S&P Global Ratings

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Great Lakes Water Authority, Michigan; Water/Sewer

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Credit Profile		
US$128.61 mil swg disposal sys rev rfdg sr ln bnds ser 2018B due 07/01/2029		
Long Term Rating	A+/Positive	New
US$80.46 mil swg disposal sys rev sr ln bnds ser 2018A due 07/01/2048		
Long Term Rating	A+/Positive	New
US$43.4 mil swg desposal sys rev rfdg sr ln bnds (Federally Taxable) ser 2018C due 07/01/2024		
Long Term Rating	A+/Positive	New
Great Lakes Wtr Auth swg (2nd lien)		
Long Term Rating	A/Positive	Upgraded
Great Lakes Wtr Auth WTRSWR		
Long Term Rating	A+/Positive	Upgraded

Rationale

S&P Global Ratings has assigned its 'A+' rating to the Great Lakes Water Authority's (GLWA) series 2018 sewage disposal system revenue and revenue refunding senior-lien bonds. We have also raised our ratings by two notches on both GLWA's existing senior-lien bonds to 'A+' from 'A-' and its existing second-lien bonds to 'A' from 'BBB+'. The outlook is positive.

The upgrade is based on several factors:

- Oversight through an agency relationship and cooperation with the Detroit Water and Sewer Board (DWSD) and its Board of Water Commissioners that we view as strong and supportive of credit quality. Because of Detroit's extremely weak overall economic indicators and historical collections/bad debt issues, we view both the existence and continuation of these functions as key to the maintenance of the rating at its current level.
- Overall management and governance functions that we also view as supportive of credit quality at the current rating level. GLWA management maintains active communication with both the DWSD retail system and its wholesale customers and has a comprehensive set of internal policies related to, among other things, maintenance of certain financial targets, key performance indicators for both financial and operational metrics, and internal controls.
- Actual financial performance has continued to exceed projections from prior feasibility studies. Now that GLWA has two full fiscal years (2017 and 2018) of operating as a separate entity from DWSD, and that various reconciliations and adjustments related to the separation have already taken place, we would expect that future variances to the feasibility studies may not be as dramatic. However, given GLWA's comprehensive budgeting practices and strong budgetary oversight of DWSD's operations, we would expect that future financial performance should be largely consistent with the most current projections.
- GLWA is not under any regulatory-driven capital costs from consent orders or consent decrees. While we view the GLWA system as highly leveraged, the fact that all of the capital plan is forward-looking and not mostly being used to cure regulatory infractions is a key credit strength that is supportive of the current rating level.

- Limited future exposure to pension cost escalation from legacy Detroit obligations resulting from prior bankruptcy negotiations. It is our understanding that after the 2023 fiscal year, both GLWA and DWSD pension costs related to legacy pension plans will drop from a total for both water and sewer systems of $45.4 million (which is a mandated contribution based on Detroit's bankruptcy plan of adjustment) to what is currently projected to be no more than $9.1 million. These additional payments would be used to retire the remaining unfunded liability from the closed/legacy pension plans that has arisen after the original payments were determined in 2014.

Additional factors supporting the rating include the following:

- A diverse revenue stream from a large number of wholesale customers;
- Revenues from both wholesale customers and the DWSD retail system that are fixed, which, in our view, significantly insulates GLWA's financial performance from volatility caused by weather and flow variances.

Offsetting these strengths are the following factors:

- Ongoing negative revenue variances from the DWSD local sewer system that have, in our view, material effects on the overall creditworthiness of the GLWA sewage disposal system. GLWA reports that the negative revenue variance caused by DWSD for the 2018 fiscal year is about $19.8 million. The authority has also experienced significant negative and positive outflows in the DWSD system since 2016 due to various one-time events, although GLWA reports that the 2018 variance was most likely attributable to DWSD's implementation of a new drainage program and related litigation.
- We consider Detroit's economy very weak, which could continue to place downward pressure on utility collection rates in the city, and high system leverage, that we do not believe will abate significantly at least over the two-year outlook horizon.

