

CREDIT OPINION

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Great Lakes Water Authority, MI Sewer Enterprise

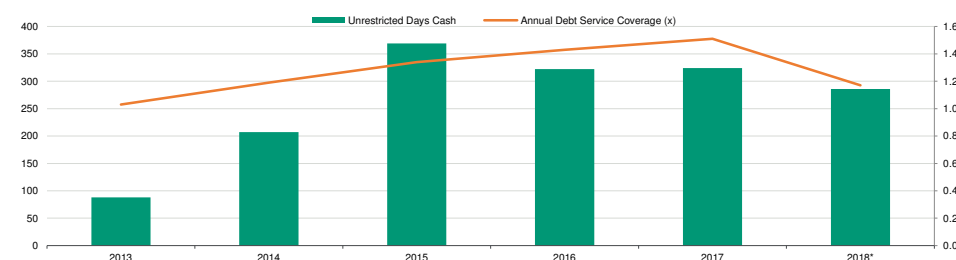
Update following upgrade of sewer revenue bonds to A2 and A3

Summary

The Great Lakes Water Authority's (GLWA) [Sewer Enterprise](#) (A2 stable) has maintained strong financial metrics in recent years and we expect this to continue. A combination of GLWA's commitment to raising rates and stabilization of the customer base supports an expectation of continued and moderate revenue growth. The system's healthy liquidity and debt service coverage balance a very high debt burden. At the same time, the enterprise has resources available to support capital spending in ways other than issuing debt. Though we anticipate more borrowing in the coming years, continued revenue growth should moderate the system's debt burden. The authority has achieved operating efficiencies by reducing staff and optimizing treatment facilities. The system's sizable service area and scale of operations remain credit strengths, though there are and will remain economic weaknesses in certain areas of the customer base. Activity in the [City of Detroit](#) (Ba3 stable) accounts for a very large share of annual revenue and the retail system in the city, in particular, is still continuing a strategy to mitigate future combined sewage overflows (CSOs). We do not expect addressing these challenges will be a significant burden as long as revenue growth and the underlying economy remain healthy. An economic setback in the region, however, could intensify operating challenges.

On August 31, 2018 we upgraded to A2 and A3 from A3 and Baa1 GLWA's senior and second lien sewer revenue debt, respectively.

Exhibit 1

Debt service coverage is satisfactory while liquidity is strong


* Unaudited

Source: Audited financial statements of Great Lakes Water Authority and City of Detroit Sewer Fund

Credit strengths

- » Very large system that provides essential wastewater services to an estimated 2.8 million residents
- » Commitment to annual revenue enhancements to support sound debt service coverage and healthy liquidity
- » Simplified monthly fixed rate structure mitigates declining usage while providing stable cash flow throughout the year

Credit challenges

- » Economic and demographic weaknesses in portions of the service area, including the City of Detroit which accounts for roughly 45% of annual operating revenue
- » High leverage will moderate slowly given outstanding capital needs and plans to issue additional debt
- » High combined operating needs and fixed costs leave little margin to miss revenue targets in order to maintain strong liquidity and expand pay-go capital financing

Rating outlook

The stable outlook incorporates our expectation that key financial metrics will remain favorable and mitigate high leverage of pledged revenue.

Factors that could lead to an upgrade

- » Sustained expansion and diversification of the service area's economic base
- » Growth in revenue that continues to outpace borrowing so as to moderate leverage of pledged resources

Factors that could lead to a downgrade

- » Renewed economic stress that pressures consumption and revenue trends
- » Material reduction to the system's liquidity or debt service coverage ratios
- » Growth in leverage of the sewer system's net revenue

