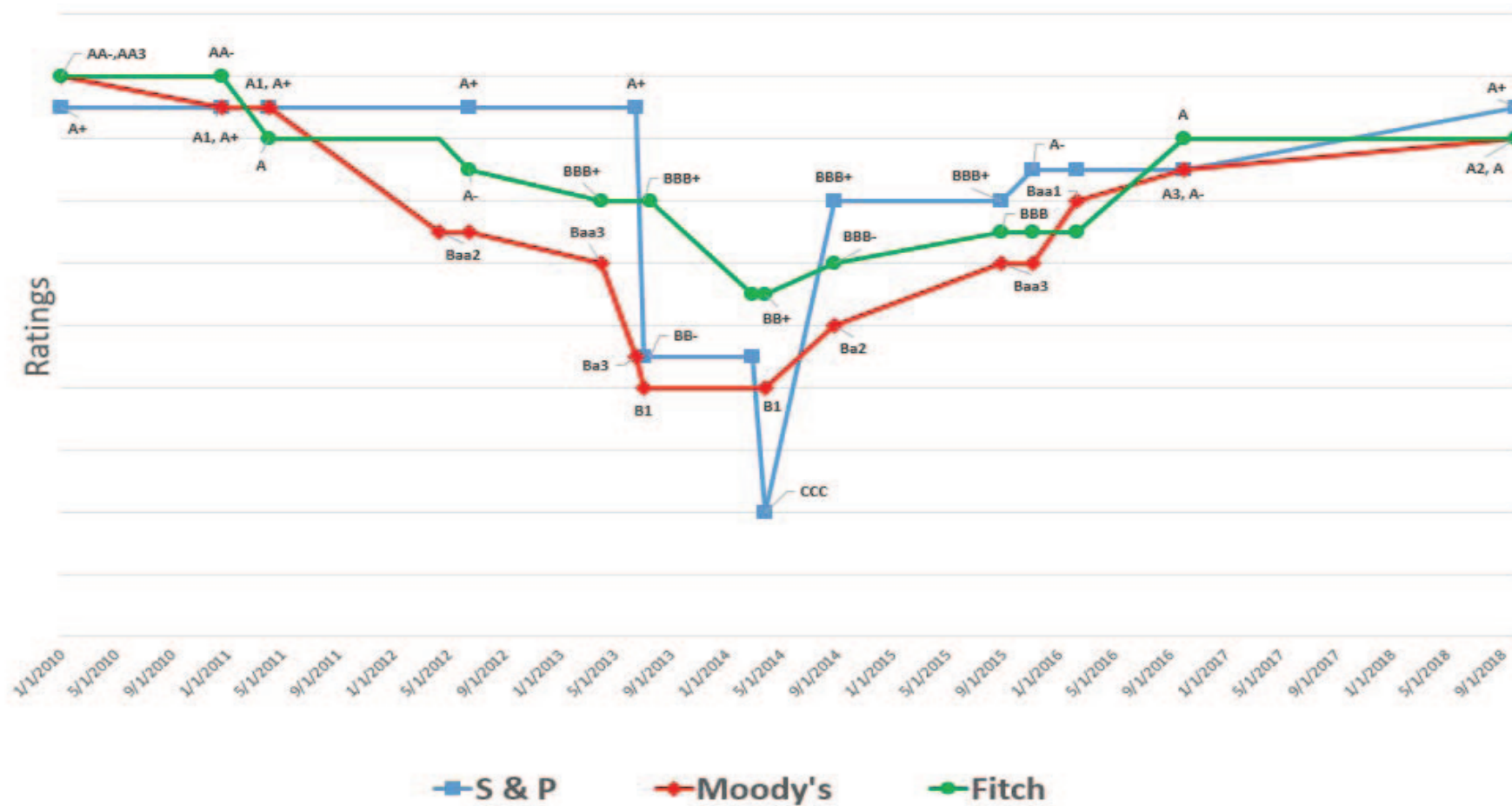
GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

CURRENT DEBT RATINGS As of June 30, 2019

Debt Type	Standard & Poor's	Rating Agency	
		Moody's	Fitch
Senior lien	A+	A2	A
Second lien	A	A3	A-
Junior lien	A	N/A	N/A

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

Water and Sewer Senior Lien - Debt Ratings History
As of June 30, 2019



GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

CALCULATION OF DEBT SERVICE COVERAGE - SEWAGE DISPOSAL FUND

As of June 30, 2019

The Authority has pledged Net Revenues of the system to secure the repayment of the principal and interest of the revenue bonds and State of Michigan revolving fund loans. Net Revenues are defined as all revenues except for those transferred to the Operations and Maintenance Fund. Revenues are defined in the Master Bond Ordinance and are in accordance with the State of Michigan Public Act 94, the Revenue Bond Act of 1933, as all monies collected, directly or indirectly, by GLWA or DWSD as agent for GLWA, under the water and sewer services agreement. A summary of the applicable debt service coverage as of June 30, 2019 is as follows:

	Sewage Disposal Fund			
	Adopted Budget	Amended Budget	Actual [5]	Variance
Operating Revenue				
Suburban Wholesale Customers [1]	\$ 271,296,300	\$ 271,296,300	\$ 272,772,460	\$ 1,476,160
Industrial waste charges	15,000,800	15,000,800	9,106,274	(5,894,526)
Pollutant surcharges	-	-	5,932,550	5,932,550
Subtotal - Regional System Suburban Wholesale Customers	<u>286,297,100</u>	<u>286,297,100</u>	<u>287,811,284</u>	<u>1,514,184</u>
Detroit Customers				
Wholesale Service Charge Revenue [1]	181,159,300	181,159,300	181,159,300	-
Local Service Revenues [2]	93,917,000	93,917,000	66,453,540	(27,463,460)
Subtotal - Detroit Customers	<u>275,076,300</u>	<u>275,076,300</u>	<u>247,612,840</u>	<u>(27,463,460)</u>
Other Operating Revenue-GLWA	-	-	506,323	506,323
Other Operating Revenue-DWSD	5,464,600	5,464,600	4,529,169	(935,431)
Earnings on investments less construction fund investment earnings	4,570,900	6,878,800	9,592,270	2,713,470
Total Revenue	<u>571,408,900</u>	<u>573,716,800</u>	<u>550,051,886</u>	<u>(23,664,914)</u>
Operating Expenses				
Operations and Maintenance Regional System	191,079,400	191,079,400	174,019,805	(17,059,595)
Operations and Maintenance transfer to Local System	68,121,500	68,121,500	56,767,920	(11,353,580)
Legacy Pension Obligations Regional System [3]	10,824,000	10,824,000	10,824,000	-
Legacy Pension Obligations Local System [3]	2,856,000	2,856,000	2,856,000	-
Total Operating Expenses	<u>272,880,900</u>	<u>272,880,900</u>	<u>244,467,725</u>	<u>(28,413,175)</u>
Pledged revenues for the year ending June 30, 2019	<u>\$ 298,528,000</u>	<u>\$ 300,835,900</u>	<u>\$ 305,584,161</u>	<u>\$ 4,748,261</u>
Principal and interest funding requirement for the year ending June 30, 2019 [4]:				
Senior Lien Bonds	\$ 148,606,900	\$ 143,785,600	\$ 145,795,507	\$ 2,009,907
Second Lien Bonds	43,922,600	43,922,600	43,922,600	-
Total Senior and Second Lien Bonds	<u>192,529,500</u>	<u>187,708,200</u>	<u>189,718,107</u>	<u>2,009,907</u>
Junior Lien Bonds	49,936,500	49,936,500	49,454,156	(482,344)
Total All Bonds	<u>\$ 242,466,000</u>	<u>\$ 237,644,700</u>	<u>\$ 239,172,263</u>	<u>\$ 1,527,563</u>
Rate Covenant Debt Service Coverage [4]				
Senior Lien Bonds	2.01	2.09	2.10	0.01
Senior and Second Lien Bonds	1.55	1.60	1.61	0.01
All Bonds, Including SRF Junior Lien	1.23	1.27	1.28	0.01

[1] Total GLWA Regional System Wholesale Revenue reported net of bad debt allowance.

[2] Local Service Revenue reported net of bad debt allowance.

[3] The legacy pension obligations reflects only the Legacy Pension Obligation as defined in Section 504 (c) of the Water Master Bond Ordinance.

[4] Computed consistent with rate covenant basis for rate determination purposes. Not applicable for purposes of additional bond test calculation.

[5] Effective for the year ending June 30, 2019 operating expenses for the regional system reflect actual operating and maintenance expense of the operations funds rather than the budgeted operating and maintenance transfers as reported in the prior years. The operations and maintenance for the local system is the actual cash transfers to the local system O&M bank account.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND**DEBT SERVICE COVERAGE HISTORY**

Last Four Years

	<u>2019 [3]</u>	<u>2018</u>	<u>2017</u>	<u>2016 [1]</u>
Pledged revenue	<u>\$ 305,584,161</u>	<u>\$ 299,055,461</u>	<u>\$ 326,300,994</u>	<u>\$ 326,048,837</u>
Principal and interest funding requirement [2]:				
Senior and second lien bonds				
Senior lien bonds	<u>\$ 145,795,507</u>	<u>\$ 141,718,836</u>	<u>\$ 140,854,010</u>	<u>\$ 140,191,016</u>
Second lien bonds	<u>43,922,600</u>	<u>43,990,100</u>	<u>47,918,639</u>	<u>48,944,924</u>
Total senior and second lien bonds	<u>189,718,107</u>	<u>185,708,936</u>	<u>188,772,649</u>	<u>189,135,940</u>
Junior lien bonds	<u>49,454,156</u>	<u>46,782,877</u>	<u>45,782,165</u>	<u>39,434,631</u>
Total all bonds	<u>\$ 239,172,263</u>	<u>\$ 232,491,813</u>	<u>\$ 234,554,814</u>	<u>\$ 228,570,571</u>
Rate covenant debt service coverage [2]				
Senior lien bonds	2.10	2.11	2.32	2.33
Senior and second lien bonds	1.61	1.61	1.73	1.72
All bonds, including SRF junior lien	1.28	1.29	1.39	1.43

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

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

[3] Effective for the year ending June 30, 2019 pledged revenue reflects actual operating and maintenance expenses for the regional system rather than budgeted operating and maintenance transfers as reported in prior years.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

SERVICE AREA DEMOGRAPHICS Last Ten Years

Year	Total Population (1)	Unemployment (2)	Per Capita Income (3)	Total Debt Service (5)	Debt Per Capita	Debt Service as a Percentage of Income
2019	2,800,000	4.5%	\$ 53,748	(4) \$ 235,381,235	\$ 84.06	0.16%
2018	2,800,000	4.3%	51,493	232,491,813	83.03	0.16%
2017	2,800,000	4.6%	50,863	234,554,814	83.77	0.16%
2016	* 2,800,000	5.3%	48,692	228,570,571	81.63	0.17%
2015	* 2,807,000	5.9%	46,894	232,612,800	82.87	0.18%
2014	* 2,807,000	8.1%	44,718	229,611,100	81.80	0.18%
2013	* 2,807,000	9.7%	42,555	225,222,900	80.24	0.19%
2012	* 2,807,000	10.1%	42,168	203,092,300	72.35	0.17%
2011	* 2,807,000	11.4%	40,607	209,063,900	74.48	0.18%
2010	* 2,807,000	13.9%	37,837	200,985,100	71.60	0.19%

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

[2] Source: Bureau of Labor Statistics Detroit-Warren-Dearborn MSA Annual Average (For 2019 the August rate was used). The Detroit-Warren-Dearborn Metropolitan Statistical Area (MSA) is comprised of six counties: Wayne, Oakland, Macomb, Livingston, Lapeer and St. Clair. This represents the majority of the service area customers.

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

[4] Source: Michigan State University Center for Economic Analysis

[5] Debt service is based on set aside debt service requirements for the fiscal year which includes the subsequent year July 1st debt payment.

*GLWA assumed operations on January 1, 2016. The information in this table from 2010-2015 is based on operations under the City of Detroit Water and Sewerage Department (DWSD). Data for 2016 includes six months of operation under DWSD and six months of operation under GLWA.

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

LARGEST EMPLOYERS Current Year and 5 Years Ago

Employer	Fixed Monthly Type of Business	Fiscal Year 2019		Fiscal Year 2014	
		Full-time Employees	Rank	Full-time Employees	Rank
Ford Motor Co.	Automobile manufacturer	46,000	1	42,750	1
FCA US LLC/Chrysler Group LLC	Automobile manufacturer	34,452	3	30,580	2
General Motors Co.	Automobile manufacturer	32,770	4	30,570	3
University of Michigan	Public university and health system	35,350	2	29,855	4
Beaumont Health	Health care system	27,492	5	25,404	5
U.S. Government	Federal government	18,893	7	19,010	6
Henry Ford Health System	Health care system	26,929	6	17,949	7
Trinity Health	Health care system	16,403	9	14,056	8
Detroit Medical Center	Health care system	n/a	n/a	11,869	9
U.S. Postal Service	Postal Service	n/a	n/a	11,600	10
Rock Ventures	Umbrella entity managing a portfolio of companies in investment and real estate	17,887	8	n/a	n/a
Ascension Michigan/St. John Providence Health System	Health care system	12,616	10	n/a	n/a

Source: Crain's Detroit Business, Largest Southeast Michigan Employers - Ranked by full-time employees as of July 2019 and January 2014

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

TREATED AND BILLED WASTEWATER VOLUMES Last Ten Years

Fiscal Year		Total Wastewater Treated (mg)	Customer Wastewater Volume (mg)		
			Wholesale Customers [1]	Local System [2]	Total
2010	*	221,400	100,600	27,100	127,700
2011	*	253,500	112,700	28,000	140,700
2012	*	255,500	112,600	24,900	137,500
2013	*	220,600	99,400	23,100	122,500
2014	*	233,200	107,200	22,100	129,300
2015	*	222,700	103,700	20,100	123,800
2016	*	209,200	96,800	20,600	117,400
2017		254,400	105,500	19,200	124,700
2018		235,600	119,400	19,500	138,900
2019		249,500	124,800	21,200	146,000

* GLWA assumed operations on January 1, 2016. The information in this table from 2010-2015 is based on operations under the City of Detroit Water and Sewerage Department (DWSD). Data for 2016 includes six months of operation under DWSD and six months of operation under GLWA.

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

[2] Reported water usage billed to retail customers

GREAT LAKES WATER AUTHORITY SEWAGE DISPOSAL FUND

ADDITIONAL SUMMARY STATISTICS Last Four Years

	2019	2018	2017	2016*
Capital Asset Statistics - Sewer				
Water Resource Recovery Facility	1	1	1	1
Major Interceptors	3	3	3	3
Pump Stations	9	9	9	9
Combined Sewer Overflow Facilities:				
Retention Treatment Basins	5	5	5	5
Flow-through Type Facilities	3	3	3	3
Miles of Trunk Sewers and Interceptors	195	181	181	181
GLWA Employees				
Water Operations	213	205	180	155
Sewage Disposal Operations	369	358	342	320
Centralized Services	295	276	249	217
Administrative Services	147	129	110	90
Total Employees	1024	968	881	782

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



We are
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GLWA
Great Lakes Water Authority

Financial Services Area
735 Randolph, Suite 1608
Detroit, Michigan 48226

APPENDIX III DETROIT MSA

The Detroit-Warren-Dearborn Metropolitan Statistical Area (the “Detroit MSA”) is comprised of six counties: Wayne, Oakland, Macomb, Livingston, Lapeer and St. Clair. The Detroit MSA is ranked the 14th largest metropolitan statistical area in terms of population in the country.

Population

The population in the Detroit MSA grew from 3,169,649 in 1950 to 4,452,557 in 2000. In 2010 the population had shrunk to 4,296,250 and estimates indicate that the population has increased minimally since then, to 4,326,442 in July 2018. The following table presents population trends of the Detroit MSA and the United States since 1990.

**Table 1
Population Trends**

Year	Detroit MSA		U.S.
	Population	% Change	% Change
1990	4,248,699	(5.3%)	9.8%
2000	4,452,557	4.8%	13.2%
2010	4,296,250	(3.5%)	9.7%
2018	4,326,442	0.3%	0.6%

SOURCE: US. Department of Commerce, Bureau of the Census.

Employment

The Detroit MSA’s economy is highly susceptible to swings in the national economy due to its high concentration of employment in the durable goods industries, particularly the automotive industry. Over the past two decades, all three major automotive companies have experienced severe financial problems which have adversely affected the economy of the Detroit area.

The following table sets forth certain information on total employment by industry group for the Detroit MSA and that of the United States. The region has in the past consistently maintained a greater percentage of persons employed in the manufacturing sector than the nation as a whole, which reflected the area’s dependence on the automotive industry.

Table 2
Annual Employment by Place of Work (Non-Agricultural)

Detroit-Warren-Dearborn MSA								
	2015		2016		2017		2018	
	(000's)	%	(000's)	%	(000's)	%	(000's)	%
Industry Group:								
Natural Resources, Mining, & Construction.....	70	3.6%	70	3.5%	77	3.8%	78	3.8%
Manufacturing.....	240	12.3%	242	12.1%	257	12.6%	263	12.9%
Trade, Transportation & Utilities....	362	18.5%	364	18.2%	370	18.2%	374	18.4%
Information.....	27	1.4%	28	1.4%	28	1.4%	27	1.3%
Financial Activities.....	108	5.6%	114	5.7%	117	5.8%	116	5.7%
Professional and Business Services	392	20.0%	407	20.3%	399	19.6%	400	19.6%
Education and Health Services.....	302	15.4%	312	15.6%	314	15.4%	316	15.5%
Leisure & Hospitality.....	196	10.0%	207	10.3%	208	10.2%	202	9.9%
Other Services.....	76	3.9%	78	3.9%	77	3.8%	76	3.7%
Government.....	184	9.4%	182	9.1%	188	9.2%	186	9.1%
Total.....	<u>1,962</u>	<u>100.0%</u>	<u>2,004</u>	<u>100.0%</u>	<u>2,035</u>	<u>100.0%</u>	<u>2,038</u>	<u>100.0%</u>

U.S.								
	2015		2016		2017		2018	
	(000's)	%	(000's)	%	(000's)	%	(000's)	%
Industry Group:								
Natural Resources & Mining.....	825	0.6%	692	0.5%	684	0.5%	754	0.5%
Construction.....	6,621	4.6%	6,850	4.7%	7,157	4.8%	7,534	5.0%
Manufacturing.....	12,407	8.7%	12,374	8.5%	12,508	8.5%	12,772	8.5%
Trade, Transportation & Utilities....	26,955	18.9%	27,375	18.8%	27,498	18.6%	27,578	18.4%
Information.....	2,755	1.9%	2,802	1.9%	2,809	1.9%	2,815	1.9%
Financial Activities.....	8,168	5.7%	8,337	5.7%	8,510	5.8%	8,599	5.7%
Professional and Business Services	19,797	13.9%	20,330	14.0%	20,600	14.0%	21,193	14.1%
Education and Health Services.....	21,829	15.3%	22,484	15.5%	22,966	15.6%	23,696	15.8%
Leisure & Hospitality.....	15,742	11.0%	16,186	11.1%	16,759	11.4%	16,546	11.0%
Other Services.....	5,687	4.0%	5,761	4.0%	5,849	4.0%	5,846	3.9%
Government.....	<u>21,931</u>	<u>15.4%</u>	<u>22,048</u>	<u>15.2%</u>	<u>22,238</u>	<u>15.1%</u>	<u>22,460</u>	<u>15.0%</u>
Total.....	<u>142,717</u>	<u>100.0%</u>	<u>145,239</u>	<u>100.0%</u>	<u>147,578</u>	<u>100.0%</u>	<u>149,793</u>	<u>100.0%</u>

NOTE: Totals may not add due to rounding.

SOURCE: Michigan Department of Technology, Management and Budget, Labor Market Information; U.S. Department of Labor, Bureau of Labor Statistics.

Unemployment in the Detroit MSA in comparison to the City, the State and the United States is illustrated in the following table:

Table 3
Civilian Unemployment Rates (Not Seasonally Adjusted), 2010 to 2019

	<u>Detroit</u>	<u>Detroit MSA</u>	<u>State of Michigan</u>	<u>U.S.</u>
2010	24.8%	13.9%	12.6%	9.6%
2011	21.1%	11.4%	10.4%	8.9%
2012	19.2%	10.1%	9.1%	8.1%
2013	18.9%	9.7%	8.8%	7.4%
2014	16.1%	8.2%	7.2%	6.2%
2015	11.8%	5.9%	5.4%	5.3%
2016	10.7%	5.3%	5.0%	4.9%
2017	9.3%	4.4%	4.6%	4.4%
2018	8.8%	4.3%	4.0%	3.7%
2019	7.7%	3.7%	3.5%	3.4%

SOURCE: Michigan Department of Technology, Management and Budget, Labor Market Information. U.S. Department of Labor, Bureau of Labor Statistics.

Table 4
Annual Employment Growth (January to January, 2007 – 2019)

	<u>Detroit MSA</u>
2007	-2.7%
2008	-1.5%
2009	-8.2%
2010	-3.4%
2011	2.0%
2012	3.3%
2013	1.9%
2014	1.2%
2015	2.4%
2016	2.0%
2017	1.9%
2018	1.1%
2019	1.3%

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

Economic Revitalization in Detroit

The City of Detroit is experiencing significant growth driven by large scale redevelopment and major corporations increasing their presence or relocating. Notable partners and developments in the City include:

- Microsoft moving 400 employees to its Detroit office
- Little Caesars' new headquarters in Detroit
- Fifth Third Bank's regional headquarters in Detroit
- Google relocating to Detroit and doubling its presence in Southeast Michigan
- Ally Bank consolidating all 1400 employees in Detroit

- T1 auto supplier Flex-N-Gate building a new plant and bringing 500 new jobs to Detroit
- Lightweight Metal Innovation Center opening in Corktown
- TCF Bank's plan to build a 20-story building in Detroit for approximately 500 employees
- Development of 1279 new residential units in Detroit's Brush Park neighborhood
- Stephen M. Ross donation of \$100 million to the Detroit Center for Innovation
- Construction of the Gordie Howe International Bridge which will provide an additional crossing between Canada and Detroit
- \$50 million expansion of the Motown Museum into a 50,000 square foot complex with interactive exhibits, a new theater, recording studios, and expanded meeting and retail space
- Ford Motor Company's \$740 million redevelopment of the Michigan Central Station site into a transportation innovation hub
- The Mid, a \$377 million mixed use development including housing, hotels and retail
- Bedrock's \$900 million redevelopment of Hudson's site into a new development with a total approximately 1,000,000 square feet, with 330 residential units and 240,000 square feet of office space
- Development of the 32-mile Joe Louis Greenway walking and biking path
- Expansion and improvement of the Riverfront and Riverwalk providing accessible park space to the City's residents
- Fiat Chrysler's \$2.5 billion investment at two Detroit Assembly plants expected to bring 5,000 new jobs to the City

Housing Characteristics

The following table shows certain housing characteristics of the Detroit MSA in comparison to the State and the United States.

Table 5
Housing Characteristics – Fourth Quarter 2019 Statistics

	Detroit MSA	State of Michigan	United States
Homeownership Rates	73.1%	74.5%	65.1%
Rental Vacancy	5.1%	6.2%	6.4%
Homeownership Vacancy	1.0%	1.1%	1.4%

SOURCE: U.S. Department of Commerce, Bureau of Census.

Manufacturing

The following table shows a breakdown of manufacturing employment by type for the Detroit MSA from 2014 through second quarter 2018.

Table 6
Manufacturing Employment

Industry Group: (000's)	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Total durable goods industries	197.5	206.7	208.9	215.6	211.9
Total nondurable goods industries	<u>42.4</u>	<u>45.1</u>	<u>45.8</u>	<u>46.5</u>	<u>46.1</u>
Total manufacturing employment	239.9	251.8	254.7	262.1	258

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics. 2019 totals are preliminary

Household Income

The following table sets forth certain information concerning median household income in the 25 most populous U.S. metropolitan areas.

Table 7
Median Household Income - 2018

Rank	Metropolitan Area	Median household income (dollars)
1	San Francisco-Oakland-Hayward, CA Metro Area	107,898
2	Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area	102,180
3	Boston-Cambridge-Newton, MA-NH Metro Area	88,711
4	Seattle-Tacoma-Bellevue, WA Metro Area	87,910
5	Baltimore-Columbia-Towson, MD Metro Area	80,469
6	Minneapolis-St Paul-Bloomington, MN-WI Metro Area	79,578
7	Denver-Aurora-Lakewood, CO Metro Area	79,478
8	San Diego-Carlsbad, CA Metro Area	79,079
9	New York-Newark-Jersey City, NY-NJ-PA Metro Area	78,478
10	Portland-Vancouver-Hillsboro, OR-WA Metro Area	75,599
11	Los Angeles-Long Beach-Anaheim, CA Metro Area	72,563
12	Chicago-Naperville-Elgin, IL-IN-WI Metro Area	70,760
13	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro Area	70,747
14	Atlanta-Sandy Springs-Roswell, GA Metro Area	69,464
15	Dallas-Fort Worth-Arlington, TX Metro Area	69,445
16	Riverside-San Bernardino-Ontario, CA Metro Area	65,671
17	Houston-The Woodlands-Sugar Land, TX Metro Area	65,394
18	Phoenix-Mesa-Scottsdale, AZ Metro Area	64,427
19	St Louis, MO-IL Metro Area	62,790
20	Charlotte-Concord-Gastonia, NC-SC Metro Area	62,068
21	Detroit-Warren-Dearborn, MI Metro Area	60,513
22	Orlando-Kissimmee-Sanford, FL Metro Area	58,610
23	San Antonio-New Braunfels, TX Metro Area	57,379
24	Miami-Fort Lauderdale-West Palm Beach, FL Metro Area	56,328
25	Tampa-St Petersburg-Clearwater, FL Metro Area	54,912
	United States	61,937
	State of Michigan	54,938

SOURCE: U.S. Department of Commerce, Bureau of Census.

Detroit/Wayne County Port Authority

The Detroit/Wayne County Port Authority is a public agency responsible for promoting trade and freight transportation through the Port of Detroit, (the “Port”) which provides direct water service to world markets via the Great Lakes/St. Lawrence Seaway. The Port has five privately-owned and operated full-service terminals, a liquid bulk terminal and bulk facility, and a single dock facility with capacity for 14 oceangoing vessels. In addition, more than 30 industries located on the Detroit and Rouge Rivers have their own port facilities. A variety of ship repair services are available. The Detroit area, which is the largest foreign trade zone in the United States, provides financial advantages related to federal taxes and customs duties at subzones throughout the City and region. The Port is a principal port of entry for trade with Canada by means of bridge, vehicular tunnel, rail tunnel and barge service. Steel and scrap steel are the principal export products of the Port, handled for the three local steel mills. General cargo constitutes a minor portion of total tonnage due to the lack of regularly scheduled shipping service.

Transportation Network

Five major rail lines provide direct service to the Detroit area by railroad companies such as Conrail, Norfolk Southern, Grand Trunk Western, Canadian Pacific and CSX Transportation. Major cargo handled by the rail lines in the Detroit area include automobiles, auto parts, steel, chemicals and food products. Air transportation service is provided at the Detroit City Airport, which has general aviation and cargo services, and at the Detroit Metropolitan Wayne County Airport, the nation’s 17th largest airport (by number of aircraft operations as of 2015) and 18th busiest airport (by number of enplanements as of 2016). Detroit Metropolitan Wayne County Airport also serves as one of Delta Airlines busiest connecting hubs and serves as an international gateway for the airline. The Detroit Metropolitan Wayne County Airport had scheduled nonstop passenger service to 140 plus destinations with more than 34.4 million annual passenger deplanements and enplanements. This area’s extensive toll-free highway system, which includes the 1-94, 1-75, 1-96 and 1-696 interstate highways and Canadian Highway 401, provides one-day access, based on a 500-mile day, to 48% (by population) of the U.S. market and to the Province of Ontario, Canada.

APPENDIX IV DEFINITIONS

In addition to the terms defined elsewhere in this Official Statement, the following terms shall have the following meanings when used in this Official Statements.

“Accountant” means an independent certified public accountant or a firm of independent certified public accountants having a favorable reputation for skill in performing similar duties to the duties imposed on the Accountant under the Bond Ordinance selected by GLWA Board.

“Act 34” means Public Acts of Michigan, 2001, as amended.

“Additional Bonds” means sewage disposal revenue bonds or sewage disposal revenue refunding bonds of GLWA of equal standing with or subordinate to the DWSD Sewer Bonds of any Priority of Lien, issued under and in accordance with the Ordinance for the purposes set forth therein.

“Additional Bonds Debt Service Coverage” means, for purposes of issuing Additional Bonds under the Bond Ordinance and for each Priority of Lien, a number equal to Projected Net Revenues in the then current or next succeeding Fiscal Year, or Historical Net Revenues, all as determined by GLWA, divided by Maximum Annual Debt Service for such Priority of Lien and any higher Priority of Lien.

“Applicable Laws” means all laws, rules, regulations, ordinances, permit and license requirements, and orders of courts, governmental officials and agencies of competent jurisdiction with respect to the Leased Sewer Facilities or which generally relate to the Leased Sewer Facilities.

“Authority Regional Construction Account” means the account of the Construction Fund for the Regional Sewer System created pursuant to the Bond Ordinance.

“Authority Regional Improvement and Extension Account” means the account of the Improvement and Extension Fund for the Regional Sewer System created pursuant to the Bond Ordinance.

“Authority Regional Operation and Maintenance Account” means the account of the Operation and Maintenance Fund created pursuant to the Bond Ordinance.

“Authority Revenue Requirement” means the sum of the projected expenses and revenue requirements for the Regional Sewer System for each Fiscal Year, including without limitation all of the following: (a) Operation and Maintenance Expenses of the Regional Sewer System; (b) the amounts necessary to pay the principal of and interest on all Bonds and to restore any reserves therefor established in the Bond Ordinance; (c) the Lease Payment, which shall be a common-to-all charge; (d) the Authority Pension Obligation and the Authority BC Note Obligation; (e) the amount necessary to be deposited to the WRAP Fund, which shall be a common-to-all charge equal to 0.5% of the base budgeted operating Revenues for the Regional Sewer System for such Fiscal Year; (f) the amounts needed to make the required deposits to the Authority Regional Extraordinary Repair and Replacement Account of the Extraordinary Repair and Replacement Reserve Fund and the Authority Regional Improvement and Extension Account of the Improvement and Extension Fund in the Bond Ordinance; and (g) the amount necessary to satisfy the coverage ratios required by the rate covenant in the Bond Ordinance (collectively, the “Rate Covenant”).

“Authorized Officer” means the Chief Executive Officer, the Chief Financial Officer, or any officer designated by GLWA Board or the designee of any of them.

“Bankruptcy Case” means the City’s Chapter 9 Bankruptcy Case No. 13-53846 in the Bankruptcy Court.

“Bankruptcy Court” means the United States Bankruptcy Court, Eastern District of Michigan, Southern Division.