The ratings also reflect the application of our wholesale utility criteria, but we do not follow a purely weak-link approach since GLWA has, in our view, additional financial strengths that could be used to support debt payments if a single participant does not fulfil its payment obligations. These strengths include pledged reserves and unrestricted liquidity available at the wholesaler GLWA level; the ability to adjust revenue requirements to participants as its cost structure changes; and strong management policies related to both the regional system and Detroit's local system. The fact that GLWA's service base is large and serves a large percentage of the state's population also supports our view that the ratings should reflect that diversity, with overall economic considerations playing a more prominent role in the credit analysis.

Legal Framework Details Relevant To The Credit Rating

The bonds are secured by a statutory lien on pledged assets of the system, prioritized by the lien status, which include net revenues of GLWA's sewage disposal system, along with investments credited to the sewer system and earnings on those investments. The net revenue pledge is constituted from gross revenues of the DWSD retail and the GLWA regional systems, which cover both systems' operating and maintenance (O&M) expenses. A rate covenant stipulates that the GLWA board set rates to produce at least 1.2x coverage of senior-lien debt, 1.1x for second-lien bonds, and 1x for junior-lien bonds. The ability to issue additional bonds exists if net revenues for the previous fiscal year, or net revenues adjusted by approved rate increases and system expansion for the current or next fiscal year, produce coverage of maximum annual debt service (MADS; including the proposed bonds) of at least those levels indicated in the rate covenant for the particular liens.

There is also a debt service reserve (DSR) for senior-lien bonds equal to MADS or the lesser of the standard three-prong test, and for second-lien bonds equal to average annual debt service or the lesser of the three-prong test. On achieving approval from at least 51% of senior- and second-lien bondholders and having appropriate senior-lien ratings from two credit rating agencies no lower than 'AA-' or the equivalent, GLWA, through amendments to the master bond ordinance (MBO), has the option to eliminate this reserve requirement on its outstanding and future bonds on any lien for which approval has been granted. If this proposed amendment is approved, we currently view the effects as credit neutral; however, our criteria methodology would indicate that if credit quality deteriorated, the importance of a DSR becomes a more important credit factor by providing immediate additional liquidity pledged to bondholders. To date, GLWA has achieved bondholder approval for this amendment from about 7% and 39% of senior- and second-lien bondholders, respectively.

The statutory lien on pledged assets is well established by state statute under Act 94 of 1933 (as amended).

Under the GLWA master bond ordinance, U.S. Bank N.A. is the trustee.

We view the numerous oversight and control functions that GLWA has over Detroit's retail system as supportive of both the overall legal framework and the ability of the GLWA regional system to help make the net revenues originating from Detroit's local system more predictable, which in turn results in an analysis that focuses more on this framework as opposed to one that benchmarks the rating specifically on our view of DWSD's creditworthiness. The primary three documents that place parameters around this operating relationship between the two entities are the water and sewer lease agreements, and both a service agreement and memorandum of understanding (MOU) between GLWA and the Detroit retail system.

The major provisions of both lease agreements that we view as supportive of the overall legal and operational framework include the following:

- Explicit language that requires all revenues collected by Detroit be held in segregated accounts in trust and remitted within five days of receipt to a trustee-held pledged revenue account under the master bond ordinance.
- Requirements that both GLWA and Detroit retail maintain a biennial budget and a five-year capital improvement plan (CIP).
- In consideration of a lease payment from GLWA for use by the Detroit local system, the use of those funds are restricted to either repayment of debt or capital projects.
- GLWA has the exclusive and direct right to establish all rates and charges, including the retail users within Detroit (although through the service agreement, GLWA delegates its right to set rates to DWSD).
- All vendor and employee contracts related to GLWA operations are assigned to the authority.