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Key indicators

Exhibit 2

Great Lakes Water Authority, Sewer Enterprise, MI					
System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	15 years				
System Size - O&M (\$000)	\$231,095				
Service Area Wealth: MFI % of USmedian	101.20%				
Legal Provisions					
Rate Covenant (x)	1.20x				
Debt Service Reserve Requirement	DSRF funded at lesser of standard 3-prong test				
Management					
Rate Management	A				
Regulatory Compliance and Capital Planning	A				
Financial Strength					
	2013	2014	2015	2016	2017
Operating Revenue (\$000)	\$440,663	\$479,929	\$506,903	\$539,481	\$585,386
System Size - O&M (\$000)	\$209,785	\$206,052	\$195,079	\$213,432	\$231,095
Net Revenues (\$000)	\$230,878	\$273,877	\$311,824	\$326,049	\$354,291
Outstanding Revenue Debt (\$000)	\$3,326,187	\$3,260,648	\$3,372,956	\$3,270,266	\$3,144,592
Annual Debt Service (\$000)	\$225,223	\$229,611	\$232,613	\$228,571	\$234,555
Annual Debt Service Coverage (x)	1.0x	1.2x	1.3x	1.4x	1.5x
Cash on Hand	88 days	207 days	369 days	322 days	324 days
Debt to Operating Revenues (x)	7.5x	6.8x	6.7x	6.1x	5.4x

See the coverage section under Debt Service Coverage and Liquidity for more details about what's included in revenues, expenditures, and debt service, and how coverage is calculated under the bond resolution.

Source: Audited financial statements of Great Lakes Water Authority and City of Detroit Sewer Fund

Profile

The [Great Lakes Water Authority](#) (GLWA) is the regional wholesale provider of water and sewer services to southeast Michigan. Fully established in 2016, GLWA is an incorporated municipal authority operating under the guidance of a six-member board consisting of one appointee each of the counties of [Macomb](#) (Aa1 stable), [Oakland](#) (Aaa stable), and [Wayne](#) (Baa2 stable), two appointees of the Mayor of Detroit, and one of the Governor of [Michigan](#) (Aa1 stable). The sewer enterprise collects, treats and disposes of wastewater produced by a service area population of approximately 2.8 million.

Detailed credit considerations

Service area and system characteristics: very large service area in southeast Michigan

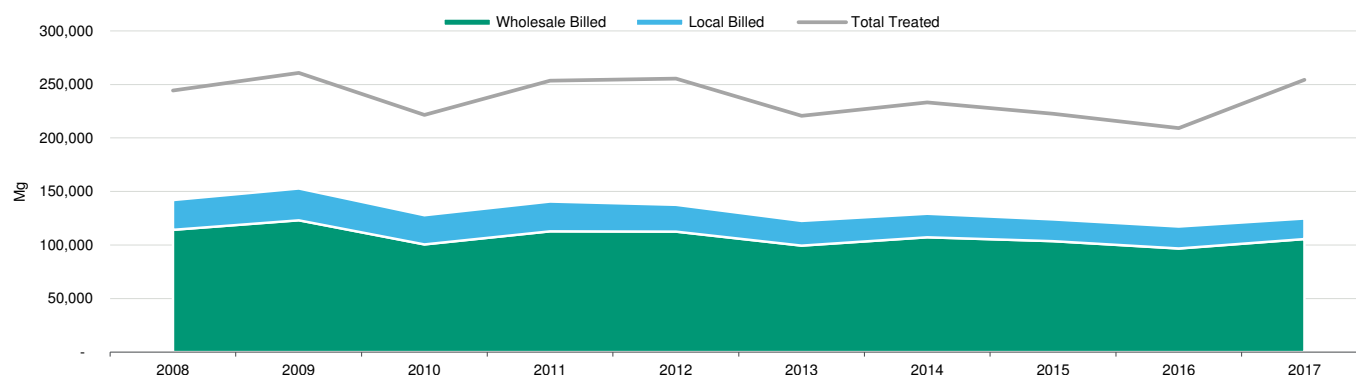
The regional sewer system, which is leased from the City of Detroit, covers a vast 944 square miles in southeast Michigan, providing sewage collection, treatment, and disposal. The system is a wholesale enterprise whose articles of incorporation allow for direct retail service. Residential and business activity within the City of Detroit has accounted for between 44% and 47% of annual GLWA revenue over the last five fiscal years (2013-2017). Residents and businesses within Detroit are retail customers of the Detroit Water and Sewerage Department (DWSD). The remainder of sewer revenue is derived from 76 suburban communities via 18 wholesale customer contracts.