“Bankruptcy Order” means the Order Pursuant to (I) 11 U.S.C. §§ 105, 364(c), 364(d)(1), 364(e), 902, 904, 921, 922, and 928 (A) Approving Post Petition Financing and (B) Granting Liens and (II) Bankruptcy Rule 9019 Approving Settlement of Confirmation Objections, entered August 25, 2014 in the Bankruptcy Case.

“BC Note Obligation” means, collectively, the debt service on (a) the City of Detroit Financial Recovery Bonds, Series 2014B(1) and Series 2014B(2), dated December 10, 2014, and (b) the City of Detroit Financial Recovery Bonds, Series 2014C, dated December 10, 2014, which bonds were issued to satisfy in whole or in part claims relating to the City’s pension obligation certificates and post-retirement health benefits.

“Bond” or “Bonds” means, regardless of Priority of Lien, any DWSD Sewer Bond, established and created by the City and outstanding under Ordinance No. 18-01 and any Series of Additional Bonds established and created by GLWA under the Bond Ordinance and issued pursuant to a Series Ordinance, and Reimbursement Obligations and Junior Lien Reimbursement Obligations of any Priority of Lien established and created under Ordinance No. 18-01 or by a Series Ordinance.

“Bond Counsel” means a firm of nationally recognized bond counsel acceptable to GLWA.

“Bond Fund” means, collectively, the Bond Interest and Redemption Funds created pursuant to the Bond Ordinance.

“Bond Interest and Redemption Fund” means each fund for the payment of Debt Service for each Series of Bonds of the same Priority of Lien.

“Bond Ordinance” means Master Bond Ordinance No. 2015-02 adopted by the GLWA Board on October 7, 2015, as from time to time restated, amended or supplemented by Supplemental Ordinances in accordance with the terms and provisions thereof.

“Bond Payment Date” means any of the dates specified in a Series Ordinance for payment of interest, or interest and principal on the Bonds.

“Bond Reserve Account” means collectively, the Senior Lien Bond Reserve Account and the Second Lien Bond Reserve Account Fund created pursuant to the Bond Ordinance.

“Bondholder” or “Holder” or any similar term means any person or party who shall be the registered owner of any Bond.

“Budget Stabilization Fund” means the fund created pursuant to the Bond Ordinance.

“Budget Stabilization Requirement” means with respect to the Local Sewer System, an amount calculated each Fiscal Year equal to (A) two times a number equal to twenty percent of the average bad debt expense of Retail Sewer Customers as a class for the two preceding Fiscal Years based on audited financial statements (or unaudited statements if audited statements are not available), which amount shall be funded from Retail Revenues initially in thirds over three Fiscal Years beginning in Fiscal Year 2016,

or (B) such other amount specified by GLWA Board by supermajority (5/6) vote. For purposes of the required deposit for Fiscal Year 2016 the amount shall be \$5,591,469 for the Local Sewer System.

“Business Day” means a day other than (i) Saturday, Sunday or a legal holiday, (ii) a day on which the Trustee is authorized or required to remain closed, (iii) a day on which the New York Stock Exchange is closed or (iv) a day on which the Federal Reserve is closed.

“Capital Improvement Program” means the ongoing program of capital improvements for the Leased Sewer Facilities, as the same may be modified from time to time by GLWA.

“CIPs” means, collectively, the Capital Improvement Program and the Detroit Capital Improvement Program.

“Chief Executive Officer” means the Chief Executive Officer of GLWA.

“Chief Financial Officer” means the Chief Financial Officer of GLWA.

“Common-to-all” means the method or methods for allocating to wholesale customers of the Regional Sewer System and Retail Sewer Customers the cost of sewage disposal service provided by the Regional Sewer System that benefits both wholesale customers and Retail Sewer Customers, which allocation is determined on a case by case analysis of the benefits derived from each customer class from such service.

“Code” means the Internal Revenue Code of 1986, as amended, and the regulations, rulings and court decisions thereunder, as the context may require.

“Construction Fund” means the fund created pursuant to the Bond Ordinance.

“Credit Entity” means, with respect to a Series of Bonds or a maturity of such Series, a commercial bank, a bond insurance company, any other financial institution or combination of such financial institutions or governmental entity which issues a Credit Facility for such Series of Bonds or maturities but only while such Credit Facility is outstanding or Reimbursement Obligations or Junior Lien Reimbursement Obligations or other amounts are outstanding under any written agreement with a Credit Entity pursuant to which a Credit Facility is issued.

“Credit Facility” means one or more credit facilities with respect to a Series of Bonds or maturity of such Series consisting of an irrevocable and unconditional letter of credit, line of credit, standby bond purchase agreement, municipal bond insurance policy, surety bond, liquidity facility, or other credit enhancement facility or other liquidity facility issued by a Credit Entity as described in the Bond Ordinance to provide moneys for the purpose of paying the principal (whether upon tender or upon maturity or redemption) of and the interest on such Series of Bonds, but only while such Credit Facility is outstanding.

“Debt Service” means with respect to Bonds of each Priority of Lien, the amount scheduled to become due and payable annually on all Outstanding Bonds as (i) interest, exclusive of interest capitalized on such Outstanding Bonds and paid from the proceeds of a Series of Bonds or investment earnings on such capitalized interest, plus (ii) principal, plus (iii) Mandatory Redemption Requirements. For purposes of calculating Debt Service:

- (i) All principal payments shall be deemed to be made as and when the same shall become due or upon mandatory redemption;

(ii) Outstanding Variable Rate Bonds shall be deemed to bear interest during any period after the date of calculation at a fixed annual rate equal to the weighted average of the actual rates on such Variable Rate Bonds for each day during the 365 consecutive days (or any lesser period such Variable Rate Bonds have been Outstanding) ending on the last day of the month next preceding the date of calculation, or at the effective fixed annual rate thereon as a result of a Swap Agreement with respect thereto; provided, that such effective fixed annual rate for Variable Rate Bonds subject to a Swap Agreement must be utilized as long as such Swap Agreement is contracted to remain in full force and effect, and provided further, that for purposes of establishing compliance with the requirements of issuing Additional Bonds under the Bond Ordinance, Outstanding Variable Rate Bonds shall be deemed to bear interest as provided for Variable Rate Bonds proposed to be issued in clause (iii) below;

(iii) Variable Rate Bonds proposed to be issued shall be deemed to bear interest at a fixed annual rate equal to the average of the interest rates published in The Bond Buyer Revenue Bond Index during the twelve (12) months preceding the date of issuance of such Variable Rate Bonds, or at the effective fixed annual rate thereon as a result of a Swap Agreement with respect to such Variable Rate Bonds; and provided, that such effective fixed annual rate must be utilized only so long as such Swap Agreement is contracted to remain in full force and effect;

(iv) Any computation of Debt Service shall recognize and give effect to the alternative, rather than the cumulative, nature of obligations on Bonds, including any related Reimbursement Obligations or Junior Lien Reimbursement Obligations to a provider of credit enhancement or a liquidity facility securing payment of such Bonds. The portion of any termination payment constituting regularly scheduled debt service which becomes payable pursuant to the terms of a Swap Agreement shall constitute interest as provided in Act 34.

“Debt Service Installment Requirement” means, as of the first day of the month with respect to each Priority of Lien of Outstanding Bonds, the amounts calculated as described below. For interest payments due on Bonds of such Priority of Lien semiannually, the amount set aside and transferred to the Bond Fund each month for interest on such Bonds shall be $1/6$ of the total amount of interest on such Bonds next coming due or such lesser amount as is necessary to assure that the amount set aside in the Bond Fund as of the first day of such month is not less than the product of (a) $1/6$ of the amount of interest next due on such Bonds times (b) the number of months elapsed since and including the last interest payment date. For Series of Bonds of such Priority of Lien with more frequent interest payment dates, the amounts set aside each month shall equal one month’s accrued interest on such Bonds as provided in the Series Ordinance for such Bonds. For the month immediately prior to each Bond Payment Date the amount set aside and transferred to the Bond Fund to pay interest shall be reduced by investment earnings in the Bond Fund which are available for such purpose and shall be increased by the amount, if any, necessary so that the amount on deposit is sufficient to pay the interest due on such Bond Payment Date. The amount set aside and transferred to the Bond Fund each month for principal on the Bonds of such Priority of Lien shall be $1/12$ of the amount of principal next coming due by maturity or as a Mandatory Redemption Requirement or such lesser amount as is necessary to assure that the amount set aside in the Bond Fund as of the first day of such month is not less than the product of (a) $1/12$ of the amount of principal next due on such Bonds times (b) the number of months elapsed since and including the last principal payment date. If there is any deficiency in the amount previously set aside, that deficiency shall be added to the next succeeding month’s requirement. For the month immediately prior to each Bond Payment Date, the amount set aside and transferred to the Bond Fund to pay principal shall be reduced by investment earnings in the Bond Fund which are available for such purpose and shall be increased by the amount, if any, necessary so that the amount on deposit is sufficient to pay the principal due on such Bond Payment Date. For all purposes of the Bond Ordinance and the Bonds of such Priority of Lien, Term Bonds of such Priority of Lien shall be deemed to come due at the time and in the amounts of the Mandatory Redemption Requirements therefor

and the principal amount due on such Term Bonds on the dates of their stated maturities shall be reduced by the Mandatory Redemption Requirements therefor coming due prior to the stated maturities for such Term Bonds. Mandatory Redemption Requirements for Term Bonds may be satisfied by the call of Bonds of such Priority of Lien of the same maturity in principal amount of the Mandatory Redemption Requirement at par and accrued interest or the purchase and surrender to the Trustee of Bonds of the same maturity in the principal amount of the Mandatory Redemption Requirement from moneys in the Bond Fund, or purchased with other funds legally available therefor, all as specified in a Series Ordinance.

“Detroit Capital Improvement Program” means the ongoing program of capital improvements for the Detroit Local Sewer Facilities, as the same may be modified from time to time by the City.

“Detroit Local Construction Account” means the account of the Construction Fund for the Local Sewer System created pursuant to the Bond Ordinance.

“Detroit Local Improvement and Extension Account” means the account of the Improvement and Extension Fund for the Local Sewer System created pursuant to the Bond Ordinance.

“Detroit Local Operation and Maintenance Account” means the account of the Operation and Maintenance Fund for the Local Sewer System created pursuant to the Bond Ordinance.

“Detroit Local Sewer Facilities” means those sewage disposal facilities, other than the Leased Sewer Facilities, that are used to provide sewer service directly to Retail Sewer Customers on the Effective Date, all as more fully described in the Water and Sewer Services Agreement and the Lease.

“Detroit Local Water Facilities” means those Water System facilities, other than the Leased Water Facilities, that are used to provide water service directly to Retail Water Customers on the Effective Date, including fire hydrants, all as more fully described in the Water and Sewer Services Agreement and the Water Lease.

“DWSD-R” means the Detroit Water and Sewerage Department, as in existence on and after the Effective Date.

“DWSD Sewer Bonds” means all bonds and other indebtedness of the City secured by a pledge of and a statutory lien on the Net Revenues of the Sewer System and Outstanding immediately prior to the Effective Date, as more fully described in Schedule B to the Lease.

“Event of Default” means an Event of Default as such term is defined in the Bond Ordinance.

“Extraordinary Repair and Replacement Maximum Requirement” means, for any Fiscal Year, 15% of the budgeted Operation and Maintenance Expenses of the Regional Sewer System and the Local Sewer System for such Fiscal Year, less any amount that is withdrawn in the Fiscal Year from the Extraordinary Repair and Replacement Reserve Fund for paying a major unanticipated repair or replacement to the Regional Sewer System or the Local Sewer System pursuant to the Bond Ordinance, but only in the Fiscal Year that such amount is withdrawn.

“Extraordinary Repair and Replacement Minimum Requirement” means, for any Fiscal Year, 1/12 of 3% of the budgeted Operation and Maintenance Expenses of the Regional Sewer System and the Local Sewer System for such Fiscal Year plus such amount as is necessary to restore to the Extraordinary Repair and Replacement Reserve Fund any amount credited to the Improvement and Extension Fund.

“Extraordinary Repair and Replacement Reserve Fund” means the fund created pursuant to the Bond Ordinance.

“Fiscal Year” means the fiscal year and operating year of GLWA which begins on July 1 and ends on the following June 30, as it may be modified.

“Government Obligations” means direct obligations of the United States, its agencies, or, or United States government sponsored enterprises or obligations the payment of principal and interest on which is fully and unconditionally guaranteed by the United States, or its agencies.

“GRS” means the General Retirement System of the City.

“GRS Plan” means the frozen defined benefit plan of the GRS in effect on December 10, 2014, the effective date of the Plan of Adjustment.

“Historical Net Revenues” means, for purposes of issuing Additional Bonds under the Bond Ordinance, (a) the Net Revenues of the Sewer System for either (i) the immediately preceding Fiscal Year for which audited financial statements of GLWA are available, and if not, the audited financial statements of DWSD for such Fiscal Year may be used, or (ii) any audited Fiscal Year ending not more than sixteen months prior to the date of delivery of the Additional Bonds then being issued pursuant to the Bond Ordinance, as determined by GLWA, plus, at the option of GLWA, (b) an amount determined by GLWA in accordance with the Bond Ordinance to equal the effect of any change in the rates, fees and charges of the Regional Sewer System and the Local Sewer System authorized at or prior to the date of sale of the Additional Bonds then being issued pursuant to the Bond Ordinance, as if the Sewer System’s billings during such Fiscal Year had been at the increased rates, plus, at the option of GLWA, (c) an amount determined by GLWA in accordance with the Bond Ordinance to equal one hundred percent of the estimated increase in Net Revenues projected to accrue as a result of (i) the acquisition of the repairs, extensions, enlargements and improvements to the Sewer System projected to be paid in whole or in part from the proceeds of the Additional Bonds then being issued pursuant to the Bond Ordinance and (ii) any acquisition, extension or connection which was made subsequent to the end of such Fiscal Year. For purposes of determining Historical Net Revenues, if the first Fiscal Year of such determination is comprised of less than 12 months, then Historical Net Revenues for the complete Fiscal Year shall be the combined Net Revenues of (i) DWSD’s partial fiscal year and (ii) GLWA’s partial Fiscal Year and shall be used with adjustments to assure no duplication of Revenues in the calculation.

“Improvement and Extension Fund” means the fund used for improvements, enlargements, extensions or betterment of the Sewer System, created pursuant to the Bond Ordinance.

“Insurance Consultant” means an independent person or a firm of persons having skill and experience in dealing with the insurance requirements of municipal sewer systems comparable in size and function to the Sewer System.

“Issuance Costs” means items of expense payable or reimbursable directly or indirectly by or to GLWA and related to the authorization, sale and issuance of Bonds and authorization of the Bond Ordinance, which items of expense shall include, but not be limited to, application fees and expenses, publication costs, printing costs, costs of reproducing documents, filing and recording fees, Bond Counsel, financial and other consultants’ fees, initial Trustee’s fees, costs and expenses, underwriters’ fees and discount, costs of credit ratings, costs of Credit Facilities and charges for execution, transportation and safekeeping of the Bonds and related documents, and other costs, charges and fees in connection with the foregoing.

“Junior Lien Bond Fund” means the fund created pursuant to the Bond Ordinance.

“Junior Lien Bonds” means any Bonds or Series of Bonds, including Second Lien Bonds and SRF Junior Lien Bonds, issued by the City under Ordinance No. 18-01 and Second Lien Bonds, SRF Junior Lien Bonds, Pension Junior Lien Bonds and any Additional Bonds of a Priority of Lien subordinate thereto issued by GLWA under the Bond Ordinance and pursuant to a Series Ordinance and payable from Net Revenues deposited in the Junior Lien Bond Fund after satisfaction of requirements for funding the Senior Lien Bond Fund, and Junior Lien Reimbursement Obligations established and created by a Series Ordinance.

“Junior Lien Reimbursement Obligations” means any obligations to repay a Credit Entity for payments of Debt Service made with respect to a Series of Junior Lien Bonds, as provided in any written agreement between GLWA and a Credit Entity pursuant to which a Credit Facility is issued, which Junior Lien Reimbursement Obligations may be evidenced by Refunding Bonds or Junior Lien Bonds or contractual undertakings with the Credit Entity; provided, that for purposes of determining Debt Service, reimbursement of expenses, fees and other similar contractual undertakings shall not be included.

“Lease” means the Regional Sewage Disposal System Lease dated June 12, 2015, between the City, as lessor, and GLWA, as lessee, of the Leased Sewer Facilities, as amended from time to time.

“Lease Payment” means the annual payment required to be made by GLWA for the benefit of the City pursuant to the Lease, in consideration for the leasing of the Leased Sewer Facilities to GLWA and the absolute and irrevocable assignment and transfer to GLWA of the Revenues as provided in the Lease and to be applied by GLWA as provided herein.

“Leased Sewer Facilities” means, collectively, all of the City’s right, title and interest in and to that portion of the real and tangible personal property comprising a part of the Sewer System and owned by the City and providing sewer service to the wholesale customers of the Regional Sewer System and Retail Sewer Customers up to the point of connection to the Detroit Local Sewer Facilities, including without limitation the land, buildings, basins, pump stations, outfalls, storage facilities, other structures, fixtures (including screens, meters, control gates, interceptors and collection lines), and improvements, and real property interests such as easements, access rights, rights of way, permits, licenses and leases, all as more fully set forth in Schedule A attached to the Lease (the “Real Property”), and any and all tangible personal property such as machinery, equipment, vehicles, furniture, office equipment, software, hardware, security systems, communications systems, other information technology systems and inventory used in connection with the Real Property, including without limitation the personal property that is described in Schedule A attached to the Lease (the “Personal Property”). Leased Sewer Facilities include all improvements and additions to and replacements of the foregoing described Real Property and Personal Property, but do not include the Detroit Local Sewer Facilities.

“Leased Water Facilities” means, collectively, all of the City’s right, title and interest in and to that portion of the real and tangible personal property comprising a part of the Regional Water System and owned by the City and providing water service to the wholesale customers of the Regional Water System and Retail Water Customers up to the point of connection to the Detroit Local Water Facilities, all as more fully set forth in the Water Lease.

“Local Sewer System” means that portion of the Sewer System that provides sewer service directly to Retail Sewer Customers, which on the Effective Date consists of the Detroit Local Sewer Facilities.

“Local Water System” means that portion of the Water System that provides water service directly to the Retail Water Customers, which on the Effective Date consists of the Detroit Local Water Facilities.

“Mandatory Redemption Requirement” means as to each Series of Bonds for any year, the principal amount of Bonds of such Series subject to mandatory sinking fund redemption in such year, as provided in the Series Ordinance or Sale Resolution for such Series of Bonds.

“Maximum Annual Debt Service” means, with respect to any given Priority of Lien, the maximum aggregate Debt Service Installment Requirements in any future Fiscal Year on Outstanding Bonds of such Priority of Lien and any Additional Bonds then being issued in accordance with the Bond Ordinance. If any Additional Bonds (any of such, the “Refunding Bonds”) are to be issued to refund Outstanding Bonds (the “Bonds to be Refunded”), the Debt Service Installment Requirements to be used for determining Maximum Annual Debt Service shall include the Debt Service Installment Requirements with respect to the Refunding Bonds and not the Debt Service Installment Requirements with respect to the Bonds to be Refunded.

“Net Proceeds” means in the event of the destruction or taking of any portion of the Leased Sewer Facilities or the Detroit Local Sewer Facilities, the gross proceeds derived by GLWA or the City, as the case may be, from insurance on or condemnation of the Leased Sewer Facilities or the Detroit Local Water Facilities, respectively, less payment of attorneys’ fees, if any, and other expenses properly incurred in the collection thereof.

“Net Revenues” means for any period of time, all Revenues received during such period of time, except for those Revenues transferred to the Operation and Maintenance Fund.

“Operation and Maintenance Expenses” means the reasonable expenses of administration, operation and maintenance of the Regional Sewer System or the Local Sewer System, as the case may be, but shall not include the Required Annual GRS Payment.

“Operation and Maintenance Fund” means the Operation and Maintenance Fund established under the Bond Ordinance. As further provided in the Bond Ordinance, such Fund shall not be part of the Trust Estate held for the benefit of Holders, who shall have no interest in such Fund whatsoever, and any funds on deposit in or credited to such Fund are not and shall not be Pledged Assets.

“Ordinance” means the Bond Ordinance, and shall include the Series Ordinance and Sale Resolution (if any) or Sale Order (if any) of the Chief Executive Officer or other Authorized Officer, for each Series of Bonds.

“Ordinance No.18-01” means Ordinance No. 18-01 of the City, adopted by the City Council of the City on October 18, 2001, and which amended and restated Ordinance No. 27-86 of the City related to the Sewer System.

“Outstanding” means, as of any date and unless otherwise provided in a Series Ordinance, all Bonds which have been authenticated and delivered by the Trustee under Ordinance No. 01-05 and the Bond Ordinance (including tendered Bonds which may be owned by GLWA, from time to time, prior to the remarketing thereof), except:

- (i) Bonds (or portions of Bonds) for the payment or redemption of which there shall be held in trust by the Trustee under the Bond Ordinance (whether at or prior to maturity or redemption) (a) moneys equal to the principal amount or Redemption Price thereof, as the case may be, with interest to the date of maturity or redemption or (b) Sufficient Government Obligations in such principal amounts, having such maturities and bearing such interest, as together with the moneys described in clause (a), if any, shall be sufficient without reinvestment to pay when due the principal amount or Redemption Price, as the case may be, with interest due to the date of maturity

or redemption; provided, that if such Bonds are to be redeemed, notice of such redemption shall have been given as provided in Article III or provisions satisfactory to the Trustee shall have been made for giving of such notice:

(ii) Bonds in lieu of or substitution for which other Bonds shall have been authenticated and delivered pursuant to the Bond Ordinance;

(iii) Bonds deemed to have been paid or defeased as provided under the Bond Ordinance; and

(iv) Bonds subject to a mandatory tender which have not been tendered prior to the related tender date which are deemed to have been redeemed.

“Pension Junior Lien Bonds” means Bonds, if any, issued to pay all or any part of the Required Annual GRS Payment, which may only be issued as Junior Lien Bonds with a Priority of Lien subordinate to SRF Junior Lien Bonds.

“Pension Obligation” means the amounts allocable to the Sewer System and required to be paid over time by DWSD and as provided in the Lease, GLWA, in respect of (i) the GRS Plan as provided in the Plan of Adjustment and the Bankruptcy Order and (ii) the BC Note Obligation as provided in the Plan of Adjustment.

“Pension Obligation Payment Fund” means the Pension Obligation Payment Fund established under the Bond Ordinance.

“Permitted Investment” means with respect to any particular amounts, an investment permitted by Act 94, including Government Obligations, and subject to such limitations as imposed under the Bond Ordinance or a Series Ordinance for the investment of such amounts.

“Person” means any natural person, firm, partnership, entity or public body.

“Plan of Adjustment” means the Eighth Amended Plan for the Adjustment of Debts of the City of Detroit, in the Bankruptcy Case, as confirmed by order of the Bankruptcy Court entered on November 12, 2014 and effective on December 10, 2014.

“Pledged Assets” means:

(i) Net Revenues;

(ii) the funds and accounts established by or pursuant to the Bond Ordinance except for the Operation and Maintenance Fund, the Construction Fund and the Rebate Fund and any account of any such fund; and

(iii) investments of amounts or any income or gain realized therefrom credited to any fund, account or subaccount that is a Pledged Asset.

“Priority of Lien” means, with respect to any particular Bonds, all other Bonds having a lien on Pledged Assets on parity with such Bonds.

“Projected Net Revenues” means, the Net Revenues of the Sewer System for any given Fiscal Year, which may include (a) one hundred percent of the estimated increase in Net Revenues projected to result

from approved rate increases and (b) in the case of issuing Additional Bonds, for the purpose of determining the Additional Bonds Debt Service Coverage, one hundred percent of the estimated increase in Net Revenues projected to accrue as a result of the acquisition of the repairs, extensions, enlargements and improvements to the Sewer System projected to be paid for in whole or in part from the proceeds of the Additional Bonds.

“Prudent Utility Practices” means those practices, methods, techniques, standards and acts engaged in or approved by a significant portion of the regulated sewer utility industry in the United States or any of the practices, methods, techniques, standards and acts which, in the exercise of reasonable judgment in light of the facts known (or which a qualified and prudent operator could reasonably be expected to have known) at the time a decision is made, would have been expected to accomplish a desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition, in each case related to the operation, maintenance and improvement of similar systems at utility facilities of the same or similar size and type as the Leased Sewer Facilities.

“Rate Covenant Debt Service Coverage” means, for purposes of the rate covenant in the Bond Ordinance and for each Priority of Lien, a number equal to Projected Net Revenues for the Fiscal Year of calculation divided by the aggregate Debt Service Installment Requirements on Bonds for such Fiscal Year, net of funds on hand representing capitalized interest, all for such Priority of Lien and any higher Priority of Lien.

“Rating Agency” means any nationally recognized rating service then rating any of the Bonds.

“Rebate Fund” means the Rebate Fund created pursuant to the Bond Ordinance.

“Receiving Fund” means the Fund required to be established and maintained by GLWA under the Bond Ordinance to which all Revenues of the Sewer System are to be credited and applied as provided in the Bond Ordinance.

“Redemption Price” means the principal of any Bond which has been called for redemption, together with any premium thereon.

“Refunding Bonds” means any Additional Bonds issued to refund Outstanding Bonds pursuant to the Bond Ordinance.

“Regional Sewer System” means that portion of the Sewer System that provides sewer service to the wholesale customers thereof and Retail Sewer Customers up to the point of connection to the Local Sewer System, which on the Effective Date consists of the Leased Sewer Facilities.

“Regional Water System” means that portion of the Water System that provides water service to the wholesale customers thereof and Retail Customers up to the point of connection to the Local Water System, which on the Effective Date consists of the Leased Water Facilities.

“Reimbursement Obligations” means any obligations to repay a Credit Entity for payments of Debt Service made with respect to a Series of Senior Lien Bonds as provided in any written agreement between GLWA (as successor to the City or otherwise) and a Credit Entity pursuant to which a Credit Facility is issued, which Reimbursement Obligations may be evidenced by the Senior Lien Bonds of such Series, Refunding Bonds or contractual undertakings with the Credit Entity; provided, that for purposes of determining Debt Service, reimbursement of expenses, fees and other similar contractual undertakings shall not be included.

“Required Annual GRS Payment” means the amount determined as specified in “SUMMARY OF CERTAIN PROVISIONS OF THE BOND ORDINANCE – Certain Other Funds – The Pension Obligation Payment Fund” herein.

“Required Coverage” means (a) for Senior Lien Bonds, 1.20, (b) for Second Lien Bonds, 1.10, and (c) for any Junior Lien Bonds other than Second Lien Bonds, 1.00.

“Reserve Requirement” means, except as otherwise provided with respect to a particular Series of Bonds in the applicable Series Ordinance pursuant to the Bond Ordinance, an amount equal to the Maximum Annual Debt Service requirements for each Series of Outstanding Senior Lien Bonds, which amount is required to be on deposit or, if permitted by law, otherwise provided for (including, but not limited to, through provision of a letter of credit, surety bond or insurance policy in the same amount and with a credit rating at the time of issuance of such Series of Bonds not less than the credit rating on such Series of Bonds) in the Senior Lien Bond Reserve Account; provided, however, that such requirement may be satisfied by a deposit of Bond proceeds at the time of issuance of a Series of Senior Lien Bonds, or by an accumulation on a scheduled basis of investment earnings or other deposits which will result in an amount equal to the Reserve Requirement for such Series of Bonds being on deposit no later than the date of the last scheduled application of all capitalized interest for such Series; provided, further, that with respect to a Series of Senior Lien Bonds which are proposed to be issued as Variable Rate Bonds, the Reserve Requirement shall be calculated utilizing the assumptions set forth under subparagraph (iii) of the definition of Debt Service; and provided that in no event shall the Reserve Requirement exceed the maximum permitted by the Code. Any Reserve Requirement with respect to one or more Series of Junior Lien Bonds shall be established by the related Series Ordinance, and if no amount is established therein, the Reserve Requirement shall be based on the average annual Debt Service requirement.

“Retail Customers” means, collectively, the Retail Water Customers and the Retail Sewer Customers.

“Retail Revenues” means Revenues collected from Retail Customers.

“Retail Sewer Customers” means those individual customers located within and outside the City that receive sewer service directly from the Detroit Local Sewer Facilities.

“Retail Water Customers” means those individual customers located within and outside the City that receive water service directly from the Detroit Local Water Facilities.

“Revenue Receipts Fund” means the Revenue Receipts Fund created pursuant to the Bond Ordinance and under GLWA’s Regional Water System Master Bond Ordinance and held in trust by the Trustee.

“Revenues” means the revenues, including the Retail Revenues, of GLWA from the Sewer System, which shall be construed as defined in Section 3 of Act 94, and shall also include:

- (i) amounts received from a Swap Provider under a Swap Agreement, including any amounts payable upon termination thereof;

- (ii) income earned and gain realized from the investment of amounts in the various funds, accounts and subaccounts established by the Bond Ordinance other than the Construction Fund for any Fiscal Year in which earnings on the Construction Fund are not credited to the Receiving Fund; and

(iii) all moneys collected directly or indirectly by GLWA or by the City, as agent of GLWA, under the Water and Sewer Services Agreement, and deposited or to be deposited into the Receiving Fund under the Bond Ordinance.

“Sale Resolution” or “Sale Order” means a resolution or resolutions of GLWA adopted by GLWA Board in accordance with the Bond Ordinance or an Order of the Chief Executive Officer, Chief Financial Officer or other specified Authority official authorizing the sale of a Series of Bonds in accordance with the terms and provisions of the Bond Ordinance and a Series Ordinance.

“Second Lien Bonds” means the DWSD Sewer Bonds having a second lien on the Net Revenues of the Sewer System that are being assumed by GLWA and any Additional Bonds of equal Priority of Lien.

“Senior Lien Bonds” means the DWSD Sewer Bonds having a first and senior lien on the Net Revenues of the Sewer System that are being assumed by GLWA, and any Additional Bonds of equal Priority of Lien.

“Series” means a Series of Bonds issued and sold pursuant to a Series Ordinance and the Bond Ordinance or Ordinance No. 18-01.

“Series Ordinance” means an ordinance or ordinances, including, if necessary, a Sale Resolution or Sale Order, authorizing the issuance and sale of a Series of Bonds in accordance with the provisions of the Bond Ordinance.

“Sewer Lease Payment” means the annual payment required to be made by GLWA for the benefit of the City pursuant to the Sewer Lease in consideration for the leasing of the Leased Sewer Facilities to GLWA as provided therein.

“Sewer System” means, the City’s sewage disposal system as existing immediately prior to the Effective Date, which consists on the Effective Date of the Regional Sewer System and the Local Sewer System as the same may be improved from time to time.

“Shared Services Agreement” means the Shared Services Agreement between the City and GLWA relating to the provision of services by the City to GLWA with respect to the Regional Water System and the Regional Sewer System, and the provision of services by GLWA to the City with respect to the operation and management of the Detroit Local Water Facilities and the Detroit Local Sewer Facilities, as it may be amended and supplemented as provided therein.

“SRF” means the State Water Pollution Control Revolving Fund financing program.

