

Great Lakes Water Authority, Michigan

Sewage Disposal System Revenue Bonds and Water Supply System Revenue Bonds New Issue

Ratings

New Issues

Sewage Disposal System Revenue
Senior Lien Bonds, Series 2018A A

Sewage Disposal System Revenue
Refunding Senior Lien Bonds,
Series 2018B A

Sewage Disposal System Revenue
Refunding Senior Lien Bonds,
Series 2018C (Federally Taxable) A

Water Supply System Revenue
Refunding Second Lien Bonds,
Series 2018A A-

Outstanding Debt

Sewage Disposal System Senior
Lien Bonds A

Sewage Disposal System Second
Lien Bonds A-

Water Supply System Senior
Lien Bonds A

Water Supply System Second
Lien Bonds A-

Rating Outlook^a

Positive

^aOutlook revised to Positive from Stable Sept.
4, 2018.

Related Research

2018 Water and Sewer Medians
(December 2017)

Fitch 2018 Outlook: Water and Sewer
Sector (December 2017)

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New Issue Details

Sale Information: \$80,460,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018A; \$128,610,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018B; \$43,400,000 Sewage Disposal System Revenue Refunding Senior Lien Bonds, Series 2018C (Federally Taxable); and \$155,585,000 Water Supply System Revenue Refunding Second Lien Bonds, Series 2018A, scheduled to sell via negotiation as early as Sept. 14, 2018.

Security: Senior lien sewer and water bonds separately secured by a first lien on net revenues of each Great Lakes Water Authority (GLWA) sewer and water system. Second lien bonds separately secured by a second lien on the net revenues of each system.

Purpose: To refund certain GLWA sewer system and water system (the systems) debt for interest savings, fund certain Detroit Water and Sewerage Department (DWSD) sewer system capital expenditures for Detroit and pay costs of issuance.

Final Maturity: Sewer – July 1, 2048; water – July 1, 2029.

Key Rating Drivers

Positive Outlook on Solid Financials: The Rating Outlook revision to Positive from Stable reflects solid fiscal years 2016 and 2017 financial results related to GLWA's initial operations of the systems, outpacing prior expectations. Changes in rate-setting practices as well as accumulation of reserves under the master bond ordinances have enhanced prospects for achieving forecast expectations and help to adequately insulate GLWA from high city of Detroit retail delinquencies.

Lease Reinforces Separate Operations: All system funds and accounts are separate and distinct from city funds, including Detroit's general fund. The lease of the systems by GLWA provides further assurance that system operations will remain independent of the city.

Highly Leveraged Debt Profile: The systems' debt load is expected to remain elevated for the foreseeable future as a result of legacy issuance and ongoing borrowing. Over the longer term, greater use of pay-as-you-go capital funding is expected to alleviate debt pressures to some degree.

Expansive Service Territory: The systems provide essential services to a broad area. The water system covers almost 40% of Michigan's population, while the sewer system includes about 30% of Michigan's population. The majority of GLWA's revenues come from suburban customers.

Strong Rate Adjustment History: The governing bodies have instituted annual charge increases in support of financial and capital needs. Continued annual adjustments are included in the forecast and will be needed to meet rising debt service and sustain financial performance.

Rating Sensitivities

Sustained Financial and Operating Gains: Sustained operating enhancements, improved liquidity and moderating leverage could lead to a rating upgrade over the course of the next couple of years. Alternatively, GLWA's failure to maintain the improved operational and financial performance of its water and sewer utilities due to insufficient revenue recovery or higher than expected costs could result in a change in Outlook back to Stable.

Rating History — Sewage Disposal System Senior Lien

Rating	Action	Outlook/ Watch	Date
A	Affirmed	Positive	9/4/18
A	Upgraded	Stable	9/30/16
BBB	Affirmed	Stable	12/15/15
BBB	Upgraded	Stable	9/2/15
BBB-	Upgraded	Stable	9/3/14
BB+	Affirmed	Positive ^a	8/25/14
BB+	Affirmed	Negative ^a	5/30/14
BB+	Downgraded	Negative ^a	2/27/14
BBB+	Affirmed	Negative ^a	11/27/13
BBB+	Affirmed	Negative ^a	6/14/13
BBB+	Downgraded	Negative	4/1/13
A-	Downgraded	Stable	5/29/12
A	Downgraded	Stable	4/1/11
AA-	Revised	Stable	4/30/10
A+	Affirmed	Negative	4/18/08
A+	Affirmed	Stable	1/28/05
A+	Upgraded	—	10/29/99
A	Assigned	—	11/16/95

^aRating Watch.