The major provisions of the service agreement and MOU that we view as supportive of the overall legal and operational framework include the following:

- If certain performance standards are not met, GLWA can revoke its appointment of Detroit as its agent for collections of revenue requirements.
- GLWA will set revenue requirements for DWSD that are related to the costs for providing services, and, in turn, Detroit will set retail rates in a fashion that meets GLWA's revenue requirement.
- All responsibilities for discharge permit and other environmental compliance requirements are explicitly allocated between Detroit retail and GLWA.
- DWSD is required to submit periodic budget and operational reporting requirements to GLWA and discuss these results at a Reconciliation Committee, which is also the initial mechanism to develop a plan for DWSD to cure any budget shortfalls it experiences.
- The service agreement has an explicit mechanism for dispute resolution.

Economic Conditions And Customer Base

GLWA's sewer system serves a large population of about 2.8 million across Wayne, Oakland, and Macomb counties, which covers about 30% of Michigan's population.

We consider Detroit's economy very weak, but the revenue base for both water and sewer is well diversified geographically beyond the city limits. The large amount of inactive accounts in Detroit exacerbates the need for ongoing collection efforts and could affect the large amount of accounts receivable. Management is actively working to lower its uncollectible accounts, but 48% of Detroit retail accounts are inactive, which we view as a significant number. We note, however, that collections efforts have increased, in our view, since GLWA was formed in 2016, including the introduction of payment plans and GLWA's water residential assistance program (WRAP) for low-income residents.

Looking at the metropolitan area as a whole, however, average economic indicators are much better, with median household effective buying income at 98% of the U.S. average, and according the U.S. Bureau of Labor Statistics, the city of Detroit's annual average unemployment rate was under 10% for 2017, the first time since 2001. We believe the metrics for a regional utility indicate a better overall economic base for the service area than looking at the city's economic indicators alone.

A weakening of economic metrics could weaken the credit rating, especially if this were to occur on a more regional scale. A general regional weakening economy would lessen the positive effects that the more diversified revenue and customer base has had on the rating profile.

Rate Structure And Collection Issues

The implementation of model contracts and moving wholesale customers' revenue requirements to a higher level of fixed-cost recovery, is, in our view, a credit strength because it will help prevent revenue fluctuations based on metered flow and will help stabilize revenue collections. Management has also maintained a wholesale customer outreach program since 1997.

Management is committed to moderate annual rate increases intended to produce a 4% increase in overall annual revenues, instead of the wide swings in rates in the past. We understand it is hoping to achieve this through implementation of fixed-cost recovery, continued cost reductions, labor force reductions, and the use of cash for capital when appropriate.

A credit weakness is the large amount of past due and inactive accounts in Detroit. DWSD management has a dedicated shut-off program that has been implemented by an outside contractor, although meaningful results will take time, in our view. One benchmark we will look at is overall budget variances for the DWSD local system as one indication of the progress DWSD is making on collection efforts.

Finances And Liquidity

The historical DWSD financial performance has been somewhat volatile, in our view, due primarily to changes in billed versus budgeted volumes and exacerbated by economic stress. Still, in most years, each system has been able to generate net revenues that cover fixed costs by at least 1x.

For GLWA, our fixed-charge coverage analysis generally follows the presentation in GLWA's MBO calculation for junior-lien debt service coverage, with additional revenue offsets due to pension payments made to Detroit for its frozen general retirement system expenses and additional fixed costs due to pension note payments made to Detroit for its B and C note payments. Our calculation focuses on how net revenues are covering all of GLWA's fixed costs instead of reporting coverage based on MBO definitions of operating and nonoperating expenses. We generally view the historical fixed-charge coverage as adequate to good, with the expectation that coverage will steadily improve due to the implementation of fixed-cost recovery rates and various management initiatives.

Liquidity of the system has fluctuated, but has generally stayed at levels we would consider good. Projections show a steady unrestricted liquidity position through 2023 of about $210 million, which takes into account operating reserves, budget stabilization, emergency repair, and improvement and extension fund balances. Because the MBO allows for any monies in these funds to be used for either O&M expense requirements or debt service shortfalls, we view them as unrestricted liquidity.