“SRF Junior Lien Bonds” means all SRF Junior Lien Bonds being assumed by GLWA and any Additional Bonds of equal Priority of Lien issued for the purpose of providing improvements to the Sewer System under the SRF and shall be the second Priority of Lien of Junior Lien Bonds.

“State” means the State of Michigan.

“Sufficient Government Obligations” means (a) direct obligations of the United States of America or (b) obligations the principal of and interest on which are fully guaranteed by the United States of America, and which (i) are not redeemable at the option of the issuer and (ii) without reinvestment of the interest, come due at such times and in such amounts as to be fully sufficient to pay the principal or Redemption Price and interest, respectively, as each becomes due on the Bonds.

“Supplemental Ordinance” means a Series Ordinance or other Ordinance supplemental to the Bond Ordinance and authorized pursuant to the Bond Ordinance.

“Surplus Fund” means the fund created pursuant to the Bond Ordinance.

“Swap Agreement” means any interest rate exchange or swap, hedge or other similar agreement or agreements entered into in connection with the issuance of obligations or other evidences of indebtedness or in connection with GLWA’s then Outstanding Senior Lien Bonds or Junior Lien Bonds within the limitations provided by Act 34 or its predecessor statute.

“Swap Provider” means any party with whom GLWA (as successor to the City or otherwise) has or shall enter into a Swap Agreement.

“System Consultant” means any professionally qualified person, firm or corporation nationally recognized in the municipal sewage disposal industry and of favorable reputation for skill and experience in performing the duties of providing consulting services to municipal sewage disposal systems comparable in size and function to the Sewer System, including setting of rates and charges for the use of such systems.

“Trustee” means U.S. Bank National Association or any successor independent bank or trust company qualified and appointed pursuant to the Bond Ordinance to act as Trustee hereunder and any company into which the Trustee may be merged or converted or with which it may be consolidated, or any company resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any company to which the Trustee may sell or transfer all or substantially all of its corporate trust business, provided such company shall be a trust company or bank which is qualified to be a successor Trustee under the Bond Ordinance, or any other bank or trust company at any time substituted in its place pursuant to the Bond Ordinance.

“Variable Rate Bonds” means any Bonds the interest rate on which is not fixed to maturity as of the date of the calculation being performed.

“Water and Sewer Services Agreement” means the Water and Sewer Services Agreement, dated June 12, 2015, between the City and GLWA relating to the provision of water supply service to the Retail Water Customers and sewage disposal service to Retail Sewer Customers, as it may be amended and supplemented as provided therein.

“Water Lease” means the Regional Water Supply System Lease, to be effective on the Effective Date, relating to the lease of the Leased Water Facilities from the City to GLWA.

“Water System” means the City’s water supply system as existing immediately prior to the Effective Date, which on the Effective Date consists of the Regional Water System and the Local Water System, as the same may be improved from time to time.

“WRAP Fund” means the Water Residential Assistance Program Fund created pursuant to the Bond Ordinance, which is a fund independently-administered on behalf of GLWA to provide assistance to indigent residential customers throughout the Water System and the Sewer System.

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APPENDIX V SUMMARY OF THE LEASE

This summary does not purport to be comprehensive or definitive and is subject to all of the terms of the Lease, to which reference is hereby made and copies of which are available on GLWA's website at www.glwater.org or from the Underwriters prior to the execution and delivery of the Series 2020 Bonds and thereafter may be examined or obtained at the expense of the person requesting the same at the corporate trust office of the Trustee.

General

On June 12, 2015, the City and GLWA executed (i) the Lease pursuant to which the City agreed to lease to GLWA the Leased Sewer Facilities and (ii) the Water Lease pursuant to which the City agreed to lease to GLWA the Leased Water Facilities. Complete copies of the Lease and the Water Lease are available on GLWA's website at www.glwater.org. On June 27, 2018, certain sections of the Lease and the Water Lease were clarified under the 2018 MOU. For a summary of the 2018 MOU as it relates to the Lease and the Water Lease, see APPENDIX IX - SUMMARY OF 2018 MOU.

Pursuant to the Lease, the City leased the Leased Sewer Facilities and assigned and transferred its interest in all revenues derived from the sale of sewage disposal services to the wholesale customers and the Retail Sewer Customers of the Sewer System to GLWA for the Term. On the Effective Date, the City conveyed to GLWA by lease for the Term all of the City's right, title and interest in and to the Leased Sewer Facilities in order to enable GLWA to operate the Leased Sewer Facilities as provided in the Lease. The City continues to own, operate and be responsible for the operation and maintenance of the Detroit Local Sewer Facilities, which consist of all sewage disposal facilities that provide sewage disposal services directly to the Retail Sewer Customers, all as more particularly described in the Water and Sewer Services Agreement. See APPENDIX VII—Summary of the Water and Sewer Services Agreement.

Term of the Lease

The term of the Lease (the "Term") commenced on the Effective Date and shall initially terminate on the 40th anniversary of the Effective Date (the "Initial Lease Termination Date"). Upon the issuance of Additional Bonds by GLWA with a maturity date after the Initial Lease Termination Date, the Initial Lease Termination Date shall automatically, and without further action of the parties to the Lease, be amended to coincide with the date on which all of the Bonds have been paid or provision for payment of all such Bonds has been made in accordance with the Bond Ordinance.

Assignment and Assumption

On the Effective Date, GLWA assumed all of the City's obligations under the DWSD Sewer Bonds, including all of the obligations to make payments of principal of and interest on the DWSD Sewer Bonds. In acquiring the Leased Sewer Facilities pursuant to the Lease, commencing on the Effective Date, GLWA also acquired for the Term, and the City absolutely and irrevocably assigned, transferred and conveyed to GLWA, and GLWA purchased and acquired from the City, (i) all of the City's right, title and interest in and to the Revenues, including the Retail Revenues, in existence on the Effective Date, and (ii) all of the City's right, title and interest in and to the Revenues, including Retail Revenues, derived from operation of the Sewer System on and after the Effective Date and through the end of the Term.

In addition, on the Effective Date, the City assigned and GLWA assumed the City's wholesale contracts related to the Regional Sewer System, existing DWSD vendor contracts related to the Regional

Sewer System, the City's rights under the contracts with bond insurers and surety bond providers with respect to the DWSD Sewer Bonds and all other liabilities and obligations of the City with respect to the Leased Sewer Facilities. GLWA also agreed to provide continuing disclosure with respect to information within its control relating to GLWA, the Leased Sewer Facilities and the DWSD Sewer Bonds that the City would otherwise have had to disclose on an annual basis pursuant to continuing disclosure undertakings entered into by the City with respect to the DWSD Sewer Bonds.

Retirement Obligations

As further consideration for the acquisition of the Regional Sewer System pursuant to the Lease, the Authority is required to pay that portion of the Pension Obligation allocable to the Regional Sewer System (the "Authority Pension Obligation") and that portion of the BC Note Obligation allocable to the Regional Sewer System (the "Authority BC Note Obligation"). The City agrees that it is liable for and shall be required to pay that portion of the Pension Obligation allocable to the Local Sewer System (the "City Pension Obligation") and that portion of the BC Note Obligation allocable to the Local Sewer System (the "City BC Note Obligation"). Amounts due for the Pension Obligation and the BC Note Obligation shall be allocated between the Authority and the City on the basis that such amounts are payable with respect to employees of the Authority and the City, respectively.

Rate Setting

Pursuant to the Lease, the City and GLWA agree that (i) GLWA shall have the exclusive right to establish rates for sewer service for customers of the Sewer System, including Retail Sewer Customers, (ii) GLWA may delegate its rights to establish rates for sewer service to customers of the Sewer System to one or more agents, as it deems necessary or convenient, and (iii) directly or through an agent, GLWA shall have the exclusive right to charge and bill to and collect from such customers amounts from sewer services constituting the Revenues, including the Retail Revenues. Under the Water and Sewer Services Agreement, GLWA has delegated to the City its rights to set and collect rates with respect to Retail Customers of the City.

Lease Payments

Part of the consideration for the Lease will be an allocation of \$27,500,000 per year (the "Lease Payment"), to be funded from a portion of the common-to-all revenue requirements for the Regional Sewer System. The Lease Payment will be retained by GLWA and applied as provided below. The Lease Payment will flow through the existing flow of funds under the Bond Ordinance, together with other funding requirements, after payment of Operations and Maintenance Expenses. The Lease Payment will not be treated as an Operation and Maintenance Expense and shall be applied solely, at the City's direction and discretion, to the cost of improvements to the Local Sewer System (payable after debt service and pension liability payments in the flow of funds), the payment of debt service on Bonds associated with such improvements or the City's share of debt service on Bonds associated with common-to-all improvements. Any Additional Bonds issued to finance Regional Sewer System improvements or Local Sewer System improvements will be issued by GLWA and will be secured by the Net Revenues.

Operation of Leased Sewer Facilities

GLWA agrees to operate the Leased Sewer Facilities for the purpose of furnishing sewer service to its customers in accordance with Applicable Laws and Prudent Utility Practices, all in a manner so as to provide sewer service to customers in the same or an improved manner as was provided by DWSD immediately prior to the Effective Date (collectively, the "Performance Standards"). In connection therewith, GLWA will pay all costs of operating, using, repairing, maintaining, replacing, enlarging,

extending, improving, financing and refinancing the Leased Sewer Facilities, including by way of illustration and not by way of limitation, all capital costs, utility rates and charges, fees and other amounts due under existing contracts, taxes and special assessments, salaries and other employment costs, permits and license fees and rents. GLWA has agreed that it will not cause or permit any waste, damage or injury to the Leased Sewer Facilities and to keep the Leased Sewer Facilities in good condition and repair (reasonable wear and tear, obsolescence and damage by act of God, fire or other causes beyond the control of GLWA excepted).

From and after the Effective Date, GLWA is obligated, at its own expense, to keep the Leased Sewer Facilities insured against any casualty loss and shall also obtain and maintain public liability insurance (covering bodily and personal injury, property damage and contractual liability), automobile liability insurance and worker's compensation insurance for the operation of the Leased Sewer Facilities and the Regional Sewer System in commercially reasonable amounts, provided that GLWA is required to carry a particular type of insurance coverage as set forth in the Lease during any period that such insurance is not available in the insurance market of the United States at commercially reasonable rates. The insurance required of GLWA by the Lease in the amounts, with the coverage and other required features, may be supplied by a fully funded self-insurance program of GLWA or a self-insurance pool in which GLWA is a participant; provided that such self-insurance program or pool will provide the coverage required herein.

Destruction or Taking of Leased Sewer Facilities

If during the Term, any portion of the Leased Sewer Facilities is damaged or destroyed by fire or other casualty, GLWA is obligated to repair, restore, rebuild or replace the damaged or destroyed portion of the Leased Sewer Facilities and complete the same as soon as reasonably possible (subject to the adjustment and receipt of insurance proceeds, if any, and the Bond Ordinance), to at least the condition they were in prior to such damage or destruction, except for obsolescent facilities or changes in design or materials as may then be necessary to achieve the Performance Standards.

In the event of any taking of the Leased Sewer Facilities or any part thereof in or by condemnation or other eminent domain proceedings pursuant to any Applicable Laws, or by reason of the temporary requisition of the use or occupancy of the Leased Sewer Facilities or any part thereof by any governmental authority (each a "Taking"), GLWA will promptly notify the City upon receiving notice of such Taking or commencement of proceedings therefor. GLWA will then, if requested by the City, file or defend its claim thereunder and prosecute the same with due diligence to its final disposition. Subject to the terms of the Bond Ordinance, all proceeds or any award or payment in respect of any taking are hereby assigned and shall be paid to GLWA, and GLWA is permitted to take all steps reasonably necessary in its discretion to notify the condemning authority of such assignment. Such award or payment shall be applied to the Leased Sewer Facilities as necessary to achieve the Performance Standards.

If the Leased Sewer Facilities or any portion thereof are in whole or in part destroyed or damaged as a result of any cause whatsoever, or a Taking occurs with respect to the Leased Sewer Facilities or any portion thereof, there shall be no abatement, diminution or reduction in any Lease Payment payable under the Lease.

In the Lease, the City agrees not to commence any proceedings against the Leased Sewer Facilities that would constitute a Taking of all or any part of the Leased Sewer Facilities if the effect of such Taking is to render it impracticable for the Leased Sewer Facilities to furnish sewer service to GLWA's customers in accordance with the Performance Standards.

Improvements to Leased Sewer Facilities

During the Term, GLWA is entitled to make such rehabilitation of and replacements and improvements to the Leased Sewer Facilities as it determines to be necessary in order to keep the Leased Sewer Facilities in compliance with the Performance Standards. In connection therewith, GLWA, for each Fiscal Year, will prepare and approve a Capital Improvement Program, which shall set forth the improvements to the Leased Sewer Facilities that GLWA proposes to undertake during the next five Fiscal Years.

In addition, during the Term, GLWA will review and revise as necessary the DWSD sewer master plan. In reviewing the plan, GLWA will use its best efforts to maximize utilization of the capacity in the Regional Sewer System so that economies of scale may be realized, shall take into account the needs of GLWA's service area in planning and operating the Regional Sewer System, shall strive to become the provider of choice for southeastern Michigan and shall consider incentives for customers to utilize the Regional Sewer System for their sewage disposal needs.

Adoption of Budget; Rates for Use of Leased Sewer Facilities

GLWA adopted a budget for the Regional Sewer System for the period from the Effective Date through June 30, 2016, which was based on a bi-furcation between the Regional Sewer System and the Local Sewer System of the budget adopted by DWSD relating to the Sewer System for the Fiscal Year beginning July 1, 2015. Commencing with the Fiscal Year beginning July 1, 2016, the Authority is required to adopt a two-year budget for the Regional Sewer System for the following two Fiscal Years that sets forth budgeted Revenues and expenses for each such Fiscal Year. The budgeted expenses for each such Fiscal Year shall equal the sum of the projected expenses and revenue requirements for the Regional Sewer System for each such Fiscal Year (collectively, the "Authority Revenue Requirement"), including without limitation all of the following:

- (a) Operation and Maintenance Expenses of the Regional Sewer System;
- (b) The amounts necessary to pay the principal of and interest on all Bonds and to restore any reserves therefor established in the Bond Ordinance;
- (c) The Lease Payment, which shall be a common-to-all charge;
- (d) The Authority Pension Obligation and the Authority BC Note Obligation;
- (e) The amount necessary to be deposited to the WRAP Fund, which shall be a common-to-all charge equal to 0.5% of the base budgeted operating Revenues for the Regional Sewer System for such Fiscal Year;
- (f) The amounts needed to make the required deposits to the Authority Regional Extraordinary Repair and Replacement Account of the Extraordinary Repair and Replacement Reserve Fund and the Authority Regional Improvement and Extension Account of the Improvement and Extension Fund in the Bond Ordinance; and
- (g) The amount necessary to satisfy the coverage ratios required by the rate covenant to be included in the Bond Ordinance (collectively, the "Rate Covenant").

GLWA, for each Fiscal Year, shall fix and approve rates and charges to its customers in an amount that is expected to produce Revenues sufficient to satisfy the Authority Revenue Requirement. In

connection with the determination by the Authority of the rates and charges applicable to Retail Sewer Customers in the City for such Fiscal Year, the City shall receive a credit in the amount of \$5,516,000, representing the return on equity to the City for the Sewer System in recognition of the City's ownership of the Sewer System and support of the rate structure for the Sewer System.

As provided in the Lease, through the Fiscal Year ending June 30, 2025, the Sewer System is assumed to experience annual increases in the Authority Revenue Requirement of not more than 4%; provided however, this limitation shall not be applicable if the Authority Revenue Requirement must increase beyond the 4% assumption in order to satisfy the Rate Covenant or to pay the cost of improvements to the Leased Sewer Facilities that are required to be made by Applicable Laws.

In the Lease, the City acknowledges that all Revenues received from customers in the City, including Revenues derived exclusively from the Local Sewer System, are the property of the Authority and will be deposited as received in the Receiving Fund in the Bond Ordinance and applied as provided in the Bond Ordinance, including amounts deposited in the Budget Stabilization Fund. As a result, the City agrees to provide the Authority with a budget for the Local Sewer System as provided in the Water and Sewer Services Agreement.

Sale or Disposition of Leased Sewer Facilities or Detroit Local Sewer Facilities

Subject to the Bond Ordinance, GLWA, following notice to the City, has the right to sell or dispose of any of the Real Property or Personal Property that constitutes part of the Leased Sewer Facilities if GLWA determines that such Real Property or Personal Property is not or is no longer needed or useful in connection with the operation of the Leased Sewer Facilities or that such sale or disposition will not impair the operating efficiency of the Leased Sewer Facilities or reduce the ability of GLWA to satisfy the Rate Covenant as provided in the Bond Ordinance. To the extent necessary to accomplish such a sale of Personal Property, the Lease also constitutes a quit claim transfer by the City of any residual property rights it may have in and to such Personal Property. The City shall cooperate with GLWA in arranging the execution and delivery of a deed for the disposition of any Real Property. The proceeds of any such sale shall be deposited in the Receiving Fund established by the Bond Ordinance.

If the City sells or disposes of any real or personal property that constitutes part of the Detroit Local Sewer Facilities that was paid for in whole or in part with common-to-all funds, the proceeds of such sale or disposition shall be paid to GLWA in the same proportion that common-to-all funds were used to pay the purchase price, for deposit in the Receiving Fund established by the Bond Ordinance.

In connection with the sale or disposition of any of the Leased Sewer Facilities or any of the Detroit Local Sewer Facilities that were paid for in whole or in part with common-to-all funds, the City and GLWA shall cooperate and use their best efforts to sell such property at market value, exchange such property for other property of similar value or sell such property as otherwise agreed to by the parties.

Events of Default and Remedies

Events of Default. Under the Lease, the term "Event of Default" means the occurrence of any one of the following events:

(a) GLWA's failure to pay any Lease Payment (without setoff, recoupment, or other deduction of any kind) when due.

(b) GLWA's failure to fully perform and comply with any of the other terms, conditions or provisions of the Lease within ninety (90) days after delivery to GLWA of a written notice from the City specifying such failure.

(c) The City's failure to fully perform and comply with any of the terms, conditions or provisions of the Lease within ninety (90) days after delivery to the City of a written notice from GLWA specifying such failure.

Remedies.

(1) If an Event of Default set forth in (a) or (b) above occurs, the City, subject to the dispute resolution procedures described below under "Dispute Resolution" (the "Dispute Resolution Procedures"), shall have all rights and remedies available to the City at law or in equity, including specific performance.

(2) If an Event of Default set forth in (c) above occurs, GLWA, subject to the Dispute Resolution Procedures, shall have all right and remedies available to GLWA at law or in equity, including specific performance.

(3) Notwithstanding anything else to the contrary in the Lease, so long as Bonds are outstanding, neither the City nor GLWA shall have any right to terminate the Lease at any time prior to the end of the Term, whether or not an Event of Default has occurred.

(4) The City's or GLWA's failure to insist upon the strict performance of any agreement, term, covenant or condition of the Lease or to exercise any right or remedy for breach of or Event of Default under the Lease shall not constitute a waiver of any such breach or Event of Default. Similarly, the City's acceptance of full or partial Lease Payments during any such breach by or Event of Default attributable to GLWA shall not constitute a waiver of any such breach or Event of Default. No waiver of any breach or Event of Default shall affect or alter this subsection and every term, covenant, condition and provision of the Lease shall continue in full force and effect with respect to any other then existing or subsequent breach or Event of Default.

(5) Subject to (3) above and the Dispute Resolution Procedures, each right and remedy provided in the Lease shall be cumulative and shall be in addition to every other right or remedy provided for in the Lease or now or later existing at law or in equity either by statute or otherwise. The City's or GLWA's exercise of any one or more of its rights or remedies shall not preclude the City's or GLWA's simultaneous or later exercise of any or all of its other rights or remedies under the Lease.

Dispute Resolution

Disputes; Resolution.

GLWA and the City shall each designate in writing to the other from time to time a representative who shall be authorized to resolve any dispute relating to the subject matter of the Lease in an equitable manner and, unless otherwise expressly provided herein, to exercise the authority of such party to make decisions by mutual agreement.

The City and GLWA each agree (i) to attempt to resolve all disputes arising under the Lease promptly, equitably and in a good faith manner and (ii) to provide each other with reasonable access during normal business hours to any and all non-privileged written records, information and data pertaining to any such dispute.

If any dispute relating to the subject matter of the Lease is not resolved between the City and GLWA within 30 days (or such later date agreed to by the parties) from the date on which a party provides written notice to the other party of such dispute and of the notifying party's position on the disputed matter, then upon written notification by either party to the other party, such dispute shall be settled exclusively and finally by arbitration as described under "Arbitration" below. During the pendency of any dispute and until such dispute is resolved as provided below, the City and GLWA shall continue to operate under the terms of the Lease.

Arbitration.

Any dispute or claim arising under or relating to the Lease that cannot be resolved between the City and GLWA, including any matter relating to the interpretation or performance of the Lease, shall be submitted to arbitration irrespective of either the magnitude thereof or the amount in dispute.

Each arbitration between the City and GLWA shall be conducted pursuant to the Uniform Arbitration Act, Act No. 371, Public Acts of Michigan, 2012 and before a panel composed of three arbitrators (the "Arbitration Panel"). Each party shall appoint an arbitrator, obtain its appointee's acceptance of such appointment and deliver written notification of such appointment and acceptance to the other party within 15 days after delivery of a notice of arbitration. The two arbitrators appointed by the City and GLWA shall jointly appoint the third (who shall be the chairperson), obtain the acceptance of such appointment and deliver written notification of such appointment within 15 days after their appointment and acceptance.

Any arbitration commenced hereunder shall be completed within 120 days after the appointment of the Arbitration Panel absent agreement of the City and GLWA to the contrary. Further, absent agreement of the City and GLWA or, upon request of one of the parties, an order of the Arbitration Panel to the contrary: (i) all discovery shall be completed within 60 days after the appointment of the Arbitration Panel; (ii) each party shall be limited to a maximum of 5 depositions; (iii) each deposition shall be completed within a maximum period of two consecutive 8-hour days; (iv) each party shall be limited to 2 expert witnesses; and (v) interrogatories shall be limited to a maximum of 50 single issues without sub-parts. The City and GLWA waive any claim to any damages in the nature of punitive, exemplary or statutory damages in excess of compensatory damages or otherwise expressly provided for in the Lease, and the Arbitration Panel is specifically divested of any power to award such damages. The Arbitration Panel shall have the power to award injunctive or other equitable relief. All decisions of the Arbitration Panel shall be pursuant to a majority vote. Any interim or final award shall be rendered by written decision.

If either the City or GLWA fails to appoint its arbitrator within 15 days after delivery of a notice of arbitration, or if the two arbitrators appointed cannot agree upon the third arbitrator within 15 days after appointment of the second arbitrator, then the required arbitrator(s) shall be appointed by the American Arbitration Association or as otherwise agreed by the City and GLWA.

No arbitrator shall be a past or present employee or agent of, or consultant or counsel to, either the City or GLWA or any affiliate of either the City or GLWA.

GLWA and the City shall each bear the out-of-pocket costs and expenses of their respective arbitrator, attorneys and witnesses, and they shall each bear one-half of the out-of-pocket costs and expenses of the chairperson of the Arbitration Panel and all administrative support for the arbitration.

Appeals and Enforcement of Arbitration Awards and Decisions. The City or GLWA may appeal an award or decision issued by the Arbitration Panel may enforce any awards or decisions of the Arbitration Panel as provided in the Lease. The remedies described under "Dispute Resolution" shall be the sole and exclusive remedies of the City and GLWA with respect to any claim, dispute or Event of Default under the

Lease. The City and GLWA agree not to bring, or cause to be brought, in a court of law any action, proceeding or cause of action whatsoever with respect to any such claim, dispute or Event of Default, other than as necessary to enforce the award or decision of the Arbitration Panel as provided in the Lease.

Amendments to Lease

The Lease may be amended from time to time by agreement of the City and GLWA. Any such amendment shall not be effective unless the amendment is in writing and is executed by the Mayor of the City and the duly authorized officers of GLWA; provided, however, that the Lease shall not be subject to any amendment which would in any manner affect either the security for the Bonds or the prompt payment of the principal of and interest thereon.

APPENDIX VI SUMMARY OF THE BOND ORDINANCE

This summary does not purport to be comprehensive or definitive and is subject to all of the terms of the Bond Ordinance, to which reference is hereby made and copies of which are available on GLWA's website at www.glwater.org or from the Underwriters prior to the execution and delivery of the Series 2020 Bonds and thereafter may be examined or obtained at the expense of the person requesting the same at the corporate trust office of the Trustee. On June 27, 2018, certain sections of the Bond Ordinance were clarified under the 2018 MOU. For a summary of the 2018 MOU as it relates to the Bond Ordinance, see APPENDIX IX - SUMMARY OF 2018 MOU.

The Revenue Receipts Fund and the Receiving Fund

Under the Bond Ordinance, consistent with the sale, assignment and transfer of Revenues contained in the Lease, GLWA and the City, as agent of GLWA under the Water and Sewer Services Agreement, shall deposit or cause to be deposited all Revenues each receives from operation of the Regional Sewer System and the Local Sewer System in the GLWA Revenue Receipts Fund established under the Bond Ordinance. GLWA shall allocate moneys in the GLWA Revenue Receipts Fund between the Water System and the Sewer System and cause funds related to the Regional Sewer System and Local Sewer System to be deposited in the Receiving Fund. The City shall act as an agent of GLWA when collecting the Retail Revenues, and shall hold the Retail Revenues in trust for the exclusive benefit of GLWA until such funds are transferred to the Trustee and deposited in the GLWA Revenue Receipts Fund.

Flow of Funds

Under the Bond Ordinance, in accordance with the requirements of Act 94 and the Lease, GLWA has established certain funds and accounts for the Sewer System under the Bond Ordinance to be held in trust by the Trustee. The Bond Ordinance permits the establishment of additional funds for additional priorities of GLWA Bonds.

In accordance with the terms of Act 94 and the Bond Ordinance, all Revenues of the Sewer System shall be deposited with the Trustee and, with the exception of Revenues transferred to the GLWA Regional Operation and Maintenance Account or the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund as directed by GLWA as provided in the Bond Ordinance, held in trust pursuant to the terms of the Bond Ordinance. The Lease and the Bond Ordinance provide that, subject to the issuance of Bonds permitted by the Bond Ordinance to satisfy all or a portion of the Pension Obligation, pursuant to the provisions of paragraph 24 of the Bankruptcy Order, DWSD's contribution to the GRS pension plan set forth in the Plan of Adjustment shall be payable as follows: (i) the portion of that contribution equal to \$24 million annually, plus DWSD's share of the annual "defined contribution" payments related to its employees (as such term is used in the Bankruptcy Order), both to be allocated between the Water System and the Sewer System, will be paid by the Trustee as Operation and Maintenance Expenses under priority "First" below, and (ii) the difference between DWSD's annual GRS pension plan contribution provided for in the Plan of Adjustment and \$24 million will be paid by the Trustee out of the Pension Obligation Payment Fund under priority "Fifth" below.

As of the first day of each month (or, in the case of the transfer to the respective Reserve Account, following the annual July 1 valuation of investments in such Reserve Account, pursuant to the Bond Ordinance), amounts credited to the Receiving Fund, including any Lease Payment (which is to be applied to the Fund(s) and Account(s) designated by the City pursuant to the Lease) shall be transferred seriatim

into the following funds and accounts but only within the respective limitations and only if the maximum amount within such limitation has been credited to the preceding fund or account:

First: to the Authority Regional Operation and Maintenance Account and the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund, 1/12 of the then current Fiscal Year's Operation and Maintenance Expenses of the Regional Sewer System and the Local Sewer System, respectively, as determined by GLWA and certified to the Trustee by an Authorized Officer as sufficient to provide for the payment of the next month's expenses of administration and operation of the Regional Sewer System and the Local Sewer System, respectively, and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order;

Second: to the Senior Lien Bond Debt Service Account, an amount that, when added to all other amounts then on deposit therein, shall equal the Debt Service Installment Requirement for Bonds as of the first day of such month;

Third: following the annual July 1 valuation of investments in the Senior Lien Bond Reserve Account pursuant to the Bond Ordinance, to the Senior Lien Bond Reserve Account, an amount, if any, that when added to all other amounts then on deposit therein shall equal the Reserve Requirement for Senior Lien Bonds;

Fourth: to the Bond Interest and Redemption Fund established for each Priority of Lien of Junior Lien Bonds, beginning with the Second Lien Bonds and continuing in descending order of priority to, and including, each Priority of Lien of Junior Lien Bonds, as follows:

First: to the Debt Service Account established for such Priority of Lien, an amount that, when added to amounts then on deposit in such account, shall equal the Debt Service Installment Requirement for Junior Lien Bonds of such Priority of Lien as of the first day of such month; and

Second: following the annual July 1 valuation of investments in the Reserve Accounts pursuant to the Bond Ordinance, to the Reserve Account, if any, established for such Priority of Lien, an amount that, when added to amounts then on deposit in such account, shall equal the Reserve Requirement for such Priority of Lien of Junior Lien Bonds;

Fifth: except as provided in the Bond Ordinance with respect to the initial deposit to the Pension Obligation Payment Fund, to the extent Pension Junior Lien Bonds are not issued, to the Pension Obligation Payment Fund an amount that equals 1/12 of the Required Annual GRS Payment and 1/12 of the BC Note Obligation at the written direction of an Authorized Officer to the Trustee;

Sixth: except as provided in the Bond Ordinance with respect to the initial deposit to the Water Residential Assistance Program ("WRAP") Fund, to the WRAP Fund, 1/12 of the amount to be deposited therein for the current Fiscal Year as directed in writing by an Authorized Officer to the Trustee;

Seventh: except as otherwise provided in the Bond Ordinance with respect to the initial deposit to the Budget Stabilization Fund, for each of the Fiscal Years 2016, 2017 and 2018, to the

Budget Stabilization Fund, an amount equal to 1/12 of one-third of the amount necessary to assure that the Budget Stabilization Requirement will be on deposit in the Budget Stabilization Fund within three full Fiscal Years at the written direction of an Authorized Officer to the Trustee and for subsequent Fiscal Years thereafter 1/12 of an amount that when added to amounts then on deposit in the Budget Stabilization Fund shall equal the Budget Stabilization Requirement, at the written direction of an Authorized Officer to the Trustee;

Eighth: to the Extraordinary Repair and Replacement Reserve Fund, the amount of the Extraordinary Repair and Replacement Minimum Requirement to the extent that the balance thereof is less than the Extraordinary Repair and Replacement Maximum Requirement; and

Ninth: at the written direction of an Authorized Officer to the Trustee, to the Authority Improvement and Extension Account and the Detroit Local Improvement and Extension Account of the Improvement and Extension Fund, such amounts as GLWA may deem advisable for the Regional Sewer System and Local Sewer System; provided that no amount shall be deposited in either such account for so long as a withdrawal from the Extraordinary Repair and Replacement Reserve Fund remains unpaid.