Rating History — Sewage Disposal System Second Lien

Rating	Action	Outlook/ Watch	Date
A-	Affirmed	Positive	9/4/18
A-	Upgraded	Stable	9/30/16
BBB-	Affirmed	Stable	12/15/15
BBB-	Upgraded	Stable	9/2/15
BB+	Upgraded	Stable	9/3/14
BB	Affirmed	Positive ^a	8/25/14
BB	Affirmed	Negative ^a	5/30/14
BB	Downgraded	Negative ^a	2/27/14
BBB+	Upgraded	Negative ^a	11/27/13
BBB	Affirmed	Negative ^a	6/14/13
BBB	Downgraded	Negative	4/1/13
BBB+	Downgraded	Stable	5/29/12
A-	Downgraded	Stable	4/1/11
A+	Revised	Stable	4/30/10
A	Affirmed	Negative	4/18/08
A	Affirmed	Stable	1/28/05
A	Upgraded	—	10/29/99
A-	Assigned	—	11/16/95

^aRating Watch.

Rating History continued on page 3.

Related Criteria

[Rating Criteria for Public-Sector,
Revenue-Supported Debt \(February
2018\)](#)

[U.S. Water and Sewer Rating
Criteria \(November 2017\)](#)

Changes to Debt Profile: Increases in debt issuance levels due to revisions in the capital plan or reductions in operating cash flow would be viewed unfavorably, given the already high leverage of both systems.

Credit Profile

GLWA entered into 40-year leases of DWSD's water and sewer systems (except for the local city infrastructure) with the city in June 2015 (the lease agreements). The lease agreements became effective on Jan. 1, 2016, at which point GLWA assumed operational control of all leased assets of the regional water and sewer systems; the leases also conveyed an interest in all revenues of both the water and sewer systems (including both the regional and local city retail systems). At the same time, GLWA assumed all outstanding indebtedness related to the respective regional and local water and sewer systems.

Fitch believes the leases and supporting documents effectively codify the legal separation between the systems and the city, and insulate the systems from being included in any future city bankruptcy proceedings, if one were to occur. DWSD continues to own and operate the city retail water and sewer systems and serves as GLWA's agent with regards to the rate setting, billing and collection of city retail accounts. However, GLWA can terminate DWSD's agent responsibilities in the event of nonperformance by DWSD as described in a Water and Sewer Service Agreement (the WSSA) between the city and GLWA.

Key terms of the agreements, which are embedded in GLWA's financial projections, include a \$50 million annual lease payment to the city, although such moneys may only be used at the city's option to fund pay-go capital improvements related to Detroit's local water and sewer systems or DWSD-related debt service associated with the local systems and/or GLWA regional systems. An assistance program is also funded annually as part of GLWA's budget. In addition, a budget stabilization fund is funded from city retail customers to ensure moneys are available to meet the city's portion of GLWA's annual revenue requirement. Deposits required to fund the lease payment and other created accounts such as the assistance account occur subsequent to payment of debt service; however, these are added costs that ratepayers must absorb.

Stronger Financials Drive Outlook Change

Audited fiscal 2017 results yielded Fitch-calculated total debt service coverage (DSC) for the water system of 1.6x, coverage of full obligations of 1.3x (which includes all transfers under the indenture including the lease payment) and liquidity of 539 days cash, all of which are considered favorable for a wholesale provider under Fitch's criteria. Fitch's calculations include both GLWA and DWSD operating revenues and expenses given the requirements under the trust indenture, leases and related agreements. Water system DSC for the year was higher than previously forecast (estimated at 1.4x in 2016) in part due to higher than expected bad debt recoveries.