Capital And Debt

The size and scope of the CIP are credit neutral. We expect that capital costs will continue to be distributed between Detroit's retail system and the regional system as appropriate, and in a manner consistent with the lease and service agreements' allocate costs.

The sewer system is highly leveraged (especially since 2012, when DWSD issued bonds to refund its variable-rate debt portfolio and to terminate its swaps). We do not expect this condition to abate in the near term and generally view the debt profile as a credit weakness. Debt service also represents over 80% of O&M expenses, and we do not see this number falling in the near future since additional debt is layered in to fund the CIP.

Outlook

The positive outlook reflects our expectation that there is at least a one-in-three chance that the rating could improve over the two-year outlook horizon. The most significant factor we are expecting to lead to an upgrade is resolution of what we view to be significant revenue variances caused by the DWSD local system. It is our understanding that progress is being made to resolve these variances, but there could be ongoing revenue pressures depending on how the drainage program litigation is resolved.

For an upgrade to occur over the next two years, we would also expect the following to occur:

- Continued financial performance that meets or exceeds GLWA's expectations as reflected in the current feasibility study;
- No large and unforeseen capital needs that would cause either large and sustained reductions in liquidity or significant increases in fixed costs; and
- Continued demonstration that the relationship with DWSD through the service agreement and MOU is being successfully used to minimize any future financial disruptions that may occur.

Downside scenario

While the outlook is currently positive, we could revise it to stable without raising the rating if we believe that a resolution with DWSD related to its ongoing revenue variances is not settled in a fashion that is either sustainable long term or able to achieve a significant amount of variance reduction. If economic stress or cost escalations lead to financial results measurably worse than that GLWA currently projects, then either the outlook, rating, or both could be negatively affected.

Ratings Detail (As Of September 5, 2018)		
Great Lakes Wtr Auth swg (wrap of insured) (ASSURED GTY) (SEC MKT)		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (wrap of insured) (MBIA, National & ASSURED GTY) (SEC MKT)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (Sr lien)		
Long Term Rating	A+/Positive	Upgraded
Great Lakes Wtr Auth swg (Sr lien) (AGM) (SECMKT)		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (2nd lien) (wrap of insured) (FGIC, AGM & BHAC) (SEC MKT)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (2nd lien) (AGM)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (2nd lien) (AGM)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (2nd lien) (BAM) (SECMKT)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded

Ratings Detail (As Of September 5, 2018) (cont.)		
Great Lakes Wtr Auth swg (2nd lien) (BAM) (SECMKT)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swr (wrap of insured) (FGIC) (ASSURED GTY - SEC MKT)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth WTRSWR (National) (MBIA)		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth WTRSWR (BHAC)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg disp sys		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg disp sys VRBD (2nd lien) ser 2006A		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (FGIC) (National)		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (Sr lien) (AGM)		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (2nd lien)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lakes Wtr Auth swg (2nd lien) (MBIA) (National)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Great Lake Wtr Auth swg (2nd lien)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Michigan Fin Auth, Michigan		
Great Lakes Wtr Auth, Michigan		
Michigan Fin Auth (Great Lakes Wtr Auth) swg		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) swg disposal (AGM)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) swg disposal (BAM)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) swg (BAM) (SECMKT)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) swg (National)		
Unenhanced Rating	A(SPUR)/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
Long Term Rating	A+/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
Long Term Rating	A+/Positive	Upgraded

Ratings Detail (As Of September 5, 2018) (cont.)		
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
Long Term Rating	A+/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
Unenhanced Rating	A+(SPUR)/Positive	Upgraded
Michigan Fin Auth (Great Lakes Wtr Auth) WTRSWR		
Long Term Rating	A/Positive	Upgraded

Many issues are enhanced by bond insurance.