In any month, funds on deposit in the Receiving Fund in excess of the requirements set forth above may, upon the direction of GLWA, be transferred to the Improvement and Extension Fund (provided that no amount shall be deposited to the Improvement and Extension Fund or credited thereto for so long as a withdrawal from the Extraordinary Repair and Replacement Reserve Fund remains unpaid).

Any amounts remaining in the Receiving Fund as of the last day of each Fiscal Year shall be applied against future years' Revenue deposit obligations under the Bond Ordinance, unless directed by GLWA within thirty (30) days of completion of the Fiscal Year's audited financial statements to be deposited in the Surplus Fund.

Priority of Funds and Accounts

Pursuant to the Bond Ordinance, if amounts in the Receiving Fund are insufficient to provide for current requirements of the Operation and Maintenance Fund and each Bond Interest and Redemption Fund (including the Reserve Account, if any, therein), then any amounts or securities held in the Surplus Fund, the Improvement and Extension Fund, the Extraordinary Repair and Replacement Reserve Fund, the WRAP Fund, the Budget Stabilization Fund and the Pension Obligation Payment Fund shall be credited or transferred from such Funds in the order listed, first, to the Operation and Maintenance Fund and, second, to the particular Bond Interest and Redemption Fund, to the extent of the insufficiency therein.

If any debt service on Bonds of the same Priority of Lien becomes due (whether on a stated or scheduled date, by reason of call for redemption or otherwise), and there are insufficient amounts for the payment thereof in the Bond Interest and Redemption Fund established for Bonds of such Priority of Lien after applying payments in any Reserve Account established for Bonds of such Priority of Lien, then there shall be applied by the Trustee to such payment amounts in each Bond Interest and Redemption Account established for Series of Bonds of each lower Priority of Lien, beginning with the lowest Priority of Lien and proceeding seriatim in ascending order of Priority of Lien, until such payments are made in full.

Operation and Maintenance Fund

The Operation and Maintenance Fund consists of two accounts, the Authority Regional Operation and Maintenance Account and the Detroit Local Operation and Maintenance Account, and within each account a Pension Obligation Subaccount. The Operation and Maintenance Fund shall not be part of the

Trust Estate held for the benefit of Holders, who shall have no interest in such Fund whatsoever. Any funds at any time on deposit in or credited to the Operation and Maintenance Fund are not and shall not be Pledged Assets.

Amounts in the Authority Regional Operation and Maintenance Account of the Operation and Maintenance Fund shall be used to pay the expenses of administration and operation of the Regional Sewer System and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order. The Authority shall have sole and exclusive authority to withdraw funds from the Authority Regional Operation and Maintenance Account of the Operation and Maintenance Fund to pay the expenses of administration and operation of the Regional Sewer System and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order as it, in its sole discretion, may at any time and from time to time deem necessary or appropriate. The Regional Sewer System's allocable share of the Pension Obligation that is required to be paid as an Operation and Maintenance Expense pursuant to the Bankruptcy Order shall be deposited and held in the Pension Obligation Subaccount until paid to GRS. No other Person, shall have the right or authority to use or withdraw funds from the Authority Regional Operation and Maintenance Account of the Operation and Maintenance Fund.

Amounts in the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund shall be used to pay the expenses of administration and operation of the Local Sewer System and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order. The City shall have sole and exclusive authority to withdraw funds from the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund to pay the expenses of administration and operation of the Local Sewer System and such current expenses for the maintenance thereof as may be necessary to preserve the same in good repair and working order as it, in its sole discretion, may at any time and from time to time deem necessary or appropriate. The Local Sewer System's allocable share of the Pension Obligation that is required to be paid as an Operation and Maintenance Expense pursuant to the Bankruptcy Order shall be deposited and held in the Pension Obligation Subaccount until paid to GRS. No other Person, shall have the right or authority to use or withdraw funds from the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund.

Certain Other Funds

The Extraordinary Repair and Replacement Reserve Fund

Under the Bond Ordinance, amounts in the Extraordinary Repair and Replacement Reserve Fund may be used by GLWA to pay costs of making major unanticipated repairs and replacements to the Regional Sewer System which individually have cost or are reasonably expected to cost in excess of \$1 million as determined by the GLWA Board. GLWA may withdraw funds from the Extraordinary Repair and Replacement Fund for such purposes at any time and from time to time upon written request to the Trustee therefor.

Amounts in the Extraordinary Repair and Replacement Reserve Fund may also be used by the City to pay costs of making major unanticipated repairs and replacements to the Local Sewer System which individually have cost or are reasonably expected by the GLWA Board to cost in excess of \$1 million as determined by the GLWA Board based on certifications provided by an authorized officer of the City. The City may withdraw funds from the Extraordinary Repair and Replacement Fund for such purposes at any time and from time to time upon written request to GLWA and the Trustee therefor.

The Pension Obligation Payment Fund

Under the Bond Ordinance, subject to the issuance of Pension Junior Lien Bonds to satisfy all or a portion of the Pension Obligation, at the written direction of an Authorized Officer to the Trustee, the Trustee shall pay from the Revenues of the Sewer System on deposit in the Pension Obligation Payment Fund, on the same ratable basis as the allocation of payroll costs between the Sewer System and the Sewer System, (i) to GRS the difference between the annual allocation of the Plan of Adjustment GRS pension contributions provided in the Plan of Adjustment and \$24 million in the aggregate, and (ii) the Sewer System's allocable share of the BC Note Obligation, as determined by GLWA.

Subject to the flow of funds as provided in the Bond Ordinance, at the written direction of an Authorized Officer to the Trustee, sufficient funds shall be allocated and disbursed by the Trustee, to the Pension Obligation Payment Fund on a monthly basis until such time as the Pension Obligation Payment Fund contains funds sufficient to pay (i) the difference between the Sewer System's allocable share of the annual allocation of the Pension Obligation contributions required to be paid to GRS as provided in the Plan of Adjustment, and the Sewer System's allocable share of \$24 million (the "Required Annual GRS Payment") and (ii) the Sewer System's allocable share of the BC Note Obligation as provided in the Plan of Adjustment, as determined by the Authority.

The WRAP Fund

Under the Bond Ordinance, the WRAP Fund shall be used to provide assistance to indigent residential customers throughout the Sewer System and the Sewer System as directed by an Authorized Officer to the Trustee.

The Budget Stabilization Fund

Under the Bond Ordinance, the Budget Stabilization Fund shall be maintained in the amount of the Budget Stabilization Requirement. Moneys in the Budget Stabilization Fund may be applied by GLWA in its discretion for any lawful purpose of the Sewer System in the event of shortfalls in the Retail Revenues attributable to unfavorable variances between actual bad debt expenses and budgeted bad debt expenses of Retail Sewer Customers as a class. At least quarterly, in connection with the preparation of the annual audit for the Local Water System and the Local Sewer System, the Chief Financial Officers of the Authority and the DWSD-R shall determine whether a draw on the Budget Stabilization Fund is necessary in accordance with the requirements and procedures set forth in the Water and Sewer Services Agreement. If so, an Authorized Officer may provide written direction to the Trustee to draw on the Budget Stabilization Fund an amount equal to the amount by which the actual bad debt expenses of the Retail Sewer Customers as a class exceeds the budgeted bad debt expenses of that class, and deposit such amount into the appropriate fund or account. Amounts on deposit in the Budget Stabilization Fund in excess of the Budget Stabilization Requirement for the following Fiscal Year based on audited financial statements shall be transferred to the Detroit Local Improvement and Extension Account of the Improvement and Extension Fund. The deposit of Retail Revenues in the Budget Stabilization Fund shall be subordinate to payment of Operation and Maintenance Expenses and the payment of principal of and interest on the Bonds.

The Improvement and Extension Fund

The Improvement and Extension Fund consists of two accounts, the Authority Regional Improvement and Extension Account and the Detroit Local Improvement and Extension Account. Under the Bond Ordinance, amounts in the Authority Improvement and Extension Account and the Detroit Local Improvement and Extension Account of the Improvement and Extension Fund shall be used for improvements, enlargements or extensions to the Regional Sewer System and the Local Sewer System,

respectively. The Authority may withdraw funds from the Authority Regional Improvement and Extension Account of the Improvement and Extension Fund for the purposes of paying the costs of improvements, enlargements or extensions to the Regional Sewer System at any time and from time to time upon written request to the Trustee therefor and may withdraw funds from the Extraordinary Repair and Replacement Reserve Fund for such purposes as provided in the second paragraph under “Extraordinary Repair and Replacement Reserve Fund” above. The City may withdraw funds from the Detroit Local Improvement Account of the Improvement and Extension Fund for the purpose of paying the costs of improvements, enlargements or extensions to the Local Sewer System at any time and from time to time upon written request to the Trustee therefor.

The Surplus Fund; Uses and Replenishments of Deficits in Other Funds

Under the Bond Ordinance, amounts from time to time on deposit in the Surplus Fund may, at the option of GLWA, be withdrawn upon written request to the Trustee and used for any purposes related to the Sewer System; provided, however, that, if and whenever there should be any deficit in the Operation and Maintenance Fund or in any Bond Interest and Redemption Fund (excluding any Reserve Account therein), then transfers shall be made by GLWA from the Surplus Fund to such funds in the priority and order described above under “Priority of Funds and Accounts” above to the extent of any such deficit.

Construction Fund

The Construction Fund consists of two accounts, the Authority Regional Construction Account and the Detroit Local Construction Account. The Construction Fund shall not be part of the Trust Estate held for the benefit of Holders, who shall have no interest in such Fund whatsoever. Any funds at any time on deposit in or credited to the Construction Fund are not and shall not be Pledged Assets.

Amounts in the Authority Regional Construction Account and the Detroit Local Construction Account of the Construction Fund shall be used to pay the cost of repairs, extensions, enlargements, and improvements to the Regional Sewer System and the Local Sewer System, respectively, and any Issuance Costs. A separate account shall be established at the direction of the Authority within the Construction Fund, entitled “Issuance Costs Account,” from which the Custodian shall pay the Issuance Costs related to Outstanding Bonds and any Additional Bonds issued subject to the Bond Ordinance. The Authority and the City each shall have sole and exclusive authority to withdraw funds from the Authority Regional Construction Account and the Detroit Local Construction Account, respectively, for such purposes as they, in their sole discretion, may at any time and from time to time deem necessary or appropriate. No other Person shall have the right or authority to use or withdraw funds from the Construction Fund.

Any unexpended balance remaining in an account of the Construction Fund may in the discretion of the Authority be used for meeting any Reserve Requirement or for further improvements, enlargements and extensions to the Regional Sewer System or the Local Sewer System, as the case may be, if, at the time of such expenditure, such use based upon an opinion of Bond Counsel, is permitted by the Bond Ordinance and, in the case of Tax-Exempt Bonds, will not adversely affect the exclusion from gross income for federal income tax purposes of the Series of Bonds, the proceeds of which were deposited in such account. Any remaining balance after such expenditure shall be paid into the Bond Interest and Redemption Fund established for the Series of Bonds of the Priority of Lien giving rise to such balance for the purpose of purchasing Bonds of such Priority of Lien or used for the purpose of calling such Bonds for redemption. The Authority may provide additional or different lawful uses for such unexpended balance or remaining balance by Series Ordinance which shall, nonetheless, be subject to the Authority’s relevant tax covenants.

Rebate Fund

The Rebate Fund shall be maintained by the Trustee as a separate depository account. The Rebate Fund is not pledged as security for any Bonds and is established for the sole purpose of paying to the United States the amounts required to be rebated pursuant to Section 103(c)(6) of the Code. Rebate calculations shall be obtained by the Trustee at the written direction of the Authority. Transfers to the Rebate Fund from the Operation and Maintenance Fund may be directed by the Authority to the Trustee in writing. The Authorized Officer shall direct the Trustee to transfer to the Rebate Fund, an amount sufficient to make the amount on deposit in the Rebate Fund equal to 100% of the amount certified by the Authority as the amount required to be rebated to the United States pursuant to Section 103(c)(6) of the Code as of the close of the bond year (as defined in the Code) for the related Series of Bonds. Such amount shall be certified by an Authorized Officer to the Trustee. The Trustee shall make payments to the United States from the Rebate Fund at the written direction of an Authorized Officer to the Trustee, no less frequently than every five years, or as otherwise provided in Section 103(c)(6) of the Code, or in a non-arbitrage and tax compliance certificate related to a Series of Tax-Exempt Bonds, together with all investment earnings thereon as the Authorized Officer shall direct. The Trustee shall retain records of determination of the amounts deposited in the Rebate Fund, the proceeds of any investments of moneys in the Rebate Fund and the amounts paid to the United States, until the date six years after the payment in full of the related Series Bonds. If the Rebate Fund is overfunded, as determined at the market value of any investments therein, at the written direction of an Authorized Officer to the Trustee, the Trustee shall withdraw the excess and return such excess to the Receiving Fund.

Rate Covenant

The Bond Ordinance contains a covenant to fix, charge and collect, or cause to be fixed, charged and collected, rates, fees and charges for the use and operation of the Sewer System. Such rates, fees and charges shall be fixed and revised from time to time as may be expected to be necessary to produce the greater of:

1. The amounts required:
 - a. To provide for the payment of Operation and Maintenance Expenses of the Sewer System; and
 - b. To provide for the payment of all Debt Service Installment Requirements coming due during the Fiscal Year of calculation; and
 - c. To provide for the creation and maintenance of reserves therefor as required by the Bond Ordinance; and
 - d. To provide for the payment of the Lease Payment; and
 - e. To provide for the deposit to the WRAP Fund; and
 - f. To repay any withdrawals from the Extraordinary Repair and Replacement Fund; and
 - g. To provide for such other expenditures and funds for the Sewer System as the Bond Ordinance may require; and

2. Amounts so that the Rate Covenant Debt Service Coverage shall not be less than the Required Coverage; and

3. Amounts required by Act 94.

The coverage requirements for determining the Required Coverage under the Bond Ordinance are the following percentages:

Priority of Lien of Bonds:	Percentage:
Senior Lien Bonds	120%
Second Lien Bonds	110%
SRF Junior Lien Bonds and Pension Junior Lien Bonds	100%

Additional Bonds

Under the Bond Ordinance, GLWA may not incur any obligations payable from Pledged Assets except Bonds, and no obligations of GLWA may be secured by a lien on Pledged Assets except as provided in the Bond Ordinance.

Coverage Requirements

Under the Bond Ordinance, prior to or concurrently with the issuance of Additional Bonds of any Priority of Lien, GLWA shall calculate a number equal to Projected Net Revenues in the then current or the next succeeding Fiscal Year, or Historical Net Revenues, all as determined by GLWA, divided by Maximum Annual Debt Service for such Priority of Lien and any higher Priority of Lien (the “Additional Bonds Debt Service Coverage”). GLWA may elect to determine Additional Bonds Debt Service Coverage on the basis of Projected Net Revenues or Historical Net Revenues. In determining Projected Net Revenues, GLWA shall engage the services of and be guided by a professionally qualified person, firm or corporation nationally recognized in the municipal sewage disposal industry and of favorable reputation for skill and experience in performing the duties of providing consulting services to municipal sewer systems comparable in size and function to the Sewer System, including setting of rates and charges for the use of such systems (a “System Consultant”). In determining Historical Net Revenues, GLWA may engage the services of and be guided by a System Consultant if it is relying on audited financial statements without augmenting Net Revenues on the basis of changes in rates, fees or charges or repairs, extensions, enlargements, improvements, acquisitions, extensions or connections to the Sewer System. In determining Historical Net Revenues, GLWA shall engage the services of and be guided by a System Consultant if it is augmenting Net Revenues on such a basis.

General Authority

Under the Bond Ordinance, GLWA may issue Additional Bonds of any Priority of Lien for repairs, extensions, enlargements, and improvements to the Regional Sewer System or the Local Sewer System (including repaying amounts withdrawn from the Extraordinary Repair and Replacement Reserve Fund for the Regional Sewer System or the Local Sewer System), and/or refunding all or a part of any outstanding Bonds and paying the costs of issuing such Additional Bonds, including deposits, if any, to be made to any Reserve Account established or to be established for such Additional Bonds or any other Bonds, if, but only if GLWA shall certify that the Additional Bonds Debt Service Coverage for each Priority of Lien (regardless of the Priority of Lien of the Additional Bonds) is not less than the Required Coverage. The determination in a Series Ordinance that the Additional Bonds Debt Service Coverage for each Priority of Lien is not less than the Required Coverage shall be conclusive.

Alternate Test for Refundings

Under the Bond Ordinance, GLWA may issue Additional Bonds of any Priority of Lien, including a portion of a Series of Additional Bonds, without regard to the above requirements for refunding all or part of Bonds then Outstanding and paying costs of issuing such Additional Bonds, including deposits which may be made to any Reserve Account established or to be established for such Additional Bonds or any other Bonds if, but only if: the aggregate Debt Service Installment Requirements required to be set aside in the Bond Fund in the current Fiscal Year and each Fiscal Year thereafter until maturity on (A) the Additional Bonds and (B) giving effect to the refunding, all outstanding unrefunded Bonds of equal and higher Priority of Lien, is less than the aggregate Debt Service Installment Requirements required to be set aside in the Bond Fund in the current Fiscal Year and each Fiscal Year thereafter until maturity on all equal and higher Priority of Lien Bonds, without giving effect to the refunding.

Events of Default and Remedies

Events of Default. Each of the following events is an “Event of Default” under the Bond Ordinance:

- (a) the Authority shall default in the payment of the principal or Redemption Price of any Bond or Bonds when and as the same shall become due, whether at maturity or upon redemption or otherwise; or
- (b) payment of any installment of interest on any Bond or Bonds shall not be made, when and as the same shall become due.

No default in the payment of the principal of, interest on or Redemption Price of any Junior Lien Bond shall be considered a default for any Senior Lien Bond.

Remedies. Upon the happening and continuance of any Event of Default specified above, the Trustee may, or upon the request of the Holders of not less than 20% in principal amount of the Outstanding Bonds shall proceed, in its own name, to protect and enforce its rights and the rights of the Bondholders, by suit, action, or other proceedings, and to protect and enforce the statutory lien on the Net Revenues and enforce and compel the performance of all duties of the officials of the Authority. The Trustee shall on behalf of the Bondholders be entitled as a matter of right, upon application to a court of competent jurisdiction, to have appointed a receiver of the Authority for the business and property of the Sewer System, or any part thereof, including all Revenues, issues, income, receipts and profits derived, received or had by the Authority thereof or therefrom, with such power as the Authority may have to operate and maintain such business and property, collect, receive and apply all Revenues, income, receipts and profits arising therefrom, and prescribe fees and other charges in the same way and manner as the Authority might do. The Trustee is entitled to indemnification against fees, costs, expenses and liabilities for its enforcing any of the remedies permitted by the Bond Ordinance on the terms provided therein in connection with its exercise of any of the foregoing remedies.

Limitation on Rights of Bondholders

No individual Bondholders may initiate legal proceedings to enforce rights under the Bond Ordinance unless such Holder shall have given to the Trustee written notice of the Event of Default or breach of duty on account of which such proceeding is to be taken, and unless the Holders of not less than 20% in principal amount of all Bonds then Outstanding have made written request of the Trustee after the right to exercise such right of action has occurred, and have afforded the Trustee a reasonable opportunity either to exercise the powers granted to it under the Bond Ordinance or to institute such proceedings in its name and unless, also, there has been offered to the Trustee reasonable security and indemnity against fees,

costs, expenses and liabilities, and the Trustee has refused or neglected to comply with such request within a reasonable time.

Application of Revenues and Other Moneys After Default

After an Event of Default, the Trustee shall have a first lien on the Pledged Assets with right of payment for all reasonable fees, charges, costs and expenses made in the performance of the duties of the Trustee and for the cost and expense included in defending any liability, unless such liability is adjudicated to have resulted from the gross negligence or willful misconduct of the Trustee (collectively the “Trustee’s Default Fees and Costs”). During the continuance of an Event of Default, the Trustee, except as otherwise provided in the provisions of the Bond Ordinance relating to remedies, shall apply moneys, securities, funds and Revenues and the investment income thereon in the Funds and Accounts as follows and in the following order:

(i) to the payment of the Trustee’s Default Fees and Costs and the reasonable fees, charges, costs, expenses and liabilities of the System Consultant selected by the Authority pursuant to the Bond Ordinance;

(ii) to the payment of the amounts required for reasonable and necessary Operation and Maintenance Expenses; and for the reasonable renewals, repairs and replacements of the Leased Sewer Facilities necessary to prevent loss of Revenues, as certified to the Trustee by the System Consultant. For this purpose the books of records and accounts of the Authority relating to the Regional Sewer System shall at all times be subject to the inspection of the System Consultant during the continuance of such Event of Default; and

(iii) to the payment of the interest and principal or Redemption Price then due on the Senior Lien Bonds or Junior Lien Bonds, as follows:

First: To the payment to the persons entitled thereto of all installments of interest on Senior Lien Bonds (including payments in the nature of interest payable to Swap Providers), then due in order of the maturity of such installments, and, if the amount available shall not be sufficient to pay in full any installment, then to the payment thereof ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference; and

Second: To the payment to the persons entitled thereto of the unpaid principal or Redemption Price of any Senior Lien Bonds which shall have become due, whether at maturity or by call for redemption, in the order of their due dates and, if the amounts available shall not be sufficient to pay in full all the Bonds due on any date, then to the payment thereof ratably, according to the amounts of principal or Redemption Price due on such date, to the persons entitled thereto, without any discrimination or preference.

Third: To the payment to the persons entitled thereto of all installments of interest on Junior Lien Bonds, including payments in the nature of interest payable to a Swap Provider under a Swap Agreement, then due in order of Priority of Lien and order of maturity of such installments, and, if the amount available shall not be sufficient to pay in full any installment, then to the payment thereof ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference; and

Fourth: To the payment to the persons entitled thereto of the unpaid principal or Redemption Price of any Junior Lien Bonds which shall have become due, whether at maturity or by call for redemption, in the order of Priority of Lien and order of their due dates and, if the amounts available shall not be sufficient to pay in full all the Junior Lien Bonds due on any date, then to the payment thereof ratably, according to the amounts of principal or Redemption Price due on such date, to the persons entitled thereto, without any discrimination or preference.

Fifth: To the payment to any Swap Provider of any termination payment due and payable under a Swap Agreement, and if the amounts available shall not be sufficient to pay in full all termination payments due under the Swap Agreements then to the payment thereof ratably according to the amounts of termination payments due on such date to the persons entitled thereto without any discrimination or preference.

If and whenever all overdue installments of interest on all Senior Lien Bonds and Junior Lien Bonds, together with the reasonable fees, charges, costs, expenses and liabilities of the Trustee and the System Consultant, and all other sums payable by the Authority to the Trustee under the Bond Ordinance, including the principal and Redemption Price of and accrued unpaid interest on the Senior Lien Bonds and Junior Lien Bonds which shall then be payable, shall either be paid by or for the account of the Authority, or provision satisfactory to the Trustee shall be made for such payment, and all defaults under the Bond Ordinance shall be made good or secured to the satisfaction of the Trustee or provision deemed by the Trustee to be adequate shall be made therefor, the Trustee shall pay over to the Authority all moneys, securities, funds and Revenues then remaining unexpended in the hands of the Trustee (except moneys, securities, funds or Revenues deposited or pledged, or required by the terms of the Bond Ordinance to be deposited or pledged, with the Trustee), and thereupon the Authority and the Trustee shall be restored, respectively to their former positions and rights under the Bond Ordinance, and all Revenues shall thereafter be applied as provided in the provisions of the Bond Ordinance governing the establishment and use of Funds and Accounts. No such payment over to the Authority by the Trustee or resumption of the application of Revenues as so provided shall extend to or affect any subsequent default under the Bond Ordinance or impair any right consequent thereon.

Bondholder's Direction of Proceedings

Anything in the Bond Ordinance to the contrary notwithstanding, following and during the continuation of an Event of Default only, subject to the last sentence of this paragraph, the Holders of not less than 20% in principal amount of the Bonds then Outstanding shall have the right, by an instrument or concurrent instruments in writing executed and delivered to the Trustee, to direct the method of conducting all remedial proceedings to be taken by the Trustee hereunder subject to the right of the Trustee to indemnification for fees, charges, costs, expenses and liabilities prior to exercising any remedy, and provided that such direction shall not be otherwise than in accordance with law or the provisions of the Bond Ordinance, and that the Trustee shall have the right to decline to follow any such direction which in the opinion of the Trustee would be unjustly prejudicial to Holders of Bonds not parties to such direction. If conflicting or inconsistent directions are received from more than one group of such Holders, each satisfying such 20% criterion, the Trustee shall be entitled to rely upon the direction given by the Holders with the largest percentage in aggregate principal amount of Bonds then Outstanding.

Responsibilities of Trustee

Prior to an Event of Default, the Trustee shall have the obligation to perform such express duties and only such express duties as are provided for in the Bond Ordinance, including any Series Ordinance or

Supplemental Ordinance, and no implied covenants or obligations shall be read into the Bond Ordinance against the Trustee.

The permissive right of the Trustee to do things enumerated in the Bond Ordinance shall not be construed as a duty, and the Trustee, except for its gross negligence or willful misconduct, shall not be liable for (i) any loss or damage whatsoever arising out of any action or failure to act in connection with its obligations under the Bond Ordinance or for (ii) the exercise of any discretion or power hereunder, or mistake of judgment, or otherwise. The Trustee shall be under no obligation to institute any suit, or to undertake any proceeding under the Bond Ordinance, or to enter any appearance or in any way defend in any suit in which it may be made defendant, or to take any steps in the execution of the trusts created under the Bond Ordinance or in the enforcement of any rights and powers hereunder, until it shall be indemnified, to the extent permitted by applicable law, to its satisfaction against any and all reasonable costs and expenses, outlays and counsel fees and other anticipated disbursements, and against all liability except to the extent determined by a court of competent jurisdiction to have been caused solely by its own gross negligence or willful misconduct. Nevertheless, the Trustee may begin suit, or appear in and defend suit or do anything else in its judgment proper to be done by it as the Trustee, without indemnity, and in such case the Trustee shall, to the extent not reimbursed by the Authority, reimburse itself from the monies available in the Surplus Fund under the Bond Ordinance for all costs and expenses, outlays and counsel fees and expenses and other reasonable disbursements properly incurred in connection therewith.

The Trustee shall be under no obligation or duty to perform any act under the Bond Ordinance or defend any suit unless indemnified (other than by the Authority) to its reasonable satisfaction for the reimbursement of all fees, costs and expenses to which it may be put and to protect it against all liability, except liability that is adjudicated to have resulted from its own gross negligence or willful misconduct in connection with any action so taken.

Upon the occurrence of an Event of Default and during the continuance of an Event of Default (which has not been cured or waived) the Trustee shall exercise such of the rights and powers vested in it by the Bond Ordinance and shall use the same degree of care and skill in the exercise or use as an ordinarily prudent trustee under a corporate indenture would exercise or use under the circumstances in the conduct of its own affairs.

Resignation and Removal of Trustee

The Trustee may resign by giving written notice to the Authority and mailing notice thereof by first class mail to each registered Bondholder as shown by the registration books held by the Trustee, and such resignation shall take effect upon the day that a successor shall have been appointed as provided under “Appointment of and Transfer to Successor Trustee” below.

The Trustee shall be removed by the Authority at any time on 30 days’ prior written notice if so requested by an instrument or concurrent instruments in writing, filed with the Trustee and the Authority, and signed by the Holders of not less than 51% of the principal amount of the Outstanding Bonds or their attorneys-in-fact duly authorized, excluding any Bonds held by or for the account of the Authority. The Authority may remove the Trustee at any time, except during the existence of any Event of Default, in the sole discretion of the Authority, by filing with the Trustee an instrument to such effect signed by the Treasurer of the Authority. Any such removal of the Trustee shall take effect upon the day that a successor shall have been appointed as provided under “Appointment of and Transfer to Successor Trustee” below.

Appointment of and Transfer to Successor Trustee

If the Trustee shall resign or shall be removed or shall become incapable of acting, or shall be adjudged a bankrupt or insolvent, or if a receiver, liquidator or conservator of the Trustee, or of its property, shall be appointed, or if any public officer shall take charge or control of the Trustee, or of its property or affairs, the Authority covenants and agrees that the GLWA Board will thereupon appoint a successor Trustee which shall be a bank or trust company authorized to do business in the State having a capital and surplus aggregating at least \$50,000,000 and which shall accept and agree to perform the trusts imposed upon it by the Bond Ordinance by depositing with the Authority and the predecessor Trustee a written instrument of acceptance. If no successor Trustee is appointed by the GLWA Board within 60 days after the Trustee's giving of written notice of resignation to the Authority or the Authority's giving of written notice of removal, any Bondholder or the resigning party may apply to any court of competent jurisdiction to appoint a successor Trustee. Such court may, after such notice appoint a successor Trustee in accordance with the requirements of the preceding sentence. The GLWA Board (or the appointing court) shall mail notice of any such appointment made by it by first class mail to each registered Bondholder within 20 days after such appointment.

The Trustee ceasing to act shall, upon receiving payment of all of its uncontested fees, costs and expenses, execute, acknowledge and deliver such instruments of conveyance and further assurance and do such other things as may reasonably be required for more fully and certainly vesting and confirming in such successor Trustee all the right, title and interest of the predecessor Trustee in and to any property held by it under the Bond Ordinance and shall pay over, assign and deliver to the successor Trustee any money or other property subject to the trusts and conditions herein set forth.

Discharge of Lien

Discharge of Lien of Pledged Assets

Upon the defeasance (as described below) of a Series of Senior Lien Bonds or Junior Lien Bonds, and payment of the Trustee's fees, costs and expenses related thereto, the lien of the Bond Ordinance upon the Pledged Assets with respect to such Series of Senior Lien Bonds or Junior Lien Bonds shall cease, terminate and be void.

Upon the defeasance of all Outstanding Bonds, the lien of the Bond Ordinance upon the Pledged Assets shall cease, terminate and be void and thereupon the Trustee, upon determining that all conditions precedent to the satisfaction and discharge of the Bond Ordinance have been complied with, and upon payment of the Trustee's fees, costs and expenses hereunder, shall (i) cancel and discharge the Ordinance and the lien on Pledged Assets, (ii) execute and deliver to the Authority such instruments in writing as shall be required to cancel and discharge the Bond Ordinance and the lien on Pledged Assets, (iii) re-convey to the Authority the Pledged Assets, and (iv) assign and deliver to the Authority so much of the Pledged Assets as may be in its possession or subject to its control, except, in the event of a defeasance of a Series of Bonds, moneys and Government Obligations held in the related Bond Interest and Redemption Funds, Debt Service Accounts, and Reserve Accounts for the purpose of paying such Series of Bonds; provided, however, such cancellation and discharge of the Bond Ordinance shall not terminate the powers and rights granted to the Trustee with respect to the payment, transfer and exchange of Bonds; and, provided, further, that the rights of the Trustee to indemnity and payment of all reasonable fees and expenses shall survive.