Preliminary fiscal 2018 financial results for the water system point to continued solid performance, with total DSC of 1.5x and coverage of full obligations of 1.3x (slightly ahead of the prior forecast). For the year revenues were \$20 million over budget (a positive 5% variance), driven primarily from higher than expected receipts from Flint, Genesee County and DWSD retail accounts. On the expense side, cash transfers for O&M expenses matched budgeted amounts. The most recent forecast anticipates financial results through fiscal 2023 generally commensurate with fiscal 2018 results, without including any potential savings from the current transaction.

Rating History — Water Supply System Senior Lien

Rating	Action	Outlook/ Watch	Date
A	Affirmed	Positive	9/4/18
A	Upgraded	Stable	9/30/16
BBB	Affirmed	Stable	12/15/15
BBB	Upgraded	Stable	9/2/15
BBB-	Upgraded	Stable	9/3/14
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BB+	Downgraded	Negative ^a	11/27/13
BBB+	Affirmed	Negative ^a	6/14/13
BBB+	Downgraded	Negative	4/1/13
A	Downgraded	Stable	4/1/11
AA-	Revised	Stable	4/30/10
A+	Affirmed	Negative	4/18/08
A+	Affirmed	Stable	1/28/05
A+	Upgraded	—	10/29/99
A	Assigned	—	11/16/95

^aRating Watch.

Rating History — Water Supply System Second Lien

Rating	Action	Outlook/ Watch	Date
A-	Affirmed	Positive	9/4/18
A-	Upgraded	Stable	9/30/16
BBB-	Affirmed	Stable	12/15/15
BBB-	Upgraded	Stable	9/2/15
BB+	Upgraded	Stable	9/3/14
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A-	Downgraded	Stable	4/1/11
A+	Revised	Stable	4/30/10
A	Affirmed	Negative	4/18/08
A	Affirmed	Stable	1/28/05
A	Upgraded	—	10/29/99
A-	Assigned	—	11/16/95

^aRating Watch.

For fiscal 2017, Fitch-calculated total sewer DSC was just under 1.5x, coverage of full obligations was 1.2x and days cash was 172, all of which are considered favorable for wholesale utilities. Sewer system DSC was also higher for the year than previously anticipated (estimated at 1.3x in 2016). Total sewer system DSC for fiscal 2018 is expected to be weaker than the prior year at slightly less than 1.2x (coverage of all obligations at 1.0x) as the system received around \$20 million less than expected from DWSD. Despite the lower collections, total revenues were only around \$13.5 million lower than budget (negative 2.5% variance). Similar to the water system, cash transfers for O&M equaled budgeted amounts for the year.

GLWA is working with DWSD to formulate a plan that is expected to be completed by fiscal Q1 2019 whereby the shortfall in sewer collection amounts will ultimately be paid to GLWA by DWSD. GLWA attributes the lower than expected collections to one-time events associated with a legal settlement over historical drainage charges (including actions to credit various customer accounts) as well as modifications to phase in newly adopted drainage program charges. GLWA's latest forecast through fiscal 2023 (which also does not include any savings from the current refunding transaction) estimate improved results from 2018 levels beginning in fiscal 2019 and continuing thereafter. A trend of sustained favorable DSC, liquidity and stabilizing leverage could lead to a rating upgrade for both systems over the near term.

Financial results have stabilized and improved over the past several years from previously poor levels, including years where total DSC for each of the systems was below 1.0x. Gains in financial results are attributable to GLWA and DWSD's efforts to both enhance revenues and cut operating costs. On the revenue front, GLWA adopted changes with its suburban water customers beginning in fiscal 2016 to revise purchase estimates and shift to an increasing amount of fixed monthly charge recovery (60% versus 40% the prior year). These changes have led to more accurate forecasting of revenues (for fiscal 2017 billed revenues and volumes were around 102% of budget each) and are similar to the implementation of a rate simplification initiative for suburban sewer customers effective for fiscal 2015 that identifies each customer's proportionate costs based on historical average shares (i.e. a 100% fixed charge), with such shares billed monthly and locked in for three years before being subject to recalculation.

DWSD also has been working extensively to reduce retail delinquencies through outreach and aggressively pursuing shut-offs, although 60-day and greater past due accounts from active customers remain abnormally high (44% excluding customers not on payment plans). GLWA's budgeting and accumulation of \$7.5 million in the budget stabilization fund as of fiscal 2017 help to mitigate GLWA's exposure to delinquent city customers.