Defeasance of Bonds

Bonds are "defeased" and a "defeasance" has occurred for purposes of the Bond Ordinance if:

(1) there has been deposited in trust sufficient cash and Sufficient Government Obligations, not callable by the issuer, the principal of and interest on which mature at the time and in the amounts, without the reinvestment thereof, necessary to pay principal of and interest on such Bonds to its maturity, or, if called for redemption, to the date fixed for redemption, together with the amount of the redemption premium, if any, provided, however, that the sufficiency of the deposit to effectuate the defeasance of a Bond shall have been verified by a nationally recognized accounting firm or verification agent; and

(2) if such Bonds are to be redeemed prior to maturity, irrevocable instruments have been given to the Trustee, acting as a transfer agent, to call such Bonds for redemption.

A Series Ordinance may be delivered to the Trustee with respect to a Series of Bonds which may:

(1) provide different means of defeasing such Series of Bonds, and such means may be in addition to or in lieu of the means set forth above;

(2) provide for Permitted Investments for the defeasance of such Bonds, but no such Permitted Investments may thereafter be changed except as provided herein; and

(3) provide for the consequences of such Bonds being defeased.

Except as otherwise provided in a Series Ordinance:

(1) cash or Government Obligations for the defeasance of such Bonds are the Permitted Investments therefor; and

(2) the statutory lien herein granted pursuant to Act 94 shall be terminated with respect to defeased Bonds, the Holders of such defeased Bonds shall have no further rights under the Bond Ordinance except for payment from the deposited funds and registration and replacement of such Bonds, and such Bonds shall no longer be considered to be Outstanding under the Bond Ordinance.

Amendments without Consent

The Authority may, without the consent of the Bondholders, but with the prior written consent of the Trustee in case the Series Ordinance or Supplemental Ordinance changes any of the Trustee's duties under the Bond Ordinance, and where required by a Credit Facility, the consent of the related Credit Entity, adopt at any time or from time to time Series Ordinances or Supplemental Ordinances for any one or more of following purposes, and any Series Ordinance or Supplemental Ordinance shall become effective in accordance with its terms upon the filing with the Trustee of a copy thereof certified by the Authorized Officer:

(1) To provide for the issuance of a Series of Bonds and to prescribe the terms and conditions pursuant to which such Bonds may be issued, paid or redeemed;

(2) To add additional covenants and agreements of the Authority for the purpose of further securing the payment of the Bonds, provided such additional covenants and agreements are not contrary to or inconsistent with the covenants and agreements of the Authority contained in the Bond Ordinance;

(3) To prescribe further limitations and restrictions upon the issuance of Bonds and the incurring of indebtedness by the Authority which are not contrary to or inconsistent with the limitations and restrictions thereon theretofore in effect;

(4) To surrender any right, power or privilege reserved to or conferred upon the Authority by terms of the Bond Ordinance;

(5) To confirm as further assurance any security created under and subject to any lien or claim created or to be created by the provisions of the Bond Ordinance;

(6) To modify the provisions of the Bond Ordinance or any previously adopted Series Ordinance to permit compliance with changes in federal tax law which is required to maintain the tax exempt status of the Tax-Exempt Bonds;

(7) With the consent of the Trustee in reliance upon an opinion of Bond Counsel, to cure any ambiguity or defect or inconsistent provision in the Bond Ordinance or to insert such provisions clarifying matters or questions arising under the Bond Ordinance as are necessary or desirable in the event any such modifications are not contrary to or inconsistent with the Bond Ordinance as theretofore in effect;

(8) To comply with the Trust Indenture Act of 1939; or

(9) To amend or supplement the Bond Ordinance in any respect with regard to Bonds of one or more Priorities of Lien so long as such amendment does not materially adversely affect the Holders of Outstanding Bonds.

No Holders of Bonds of a Priority of Lien shall be “materially adversely affected” for the purposes of the Bond Ordinance by the change of any coverage percentage established for Bonds of any other Priority of Lien, and no amendment of or supplement to this Ordinance that provides for or facilitates the issuance of Bonds of any Priority of Lien shall “materially adversely affect” the Holders of Bonds of any other Priority of Lien for the purposes of this Ordinance so long as such amendment does not change any coverage percentage established for such Priority of Lien or is not an amendment that requires the consent of the Holders of such Bonds as described under “Amendments with Consent” below.

Notice of the adoption and delivery of any Supplemental Ordinance or resolution and a copy thereof shall be filed by the Trustee with the Rating Agency at the time of such adoption and delivery.

Amendments with Consent

Exclusive of Supplemental Ordinances under “Amendments without Consent” above, the Holders of at least 51% of the principal amount of Outstanding Bonds affected by the proposed Supplemental Ordinance and when required by of a Credit Facility, the related Credit Entity, shall have the right to consent to and approve the adoption by the Authority of other Supplemental Ordinances; provided, however, that nothing contained in this Article shall permit or be construed as permitting the following actions without the following consents: (i) an extension of the maturity of the principal of, or mandatory redemption date of, or the interest on any Bond, except upon the consent of the Holders of 100% of the principal amount of Bonds being affected thereby, (ii) a reduction in the principal amount of, or the premium or rate of interest on any Bond, except upon the consent of the Holders of 100% of the principal amount of all Bonds being affected thereby, (iii) modification of the privilege or priority of any Senior Lien Bond or Bonds over any other Senior Lien Bonds, except upon the written consent of the Holders of 100% of the principal amount of the Senior Lien Bonds Outstanding or (iv) modification of the privilege or priority of any Junior Lien

Bond or Junior Lien Bonds of a Priority of Lien over any other Junior Lien Bonds of a different Priority of Lien, except upon the written consent of the Holders of 100% of the principal amount of Junior Lien Bonds Outstanding. For the purposes of obtaining the foregoing consents, a Credit Entity shall be deemed to be the Holder of Senior Lien Bonds or Junior Lien Bonds pledged by the Authority to the Credit Entity or owned by the Credit Entity or Senior Lien Bonds or Junior Lien Bonds secured by a Credit Facility except to the extent the Credit Entity has not honored a draw on its Credit Facility which draw complies with the requirements of the Credit Facility.

The Trustee shall give written notice of the proposed adoption of a Supplemental Ordinance by mail to the registered addresses of Holders of the Outstanding Bonds and to the Credit Entity. Such notice shall briefly set forth the nature of the proposed Supplemental Ordinance and shall state that copies thereof are on file at the designated trust office of the Trustee for inspection by Holders of Bonds. If, within 60 days or such longer period as shall be prescribed by the Trustee at the written direction of an Authorized Officer following the mailing of such notice, the Holders of not less than the required percent of the principal amount of the Senior Lien Bonds and Junior Lien Bonds Outstanding by instruments filed with the Trustee shall have consented to the adoption thereof and any other prerequisites such as the approval of any Credit Entity having such right, such Supplemental Ordinance may be adopted and the Bond Ordinance shall be deemed to be modified and amended in accordance therewith.

Anything in the Bond Ordinance to the contrary notwithstanding, a Supplemental Ordinance which affects the rights, duties and obligations of the Trustee shall not become effective unless and until the Trustee shall have consented in writing in the case of the Trustee, to the adoption of such Supplemental Ordinance and unless the Authority has first obtained the approval of the State Department of Treasury if such approval is required.

Proposed Amendments to Bond Ordinance; Effective Date

The 2020 Series Ordinance contains certain proposed amendments to the Bond Ordinance that, following approval by Bondholders as described below under “Effective Date of Amendments,” amend the definition of “Reserve Requirement” and provide GLWA with the ability to reduce or eliminate the amounts required to be on deposit in the Senior Lien Bond Reserve Account and the Second Lien Bond Reserve Account, respectively.

Proposed Amendments

The following sentence is proposed to be added at the end of the definition of “Reserve Requirement” in the Bond Ordinance:

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

The following new subsection (e) is proposed to be added to Section 506 of the Bond Ordinance:

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

The following new subsection (f) is proposed to be added to Section 506 of the Bond Ordinance:

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

Effective Date of Amendments

Pursuant to the Bond Ordinance, the amendments set forth above shall become effective only upon, (1) in the case of Senior Lien Bonds secured by the Senior Lien Bond Reserve Account, the consent or deemed consent (by purchasing such Senior Lien Bonds where the offering document with respect to such Bonds contains a description of the amendments in the first two paragraphs under “Proposed Amendments” above) of the Holders of at least 51% of such Outstanding Senior Lien Bonds, and (2) in the case of Second Lien Bonds secured by the Second Lien Bond Reserve Account, the consent or deemed consent (by purchasing such Second Lien Bonds where the offering document with respect to such Bonds contains a description of the amendments in the first and third paragraphs under “Proposed Amendments” above) of the Holders of at least 51% of such Outstanding Second Lien Bonds,.

BY PURCHASING SERIES 2020 BONDS, EACH PURCHASER IS CONSENTING TO THE AMENDMENTS AS DESCRIBED ABOVE.

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APPENDIX VII SUMMARY OF THE WATER AND SEWER SERVICES AGREEMENT

This summary does not purport to be comprehensive or definitive and is subject to all of the terms of the Water and Sewer Services Agreement, to which reference is hereby made and copies of which are available on GLWA's website at www.glwater.org or from the Underwriters prior to the execution and delivery of the Series 2020 Bonds and thereafter may be examined or obtained at the expense of the person requesting the same at the corporate trust office of the Trustee.

General

The City and the Authority (the "Parties") entered into the Water and Sewer Services Agreement on June 12, 2015. Pursuant to the Water and Sewer Services Agreement, the Authority will provide water to the Detroit Local Water Facilities ("Water Services") and will collect, carry, separate, treat and dispose of both sewage and water runoff from the Detroit Local Sewer Facilities to the Regional Sewer System ("Sewer Services"), all as more fully provided therein. Additionally, the Water and Sewer Services Agreement establishes and defines the scope of the agency relationship between the City and the Authority with respect to the development of rates and the billing, collection and enforcement of charges for the provision of Water Services and Sewer Services to Retail Customers, as described below. On June 27, 2018, certain sections of the Water and Sewer Services Agreement were clarified under the 2018 MOU. For a summary of the 2018 MOU as it relates to the Water and Sewer Services Agreement, see APPENDIX IX - SUMMARY OF 2018 MOU.

Definitions

In addition to terms defined elsewhere in this Official Statement, the following terms shall have the following meanings:

"Authority Bonds" means bonds or other evidences of indebtedness assumed by the Authority under the Leases and related Master Bond Ordinance or issued by the Authority under the related Bond Ordinance pursuant to Act 94 and secured by a pledge of and statutory lien upon the Net Revenues (as that term is defined in the related Master Bond Ordinance) of the related System.

"Detroit Local Systems" means, collectively, the Local Water System and the Local Sewer System.

"Green Infrastructure" means an array of products, technologies and practices that use natural systems or engineering systems that mimic natural process by using soils and vegetation to remove storm water from the Sewer System as components of a storm water management system, which systems may include by are not limited to green roofs, porous pavement, rain gardens and vegetated swales.

"Green Infrastructure Program" means implementation of Green Infrastructure to remove storm water from the Sewer System and expenditure of the average annual requirement as required by the Wastewater Treatment NPDES Permit.

"Master Bond Ordinance" means, individually or collectively, as the context requires, the ordinance adopted by the Authority prior to the Effective Date for each System, setting forth the terms and provisions under which Authority Bonds may be assumed or issued.

Water Services

The Authority shall provide Water Services in amounts sufficient to meet the requirements of the Water and Sewer Services Agreement and in compliance with the technical and other requirements as provided in the Water and Sewer Services Agreement. The City agrees to remit payment for all Water Services provided by the Authority at such rates as the Authority may establish, but only from amounts billed to and collected from Retail Customers. The City shall act as agent for the Authority as described below with respect to the development of rates, and billing and collecting and enforcing the collection of fees and charges from Retail Customers for Water Services. The City shall establish rates consistent with Applicable Laws that are reasonably projected to meet the revenue requirement the Authority establishes for Retail Customers as well as other costs of the Local Water System; provided that:

- (i) rates established by the Authority shall be reasonable in relation to the costs incurred by the Authority for the supply of water;
- (ii) the Authority shall not establish a revenue requirement for Retail Customers for the 2015-2016 Fiscal Year in an amount exceeding the revenue requirement established by DWSD for that period; and
- (iii) each year, the Authority shall reflect in the revenue requirement a credit for the Retail Customers located in the City in the amount of \$20,700,000 against the portion of the Authority's revenue requirements allocated to the City, representing the return on equity to the City for the Water System in recognition of the City's ownership of the Water System and support of the rate structure for the Water System.

Measurement of City Usage. Annual volume and demands (used interchangeably as Units of Service) of the Local Water System on the Regional Water System will be estimated based on a combination of retail automated meter sales data and estimated sales data for non-automated meter customers, other Prudent Utility Practices measurement techniques, as well as all sources of non-revenue water. To the extent that all or a portion of water sales to the Local Water System becomes measured by master meters, the general approach may be modified.

Authority Usage. Until such time as the Leased Facilities are completely master metered, the Parties shall use the best available data and Prudent Utility Practices to develop Leased Facility annual volumes and maximum flow rates. Water usage by the Authority in the Leased Facilities connected to and receiving water service from the Local Water System shall be accounted for by applying applicable Prudent Utility Practices, including metering where feasible, and where not metered subject to the quarterly review and concurrence by the City and the Authority. Such usage may be excluded from any calculations used to determine the annual purchase volumes, maximum day demands or peak hour demands for Water Services to Retail Customers from the Authority.

Water Treatment Production Metering. The Authority shall complete the metering improvements specified in the Fiscal Year 2016 Water Supply System Capital Improvement Program, Fiscal Years 2016-2020, approved on March 1, 2015 by the Board of Water Commissioners, for the Northeast, Springwells, and Water Works Park water treatment facilities no later than June 30, 2020. The Authority shall include in a future Authority CIP adequate means of measuring Authority consumption of water at other Regional Water Facilities.

Rate Methodology. The Authority shall adopt, and may amend from time to time, a methodology for ratemaking for the sale of water detailed in the Water and Sewer Services Agreement that complies with Michigan law. The Authority shall provide the City a description of such methodology and any amendment

thereto in a form that complies with the provisions of the Water and Sewer Services Agreement and accounts for differences attributable to the Water and Sewer Services Agreement and the Leases. The Authority shall provide the City any update to its methodology within twenty (20) business days of its adoption by the GLWA Board.

Lease Payments. The Authority shall apply any portion of the Lease Payments directed by the City to debt service on Authority Bonds to the water revenue requirement established for the City and incorporate in its budget any portion of the Lease Payments directed by the City to the Detroit Local Account in the Water Improvement and Extension Fund.

Operation of Local Water System. The City shall repair, maintain, improve and operate the Local Water System in compliance with all Applicable Laws and the requirements of governmental and quasi-governmental permits issued with respect to the Local Water System or that are generally applicable to the Local Water System. Except to the extent caused by an act or omission of the Authority, the City shall be solely responsible for any noncompliance by the Local Water System with any of the foregoing, including the correction of the noncompliance and the payment of the costs thereof, and for the payment of any related fines, penalties, costs, losses or damages related thereto.

Sewer Services

The Authority shall provide Sewer Services to the Retail Customers in amounts sufficient and in compliance with other technical requirements as described in the Water and Sewer Services Agreement. The City agrees to remit payment for all Sewer Services provided by the Authority at such rates as the Authority may establish, but only from amounts billed to and collected from Retail Customers. The City shall act and is hereby appointed as agent for the Authority with respect to the development of rates for, and billing and collecting and enforcing the collection of fees and charges from the Retail Customers for Sewer Services. The City shall establish rates consistent with Applicable Laws that are reasonably projected to meet the revenue requirement the Authority establishes for Retail Customers, as well as other costs of the Local Sewer System; provided that:

- (i) rates established by the Authority consistent with the Water and Sewer Services Agreement shall be reasonable in relation to the costs incurred by the Authority for the supply of Sewer Services; and
- (ii) the Authority shall not establish a revenue requirement for the 2015-2016 Fiscal Year in an amount exceeding the amount currently in effect as established by DWSD for that period; and
- (iii) each year, the Authority shall reflect in its rate structure for Sewer Services a credit for Retail Customers in the City in the amount of \$5,516,000 against the portion of the Authority's revenue requirements allocated to the City, representing the return on equity to the City for the Sewer System in recognition of the City's ownership of the Sewer System.

Rate Methodology. The Authority shall adopt, and may amend from time to time, the methodology for ratemaking for the sale of Sewer Services that complies with Applicable Laws. The current methodology utilized by DWSD prior to the Effective Date is identified in the Water and Sewer Services Agreement. The Authority shall provide the City any update to its methodology within twenty (20) business days of its adoption by the GLWA Board.

Lease Payments. The Authority shall apply any portion of the Lease Payments directed by the City to debt service on Authority Bonds to the sewer revenue requirement established for the City and

incorporate in its budget any portion of the Lease Payments directed by the City to the Detroit Account in the Sewer Improvement and Extension Fund.

Authority Usage. Sewer Services used by the Authority in the operation of the Leased Facilities connected to and receiving sewer service from the Local Sewer System shall be accounted for by applying applicable Prudent Utility Practices, including metering where applicable, and where not metered subject to the quarterly review and concurrence by the City and the Authority. Such usage shall be excluded from any calculations used to determine the City's cost for Sewer Services to Retail Customers from the Authority.

Operation of Local Sewer System. The City shall repair, maintain, improve and operate the Local Sewer System in compliance with all Applicable Laws and the requirements of governmental and quasi-governmental permits issued with respect to the Local Sewer System or that are generally applicable to the Local Sewer System, including without limitation the provisions of Wastewater Treatment NPDES Permit applicable to the Local Sewer System. Responsibilities for compliance with the Wastewater Treatment NPDES Permit shall be generally allocated as provided in the Water and Sewer Services Agreement. Except to the extent caused by an act or omission of the Authority, the City shall be solely responsible for any noncompliance by the Local Sewer System with any of the foregoing, including the correction of the noncompliance and the payment of the costs thereof, and for the payment of any related fines, penalties, costs, losses or damages related thereto.

Detroit Local System Usage. Until such time as the Detroit Local System is master metered, sewer usage by all Retail Customers connected to and receiving sewer service from the Detroit Local System shall be accounted for by Prudent Utility Practices including metering where applicable, and where not metered subject to the quarterly review and concurrence by the City and the Authority.

Notification of Rates and Charges

As soon as possible in the ratemaking process, the Authority shall provide information on proposed rates and charges and the draft data and information used in the calculation of the proposed rates in a format that will enable the City to assist in the ratemaking process. Not less than one hundred twenty (120) days prior to the effectiveness of any new rates, the Authority shall provide the City with written notice of the proposed rates and the underlying data used to calculate the rates. The Authority shall meet with the City to review the rates and the data.

License

Although the City has retained the right and responsibility to operate the Detroit Local Systems, it hereby grants the Authority the right to use the Detroit Local Systems for the Term of the Water and Sewer Services Agreement (coterminous with the Term of the Lease), in order to provide Water Services and Sewer Services to customers of the Regional Systems including Retail Customers.

Deposit of Revenues

Consistent with the assignment of Revenues contained in the Leases, the Authority and the City shall deposit or cause to be deposited all Revenues each receives or collects from the operation of the Systems into the Revenue Receipts Fund of the Authority or, where feasible, directly into the Receiving Fund for the related System. From the Revenue Receipts Fund, the Revenue Receipts Trustee, at the direction of the Authority, shall allocate and cause these funds to be deposited into the appropriate Receiving Fund.

As described under “Appointment and Termination of Agency” below, the City shall act as an agent of the Authority when collecting the portion of the Revenues derived from the provision of Water Services and Sewer Services to the Retail Customers, and the City shall hold such Revenues in trust for the exclusive benefit of the Authority until such funds are deposited into the Revenue Receipts Fund.

Application of Lease Payments

For Fiscal Year 2016, the City directed that \$2,327,026 of the Lease Payment for the Regional Water System and \$19,991,469 of the Lease Payment for the Regional Sewer System to be applied to common-to-all debt service for the related Authority Bonds. The balance of the Lease Payments for Fiscal Year 2016 was directed to be deposited to the Detroit Local System Account in the related Improvement and Extension Fund. For subsequent Fiscal Years, no later than May 1 each year the City shall provide to the Authority a written direction concerning the application of the Lease Payments to be paid by the Authority to the City for the next Fiscal Year (each a “Direction to Apply Lease Payment”). A Direction to Apply Lease Payment shall include direction as to the allocation of the full amount of the Lease Payment for that year, and may also reflect commitment of Lease Payments for future years to the payment of debt service on Authority Bonds, consistent with the Leases. The Direction to Apply Lease Payment shall direct the Authority to allocate and credit to the City identified portions of the Lease Payment for: (i) the payment of principal of and interest on that portion of the Authority Bonds issued to finance the cost of improvements to the Detroit Local Facilities; (ii) the payment of the City’s share of the principal of and interest on Authority Bonds issued to finance the cost of common-to-all improvements to the Leased Facilities; and (iii) the payment of the cost of improvements to and repairs of the Detroit Local Facilities. Upon receipt of the Direction to Apply Lease Payment from the City, the Authority shall ensure that the Lease Payments are allocated to Authority funds and accounts consistent with that direction, and shall honor any direction from the City to release to the City portions of the Lease Payment which are required to be deposited in the Detroit Local System Account in the Authority’s Improvement and Extension Fund to the City to be applied to Detroit Local System improvements. The Authority shall transfer such amounts to the designated Bond Funds and the Detroit Local System Account in the related Improvement and Extension Fund at the times specified in the Master Bond Ordinance.

To the extent any portion of the Lease Payments have not previously been encumbered, the City may amend a Direction to Apply Lease Payment at any time during each Fiscal Year, to pay debt service or to pay the cost of an executed contract for improvements to the Detroit Local Facilities. The City may not amend a Direction to Apply Lease Payment to redirect any portion of a Lease Payment previously committed by the City to pay debt service on outstanding Authority Bonds or an executed contract for improvements to the Detroit Local Facilities.

Appointment and Termination of Agency

The Authority appoints the City as its agent, and the City accepts such appointment as agent, to perform the services and undertake the duties, obligations and administrative functions described in the third sentence of the first paragraph under “Water Services” above, in the third sentence of the first paragraph under “Sewer Services” above, and in the second paragraph under “Deposit of Revenues” above on behalf and for the benefit of the Authority, in accordance with the terms of the Water and Sewer Services Agreement and Applicable Law. This appointment and the City’s acceptance thereof may not be revoked or terminated except in accordance with the express terms described under “Termination of Agency” below. Unless and until this agency relationship between the Authority and the City is revoked or terminated in whole or in part as described below, the City is authorized and empowered by the Authority to execute and deliver, in the name and on behalf of the Authority, any and all instruments, documents or notices necessary or appropriate in performing its role as agent of the Authority under the Water and Sewer Services Agreement. The Authority shall execute and deliver to the City such documents as have been prepared by

the City for execution by the Authority and shall furnish the City with such other documents as may be in the Authority's possession, in each case, as the City may determine to be necessary or appropriate to enable it to carry out and perform its duties, obligations and administrative functions under the Water and Sewer Services Agreement and Applicable Law. Upon the City's written request, the Authority shall furnish the City with any powers of attorney or other documents necessary or appropriate to enable the City to carry out and perform its duties, obligations and administrative functions hereunder. The City may perform its agency duties directly or through one or more third parties, provided that the City shall remain primarily responsible for the performance of such duties.

The City shall act in its capacity as agent for the Authority (and not in its own capacity as principal or otherwise) for the purposes described in the first paragraph under "Water Services" above, in the first paragraph under "Sewer Services" above and under "Deposit of Revenues" above. The Authority may revoke or terminate, in accordance with the procedures described under "Termination of Agency" below, its appointment of the City as agent for the Authority, if the City fails to perform its duties, obligations or administrative functions in accordance with and as described in the first paragraph under "Water Services" above, in the first paragraph under "Sewer Services" above and under the "Deposit of Revenues" above and, to the extent applicable, the Performance Standards and Applicable Law; and in particular by failing to:

- (i) Establish a two-year budget which includes the costs of performing the City's agency responsibilities for the Detroit Local Systems under the Water and Sewer Services Agreement no later than April 23 of each year starting with Fiscal Year 2017;
 - (ii) Establish rates reasonably intended to meet the revenue requirements for the Water Services and Sewer Services for each Fiscal Year that will become effective no later than June 30 of the prior Fiscal Year;
 - (iii) Send bills to Retail Customers at least every other month;
 - (iv) Collect and enforce payment of bills consistent with the Performance Standards;
- and
- (v) Deposit Revenues as described under "Deposit of Revenues" above.

Termination of Agency. In the event the City fails to satisfy any of the requirements described in the immediately preceding paragraph at any time after attempting to resolve concerns as provided under "Dispute Resolution" below, the Authority may, but is not obligated or required to, revoke or terminate the agency of the City with respect to those requirements that the City has failed to carry out and perform (but the agency shall continue with respect to all other requirements), subject to prior compliance by the Authority with the exclusive procedures and remedies provided and described under "Remedies" and "Arbitration" below. If, pursuant to a decision of the Arbitration Panel as described under "Remedies" and "Arbitration" below, the Arbitration Panel determines that the City has failed to satisfy any of the requirements set forth in the immediately preceding paragraph, the Authority may perform each of those requirements that was not satisfied by the City in accordance with the Water and Sewer Services Agreement directly or through another appointed agent. The City may not resign or assign any of its responsibilities as described under this "Appointment and Termination of Agency" without the prior written consent of the Authority.

Standard of Performance

The Authority shall endeavor to perform, or cause to be performed, all Services required under the Water and Sewer Services Agreement in compliance with Prudent Utility Practices, but shall in no event perform the Services at a level of service below the Performance Standards.

Cooperation of Parties

The Parties shall cooperate reasonably with each other in connection with any steps required to be taken as part of their respective obligations under the Water and Sewer Services Agreement, and shall (i) furnish upon request to each other such information and data, including maps, which are reasonably accessible and would not cause the Party providing such information and data to violate the terms of any agreement to which it is subject at the time of the request; (ii) execute and deliver to each other such other documents; and (iii) do such other acts and things, all as the other Party may reasonably request that is necessary or convenient to effectuate the purposes of the Water and Sewer Services Agreement and the transactions contemplated thereby.

The Director of DWSD-R and the Chief Executive Officer of the Authority or their designees shall initially meet weekly or at such other interval as they shall reasonably agree to review data, information and processes relevant to the operation and management of the Systems, including capital improvements, the Authority CIP and the Detroit CIP, maintenance and repairs, and any other issues arising out of the Leases or the Water and Sewer Services Agreement. Such meetings shall include a review of Service delivery and any other issues relevant to the Water and Sewer Services Agreement. The City and the Authority agree to develop plans and protocols for operational coordination, GIS coordination, hydraulic water and sewer modeling, fire hydrant removal coordination and asset identification.

The Parties agree and covenant to coordinate all efforts and undertakings under the Water and Sewer Services Agreement, including the implementation of the Detroit CIP and the Authority CIP, with the goal of maximizing any economies of scale and achieving any other available financial and operational efficiencies from such coordination. The Parties shall develop a long-term plan for the installation of master meters and backflow prevention devices between the Detroit Local Water System and the Regional Water System to be implemented in connection with the implementation of the Detroit CIP, recognizing that the installation of such meters may be implemented over a long period of time. Such plan shall provide for modifications to the Systems as part of replacement projects to facilitate metering implementation.

The City and the Authority shall confer at least annually to develop, coordinate and prioritize a schedule for financing components of the Authority CIP and the City CIP, including grant applications and prioritization of applications for financing through the Michigan Clean Water Revolving Loan Fund or the Drinking Water Revolving Loan Fund.

With respect to each permit issued in the names of both the Authority and the City, the Parties shall identify which Party state regulatory officials should contact regarding questions or enforcement matters and the Parties shall provide such contact information to the issuer of the permit. The Parties shall jointly or separately perform such functions under the Wastewater Treatment NPDES Permit as set forth in the Water and Sewer Services Agreement.

The Parties shall maintain a combined sewer overflow control plan which shall include protocols for the management of City and Authority facilities during wet weather events. The Parties recognize that (i) the City is served by a combined sewer overflow (“CSO”) system and that the rate of flow will vary greatly depending upon the rainfall magnitude and other climatological factors, and (ii) under certain conditions the Regional Sewer System will have insufficient capacity to handle all flow generated by the

City. The Authority will continue to operate the Regional Sewer System in accordance with the current Michigan Department of Environmental Quality (“MDEQ,” now known as the Department of Environment, Great Lakes, and Energy or “EGLE”) approved Wet Weather Operational Plan (the “Operational Plan”) to provide service to the City. In situations where the Operational Plan does not address a particular instance or issue, the Parties agree that the mutual goal of the Parties is to maximize the treatment and disinfection of Flows (as defined in Exhibit B to the Water and Sewer Services Agreement). Review and modification of the Operational Plan may occur periodically as mutually agreed between the Parties, and approved by MDEQ. Such review and/or modification may occur as Sewer System improvements are implemented or adaptive management strategies are found to be effective and formalized. If changes to the Operational Plan are significant and result in increased capacity limits for Authority wholesale customers, an adjustment to the CSO cost allocation or other appropriate cost allocation may be considered.

To the extent the Wastewater Treatment NPDES Permit allows for and requires Green Infrastructure, the City shall be primarily responsible for performing the Green Infrastructure Program required by the Wastewater Treatment NPDES Permit, including achieving the wet weather flow removal goal and annual average expenditure requirement. The City also shall be primarily responsible for performing the elective Green Infrastructure elements of the Wastewater Treatment NPDES Permit. The City’s responsibility shall be limited to projects in the City. Subject to the City’s reasonable approval, the Authority may propose additional Green Infrastructure Projects on properties located in but not owned by the City to the extent the projects are demonstrated to provide cost effective reduction of wet weather flow into sewers. Subject to the Authority’s reasonable approval, the City may apply any wet weather flow removed, and expenditure made, by any additional Green Infrastructure Projects performed by the Authority to meet the flow removal and annual expenditure requirements of the Wastewater Treatment NPDES Permit. In the event the City fails to implement any Green Infrastructure required under the Wastewater Treatment NPDES permit in the timeline provided in such permit, the Authority may implement Green Infrastructure Programs in the City in order to meet the permit requirements. In such event, the Authority shall give the City notice of its intent to implement Green Infrastructure in the City in the following Fiscal Year no later than the end of the each December after the Authority’s review of the report provided to MDEQ in August of each year.

The Authority shall have the right to review and approve the City’s construction plans for meter facilities at new water distribution points to be connected to the Leased Water Facilities, water mains sized twenty-four inches and larger, pump stations, reservoirs, water towers, and any other construction that will cross, or be within close proximity to, or have influence upon the Leased Water Facilities. The Authority’s approval of construction plans shall be timely and shall not be unreasonably withheld.