System Leverage Remains High

Fitch expects leverage for both systems to remain high for the foreseeable future but will decline in time given increased use of pay-go sources and principal amortization that exceeds planned annual issuances. The vast majority of debt is fixed rate and there are no swaps outstanding, limiting interest rate and third-party credit risks.

For fiscal 2017, GLWA's long-term debt per capita totaled \$697 for water and \$1,381 for sewer (excluding the lease obligations), both of which are considered high per Fitch's criteria. For the same period, debt to net plant assets was also elevated for both systems at 130% and 116% for water and sewer, respectively, while debt to funds available for debt service was 9.5x for water and 9.8x for sewer (all excluding the lease obligations). Principal payout is relatively typical for sector credits at about 80% over 20 years for both water and sewer, including debt and contractual pension obligations.

The consolidated GLWA regional and DWSD local 2019–2023 capital improvement plans (CIPs), including regional budgeted capital outlays, total \$866 million for water (down 11% from the fiscal 2017–2021 CIP) and \$748 million for sewer (down 9%). While GLWA's CIPs for the regional water and sewer systems total just \$659 million and \$562 million, respectively, GLWA's revenues fund the DWSD CIPs through the lease payments and debt issued by GLWA for the local projects (including the new money portion related to this sale). Funding for the consolidated CIPs is expected to be provided by approximately 40% debt proceeds and 60% pay-go for the water system and 60% debt and 40% pay-go for the sewer system, with the amount of pay-go representing a significant amount of current resources for a wholesale entity.

Projected capital costs have risen from prior CIPs before the system leases were executed as a result of the updated water master plan approved by GLWA's board in August 2016, the first update since 2004. An outcome of the plan includes removing treatment processes from one of the water treatment plants (accounting for over 15% of system capacity) along with other system optimization. The updated water master plan results in significant near-term investment; however, these costs are expected to moderate over time and ultimately result in over \$400 million in capital cost avoidance as well as reduced operating costs by \$2.4 million per year.

Sewer CIP costs have also increased since before the system leases were executed as GLWA has been going through an update to the sewer master plan, which is expected to be finalized in the 2019–2020 timeframe. While the sewer costs are less refined than the water costs, certain initial estimates from the planning levels have been added to the CIP at this point.

Broad Service Area Enhances System Stability

The water system is a regional provider serving around 3.8 million people, or almost 40% of Michigan's population, including the city's population of approximately 675,000. The system serves the city via DWSD on a retail basis and 127 communities through 87 wholesale contracts and provides service to Genesee County Drain Commissioner through a reciprocal backup contract. The service territory consists of 1,760 square miles covering all or a portion of eight counties in southeast Michigan. Water supplies, which are derived from the Detroit River, Lake Huron and Lake St. Clair, are more than sufficient to meet the perpetual needs of the service territory. Similarly, combined treatment capacity by the system's five plants greatly exceeds current and future projected demand levels. The capacity margin will decline with the decommissioning of one of the treatment plants but is still expected to be more than sufficient over at least the next 20 years. GLWA faces no issues relating to the water system and is in full compliance with the federal Lead and Copper Rule.

The sewer system is also a regional provider serving around 2.8 million people, or approximately 30% of Michigan's population, including the city. The system serves the city via DWSD on a retail basis and 76 communities through 18 wholesale contracts. The service territory consists of 944 square miles covering three counties in the Detroit-Warren-Dearborn metropolitan statistical area. Like the water system, sewer treatment capacity is more than sufficient to meet average demands, but wet weather flows can exceed system capacity. As a result GLWA operates certain combined sewer overflow facilities to manage these events. GLWA is in material compliance with its discharge requirements, although GLWA is a party to an administrative order dating back to 2011 requiring certain corrective measures relating to biosolids handling.

Population and customer growth for both systems have experienced modest annual declines for a number of years. Detroit's population in particular has experienced continuous decline, but suburban areas have picked up most of the migration. Wealth levels in the city are low (less than 50% of the U.S. average) while poverty (39%) and unemployment levels (9.3% as of June

2018) are high, although figures for the metropolitan area overall, which includes the city as well as the suburban customers, are generally in line with state and national averages.