City Budget; Detroit CIP; Application of Lease Payments

Each year the City shall provide the Authority with: (i) the budget forecast for the Detroit Local Systems as described below; (ii) the budgets for the operation and maintenance and other funding requirements of the Detroit Local Systems (the “Detroit Local System Budgets”) as described below; (iii) the Detroit CIP as described below; and (iv) the Direction to Apply Lease Payment as described under “Application of Lease Payments” above. The Detroit Local System Budgets for Fiscal Year 2015-2016 shall be the portions of the DWSD Fiscal Year 2015-2016 budget adopted on March 11, 2015 by the Board of Water Commissioners allocated to the Local Water System and the Local Sewer System. The allocation of responsibilities and charges listed in the Service Delivery Schedules attached to the Shared Services Agreement between the Parties shall not alter the Detroit Local System Budgets for Fiscal Year 2015-2016. On the Effective Date, the Authority shall deposit into each of the WRAP Fund, the Budget Stabilization Fund for each System and the funds designated by the City for application of the Lease Payments for Fiscal Year 2016 an amount equal to the annual deposit required for such fund or Lease Payment for Fiscal Year

2016 divided by twelve, which shall be multiplied by the number of months already elapsed during such Fiscal Year.

Preliminary Budget Forecast. The City agrees to provide the Authority with a preliminary budget forecast for the Detroit Local Systems. Commencing with the Fiscal Year beginning July 1, 2016, the City shall prepare and submit to the Authority on or before January 1 of each year, a preliminary two-year budget forecast for the Detroit Local Systems for the following two Fiscal Years that sets forth projected revenues and expenses for each such Fiscal Year. The preliminary budget forecast shall set forth the City's assumptions for at least that two-year period with respect to demand for Water Services and Sewer Services and the expected delinquency level for amounts billed to Retail Customers in the City. The preliminary forecast for each such Fiscal Years shall project revenues necessary to generate the sum of the projected expenses and revenue requirements for the Detroit Local Systems for such Fiscal Years (collectively, the "Local Revenue Requirement") and the City share of the Authority's revenue requirement, including without limitation the following:

- (i) the amounts reasonably necessary to fund all expenses of administration and operation and the expenses for maintenance as may be necessary to preserve the Detroit Local Systems in good repair and working order;
- (ii) the Detroit Local Systems' share of the common-to-all amounts required to fund the Lease Payments;
- (iii) the Detroit Local Systems' share of debt service on the portion of the Authority Bonds issued to finance capital improvements to the Regional Systems and the Detroit Local Systems not covered by Lease Payments;
- (iv) the amounts necessary to fund the Detroit CIP or make deposits to the Detroit Local Improvement and Extension Account of the Improvement and Extension Funds in the applicable Master Bond Ordinance from Retail Revenues, a portion of the Lease Payments or bond proceeds;
- (v) the Detroit Local Systems' share of the (x) common-to-all portion of liability assumed by the Authority on behalf of DWSD as a result of the City's Plan of Adjustment, including costs of (A) debt service on the B Notes, (B) debt service on the C Notes, and (C) funding for the City's frozen General Retirement System pension plan, and (y) the portion of such liabilities associated with Detroit Local System employees;
- (vi) the amount necessary to be deposited to the WRAP Fund, which shall be equal to 0.5% of the base budgeted operating revenues for the Detroit Local Systems for such Fiscal Year;
- (vii) (y) for each of Fiscal Years 2016, 2017 and 2018, an amount equal to one-third of the Budget Stabilization Requirement; and (z) for subsequent Fiscal Years one-third of the amount necessary to assure that the Budget Stabilization Requirement will be on deposit in the Budget Stabilization Fund within three full Fiscal Years; and
- (viii) any other amount that the City may be required to pay to the Authority in order to satisfy its revenue requirement from the Authority for such Fiscal Years. If the Authority issues bonds or other debt to satisfy its portion of liability associated with the City's frozen General Retirement System pension plan, the City shall include its portion of the debt service thereon in the Detroit Local System Budgets.

The City shall prepare an impact statement with respect to any new, modifications for or other changes in program or activity levels and revenue requirements for the forecast period. The impact statement shall include an explanation of the rationale for the change and the financial impact of the change on current and future budgets. The City and the Authority agree to act in good faith and to meet to review the budget forecast and the assumptions therefore relating to demand for Water Service and Sewer Service and delinquencies and any other significant assumptions. If City and Authority administrators are unable to resolve differences of opinion regarding the assumptions, then the Reconciliation Committee shall meet promptly for the purpose of reaching consensus.

Adopted Budget. No later than March 23 of each year, commencing March 23, 2016, the City shall develop, adopt and provide the Authority with a copy of the Detroit Local System Budgets for the following two Fiscal Years. The Detroit Local System Budgets shall identify the Local Revenue Requirement for each Local System and shall include for each such Fiscal Year, at a minimum:

- (i) the amounts reasonably necessary to fund all expenses of administration and operation and the expenses for maintenance as may be necessary to preserve the Detroit Local Systems in good repair and working order;
- (ii) the Detroit Local Systems' share of the common-to-all amounts required to fund the Lease Payments;
- (iii) the Detroit Local Systems' share of debt service on the portion of the Authority Bonds issued to finance capital improvements to the Regional Systems and the Detroit Local Systems not covered by Lease Payments;
- (iv) the amounts necessary to fund the Detroit CIP or make deposits to the Detroit Local Improvement and Extension Account of the Improvement and Extension Funds in the applicable Master Bond Ordinance from Retail Revenues, a portion of the Lease Payments or bond proceeds;
- (v) the Detroit Local Systems' share of the (x) common-to-all portion of liability assumed by the Authority on behalf of DWSD as a result of the City's Plan of Adjustment, including costs of (A) debt service on the B Notes, (B) debt service on the C Notes, and (C) funding for the City's frozen General Retirement System pension plan, and (y) the portion of such liabilities associated with Detroit Local System employees;
- (vi) the amount necessary to be deposited to the WRAP Fund, which shall be equal to 0.5% of the base budgeted operating revenues for the Detroit Local Systems for such Fiscal Year;
- (vii) (y) for each of Fiscal Years 2016, 2017 and 2018, an amount equal to one-third of the Budget Stabilization Requirement; and (z) for subsequent Fiscal Years one-third of the amount necessary to assure that the Budget Stabilization Requirement will be on deposit in the Budget Stabilization Fund within three full Fiscal Years; and
- (viii) any other amount that the City may be required to pay to the Authority in order to satisfy its revenue requirement from the Authority for such Fiscal Years. If the Authority issues bonds or other debt to satisfy its portion of liability associated with the City's frozen General Retirement System pension plan, the City shall include its portion of the debt service thereon in the Detroit Local System Budgets.

Tracking. The City shall, within 45 days following the end of each fiscal quarter of each Fiscal Year, furnish to the Authority a comparison of actual revenues and expenses for such fiscal quarter against the budgeted amounts in each Detroit Local System Budget. If the Authority determines that for such fiscal quarter there is a significant unfavorable variance which is reasonably expected to have a negative effect on the Authority's budget with respect to revenues or any of the following expense categories: (i) compensation (including wages, salaries and fringe benefits), (ii) operation and maintenance expenses and (iii) debt service, then the Reconciliation Committee (consisting of a member of the GLWA Board appointed by the Mayor of the City, or his or her designee, and a member of the Board of Water Commissioners of the City, or his or her designee) shall meet promptly for the purpose of reviewing actions the City proposes to take to address such significant unfavorable variance. Following the meeting of the Reconciliation Committee, the City agrees to take actions to address any such significant unfavorable variance and to make appropriate adjustments to the related Detroit Local System Budget in the current and succeeding Fiscal Year. Favorable variances may be incorporated into the budget by following the same process. An impact statement shall be prepared for each such action, and the impact of any budget amendments shall be carried through, as appropriate, in budget forecasts for subsequent Fiscal Years. The Authority may draw on the Budget Stabilization Fund an amount equal to the amount by which actual bad debt expense of the Retail Customer class exceeds the budgeted bad debt expense for that class. At least quarterly, and in connection with the preparation of the annual audit for the Local Water System and the Local Sewer System, the chief financial officers of the Authority and DWSD-R shall determine whether a draw on the Budget Stabilization Fund is necessary. In the event the chief financial officers cannot reach agreement on whether a draw is necessary, the Reconciliation Committee shall promptly meet for the purpose of resolving such disagreement. Amounts on deposit in the Budget Stabilization Fund in excess of the Budget Stabilization Requirement for the following Fiscal Year based on audited financial statements shall be transferred to the Detroit Local Improvement and Extension Account of the Improvement and Extension Fund in the applicable Master Bond Ordinance.

Detroit CIP. No later than February 1 of each year, the City shall develop and provide the Authority with a copy of its current Detroit CIP for the Detroit Local Facilities. The Detroit CIP shall include the capital improvements and estimate of the costs therefor which the City plans to undertake in the next Fiscal Year, and projected capital improvement projects and estimates for the five years following. At least three months prior to finalizing each Detroit CIP and any modifications thereto, the City shall provide a copy of the proposed CIP to the Authority solely for the purpose of: (A) coordinating the Detroit CIP and the Authority CIP to maximize economies of scale, minimize service disruptions and to achieve other efficiencies from a coordinated implementation effort, and (B) providing notice to the Authority of any financing requirements of the City for the Detroit Local Facilities to be satisfied from Lease Payments and/or the issuance of Authority Bonds or requests for collaboration on grant applications or other funding opportunities. Upon receipt of the adopted Detroit CIP from the City, consistent with the fourth paragraph under "Cooperation of Parties" above, the Authority shall ensure that its financial planning and budgeting reflect the foregoing requirements.

The City agrees that, in conjunction with the implementation of the Detroit CIP and consistent with the plan developed as described in the third paragraph under "Cooperation of Parties" above, it will install master water meters to measure consumption by the Detroit Local Water System and cross connection controls between the Detroit Local Water System and the Regional Water System.

Third Party Disputes

Each Party hereby agrees to reasonably assist the other Party in the event any disputes arise between any Party and any third party arising out of the operation and maintenance of the Systems. In the event of a dispute between the Authority or the City and any third party, the City and the Authority shall cooperate with each other to resolve and defend such dispute. Any disputes between the City and the Authority arising

in connection with third party disputes as described in this paragraph shall be resolved as described under “Dispute Resolution” below.

System Operation Costs

Each year, each Party shall provide to the other Party information and data regarding its actual costs associated with providing Water Services and Sewer Services to its respective wholesale and Retail Customers for the following Fiscal Year to allow the other Party to establish the revenue requirements for the Systems.

First Response; Findings

The City shall be the first responder for unscheduled and/or emergency situations (e.g. main breaks, sinkholes, etc.) which may arise in those portions of the Systems’ water transmission and distribution system and wastewater collection system within the City. The City shall promptly respond when necessary and work diligently to stabilize (e.g. notify miss-dig, throttle valves, install traffic control), using Prudent Utility Practices, the affected portion of the Systems, to protect public health and safety and minimize property damage, regardless of responsibility for that portion of the Systems. The City will notify the Authority, in accordance with established protocols, prior to taking actions beyond those necessary to stabilize the affected portion of the Systems. Each Party reserves the right to take over response actions to the extent that the action is related to an asset for which it has operating responsibility.

The Parties shall establish mutually agreeable and coordinated response protocols for unscheduled and/or emergency response situations and include the protocol in the Shared Services Agreement. In all cases where investigation and/or work is to be or has been performed by a Party, the responding staff of that Party is to respond promptly, take necessary actions in accordance with Prudent Utility Practices, standards, exercise due care, document the results of any investigation, and notify the other Party of all findings. Any disputes arising from such unscheduled and/or emergency repairs shall be resolved as described under “Disputes Arising from Physical, Technical and Mechanical Issues” below.

Defaults

Either Party shall be in default under the Water and Sewer Services Agreement if it fails to fully perform and comply with any of the terms, conditions or provisions of the Water and Sewer Services Agreement after it has received thirty (30) days’ notice of such default, provided that if such failure cannot be remedied within such thirty (30) day cure period, the defaulting Party shall not be in default if it commits to remedy within the thirty (30) day cure period and diligently pursues the remedy to its completion.

Remedies

Upon default of the Authority, the City may, at its sole option and as its exclusive remedy, pursue any rights and remedies available to such Party at law or in equity under the Water and Sewer Services Agreement as determined in accordance with the dispute resolution procedures described under “Dispute Resolution,” “Arbitration” and “Disputes Arising from Physical, Technical and Mechanical Issues” below, including specific performance; provided, that the City may not terminate the Water and Sewer Services Agreement.

Upon default of the City, the Authority may but is not required to: (i) terminate the agency described above under “Appointment and Termination of Agency” and exercise all rights granted to the City thereunder, which includes the power of the Authority to establish rates to be paid by the Retail Customers for the Services and to charge, bill and collect from the Retail Customers amounts due for the Services; and

(ii) pursue all rights and remedies available to the Authority described under “Dispute Resolution,” “Arbitration” and “Disputes Arising from Physical, Technical and Mechanical Issues” below; provided, that the Authority may not terminate the Water and Sewer Services Agreement and shall continue to provide Water Services and Sewer Services as described under “Water Services” and “Sewer Services” above. The foregoing remedies are the exclusive remedies available upon a default for non-payment by the City.

Waiver

The failure of any Party to insist in any one instance upon strict performance by the other Party of its obligations under the Water and Sewer Services Agreement shall not constitute a waiver or relinquishment of any such obligations as to any other instances. No covenant or condition of the Water and Sewer Services Agreement may be waived by either Party except in a writing signed by that Party, and the forbearance or indulgence of that Party in any regard whatsoever and regardless of the duration of such forbearance or indulgence shall not constitute a waiver of the covenant, condition or obligation until performed or waived in writing, and that Party shall be entitled to invoke any remedy available to that Party under the Water and Sewer Services Agreement despite the forbearance or indulgence.

Dispute Resolution

The Authority and the City shall each designate in writing to the other from time to time a representative who shall be authorized to resolve any dispute relating to the subject matter of the Water and Sewer Services Agreement in an equitable manner and, unless otherwise expressly provided herein, to exercise the authority of such party to make decisions by mutual agreement.

The City and the Authority each agree (i) to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner and (ii) to provide each other with reasonable access during normal business hours to any and all non-privileged written records, information and data pertaining to any such dispute.

If any dispute relating to the subject matter of the Water and Sewer Services Agreement is not resolved between the City and the Authority as described under this “Dispute Resolution” within 30 days from the date on which a party provides written notice to the other party of such dispute and of the notifying party’s position on the disputed matter, then upon written notification by either party to the other party, such dispute shall be settled exclusively and finally by binding arbitration as described under “Arbitration” below.

During the pendency of any dispute and until such dispute is resolved the Parties shall continue to operate under the terms of the Water and Sewer Services Agreement.

Arbitration

It is specifically understood and agreed that any dispute or claim arising under or relating to the Water and Sewer Services Agreement that cannot be resolved between the City and the Authority, other than disputes arising under “Disputes Arising from Physical, Technical and Mechanical Issues” below, including any matter relating to the interpretation or performance of the Water and Sewer Services Agreement, shall be submitted to binding arbitration irrespective of either the magnitude thereof or the amount in dispute.

Each arbitration between the City and the Authority shall be conducted pursuant to the Uniform Arbitration Act, Act No. 371, Public Acts of Michigan, 2012 (“Act 371”).

The arbitration shall be conducted before a panel composed of three arbitrators (the “Arbitration Panel”). Each party shall appoint an arbitrator, obtain its appointee’s acceptance of such appointment and deliver written notification of such appointment and acceptance to the other party within 15 days after delivery of a notice of arbitration. The two arbitrators appointed by the City and the Authority shall jointly appoint the third (who shall be the chairperson), obtain the acceptance of such appointment and deliver written notification of such appointment within 15 days after their appointment and acceptance.

Any arbitration commenced hereunder shall be completed within 120 days after the appointment of the Arbitration Panel absent agreement of the City and the Authority to the contrary. Further, absent agreement of the City and the Authority or, upon request of one of the Parties, an order from the Arbitration Panel to the contrary: (i) all discovery shall be completed within 60 days after the appointment of the Arbitration Panel; (ii) each Party shall be limited to a maximum of 5 depositions; (iii) each deposition shall be completed within a maximum period of two consecutive 8-hour days; (iv) each Party shall be limited to 2 expert witnesses; and (v) interrogatories shall be limited to a maximum of 50 single issues without sub-parts. The City and the Authority waive any claim to any damages in the nature of punitive, exemplary or statutory damages in excess of compensatory damages or otherwise expressly provided for herein, and the Arbitration Panel is specifically divested of any power to award such damages. The Arbitration Panel shall have the power to award injunctive or other equitable relief. All decisions of the Arbitration Panel shall be pursuant to a majority vote. Any interim or final award shall be rendered by written decision.

If either the City or the Authority fails to appoint its arbitrator within 15 days after delivery of a notice of arbitration, or if the two arbitrators appointed cannot agree upon the third arbitrator within 15 days after appointment of the second arbitrator, then the required arbitrator(s) shall be appointed by the American Arbitration Association or as otherwise agreed by the City and the Authority.

No arbitrator shall be a past or present employee or agent of, or consultant or counsel to, either the City or the Authority or any affiliate of either the City or the Authority.

The Authority and the City shall each bear the out-of-pocket costs and expenses of their respective arbitrator, attorneys and witnesses, and they shall each bear one-half of the out-of-pocket costs and expenses of the chairperson of the Arbitration Panel and all administrative support for the arbitration.

Disputes Arising from Physical, Technical and Mechanical Issues

If any disputes arise between the City and the Authority regarding physical, technical or mechanical issues arising under the Water and Sewer Services Agreement (but specifically excluding any claims that may arise under Act 222, Public Acts of Michigan, 2001, as amended), including but not limited to the assignment of responsibility for breaks or failures of water and sewer pipes or other mechanical failures based on the operating control of the respective portion of the facilities, and the Parties do not resolve such dispute within fourteen days, or such other time mutually agreeable to the Parties, after the City or the Authority expresses its disagreement with the position of the other Party to such matters, a committee consisting of one officer (as well as such other employees with expertise in the particular area of dispute) of the Authority and one officer (as well as such other employees with expertise in the particular area of dispute) of the City shall meet and attempt in good faith to resolve such dispute. If such committee is unable to resolve such dispute within fourteen days, or such other time mutually agreeable to the Parties, following their initial meeting, then the Parties shall select a panel of three engineers with experience in the design, construction, or operation and maintenance of a water and sewer utility system in the same manner as the Arbitration Panel is selected as described in the third paragraph under “Arbitration” above (the “Engineer Panel”), and the Engineer Panel shall be designated to consider and decide the issues raised by such dispute unless both Parties determine that further discussions by the committee are merited. The Engineer Panel shall be designated not later than the third day following the expiration of the second

fourteen-day or other period described above, such designation to become effective on the third day following such designation. Within ten days after the designation of the Engineer Panel, the Authority and the City shall each submit to the Engineer Panel a notice (a “Technical Position Notice”) setting forth in detail such Party’s position in respect of the issues in dispute. Such notice shall include supporting documentation, if appropriate.

The Engineer Panel shall complete all proceedings and issue its decision with regard to the issues under dispute as promptly as reasonably possible, but in any event not later than ten days after the date on which both Technical Position Notices are submitted, unless the Engineer Panel reasonably determines that additional time is required in order to give adequate consideration to the issues raised. In such case, the Engineer Panel shall state in writing its reasons for believing that additional time is needed and shall specify the additional period required, which period shall not exceed ten days without the City’s and the Authority’s agreement.

In resolving a dispute under this section, the Engineer Panel shall consider all facts and circumstances the panel deems reasonable given the nature of the dispute.

The Engineer Panel shall choose either the City’s position or the Authority’s position as set forth in their respective Technical Position Notices or shall choose from each Party’s Technical Position Notices the portions that are technically correct. If the Engineer Panel determines that the position set forth in the City’s Technical Position Notice is correct, the panel shall so state and shall state the appropriate actions to be taken by the Authority. In such case, the Authority shall promptly take such actions. If the Engineer Panel determines that the position set forth in the Authority’s Technical Position Notice is correct, the panel shall so state and shall state the appropriate actions to be taken by the City. In such case, the City shall promptly take such actions. If the Engineer Panel determines that a portion of the City’s Technical Position Notice is correct and a portion of the Authority’s Technical Position Notice is correct, the panel shall so state and shall state the appropriate actions to be taken by each respective Party. In such case, the respective Party shall promptly take such actions. The Engineer Panel may assign responsibility of the costs of repairs undertaken by a Party to the Party that is responsible for such water and sewer pipes. The decision of the Engineer Panel shall be final and non-appealable; provided that, any such decision may be treated as an arbitration award for purposes of enforcement.

The Authority and the City shall each bear the out-of-pocket costs and expenses of their respective engineer, attorneys and witnesses, and they shall each bear one-half of the out-of-pocket costs and expenses of the chairperson of the Engineer Panel and all administrative support for the arbitration.

Appeals of Arbitration Awards and Decisions

The City or the Authority may appeal an award or decision issued by the Arbitration Panel for the reasons set forth in Section 23 of Act 371 (MCL 691.1703).

Enforcement of Arbitration Awards and Decisions

The City or the Authority may enforce any awards or decisions of the Arbitration Panel or the Engineer Panel as described above pursuant to Section 22 of Act 371 (MCL 691.1702). The provisions of the Water and Sewer Services Agreement as described under “Dispute Resolution,” “Arbitration” and “Disputes Arising from Physical, Technical and Mechanical Issues” above shall be the sole and exclusive remedy of the parties with respect to any claim or dispute, other than disputes arising under “Disputes Arising from Physical Technical and Mechanical Issues” described above. The City and the Authority agree not to bring, or cause to be brought, in a court of law any action, proceeding or cause of action

whatsoever with respect to any such claim or dispute, other than as necessary to enforce the award or decision of the Arbitration Panel or the Engineer Panel as described in this paragraph.

Amendments to Water and Sewer Services Agreement

The Water and Sewer Services Agreement may be amended only by written agreement executed and approved by both Parties, as applicable. Approval by the GLWA Board shall be by supermajority vote.

APPENDIX VIII SUMMARY OF THE SHARED SERVICES AGREEMENT

This summary does not purport to be comprehensive or definitive and is subject to all of the terms of the Shared Services Agreement, to which reference is hereby made and copies of which are available on GLWA's website at www.glwater.org or from the Underwriters prior to the execution and delivery of the Series 2020 Bonds and thereafter may be examined or obtained at the expense of the person requesting the same at the corporate trust office of the Trustee. Capitalized terms used in this Appendix and not otherwise defined in this Official Statement shall have the meanings given to such terms in the Shared Services Agreement.

General

The City and the Authority entered into the Shared Services Agreement as of December 1, 2015 pursuant to which each party agreed to provide services to the other in connection with the management and operation of the Regional Water System and the Local Water System to avoid duplication of internal administrative and office functions. The Shared Services Agreement became effective on January 1, 2016.

Service Delivery Schedules

The City and the Authority have agreed that, to facilitate and enhance the efficiency of the operation of the Regional Systems by the Authority and the operation of the Local Systems by DWSD, and to increase the efficiency of operation of the Systems into the future, minimizing duplication of services and functions by both the Authority and the City, the City shall provide to the Authority the City Services for the periods described on the Service Delivery Schedules attached to the Shared Services Agreement and the Authority shall provide to the City the Authority Services for the periods described on the Service Delivery Schedules, commencing on the Effective Date, subject to periodic modification as to scope and duration as provided under "Modifications and Extensions of Service Delivery Schedules" below. Generally, the Performing Party for a particular Service will be the party that utilizes or requires the Service more than the Subscribing Party, unless such allocation of responsibility would result in a substantial increase in FTEs to the other Party. Each Service Delivery Schedule shall contain, at minimum, the following information:

- a) the Performing Party and the Subscribing Party;
- b) identification of the Service to be provided and how such Service shall be delivered;
- c) the period for which the Service is to be provided;
- d) the Service Cost, which, beginning no later than Fiscal Year 2017-2018, shall include a breakdown, where practicable, of each component of the Service Cost, and the charges therefor;
- e) a statement of any variations of the terms of this Agreement which may be reasonably necessary for the specific Service being performed;
- f) if necessary, a process for determining how such Services will be provided after an initial transition period; and

g) notice and other provisions, including Separation Costs, regarding the termination or modification of the Service under this Agreement.

The Parties may mutually agree to adopt new or modified Service Delivery Schedules as the need or desirability of such Services occurs or changes as described under “Modification or Extension of Service Delivery Schedules” below. The Director of DWSD (the “Director”) and the Chief Executive Officer or their assignees shall maintain and update as necessary a list of primary contacts from each Party for each Service Delivery Schedule. Each Party shall ensure that the appropriate employee or officer of that Party responsible for the provision or subscription of a specific Service is kept informed of the current contact list.

Except as otherwise provided in a Service Delivery Schedule, no Party shall be responsible for paying any Separation Costs.

Provision of Services

The Authority shall perform or cause to be performed the Authority Services as provided in each applicable Service Delivery Schedule. The Authority may perform the Services directly or contract with third parties to perform all or a portion of the Services on its behalf.

The City shall perform, or cause to be performed, the City Services as provided in each applicable Service Delivery Schedule. The City may perform the Services directly or contract with third parties to perform all or a portion of the Services on its behalf. The City Services may be provided on behalf of DWSD by the City’s central administration as an operation and maintenance expense to the extent the central administration has historically provided such services to DWSD.

In the event a Performing Party has contracted with a third party to perform all or a portion of the Services on its behalf, the provisions of this Agreement shall control in the event of a conflict between the provisions of such contract and this Agreement. Additionally, a Subscribing Party shall have the right to consent to the selection of any new third party contractor who will be providing all or a portion of Services on behalf of a Performing Party, which consent shall not be unreasonably withheld.

A Performing Party shall dedicate such resources as are necessary to ensure its officers, employees and contractors promptly respond to reasonable requests of the Subscribing Party in connection with the provision of Services. In the event a Subscribing Party requests information or support pursuant to the Shared Services Agreement or a Service Delivery Schedule to which a representative of the Providing Party fails to respond in a timely manner, the Director and the Chief Executive Officer and the appropriate employees or agents of each Party responsible for responding to the request shall meet within three business days to provide the response or establish a date certain for responding, as appropriate.

Modification or Extension of Service Delivery Schedules

Prior to the development of the DWSD budget for each Fiscal Year pursuant to the Water and Sewer Services Agreement, the Chief Executive Officer and the Director shall meet to discuss and plan for any modifications to the Service Delivery Schedules for the next Fiscal Year and the anticipated need and Service Costs for any “as-needed” Services for the next Fiscal Year based on actual results in prior Fiscal Years. Any proposed modification shall identify or project any Stranded Costs and Transition Costs calculated by applying the Service Cost cost-components. Except as otherwise provided in a Service Delivery Schedule, the expectation is that the effective date and expiration of each Service Delivery Schedule shall be coterminous with the Fiscal Year of the Parties.

The Chief Executive Officer and the Director may approve Service Delivery Schedules to share additional Services if the Service Cost will not exceed \$50,000 in a Fiscal Year, or otherwise with the approval of the GLWA Board and the Board of Water Commissioners. Any existing Service Delivery Schedule may be terminated other than by its terms, modified or extended by: (a) mutual agreement of the Chief Executive Officer and the Director if the Chief Executive Officer and the Director reasonably believe that the modified service arrangement will not result in an increase in the cost of acquiring such Service in excess of the greater of \$50,000 or 10% of the annual Service Cost, including any applicable Separation Costs; or (b) otherwise by approval of the GLWA Board and the Board of Water Commissioners. At least quarterly, the Chief Executive Officer shall provide to the GLWA Board and the Director shall provide to the Board of Water Commissioners a report including any modifications, extensions and terminations of existing Service Delivery Schedules.

Compliance with Procurement Policies and Procedures

The procurement of Services pursuant to the Shared Services Agreement by a Subscribing Party is not subject to the procurement policies and procedures of the Parties. In the event a Subscribing Party requires a Service from a Performing Party hereunder on an “as needed” basis, it may request such Service pursuant to this Agreement and the applicable Service Delivery Schedule according to the procedures agreed to by the Chief Executive Officer and the Director notwithstanding any procurement policies or procedures of the Subscribing Party then in effect.

Standard of Performance

A Performing Party shall endeavor to perform, or cause to be performed, all Services required under the Shared Services Agreement in compliance with Prudent Utility Practices, but shall in no event perform the Services at a level of service below the Performance Standards. The Parties shall endeavor to establish reasonable safeguards and internal controls to ensure the fiscal integrity of the operations and fiscal management of each Party with respect to the Services, including conducting criminal and credit background checks of each employee with access to any cash, information technology systems, or other assets of either Party.

Cooperation of Parties

The Parties shall cooperate reasonably with each other in connection with any steps required to be taken as part of their respective obligations under the Shared Services Agreement, the Water Lease, the Sewer Lease, the Water and Sewer Services Agreement, permits or any Applicable Laws, including the development of the capital improvement plans of each Party, financial planning and debt management, and shall (i) furnish upon request to each other such information, data and records, including maps, which are reasonably accessible and would not cause a Performing Party to violate the terms of any agreement to which it is subject at the time of the request or which are required to be disclosed pursuant to any agreements or Applicable Laws; (ii) execute and deliver to each other such other documents; (iii) provide such witness testimony, documents, records and other services or information within the possession or control of each Party necessary or desirable for the proper prosecution and/or defense of any current or future litigation affecting either Party, and (iv) do such other acts and things, all as the other Party may reasonably request that is necessary or convenient to effectuate the purposes of this Agreement and the transactions contemplated hereby.

The Director, the City and the Chief Executive Officer or their designees shall initially meet weekly or at such other interval as they shall reasonably agree or as specified in a particular Service Delivery Schedule, to review data, information and processes relevant to the provision of Services and any other issues arising out of this Agreement. Such meetings shall include a review of Service delivery, potential

Invoice Disputes as known, anticipated Service Delivery Schedule requests, including modifications, extensions or potential amendments, and any other issues relevant to this Agreement.

In the event the performance of a Service is going to be assumed by a Subscribing Party, the Parties and their employees shall reasonably cooperate and provide information and training to each other in order to ensure the seamless transfer of knowledge with respect to that Service.

When necessary or desirable, the Parties shall jointly develop operational protocols with respect to specific Services.

The City shall maintain a record and be the repository of all easements and other real property interests acquired by the Authority during the term of the Water Lease and the Sewer Lease. The Authority shall provide all original documents memorializing such easements and other real property interests to the City. The City shall take all actions necessary to record or otherwise perfect its interest in all easements or other real property interests acquired by it or the Authority during the term of the Water Lease and the Sewer Lease. The City shall provide the Authority access to and copies of any easements and other real property interests necessary for the performance of its rights and duties under this Agreement, the Water Lease, the Sewer Lease and the Water and Sewer Services Agreement.

Invoices; Payment Terms; Invoice Disputes

Invoices. For Fiscal Year 2015-2016, the City shall pay the Authority \$4,707,608 for all Authority Services (including “as-needed” Services) and the Authority shall pay the City \$2,179,506 for all City Services (including “as-needed” Services), each in equal monthly installments. Such installments received by the Authority shall be deposited into the Authority Regional Operation and Maintenance Account of the Operation and Maintenance Fund established in the master bond ordinances for each of the Systems, and such installments received by the City shall be deposited into the Detroit Local Operation and Maintenance Account of the Operation and Maintenance Fund established in the master bond ordinances for each of the Systems. Commencing no later than July 1, 2016, each Party shall provide the other Party one monthly invoice itemized by Service Delivery Schedule for Services provided other than for “as needed” Services, which shall be invoiced as described below under “As Needed and Other Hourly Services.”

The Parties shall engage, and share the costs of, a third-party to analyze the actual Service Costs (“Cost Analysis”) of providing the City Services and the Authority Services for Fiscal Year 2015-2016 and each subsequent Fiscal Year. If, based on this Cost Analysis: (a) the costs paid by a Subscribing Party were greater than the costs of providing the Services, the Providing Party shall pay an amount equal to such cost variance to the Subscribing Party in the next Fiscal Year or as otherwise agreed to by the Parties; and (b) the costs paid by a Subscribing Party were less than the costs of providing the Services, the Subscribing Party shall pay an amount equal to such cost variance to the Providing Party in the next Fiscal Year or as otherwise agreed to by the Parties. Additionally, Service Costs will not include costs of funding the Pension Obligation (as defined in each of the Leases), but shall be addressed as part of the process of preparing budgets for the Regional Systems and Local Systems as set forth in the Water and Sewer Services Agreement.

Each invoice, whether for Services provided regularly or “as-needed,” shall itemize the costs and charges by Services provided under each Service Delivery Schedule, and shall provide sufficient detail to the Subscribing Party to identify the Services performed and the basis for the charges. A Performing Party may only charge the Service Cost for Services provided. Neither Party may set-off any amount it owes to the other Party on account of any amounts it may be owed by such Party. Contract, material and other applicable Service Costs shall be billed at the contractual rates or third-party charges therefor.

Payment Terms. Payments for Services shall be payable monthly. Unless otherwise specified in a Service Delivery Schedule, payment of each invoice shall be due no later than thirty (30) days after the date of delivery of the Invoice, provided however, that in the event the City has not received its current monthly disbursement of operations and maintenance operating funds from the Authority pursuant to the Water and Sewer Services Agreement, its payment due date shall be five (5) business days after receipt of such funds (the “Payment Terms”).

Invoice Disputes. In the event a Subscribing Party disputes all or a portion of the amount billed under any invoice, it shall notify the Performing Party of such dispute (an “Invoice Dispute”) in writing within twenty (20) days of the date of receipt of the disputed invoice. Invoice Disputes shall be resolved as described under “Dispute Resolution” below.

The Subscribing Party shall pay the undisputed amount of any invoice pursuant to the Payment Terms. If the Invoice Dispute is not resolved by the date the payment on the disputed invoice is due, the Subscribing Party shall deposit the disputed amount into an escrow account to be held for the benefit of the Performing Party until the dispute is resolved.

Reconciliation. Beginning with Fiscal Year 2017-2018, the Performing Party shall reasonably calculate the Service Cost required to provide each Service during the next Fiscal Year, and shall notify the Subscribing Party of that Service Cost in sufficient time for the Subscribing Party to ensure the organization’s Fiscal Year budget is sufficient to pay such Service Costs. By December 1 of each year, a Performing Party shall provide to the other Party the Service Costs for each Service it expects to provide in the next Fiscal Year.

Beginning with the Fiscal Year 2017-2018, in the event a Performing Party incurs extraordinary and unanticipated Service Costs, the Chief Executive Officer and the Director shall meet within ten (10) business days to discuss any reconciliation or adjustments to the amounts paid by the Subscribing Party to ensure the payment of the Service Costs.

“As-needed” and Other Hourly Services. Commencing no later than July 1, 2016, for Services provided on an “as-needed” basis, the Performing Party shall exercise its best efforts to provide invoices within thirty (30) days after the end of each month for such Services performed during the immediately preceding month, with such invoices clearly marked as final if all “as needed” Services have been completed or marked as open if the “as needed” Services are still being performed. “As-needed” Services shall be billed on an hourly unit price basis, which shall be recorded and billed in quarter hour increments, comprising the Service Cost for such Services.

“As-needed” Services and other Services billed on hourly basis shall be recorded and billed in quarter hour increments, comprising the following Service Cost elements: salaries and fringe benefits; provided that, such hourly unit price shall be based on the annualized productive hours for the class of employee being billed. This amount shall be subject to the annual Cost Analysis reconciliation described under “Invoices” above.

Defaults

A Performing Party shall be in default under the Shared Services Agreement if it fails to perform any of the Services required of it thereunder in accordance with the Performance Standards after it has received thirty (30) days’ notice of such default, provided that if such failure cannot be remedied within such thirty (30) day cure period, the Performing Party shall not be in default if it commences to remedy the default within the 30 day cure period and diligently pursues the remedy to its completion pursuant to a

mutually agreeable action plan and schedule agreed to by the Director and the Chief Executive Officer or their assignees.

A Subscribing Party shall be in default under the Shared Services Agreement if it does not make the payments required, whether in whole or in part, pursuant to the Payment Terms and after resolution of any invoice dispute as described above.

Either Party shall be in default under the Shared Services Agreement if it fails to fully perform and comply with any of the other terms, conditions or provisions of the Shared Services Agreement not covered by the two immediately preceding paragraphs after it has received thirty (30) days' notice of such default, provided that if such failure cannot be remedied within such thirty (30) day cure period, the defaulting Party shall not be in default if it commits to remedy within the thirty (30) day cure period and diligently pursues the remedy to its completion pursuant to a mutually agreeable action plan and schedule agreed to by the Director and the Chief Executive Officer or their assignees.

Remedies

Upon default by a Performing Party, the Subscribing Party may (i) perform or cause a third party to perform such obligation of the Performing Party upon written notice to the Performing Party, and the Performing Party shall reimburse the non-defaulting Party for all reasonable increased costs incurred in such performance; and (ii) resolve the dispute as described under "Disputes, Resolution" below.

Upon default by a Subscribing Party, the Performing Party may, at its sole option: (i) provide written notice to the Subscribing Party of such default; and (ii) pursue all rights and remedies available to the Performing Party under the Shared Services Agreement.

Upon default of a Party as described in the third paragraph under "Defaults" above, the non-defaulting Party may, at its sole option, pursue any rights and remedies available to such Party under the Shared Services Agreement, including specific performance.

Waiver

The failure of any Party to insist in any one instance upon strict performance by the other Party of its obligations under the Shared Services Agreement shall not constitute a waiver or relinquishment of any such obligations as to any other instances, and the same shall continue in full force and effect. No covenant or condition of the Shared Services Agreement may be waived by either Party except by written consent of that Party, and forbearance or indulgence of that Party in any regard whatsoever and no matter how long shall not constitute a waiver of the covenant or condition until performed or waived in writing, and that Party shall be entitled to invoke any remedy available to that Party under the Shared Services Agreement or by applicable law, despite the forbearance or indulgence.

Disputes; Resolution

The Authority and the City shall each designate in writing to the other from time to time a representative who shall be authorized to resolve any dispute relating to the subject matter of the Shared Services Agreement in an equitable manner and, unless otherwise expressly provided herein, to exercise the authority of such party to make decisions by mutual agreement.

The City and the Authority each agree (i) to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner and (ii) to provide each other with reasonable access during

normal business hours to any and all non-privileged written records, information and data pertaining to any such dispute.

If any dispute relating to the subject matter of the Shared Services Agreement is not resolved between the City and the Authority as described under this “Disputes; Resolution” within 30 days from the date on which a party provides written notice to the other party of such dispute and of the notifying party’s position on the disputed matter, then upon written notification by either party to the other party, such dispute shall be settled exclusively and finally by arbitration in accordance with the procedures described under “Arbitration” below.

Arbitration

It is specifically understood and agreed that any dispute or claim arising under or relating to the Shared Services Agreement that cannot be resolved between the City and the Authority, including any matter relating to the interpretation or performance of the Shared Services Agreement, shall be submitted to arbitration irrespective of either the magnitude thereof or the amount in dispute.

Each arbitration between the City and the Authority shall be conducted pursuant to the Uniform Arbitration Act, Act No. 371, Public Acts of Michigan, 2012 (“Act 371”).

The arbitration shall be conducted before a panel composed of three arbitrators (the “Arbitration Panel”). Each party shall appoint an arbitrator, obtain its appointee’s acceptance of such appointment and deliver written notification of such appointment and acceptance to the other party within 15 days after delivery of a notice of arbitration. The two arbitrators appointed by the City and the Authority shall jointly appoint the third (who shall be the chairperson), obtain the acceptance of such appointment and deliver written notification of such appointment within 15 days after their appointment and acceptance.

Any arbitration commenced hereunder shall be completed within 120 days after the appointment of the Arbitration Panel absent agreement of the City and the Authority to the contrary. The City and the Authority waive any claim to any damages in the nature of punitive, exemplary or statutory damages in excess of compensatory damages or otherwise expressly provided for herein, and the Arbitration Panel is specifically divested of any power to award such damages. The Arbitration Panel shall have the power to award injunctive or other equitable relief. All decisions of the Arbitration Panel shall be pursuant to a majority vote. Any interim or final award shall be rendered by written decision.

If either the City or the Authority fails to appoint its arbitrator within 15 days after delivery of a notice of arbitration, or if the two arbitrators appointed cannot agree upon the third arbitrator within 15 days after appointment of the second arbitrator, then the required arbitrator(s) shall be appointed by the American Arbitration Association or as otherwise agreed by the City and the Authority.

No arbitrator shall be a past or present employee or agent of, or consultant or counsel to, either the City or the Authority or any affiliate of either the City or the Authority.

The Authority and the City shall each bear one-half of the out-of-pocket third party costs and expenses of an arbitration, including the arbitrators’ fees.

Appeals of Arbitration Awards and Decisions

The City or the Authority may appeal an award or decision issued by the Arbitration Panel for the reasons set forth in Section 23 of Act 371 (MCL 691.1703).

Enforcement of Arbitration Awards and Decisions

The City or the Authority may enforce any awards or decisions of the Arbitration Panel issued as described under this “Arbitration” pursuant to Section 22 of Act 371 (MCL 691.1702). The provisions described under “Disputes; Resolution” and “Arbitration” above shall be the sole and exclusive remedy of the Parties with respect to any claim or dispute. The City and the Authority agree not to bring, or cause to be brought, in a court of law any action, proceeding or cause of action whatsoever with respect to any such claim or dispute, other than as necessary to enforce the award or decision of the Arbitration Panel as provided above.

Term

The term of the Shared Services Agreement shall run concurrently with the terms of the Leases.

Amendments

The Shared Services Agreement can be amended only by written agreement executed and approved by both Parties, as applicable; provided, that Service Delivery Schedules may be executed, modified, or terminated as described under “Modification or Extension of Service Delivery Schedules” above.

Confidential Information

Each Party acknowledges that it may receive or have access to “Confidential Information,” as that term is defined below (a “Possessing Party”), of the other Party (a “Protected Party”). A Possessing Party shall protect the Protected Party’s Confidential Information with the same degree of care as the Possessing Party uses to avoid unauthorized use, disclosure, publication or dissemination of its own Confidential Information of a similar nature, but in no event, less than a reasonable degree of care. A Possessing Party shall not manipulate, modify, corrupt or otherwise change any of the Confidential Information of the Protected Party. A Possessing Party shall not disclose or otherwise make available the Protected Party’s Confidential Information to any third party without the prior written consent of Protected Party; provided, however, that the Possessing Party may disclose the Confidential Information to its officers and employees who need access to the Confidential Information to perform their obligations to the Protected Party and who are themselves bound by nondisclosure obligations at least as restrictive as those set forth under this “Confidential Information.” Further, the Possessing Party shall comply with all confidentiality-related guidelines, standards and law applicable to the Protected Party. The Possessing Party agrees to immediately notify the Protected Party in the event the Possessing Party becomes aware of any loss or unauthorized disclosure of the Protected Party’s Confidential Information. A Possessing Party shall not utilize any Confidential Information of a Protected Party for its own benefit.

“Confidential Information” means any information related to the business, personnel and operations of the Protected Party obtained by the Possessing Party, and may include but is not limited to information or data related to business affairs, customer billing and usage information, data, manuals, financial and accounting data, data and information concerning contracts, intellectual property, proprietary information and other operational information. Confidential Information shall not include: (A) any information that the Possessing Party can document: (i) was generally available to the public at the time it was received by the Possessing Party, (ii) was known to the Possessing Party, without restriction, at the time of disclosure, or (iii) was independently developed by the Possessing Party without any use of any Confidential Information; and (B) any public records subject to disclosure pursuant to Act 442, Public Acts of Michigan, 1976, as amended.

Upon expiration or termination of the applicable Service Delivery Schedule, the Possessing Party shall promptly return to the Protected Party all Confidential Information of the Protected Party and all copies, or at the Protected Party's option, the Possessing Party shall destroy the Confidential Information.

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APPENDIX IX

SUMMARY OF 2018 MOU

This summary does not purport to be comprehensive or definitive and is subject to all of the terms of the 2018 MOU, to which reference is hereby made and copies of which are available on GLWA's website at www.glwater.org or from the Underwriters prior to the execution and delivery of the Series 2020 Bonds and thereafter may be examined or obtained at the expense of the person requesting the same at the corporate trust office of the Trustee.

General

On June 27, 2018, DWSD and GLWA entered into the 2018 MOU to provide for clarification of specific sections of the Leases, the Water and Sewer Services Agreement, Master Bond Ordinance No. 2015-01 adopted by the GLWA Board with respect to the Water System on October 7, 2015, as amended (the "Water Bond Ordinance"), and the Bond Ordinance (the Bond Ordinance together with the Water Bond Ordinance, the "Bond Ordinances"), to make adjustments contemplated by the Leases, the Water and Sewer Services Agreement and the Bond Ordinances, and to address the liquidation of certain liabilities set forth in the Leases. Complete copies of the Leases, the Water and Sewer Services Agreement and the Bond Ordinances are available on GLWA's website at www.glwater.org.

Adjustments to Cash Held for the Benefit of DWSD

The 2018 MOU provides that the following book entry credits and charges are effective July 1, 2017, reflecting a net amount of \$74,201,200 to the Cash Held for the Benefit of DWSD as established on GLWA's General Ledger Account:

1. A credit of \$78,434,300 for the assumption by DWSD of the Pre-Effective Date Liabilities, as outlined below, reduced by \$9,000,000 for the reimbursement of certain litigation liabilities previously paid by GLWA, for a net deposit of \$69,434,300.
2. A reduction of the Budget Stabilization Requirement to \$7,500,000, and to reflect this adjustment, GLWA shall apply \$3,433,000 as a credit to DWSD.
3. A credit of \$1,333,900, reflecting the portion of the final annual \$20,000,000 sewer lookback adjustment charged during Fiscal Year 2016, which was attributable to a deposit to DWSD's Sewer System Improvement and Extension ("I&E") Account of the Sewer System I&E Fund. The final sewer bad debt lookback adjustment, as calculated as of June 30, 2017, shall reduce DWSD's Fiscal Year 2019 revenue requirement by \$6,527,200. This adjustment is different than the prior sewer lookback adjustment agreement that is reflected in the first sentence of this paragraph 3. The parties agree that the Budget Stabilization Fund sufficiently accomplishes the intent of mitigating collection risk, obviating the need for any further sewer bad debt lookback.

Adjustments to Non-cash Related Book Entries

Lease Pre-payment. The 2018 MOU provides that the initial term of the Leases began on the Effective Date and ends on December 31, 2055. GLWA's last monthly payment shall be June 1, 2055 and GLWA's \$25,000,000 Lease payment on January 1, 2016 shall be applied to the period of July 1, 2055 through December 31, 2055.

Obligation Payable by DWSD to GLWA for Direct Allocable Share of pre-Effective Date Bonded Indebtedness for the Local Systems. DWSD's agreed upon allocable share of pre-Effective Date bonded indebtedness at June 30, 2017 related to the Local Systems is \$437,280,200 for the Local Water System and \$358,090,600 for the Local Sewer System. This allocation was determined based on an agreed upon share of debt service in Fiscal Year 2016 of \$455,000,000 for the Local Water System and \$370,000,000 for the Local Sewer System and the amounts included in the revenue requirements allocated to the Retail Customers related to the debt service for Fiscal Year 2016 and Fiscal Year 2017. The amortization schedule of DWSD's obligations payable related to pre-Effective Date bonded indebtedness for the Local Systems is set forth in Schedule 3 to the 2018 MOU. This amortization schedule establishes fixed payment terms for these obligations, with an agreed upon interest rate of 4.76% for the Local Water System and 4.33% for the Local Sewer System. This amortization schedule shall not be altered to reflect any refunding of pre-Effective Date bonded indebtedness after calendar year 2017. Debt service on bonds issued Post-Effective Date, other than bonds issued after calendar year 2017 to refund pre-Effective Date bonded indebtedness, shall be allocated based on the use of the proceeds. Consistent with implementation of the amortization schedule, GLWA shall reduce the DWSD Fiscal Year 2018 Revenue Requirement by \$2,177,500.

DWSD Retail Customers

The 2018 MOU provides the following adjustments with respect to pre-Effective Date receivables and Landlord/Tenant Deposits and Affordability Accounts:

1. Pre-Effective Date Receivables. As of July 1, 2017, GLWA shall transfer to DWSD all of GLWA's interests in remaining pre-Effective Date retail accounts receivable and DWSD assumes all liability associated with repayment of delinquent tax advances. Net balances of \$8,816,149 shall be written off from GLWA's books as of July 1, 2017. In addition, GLWA shall transfer the aggregate amount of \$16,293,664 related to the cumulative Wayne County Revolving Fund Loan balance as of June 30, 2017, collected after July 1, 2017, to (i) DWSD's Sewer System Operation and Maintenance ("O&M") Account in the Sewer System O&M Fund in the amount of \$15,044,972 and the related obligations and (ii) DWSD's Water System O&M Account in the Water System O&M Fund in the amount of \$1,248,692 and the related obligations. Other collection activity related to these retail accounts receivable, since July 1, 2017, shall be deposited to the Receiving Fund held under the related Bond Ordinance, distributed in accordance with terms of the related Bond Ordinance and credited to the Cash Held for the Benefit of DWSD Account.

2. Landlord/Tenant Deposits and Affordability Accounts. GLWA shall transfer to DWSD all of GLWA's interests, if any, in the balances in the Landlord/Tenant Deposits and Affordability Accounts (i.e. non-Revenues representing, respectively, deposits required by DWSD for tenants in leased facilities and voluntary charitable contributions by Retail Customers to be used to assist certain other Retail Customers with paying bills for Water Services and Sewer Services) held in the Bond Ordinances in a fiduciary capacity and the related obligations.

Cash Transfers to DWSD

The 2018 MOU provides for the following cash transfers to DWSD Accounts:

1. DWSD Sewer System I&E Account. Proceeds of DWSD Bonds held in the Construction Fund for such DWSD Bonds and available on the Effective Date are allocated consistent with the DWSD agreed upon allocable share of bond debt service related to the Local Systems. In recognition, GLWA shall transfer \$15,174,200 from GLWA's Sewer System I&E Account to DWSD's Sewer System I&E Account.

2. DWSD O&M Account. GLWA shall transfer \$18,622,473 to DWSD, in full satisfaction of GLWA's remaining short and long-term worker's compensation, unemployment, compensated absences employment and other liabilities included in Schedule 4 to the 2018 MOU. Upon execution of the 2018 MOU, DWSD will notify the City Office of the Chief Financial Officer that DWSD has become solely responsible for these liabilities. Net balances of \$18,622,473 shall be written off from GLWA's books as of July 1, 2017. DWSD shall record a like amount as of July 1, 2017.

Extraordinary Repair & Replacement ("ER&R") Reserve Fund Contributions and Clarifications

The 2018 MOU provides that except for the required restoration of DWSD withdrawals, GLWA shall fund future deposits to the ER&R Reserve Fund from Regional System Revenues as needed to satisfy the ER&R Maximum Requirement, as defined in the related Bond Ordinance and based on the sum of the Regional Systems' and Local Systems' Fiscal Year O&M Budgets. This provision does not require any cash or non-cash adjustments between the parties.

The ER&R Reserve Fund shall be available to both GLWA and DWSD as provided in the Bond Ordinances. To the extent there may be an investment loss if funds are drawn by DWSD, DWSD's Chief Financial Officer shall be advised before any loss is incurred. The entity that uses the funds shall fund investment losses incurred, if any.

DWSD draws not repaid as contemplated by the Bond Ordinances shall be repaid in full, in installments, over a period up to the next three fiscal years, plus a surcharge calculated as provided below, as part of the revenue requirement allocated to and payable by DWSD. The surcharge on the portion of the draw which remains unpaid at June 30 of the Fiscal Year in which the draw was made shall be based on the three-year U.S. Treasury Note Rate, as published in the Wall Street Journal, plus 150 basis points.

Until DWSD's ER&R Reserve Fund withdrawal is repaid, and unless DWSD has other resources available for that purpose or otherwise agreed to by GLWA, DWSD shall apply any available funds in the related DWSD I&E Account for that purpose. GLWA Board approval shall be required for repayment terms in excess of three (3) years. The quarterly Reconciliation Committee meetings shall include a review of the progress in DWSD repaying any ER&R Reserve Fund withdrawal.

Reconciliation Committee

The 2018 MOU provides that the Reconciliation Committee (defined by the Water and Sewer Services Agreement as a DWSD Board Member and GLWA Board Member or their designees) along with GLWA's Chief Executive Officer, DWSD's Director, and their respective Chief Financial Officers and General Counsels shall meet at a minimum quarterly (January, April, July, and October). GLWA's designated Board Member liaison shall not be a Mayoral appointee and shall not be selected by the Mayoral appointees to the GLWA Board. The purpose of the quarterly meetings is to expand the level of communication between the two entities related to financial, operational, legal, capital planning, and other matters and opportunities for improved management and coordination of both entities and foster a positive partnership in the water services sector. The results of those meetings shall be reported back to the respective Boards by the Board liaison.

Financial Reporting on the Local Systems

The 2018 MOU provides that beginning June 1, 2018, DWSD shall transmit to GLWA:

- a. Quarterly Budget to Actual Report for Revenues and Expenses for O&M, I&E, and Construction Bond activities.

- b. Quarterly cash flow forecast for the subsequent two-year time period for O&M, I&E, and Construction Bond activities.
- c. Quarterly reconciliation of the Cash Held by GLWA, as recorded by DWSD, with the Cash Held for the Benefit of DWSD, as provided by GLWA.
- d. Monthly cash receipts presented on a year-over-year basis with variance analysis.
- e. Monthly accounts receivable roll-forward by system, which provides beginning balance, revenues, expenses, write-offs, other adjustments, and reconciling items.
- f. Daily cash receipt reconciliation.
- g. Any other reports as requested by the Reconciliation Committee.

Standard Operating Procedures

The 2018 MOU provides that DWSD and GLWA shall jointly develop standard operating procedures (“SOPs”) for working through and documenting operational interactions. To the extent that SOPs cannot be agreed upon by the DWSD and GLWA team members after review with the GLWA Chief Executive Officer and the DWSD Director, the issue may be brought forward to the Reconciliation Committee.

Budget Shortfalls

The 2018 MOU provides that if DWSD experiences a cumulative negative variance of more than two percent (2%) of the total budget for either Local System (a “Budget Shortfall”) from its budget adopted pursuant to the Water and Sewer Services Agreement based on DWSD’s quarterly reports to GLWA, DWSD, as the agent of GLWA, shall, within thirty (30) days thereafter, schedule a meeting of the Reconciliation Committee to discuss the magnitude and reasons for the shortfall and possible approaches to address the shortfall. Within sixty (60) days after the Reconciliation Committee meets, DWSD, as agent, shall develop a plan to cure the Budget Shortfall and the time period within which the shortfall will be cured, taking into account the reasons for and magnitude of the shortfall. If Revenues, including, but not limited to, adjustments to Local O&M expenditures and the use of subsequent positive receipts, are not available to cure the Budget Shortfall within the same Fiscal Year, DWSD shall reallocate available funds in the related DWSD I&E Account or reallocate any unencumbered Lease Payment to eligible debt service to satisfy the Budget Shortfall.

Budget Shortfalls not cured by the end of the Fiscal Year following the year in which they arise shall be repaid in full, in installments, over a period not to exceed the next three fiscal years, plus a surcharge calculated as provided below, as part of the Revenue Requirement payable by DWSD. The surcharge factor on the portion of the Budget Shortfall which remains unpaid at June 30 of the Fiscal Year following the fiscal year in which the Budget Shortfall arises shall be based on the three-year U.S. Treasury Note Rate, as published in the Wall Street Journal, plus 150 basis points.

Until the Budget Shortfall is repaid, and unless DWSD has other resources available for that purpose or otherwise agreed to by GLWA, DWSD shall apply any available funds in the related DWSD I&E Account for that purpose. GLWA Board approval shall be required for repayment terms in excess of three (3) years. The quarterly Reconciliation Committee meetings shall include a review of the progress in eliminating the Budget Shortfall.

Write-offs Related to 2018 MOU Implementation

The 2018 MOU provides that any write-offs recognized in GLWA's Financial Statements related to implementing the 2018 MOU shall not directly affect current or future revenue requirements for customer specific cost pools.

Water and Sewer Charges to GLWA

The 2018 MOU includes a provision that GLWA desires a meeting to begin the discussion on the clarification of water supply and sewage disposal services provided by DWSD to the Regional System within thirty (30) days after the execution of the 2018 MOU. The 2018 MOU provides that if this issue is not resolved within ninety (90) days after the meeting, the matter will be brought to the Reconciliation Committee for potential resolution prior to invoking Article 7 - Dispute Resolution of the Water and Sewer Services Agreement.

Pre-Effective Date Liabilities

The 2018 MOU provides and clarifies that DWSD assumes liability for third party litigation, arbitrations and claims arising out of events and/or actions occurring on or before January 1, 2016 and involving the following types of matters (collectively, the "Pre-Effective Date Liabilities"):

- a. Local System ratemaking, collections and enforcement.
- b. Sewer back-ups in the City of Detroit, unless there is admissible evidence of the failure of Leased Sewer Facility or Facilities.
- c. Personal injury matters (more fully described in the 2018 MOU).
- d. Contract matters related to the Local Systems (more fully described in the 2018 MOU).
- e. Environmental matters related to the Local Systems.
- f. City of Detroit Bankruptcy matters, excluding BC Notes and pension liabilities as described in Section 4.3 of the Leases.
- g. Freedom of Information Act and Open Meetings Act matters related to the Local System for which DWSD maintains the records.
- h. In addition to the matters addressed in "Cash Transfers to DWSD – DWSD O&M Account" described above, employment matters for DWSD employees that were not actually offered employment by GLWA, including labor/union and discrimination and harassment.
- i. Any other Pre-Effective Date Liabilities relating to the Local Systems only.

For all Pre-Effective Date Liabilities, DWSD agrees to lead in the defense of the Pre-Effective Date Liabilities and assume all financial or legal exposure for the Pre-Effective Date Liabilities, including any and all unpaid amounts to fund ratemaking litigation settlements. GLWA agrees that the arbitration demands approved by GLWA's Board related to Pre-Effective Date Liabilities involving third parties shall be withdrawn. GLWA agrees to cooperate in DWSD's defense of any Pre-Effective Date Liabilities.

The 2018 MOU provides that GLWA shall have no further liability as to the liabilities transferred to and assumed by DWSD under the 2018 MOU, specifically those assigned as described under "Adjustments to Cash Held for the Benefit of DWSD – Consideration for Assumption of Pre-Effective Date Liabilities," second paragraph of "DWSD Retail Customers," "Cash Transfers to DWSD – DWSD O&M Account," and first two paragraphs of "Pre-Effective Date Liabilities."

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APPENDIX X

FORM OF CONTINUING DISCLOSURE UNDERTAKING

This Continuing Disclosure Undertaking (the “Undertaking”) is executed and delivered by the Great Lakes Water Authority (the “Issuer”) and in connection therewith have examined the law and certified copies of the proceedings and other documents relating to the issuance by the Issuer of its \$594,930,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2020A (Federally Taxable) and \$92,525,000 Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2020B (Federally Taxable) (collectively, the “Series 2020 Bonds”).

The Series 2020 Bonds have been authorized and are being issued pursuant to the provisions of (i) Act 233 and Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”), (ii) Master Bond Ordinance No. 2015-02 adopted by the Board of Directors of the Issuer on October 7, 2015, as amended (the “Bond Ordinance”), (iii) the Series Ordinance Authorizing Issuance and Sale of Sewage Disposal System Revenue Refunding Bonds in a Principal Amount not to Exceed \$800,000,000, adopted by the Board of Directors of the Issuer on February 12, 2020 (the “2020 Series Ordinance”), and (iv) a Sale Order of the Chief Executive Officer of the Issuer dated June 4, 2020 (the “2020 Sale Order,” and, together with the Bond Ordinance and the 2020 Series Ordinance, the “Ordinance”).

Section 1. Purpose of the Undertaking. This Undertaking is being executed and delivered by the Issuer for the benefit of the Bondholders. The Issuer acknowledges that the State of Michigan (the “State”) has undertaken no responsibility with respect to any notices or disclosures provided or required under this Undertaking and has no liability to any person, including any Bondholders, with respect to any such notices or disclosures. The Issuer acknowledges that this Undertaking does not address the scope of any application of Rule 10b-5 promulgated by the SEC pursuant to the 1934 Act to the notices of the Listed Events provided or required to be provided by the Issuer pursuant to this Undertaking.

Section 2. Definitions. The following capitalized terms shall have the following meanings:

“1934 Act” shall mean the Securities Exchange Act of 1934, as amended.

“Annual Report” shall mean any Annual Report of the Issuer provided by the Issuer pursuant to, and as described in, Sections 3 and 4 of this Undertaking.

“Beneficial Owner” shall mean any person which has or shares the power, directly or indirectly, to make investment decisions concerning ownership of any Series 2020 Bonds (including any person holding Series 2020 Bonds through nominees, depositories or other intermediaries).

“Bondholder” shall mean the registered owner of any Series 2020 Bond and any person which (a) has the power, directly or indirectly, to vote or consent with respect to, or to dispose of ownership of, any of the Series 2020 Bonds (including persons holding Series 2020 Bonds through nominees, depositories or other intermediaries), or (b) is treated as the owner of any of the Series 2020 Bonds for federal income tax purposes.

“Disclosure Dissemination Agent” shall mean the Issuer or any successor Disclosure Dissemination Agent appointed in writing by the Issuer and which has filed with the Issuer a written acceptance of such appointment. In order to provide continuing disclosure with respect to the Series 2020 Bonds in accordance with the Rule in connection with the issuance of the Series 2020 Bonds, the Issuer will enter into a Disclosure Dissemination Agent Agreement (“Disclosure Dissemination Agreement”) for the benefit of the Bondholders

with Digital Assurance Certification, L.L.C. (“DAC”), under which the Issuer has designated DAC as Disclosure Dissemination Agent.

“EMMA” shall mean the Electronic Municipal Market Access system of the MSRB. As of the date of this Undertaking, the EMMA Internet Web site address is <http://www.emma.msrb.org>.

“Financial Obligation” means a (i) debt obligation; (ii) derivative instrument entered into in connection with, or pledged as a security or a source of payment for, an existing or planned debt obligation; or (iii) a guarantee of (i) or (ii). The term Financial Obligation does not include municipal securities as to which a final official statement has been otherwise provided to the MSRB under the Rule.