Financial Summary — Sewer System

(\$000, Audited Years Ended June 30)

	2013	2014	2015	2016	2017	2018	2019	Projected			
								2020	2021	2022	2023
Balance Sheet											
Unrestricted Cash and Investments	50,298	116,899	197,070	188,063	205,179	—	—	—	—	—	—
Other Unrestricted Current Assets	231,613	260,368	241,429	146,602	99,583	—	—	—	—	—	—
Available Restricted Cash and Investments	—	—	—	5,813	5,500	—	—	—	—	—	—
Current Liabilities Payable from Unrestricted Assets	(280,203)	(272,343)	(276,396)	(172,737)	(181,761)	—	—	—	—	—	—
Net Working Capital	1,707	104,924	162,103	167,741	128,502	—	—	—	—	—	—
Net Fixed Assets	2,861,257	2,837,995	2,869,146	2,995,767	2,869,310	—	—	—	—	—	—
Net Long-Term Debt Outstanding	3,280,729	3,435,532	3,533,419	4,019,827	3,867,814	—	—	—	—	—	—
Operating Statement											
Operating Revenues	440,863	475,771	505,672	635,958	779,495	532,407	566,838	587,724	608,688	630,403	652,990
Non-Operating Revenues Available for Debt Service	(200)	(8,741)	(928)	1,089	(3,993)	5,298	4,571	3,556	3,548	3,618	3,596
Connection Fees	—	—	—	2,000	—	—	—	—	—	—	—
Total Revenues Available for Debt Service	440,663	467,030	504,743	639,047	775,502	537,705	571,409	591,280	612,236	634,021	656,586
Operating Expenditures (Excluding Depreciation)	223,394	207,173	195,079	288,339	436,462	265,161	272,881	278,158	283,392	288,733	294,178
Depreciation	121,464	118,409	119,848	152,825	194,349	—	—	—	—	—	—
Fitch-Calculated Operating Income	95,805	141,448	189,816	197,883	144,691	272,543	298,528	313,122	328,843	345,288	362,408
Net Revenues Available for Debt Service	217,269	259,857	309,665	350,708	339,040	272,543	298,528	313,122	328,843	345,288	362,408
Senior Lien Annual Debt Service	133,477	129,961	132,541	140,191	140,854	142,377	148,607	153,591	142,877	158,436	169,589
All-In Annual Debt Service	225,223	229,611	232,613	228,571	234,555	233,321	242,466	252,784	251,600	260,650	257,011
Required Transfers ^a	6,568	6,232	28,715	30,290	43,322	35,881	42,034	39,398	39,557	39,739	39,865
Financial Statistics											
Senior Lien Debt Service Coverage (x)	1.63	2.00	2.34	2.50	2.41	1.91	2.01	2.04	2.30	2.18	2.14
All-In Debt Service Coverage (x)	0.96	1.13	1.33	1.53	1.45	1.17	1.23	1.24	1.31	1.32	1.41
Coverage of Full Obligations (x) (a)	0.94	1.10	1.18	1.35	1.22	1.01	1.05	1.07	1.13	1.15	1.22
Days Cash on Hand	82	206	369	245	176	—	—	—	—	—	—
Days Working Capital	3	185	303	212	107	—	—	—	—	—	—
Debt / Net Plant (%)	115	121	123	134	135	—	—	—	—	—	—
Debt / Funds Available for Debt Service (x)	15.1	13.2	11.4	11.5	11.4	—	—	—	—	—	—
Outstanding L/T Debt Per Capita (\$)	1,172	1,227	1,262	1,436	1,381	—	—	—	—	—	—
Free Cash / Depreciation (%)	(12)	20	40	60	31	—	—	—	—	—	—

^aIncludes non-operating pension costs, professional service fees, assistance fund transfers, and lease payments. DWSD-Detroit Water and Sewerage Department (MI). GLWA-Great Lakes Water Authority (MI). Notes: Fitch has reclassified certain financial statement items for analytical purposes. Fiscals 2013–2015 reflects DWSD financials. Fiscals 2016–2023 reflect GLWA only with regards to 'Balance Sheet' items and both GLWA/DWSD with regards to 'Operating Statement' items. Source: GLWA, DWSD and Fitch.