“GAAP” shall mean generally accepted accounting principles, as such principles are prescribed, in part, by the Financial Accounting Standards Board and modified by the Governmental Accounting Standards Board and in effect from time to time.

“Listed Events” shall mean any of the events listed in Section 5(a) of this Undertaking.

“MSRB” shall mean the Municipal Securities Rulemaking Board established in accordance with the provisions of Section 15B(b)(1) of the 1934 Act. As of the date of this Undertaking, the address and telephone and telecopy numbers of the MSRB are as follows:

Municipal Securities Rulemaking Board
1300 “I” Street, N.W. Suite 1000
Washington, DC 20005
Tel: (202) 838-1500
Fax: (202) 898-1500

“Official Statement” shall mean the final Official Statement for the Series 2020 Bonds dated June 4, 2020.

“Participating Underwriter” shall mean any of the original underwriters of the Series 2020 Bonds required to comply with the Rule in connection with the primary offering of the Series 2020 Bonds.

“Rule” shall mean Rule 15c2-12 (17 CFR Part 240, § 240.15c2-12) promulgated by the SEC pursuant to the 1934 Act, as the same may be amended from time to time, together with all interpretive guidance or other official interpretations or explanations thereof that are promulgated by the SEC.

“SEC” shall mean the United States Securities and Exchange Commission.

“Securities Counsel” shall mean legal counsel expert in federal securities law.

“State” shall mean the State of Michigan.

Section 3. Provision of Annual Reports.

(a) Each year, the Issuer shall provide, or shall cause the Disclosure Dissemination Agent to provide, not later than 270 days after the last day of the Issuer’s fiscal year, commencing with the Issuer’s Annual Report for its fiscal year ended June 30, 2020, to the MSRB an Annual Report for the preceding fiscal year which is consistent with the requirements of Section 4 of this Undertaking. Not later than 15 business

days (or such lesser number of days as is acceptable to the Disclosure Dissemination Agent) prior to said date, the Issuer shall provide the Annual Report to the Disclosure Dissemination Agent (if other than the Issuer). Currently, the Issuer's fiscal year commences on July 1. In each case, the Annual Report may be submitted as a single document or as separate documents comprising a package, and may include by specific reference other information as provided in Section 4 of this Undertaking; provided, however, that if the audited financial statements of the Issuer are not available by the deadline for filing the Annual Report, they shall be provided when and if available, and unaudited financial statements in a format similar to the audited financial statements then most recently prepared for the Issuer shall be included in the Annual Report.

(b) If the Issuer is unable to provide to the MSRB an Annual Report of the Issuer by the date required in subsection (a), the Issuer shall file a notice, in a timely fashion, with the MSRB, in substantially the form attached as Exhibit A.

(c) If the Issuer's fiscal year changes, the Issuer shall file written notice of such change with the MSRB, in substantially the form attached as Exhibit B.

(d) Whenever any Annual Report or portion thereof is filed as described above, it shall be attached to a cover sheet in substantially the form attached as Exhibit C.

(e) If the Disclosure Dissemination Agent is other than the Issuer, the Disclosure Dissemination Agent shall file a report with the Issuer certifying that the Annual Report has been provided pursuant to this Undertaking, stating the date it was provided.

(f) In connection with providing the Annual Report, the Disclosure Dissemination Agent (if other than the Issuer) is not obligated or responsible under this Undertaking to determine the sufficiency of the content of the Annual Report for purposes of the Rule or any other state or federal securities law, rule, regulation or administrative order.

Section 4. Content of Annual Reports. The Issuer's Annual Report shall contain or include by reference the following:

(a) The audited financial statements of the Issuer for its fiscal year immediately preceding the due date of the Annual Report.

(b) An update of the financial information and data contained in the tables under the captions: "THE REGIONAL SEWER SYSTEM," "SERVICE AREA AND CUSTOMERS," "THE MASTER PLAN AND THE CAPITAL IMPROVEMENT PLAN," "AUTHORITY FINANCIAL OPERATIONS" (excluding any projections included therein) appearing in the Official Statement.

The Issuer's financial statements shall be audited and prepared in accordance with GAAP with such changes as may be required from time to time in accordance with State law.

Any or all of the items listed above may be included by specific reference to other documents available to the public on the MSRB's Internet Web site or filed with the SEC. The Issuer shall clearly identify each such other document so included by reference.

Section 5. Reporting of Significant Events.

(a) The Issuer covenants to provide, or cause to be provided, notice of the occurrence of any of the following events with respect to the Series 2020 Bonds in a timely manner not in excess of ten (10) business days after the occurrence of the event and in accordance with the Rule:

- (1) Principal and interest payment delinquencies;
- (2) Non-payment related defaults, if material;
- (3) Unscheduled draws on debt service reserves reflecting financial difficulties;
- (4) Unscheduled draws on credit enhancements reflecting financial difficulties;
- (5) Substitution of credit or liquidity providers, or their failure to perform;
- (6) [Reserved;]
- (7) Modifications to rights of security holders, if material;
- (8) Bond calls, if material;
- (9) Defeasances;
- (10) Release, substitution, or sale of property securing repayment of the Series 2020 Bonds, if material;
- (11) Rating changes;
- (12) Tender offers;
- (13) Bankruptcy, insolvency, receivership or similar event of the Issuer;
- (14) The consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;
- (15) Appointment of a successor or additional trustee or the change of name of a trustee, if material;
- (16) Incurrence of a Financial Obligation of the obligated person, if material, or agreement to covenants, events of default, remedies, priority rights or other similar terms of a Financial Obligation of the obligated person, any of which affect Holders of the Series 2020 Bonds, if material; and

- (17) Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the obligated person, any of which reflect financial difficulties.

(b) Whenever the Issuer obtains knowledge of the occurrence of a Listed Event described in subsection (a)(2), (7), (8), (10), (14), (15), (16) or (17), the Issuer shall as soon as possible determine if such Listed Event would be material under applicable federal securities laws. The Issuer covenants that its determination of materiality will be made in conformance with federal securities laws.

(c) If the Issuer determines that (i) a Listed Event described in subsection (a)(1), (3), (4), (5), (6), (9), (11), (12) or (13) has occurred or (ii) the occurrence of a Listed Event described in subsection (a)(2), (7), (8), (10), (14), (15), (16) or (17) would be material under applicable federal securities laws, the Issuer shall cause a notice of such occurrence to be filed with the MSRB within ten (10) business days of the occurrence of the Listed Event, together with a cover sheet in substantially the form attached as Exhibit D. In connection with providing a notice of the occurrence of a Listed Event described in subsection (a)(9), the Issuer shall include in the notice explicit disclosure as to whether the Series 2020 Bonds have been escrowed to maturity or escrowed to call, as well as appropriate disclosure of the timing of maturity or call.

(d) In connection with providing a notice of the occurrence of a Listed Event, the Disclosure Dissemination Agent (if other than the Issuer), solely in its capacity as such, is not obligated or responsible under this Undertaking to determine the sufficiency of the content of the notice for purposes of the Rule or any other state or federal securities law, rule, regulation or administrative order.

(e) The Issuer acknowledges that the “rating changes” referred to in subsection (a)(11) above may include, without limitation, any change in any rating on the Series 2020 Bonds or other indebtedness for which the Issuer is liable.

(f) The Issuer acknowledges that it is not required to provide a notice of a Listed Event with respect to credit enhancement when the credit enhancement is added after the primary offering of the Series 2020 Bonds, the Issuer does not apply for or participate in obtaining such credit enhancement, and such credit enhancement is not described in the Official Statement.

Section 6. Mandatory Electronic Filing with EMMA.

All filings with the MSRB under this Undertaking shall be made by electronically transmitting such filings through the EMMA Dataport at <http://www.emma.msrb.org> as provided by the amendments to the Rule adopted by the SEC in Securities Exchange Act Release No. 59062 on December 5, 2008.

Section 7. Termination of Reporting Obligation.

(a) The Issuer’s obligations under this Undertaking shall terminate if and when the Issuer’s obligation to pay the principal of and interest on Series 2020 Bonds is assumed in full by some other entity, such entity shall be responsible for compliance with this Undertaking in the same manner as if it were the Issuer, and the Issuer shall have no further responsibility hereunder.

(b) This Undertaking, or any provision hereof, shall be null and void in the event that the Issuer (i) receives an opinion of Securities Counsel, addressed to the Issuer, to the effect that those portions of the Rule, which require such provisions of this Undertaking, do not or no longer apply to the Series 2020 Bonds, whether because such portions of the Rule are invalid, have been repealed, amended or modified, or are

otherwise deemed to be inapplicable to the Series 2020 Bonds, as shall be specified in such opinion, and (ii) files notice to such effect with the MSRB.

Section 8. Disclosure Dissemination Agent. The Issuer, from time to time, may appoint or engage a Disclosure Dissemination Agent to assist it in carrying out its obligations under this Undertaking and may discharge any such Disclosure Dissemination Agent, with or without appointing a successor Disclosure Dissemination Agent. Except as otherwise provided in this Undertaking, the Disclosure Dissemination Agent (if other than the Issuer) shall not be responsible in any manner for the content of any notice or report prepared by the Issuer pursuant to this Undertaking.

Section 9. Amendment; Waiver.

(a) Notwithstanding any other provision of this Undertaking, this Undertaking may be amended, and any provision of this Undertaking may be waived, provided that the following conditions are satisfied:

(i) if the amendment or waiver relates to the provisions of Section 3(a), (b), (c), 4 or 5(a), it may only be made in connection with a change in circumstances that arises from a change in legal requirements, a change in law or a change in the identity, nature or status of the Issuer, or type of business conducted by the Issuer;

(ii) this Undertaking, as so amended or taking into account such waiver, would, in the opinion of Securities Counsel, have complied with the requirements of the Rule at the time of the original issuance of the Series 2020 Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(iii) the amendment or waiver does not, in the opinion of nationally recognized bond counsel, materially impair the interests of the Bondholders.

(b) In the event of any amendment to, or waiver of a provision of, this Undertaking, the Issuer shall describe such amendment or waiver in the next Annual Report and shall include an explanation of the reason for such amendment or waiver. In particular, if the amendment results in a change to the annual financial information required to be included in the Annual Report pursuant to Section 4 of this Undertaking, the first Annual Report that contains the amended operating data or financial information shall explain, in narrative form, the reasons for the amendment and the impact of such change in the type of operating data or financial information being provided. Further, if the annual financial information required to be provided in the Annual Report can no longer be generated because the operations to which it related have been materially changed or discontinued, a statement to that effect shall be included in the first Annual Report that does not include such information.

(c) If the amendment results in a change to the accounting principles to be followed in preparing financial statements as set forth in Section 4 of this Undertaking, the Annual Report for the year in which the change is made shall include a comparison between the financial statements or information prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles. The comparison shall include a qualitative discussion of such differences and the impact of the changes on the presentation of the financial information. To the extent reasonably feasible, the comparison shall also be quantitative. A notice of the change in accounting principles shall be filed by the Issuer or the Disclosure Dissemination Agent (if other than the Issuer) at the written direction of the Issuer with the MSRB.

Section 10. Additional Information. Nothing in this Undertaking shall be deemed to prevent the Issuer from disseminating any other information, using the means of dissemination set forth in this Undertaking or any other means of communication, or including any other information in any Annual Report

or notice of occurrence of a Listed Event, in addition to that which is required by this Undertaking. If the Issuer chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Undertaking, the Issuer shall have no obligation under this Undertaking to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

Section 11. Failure to Comply. In the event of a failure of the Issuer or the Disclosure Dissemination Agent (if other than the Issuer) to comply with any provision of this Undertaking, any Bondholder or Beneficial Owner may bring an action to obtain specific performance of the obligations of the Issuer or the Disclosure Dissemination Agent (if other than the Issuer) under this Undertaking, but no person or entity shall be entitled to recover monetary damages hereunder under any circumstances, and any failure to comply with the obligations under this Undertaking shall not constitute a default with respect to the Series 2020 Bonds. Notwithstanding the foregoing, if the alleged failure of the Issuer to comply with this Undertaking is the inadequacy of the information disclosed pursuant hereto, then the Bondholders and the Beneficial Owners (on whose behalf a Bondholder has not acted with respect to this alleged failure) of not less than a majority of the aggregate principal amount of the then outstanding Series 2020 Bonds must take the actions described above before the Issuer shall be compelled to perform with respect to the adequacy of such information disclosed pursuant to this Undertaking.

Section 12. Duties of Disclosure Dissemination Agent. The Disclosure Dissemination Agent shall have only such duties as are specifically set forth in this Undertaking.

Section 13. Beneficiaries. This Undertaking shall inure solely to the benefit of the Issuer, the Disclosure Dissemination Agent, the Participating Underwriter, the Bondholders and the Beneficial Owners, and shall create no rights in any other person or entity.

Section 14. Transmission of Information and Notices. Unless otherwise required by law or this Undertaking, and, in the sole determination of the Issuer or the Disclosure Dissemination Agent, as applicable, subject to technical and economic feasibility, the Issuer or the Disclosure Dissemination Agent, as applicable, shall employ such methods of information and notice transmission as shall be requested or recommended by the herein-designated recipients of such information and notices.

Section 15. Additional Disclosure Obligations. The Issuer acknowledges and understands that other State and federal laws, including, without limitation, the Securities Act of 1933, as amended, and Rule 10b-5 promulgated by the SEC pursuant to the 1934 Act, may apply to the Issuer, and that under some circumstances, compliance with this Undertaking, without additional disclosures or other action, may not fully discharge all duties and obligations of the Issuer under such laws.

Section 16. Governing Law. This Undertaking shall be construed and interpreted in accordance with the laws of the State, and any suits and actions arising out of this Undertaking shall be instituted in a court of competent jurisdiction in the State. Notwithstanding the foregoing, to the extent this Undertaking addresses matters of federal securities laws, including the Rule, this Undertaking shall be construed and interpreted in accordance with such federal securities laws and official interpretations thereof.

GREAT LAKES WATER AUTHORITY

Dated: June __, 2020

By: _____
Chief Executive Officer

EXHIBIT A

NOTICE OF FAILURE TO FILE ANNUAL REPORT

Issuer: Great Lakes Water Authority (the “Issuer”)

Name of Bond Issue: \$594,930,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2020A (Federally Taxable) and \$92,525,000 Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2020B (Federally Taxable)

Date of Bonds: June 16, 2020

NOTICE IS HEREBY GIVEN that the Issuer has not provided an Annual Report with respect to the above-named Bonds as required by Section 3 of its Continuing Disclosure Undertaking with respect to such Bonds. The Issuer anticipates that the Annual Report will be filed by _____.

GREAT LAKES WATER AUTHORITY

By: _____
Its _____

Dated: _____

EXHIBIT B

NOTICE OF CHANGE IN ISSUER'S FISCAL YEAR

Issuer: Great Lakes Water Authority

Name of Bond Issue: \$594,930,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2020A (Federally Taxable) and \$92,525,000 Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2020B (Federally Taxable)

Date of Bonds: June 16, 2020

NOTICE IS HEREBY GIVEN that the Issuer's fiscal year has changed. Previously, the Issuer's fiscal year ended on _____. It now ends on _____.

GREAT LAKES WATER AUTHORITY

By: _____
Its _____

Dated: _____

EXHIBIT C

ANNUAL REPORT COVER SHEET

This cover sheet and the attached Annual Report or portion thereof should be filed electronically with the Municipal Securities Rulemaking Board through the EMMA Dataport at <http://www.emma.msrb.org> pursuant to Securities and Exchange Commission Rule 15c2-12(b)(5)(i)(A) and (B).

Issuer: Great Lakes Water Authority

Issuer's Six-Digit CUSIP Number(s): _____

or Nine-Digit CUSIP Number(s) to which the attached Annual Report relates: _____

Number of pages of the attached Annual Report or portion thereof: _____

Name of Bond Issue to which the attached Annual Report relates: Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2020A (Federally Taxable) and Sewage Disposal System Revenue Refunding Second Lien Bonds, Series 2020B (Federally Taxable)

Date of such Bonds: _____

I hereby represent that I am authorized by the Issuer or its agent to distribute this information publicly:

Signature: _____

Name: _____

Title: _____

Employer: _____

Address: _____

City, State, Zip Code: _____

Voice Telephone Number: _____

EXHIBIT D

EVENT NOTICE COVER SHEET

This cover sheet and the attached Event Notice should be filed electronically with the Municipal Securities Rulemaking Board through the EMMA Dataport at <http://www.emma.msrb.org> pursuant to Securities and Exchange Commission Rule 15c2-12(b)(5)(i)(C) and (D).

Issuer: Great Lakes Water Authority

Issuer's and/or Other Obligated Person's Six-Digit CUSIP Number(s): _____

or Nine-Digit CUSIP Number(s) to which the attached Event Notice relates: _____

Number of pages of the attached Event Notice: _____

Description of the attached Event Notice (Check One):

- | | | |
|-----|-------|--|
| 1. | _____ | Principal and interest payment delinquencies |
| 2. | _____ | Non-Payment related defaults |
| 3. | _____ | Unscheduled draws on debt service reserves reflecting financial difficulties |
| 4. | _____ | Unscheduled draws on credit enhancements reflecting financial difficulties |
| 5. | _____ | Substitution of credit or liquidity providers, or their failure to perform |
| 6. | _____ | [Reserved] |
| 7. | _____ | Modifications to rights of securities holders |
| 8. | _____ | Bond calls |
| 9. | _____ | Defeasances |
| 10. | _____ | Release, substitution, or sale of property securing repayment of the securities |
| 11. | _____ | Rating changes |
| 12. | _____ | Tender offers |
| 13. | _____ | Bankruptcy, insolvency, receivership or similar event of an obligated person |
| 14. | _____ | The consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of an obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms |
| 15. | _____ | Appointment of a successor or additional trustee, or the change of name of a trustee |
| 16. | _____ | Incurrence of a Financial Obligation of the obligated person, if material, or agreement to covenants, events of default, remedies, priority rights or other similar terms of a Financial Obligation of the obligated person, any of which affect holders of the securities, if material |
| 17. | _____ | Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the obligated person, any of which reflect financial difficulties |
| 18. | _____ | Failure to provide annual financial information as required |
| 19. | _____ | Other material event notice (specify) _____ |

I hereby represent that I am authorized by the Issuer or its agent to distribute this information publicly:

Signature: _____

Name: _____ Title: _____

Employer: _____

Address: _____

City, State, Zip Code: _____

Voice Telephone Number: _____

Please format the Event Notice attached to this cover sheet in 10 point type or larger. Contact the MSRB at (202) 838-1500 with questions regarding this form or the dissemination of this notice.

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APPENDIX XI
FORM OF APPROVING OPINION OF BOND COUNSEL

June 16, 2020
Great Lakes Water Authority
Counties of Macomb, Oakland and Wayne, Michigan

We have acted as bond counsel to the Great Lakes Water Authority, Counties of Macomb, Oakland and Wayne, Michigan (the “Issuer”) and in connection therewith have examined the law and certified copies of the proceedings and other documents relating to the issuance by the Issuer of (i) its \$594,930,000 Sewage Disposal System Revenue Senior Lien Bonds, Series 2020A (Federally Taxable) (the “Series 2020A Bonds”) and (ii) its \$92,525,000 Sewage Disposal System Revenue Second Lien Bonds, Series 2020B (Federally Taxable) (the “Series 2020B Bonds,” and together with the Series 2020A Bonds, the “Bonds”). The Bonds are dated June 16, 2020, are payable as to principal and interest as provided in the Bonds and are subject to redemption prior to maturity in the manner, at the times and at the prices specified in the Bonds.

The Bonds are issued pursuant to (i) Act 233, Public Acts of Michigan, 1955, as amended (“Act 233”), (ii) Act 94, Public Acts of Michigan, 1933, as amended (“Act 94”), (iii) Ordinance No. 2015-02 adopted by the Board of Directors of the Issuer on October 7, 2015, as amended (the “Bond Ordinance”), (iv) Ordinance No. 2020-04 adopted by the Board of Directors of the Issuer on February 12, 2020 (the “Series Ordinance”), and (v) a Sale Order of the Chief Executive Officer of the Issuer executed June 4, 2020 (the “Sale Order,” and together with the Bond Ordinance and the Series Ordinance, the “Ordinance”). Capitalized terms not otherwise defined herein shall have the meaning given such terms in the Bond Ordinance.

As to questions of fact material to our opinion, we have relied upon certified proceedings and other certificates of public officials furnished to us without undertaking to verify the same by an independent investigation.

Based on the foregoing, we are of the opinion that, under existing law:

1. The Issuer is duly organized and validly existing as a municipal authority and public body corporate under Act 233.
2. The Bond Ordinance and the Series Ordinance have been duly and lawfully adopted by the Issuer and the Sale Order has been duly executed by the Chief Executive Officer of the Issuer, and each of the Bond Ordinance, the Series Ordinance and the Sale Order is in full force and effect and is valid and binding upon the Issuer and enforceable in accordance with its terms.
3. The Bonds have been duly authorized, executed and delivered by the Issuer and are valid and legally binding obligations of the Issuer, secured by and payable solely from the Pledged Assets, which includes a pledge of the Net Revenues of the Sewer System.
4. Pursuant to Act 94, the Ordinance creates a valid statutory lien on the Pledged Assets as security for payment of the principal of and interest on the Bonds, on a senior lien basis, parity lien basis or junior lien basis with other bonds previously issued, currently being issued and to be issued hereafter, as described in the Bonds.

5. The Bonds and the interest thereon are exempt from taxation by the State of Michigan or by any taxing authority within the State of Michigan, except estate taxes and taxes on gains realized from the sale, payment or other disposition thereof.

6. The interest on the Bonds is not excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended.

It is understood that the rights of the holders of the Bonds and the enforceability thereof may be subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights heretofore or hereafter enacted to the extent constitutionally applicable and that their enforcement may also be subject to the exercise of judicial discretion in appropriate cases.

This opinion is given as of the date hereof, and we assume no obligation to revise or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention, or any changes in law that may hereafter occur.

Respectfully submitted,

APPENDIX XII

BOOK-ENTRY ONLY SYSTEM

Book-Entry-Only System

The information in this Appendix “Book-Entry-Only System” has been furnished by The Depository Trust Company (“DTC”). No representation is made by the Authority, the State, the Trustee or the Underwriters as to the completeness or accuracy of such information or as to the absence of material adverse changes in such information subsequent to the date hereof. No attempt has been made by the Authority, the State, the Trustee or the Underwriters to determine whether DTC is or will be financially or otherwise capable of fulfilling its obligations. Neither the Authority, the State nor the Trustee will have any responsibility or obligation to DTC Direct Participants, Indirect Participants (both as defined below) or the persons for which they act as nominees with respect to the Series 2020 Bonds, or for any principal, premium, if any, or interest payment thereof.

DTC will act as securities depository for the Series 2020 Bonds. The Series 2020 Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered certificate will be issued for each maturity of each Type of the Series 2020 Bonds, in the aggregate principal amount of such maturity, and will be deposited with DTC.

DTC, the world’s largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code, and a “clearing agency” registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC’s participants (“Direct Participants”) deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants’ accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC”). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). DTC has a Standard & Poor’s rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of the Series 2020 Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2020 Bonds on DTC’s records. The ownership interest of each actual purchaser of each Series 2020 Bond (“Beneficial Owner”) is in turn to be recorded on the Direct and Indirect Participants’ records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect

Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interest in the Series 2020 Bonds, except in the event that use of the book-entry system for the Series 2020 Bonds is discontinued.

To facilitate subsequent transfers, all Series 2020 Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Series 2020 Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2020 Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2020 Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of the Series 2020 Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2020 Bonds, such as redemptions, tenders, defaults, and proposed amendments to the Security documents. For example, Beneficial Owners of Series 2020 Bonds may wish to ascertain that the nominee holding the Series 2020 Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of the notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Series 2020 Bonds within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2020 Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2020 Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Series 2020 Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participant's accounts upon DTC's receipt of funds and corresponding detail information from the Authority or Trustee, on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC (nor its nominee), the Trustee, or the Authority, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Authority or the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as securities depository with respect to the Series 2020 Bonds at any time by giving reasonable notice to the Authority or Trustee. Under such circumstances, in

the event that a successor securities depository is not obtained, Series 2020 Bond certificates are required to be printed and delivered.

The Authority may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Series 2020 Bond certificates will be printed and delivered.

The information in this section concerning DTC and DTC's book-entry-only system has been obtained from sources that the Authority believes to be reliable, but neither the Authority nor the Underwriters take any responsibility for the accuracy thereof. The Authority and the Underwriters cannot and do not give any assurances that DTC, the Direct and Indirect Participants or others will distribute payments of principal and interest with respect to the Series 2020 Bonds paid to Cede & Co. or another DTC nominee as the Owner, or will distribute any redemption or other notices to the Beneficial Owners, or that they will do so on a timely basis or will serve and act in the manner described in this Official Statement. The Authority and the Underwriters are not responsible or liable for the failure of DTC or any Participant to make any payment or give any notice to a Beneficial Owner with respect to the Series 2020 Bonds or an error or delay relating thereto.

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APPENDIX XIII

SPECIMEN MUNICIPAL BOND INSURANCE POLICY

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MUNICIPAL BOND INSURANCE POLICY

ISSUER:

BONDS: \$ in aggregate principal amount of

Policy No: -N

Effective Date:

Premium: \$

ASSURED GUARANTY MUNICIPAL CORP. ("AGM"), for consideration received, hereby UNCONDITIONALLY AND IRREVOCABLY agrees to pay to the trustee (the "Trustee") or paying agent (the "Paying Agent") (as set forth in the documentation providing for the issuance of and securing the Bonds) for the Bonds, for the benefit of the Owners or, at the election of AGM, directly to each Owner, subject only to the terms of this Policy (which includes each endorsement hereto), that portion of the principal of and interest on the Bonds that shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

On the later of the day on which such principal and interest becomes Due for Payment or the Business Day next following the Business Day on which AGM shall have received Notice of Nonpayment, AGM will disburse to or for the benefit of each Owner of a Bond the face amount of principal of and interest on the Bond that is then Due for Payment but is then unpaid by reason of Nonpayment by the Issuer, but only upon receipt by AGM, in a form reasonably satisfactory to it, of (a) evidence of the Owner's right to receive payment of the principal or interest then Due for Payment and (b) evidence, including any appropriate instruments of assignment, that all of the Owner's rights with respect to payment of such principal or interest that is Due for Payment shall thereupon vest in AGM. A Notice of Nonpayment will be deemed received on a given Business Day if it is received prior to 1:00 p.m. (New York time) on such Business Day; otherwise, it will be deemed received on the next Business Day. If any Notice of Nonpayment received by AGM is incomplete, it shall be deemed not to have been received by AGM for purposes of the preceding sentence and AGM shall promptly so advise the Trustee, Paying Agent or Owner, as appropriate, who may submit an amended Notice of Nonpayment. Upon disbursement in respect of a Bond, AGM shall become the owner of the Bond, any appurtenant coupon to the Bond or right to receipt of payment of principal of or interest on the Bond and shall be fully subrogated to the rights of the Owner, including the Owner's right to receive payments under the Bond, to the extent of any payment by AGM hereunder. Payment by AGM to the Trustee or Paying Agent for the benefit of the Owners shall, to the extent thereof, discharge the obligation of AGM under this Policy.

Except to the extent expressly modified by an endorsement hereto, the following terms shall have the meanings specified for all purposes of this Policy. "Business Day" means any day other than (a) a Saturday or Sunday or (b) a day on which banking institutions in the State of New York or the Insurer's Fiscal Agent are authorized or required by law or executive order to remain closed. "Due for Payment" means (a) when referring to the principal of a Bond, payable on the stated maturity date thereof or the date on which the same shall have been duly called for mandatory sinking fund redemption and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity unless AGM shall elect, in its sole discretion, to pay such principal due upon such acceleration together with any accrued interest to the date of acceleration and (b) when referring to interest on a Bond, payable on the stated date for payment of interest. "Nonpayment" means, in respect of a Bond, the failure of the Issuer to have provided sufficient funds to the Trustee or, if there is no Trustee, to the Paying Agent for payment in full of all principal and interest that is Due for Payment on such Bond. "Nonpayment" shall also include, in respect of a Bond, any payment of principal or interest that is Due for Payment made to an Owner by or on behalf of the Issuer which has been recovered from such Owner pursuant to the

United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final, nonappealable order of a court having competent jurisdiction. "Notice" means telephonic or telecopied notice, subsequently confirmed in a signed writing, or written notice by registered or certified mail, from an Owner, the Trustee or the Paying Agent to AGM which notice shall specify (a) the person or entity making the claim, (b) the Policy Number, (c) the claimed amount and (d) the date such claimed amount became Due for Payment. "Owner" means, in respect of a Bond, the person or entity who, at the time of Nonpayment, is entitled under the terms of such Bond to payment thereof, except that "Owner" shall not include the Issuer or any person or entity whose direct or indirect obligation constitutes the underlying security for the Bonds.

AGM may appoint a fiscal agent (the "Insurer's Fiscal Agent") for purposes of this Policy by giving written notice to the Trustee and the Paying Agent specifying the name and notice address of the Insurer's Fiscal Agent. From and after the date of receipt of such notice by the Trustee and the Paying Agent, (a) copies of all notices required to be delivered to AGM pursuant to this Policy shall be simultaneously delivered to the Insurer's Fiscal Agent and to AGM and shall not be deemed received until received by both and (b) all payments required to be made by AGM under this Policy may be made directly by AGM or by the Insurer's Fiscal Agent on behalf of AGM. The Insurer's Fiscal Agent is the agent of AGM only and the Insurer's Fiscal Agent shall in no event be liable to any Owner for any act of the Insurer's Fiscal Agent or any failure of AGM to deposit or cause to be deposited sufficient funds to make payments due under this Policy.

To the fullest extent permitted by applicable law, AGM agrees not to assert, and hereby waives, only for the benefit of each Owner, all rights (whether by counterclaim, setoff or otherwise) and defenses (including, without limitation, the defense of fraud), whether acquired by subrogation, assignment or otherwise, to the extent that such rights and defenses may be available to AGM to avoid payment of its obligations under this Policy in accordance with the express provisions of this Policy.

This Policy sets forth in full the undertaking of AGM, and shall not be modified, altered or affected by any other agreement or instrument, including any modification or amendment thereto. Except to the extent expressly modified by an endorsement hereto, (a) any premium paid in respect of this Policy is nonrefundable for any reason whatsoever, including payment, or provision being made for payment, of the Bonds prior to maturity and (b) this Policy may not be canceled or revoked. THIS POLICY IS NOT COVERED BY THE PROPERTY/CASUALTY INSURANCE SECURITY FUND SPECIFIED IN ARTICLE 76 OF THE NEW YORK INSURANCE LAW.

In witness whereof, ASSURED GUARANTY MUNICIPAL CORP. has caused this Policy to be executed on its behalf by its Authorized Officer.

ASSURED GUARANTY MUNICIPAL CORP.

By _____
Authorized Officer

A subsidiary of Assured Guaranty Municipal Holdings Inc.
1633 Broadway, New York, N.Y. 10019
(212) 974-0100

Form 500NY (5/90)