Financial Summary — Water System

(\$000, Fiscal Years Ending June 30)

	2013	2014	2015	2016	2017	2018	2019	Projected			
								2020	2021	2022	2023
Balance Sheet											
Unrestricted Cash and Investments	47,674	112,901	99,145	167,293	267,336	—	—	—	—	—	—
Other Unrestricted Current Assets	171,157	137,893	161,656	117,317	96,900	—	—	—	—	—	—
Available Restricted Cash and Investments	—	—	—	2,357	2,990	—	—	—	—	—	—
Current Liabilities Payable from Unrestricted Assets	(168,266)	(186,137)	(202,839)	(151,106)	(136,374)	—	—	—	—	—	—
Net Working Capital	50,565	64,657	57,962	135,860	230,852	—	—	—	—	—	—
Net Fixed Assets	2,083,632	2,011,644	1,949,697	2,143,613	2,039,477	—	—	—	—	—	—
Net Long-Term Debt Outstanding	2,568,176	2,632,502	2,515,343	2,977,404	3,078,206	—	—	—	—	—	—
Operating Statement											
Operating Revenues	355,528	349,369	364,278	432,204	459,925	421,202	405,077	419,790	435,124	450,934	468,215
Non-Operating Revenues Available for Debt Service	5,564	1,894	10,039	392	(450)	5,860	3,837	3,669	3,367	2,975	2,504
Total Revenues Available for Debt Service	361,092	351,263	374,318	432,596	459,474	427,062	408,914	423,458	438,490	453,909	470,720
Operating Expenditures (Excluding Depreciation)	168,453	146,582	136,030	151,942	181,028	166,942	167,367	170,441	173,605	176,832	180,124
Depreciation	83,031	85,026	124,371	122,045	160,505	—	—	—	—	—	—
Fitch-Calculated Operating Income	109,607	119,655	113,916	158,608	117,941	260,119	241,547	253,018	264,885	277,077	290,596
Net Revenues Available for Debt Service	192,638	204,681	238,288	280,653	278,446	260,119	241,547	253,018	264,885	277,077	290,596
Senior Lien Annual Debt Service	130,182	140,249	134,821	128,178	134,235	127,687	119,231	123,910	126,616	127,786	132,968
All-In Annual Debt Service	172,459	182,465	178,924	171,139	175,010	172,905	170,962	178,889	190,786	187,370	192,902
Required Transfers ^a	5,796	2,827	22,107	32,839	35,260	33,427	31,451	31,948	32,018	32,093	32,179
Financial Statistics											
Senior Lien Debt Service Coverage (x)	1.48	1.46	1.77	2.19	2.07	2.04	2.03	2.04	2.09	2.17	2.19
All-In Debt Service Coverage (x)	1.12	1.12	1.33	1.64	1.59	1.50	1.41	1.41	1.39	1.48	1.51
Coverage of Full Obligations (x) ^a	1.08	1.10	1.19	1.38	1.32	1.26	1.19	1.20	1.19	1.26	1.29
Days Cash on Hand	103	281	266	408	545	—	—	—	—	—	—
Days Working Capital	110	161	156	326	465	—	—	—	—	—	—
Debt / Net Plant (%)	123	131	129	139	151	—	—	—	—	—	—
Debt / Funds Available for Debt Service (x)	13.3	12.9	10.6	10.6	11.1	—	—	—	—	—	—
Outstanding L/T Debt Per Capita (\$)	676	693	662	784	810	—	—	—	—	—	—
Free Cash / Depreciation (%)	17	23	30	63	42	—	—	—	—	—	—

^aIncludes non-operating pension costs, professional service fees, assistance fund transfers, and lease payments. DWSD-Detroit Water and Sewerage Department (MI). GLWA-Great Lakes Water Authority (MI). Notes: Fitch has reclassified certain financial statement items for analytical purposes. Fiscals 2013-2015 reflects DWSD financials. Fiscals 2016-2023 reflect GLWA only with regards to 'Balance Sheet' items and both GLWA/DWSD with regards to 'Operating Statement' items. Source: GLWA, DWSD and Fitch.

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