Since 2009, 11 of GLWA's wholesale customers signed new model contracts with 30-year terms and automatic 10-year renewal. Customers under the model contract must provide notice of intent to terminate five years in advance of the end of the contract term. All remaining wholesale customers that are not on the model contract have purchased services from DWSD and subsequently GLWA since at least 1961. Stabilization of the regional economy should further support the resiliency of the customer base. Since peaking at 15.1% in 2009, the Detroit MSA's unemployment rate has fallen to 4.4% as of August 2018. Median family income has also gradually improved, and is now estimated at 101.2% of the national figure.

Similar to many older sewer systems, GLWA's wastewater utility has a significant amount of combined sewer infrastructure. As such, a large degree of treated wastewater volume is related to wet weather events. Over the past ten years only an average of 36% of total treated wastewater volume has been a result of sanitary volume associated with customer water usage. The remaining 64% reflects water from runoff of wet weather events and infiltration. Greater ability to control infiltration would likely lead to reductions in treatment costs.

Exhibit 3

Runoff from wet weather events continue to account for a large amount of treated wastewater



Source: Audited financial statements of Great Lakes Water Authority

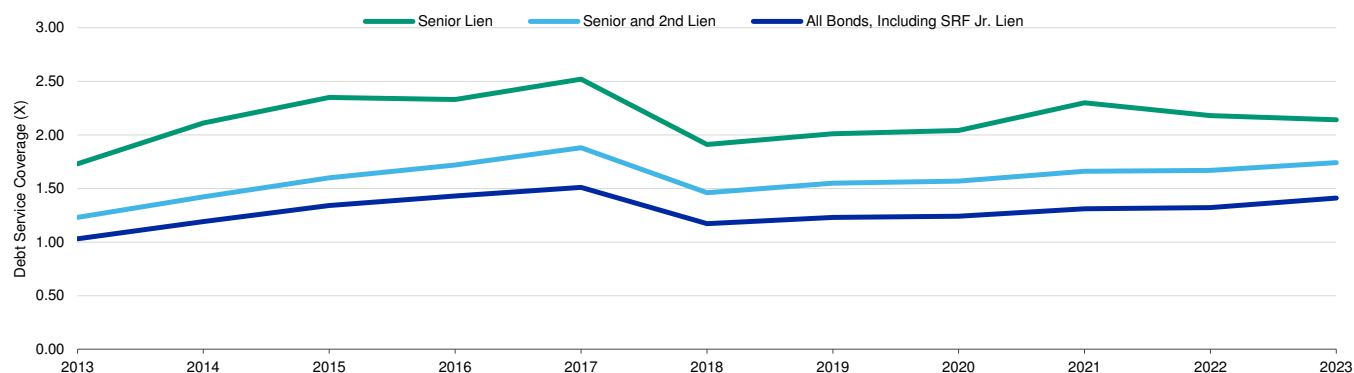
Debt service coverage and liquidity: financial metrics expected to remain healthy

Debt service and liquidity strengthened in recent years and we expect both to remain healthy. The authority plans to limit annual growth in its sewer system revenue requirements by 4%, but is committed to adjusting service charges, as needed, to meet bond covenants. Each year GLWA conducts an extensive study of both its wholesale service charges and allocated annual revenue requirement to retail sewer customers, with the purpose of adjusting revenue to reflect the cost of operations, depreciation expense, and return on the rate base. Due to positive operating variances in fiscal 2017, GLWA's needed revenue increases fell below 4% in fiscal 2018 and in the adopted fiscal 2019 budget.

Significant growth in retail rates in Detroit could challenge the capacity of some of DWSD's customers to pay. Delinquent Detroit retail accounts have remained high, though DWSD has enhanced both collection efforts and customer assistance programs, including participating in GLWA's water residential assistance program (WRAP). Additionally, DWSD funds a budget reserve, per the bond ordinance, to cover shortfalls in retail collections. The significant portion of annual revenue derived from Detroit retail operations remains a key credit challenge that could affect debt service coverage and liquidity. However, in conjunction with GLWA's commitment to manageable revenue requirement increases, DWSD's efforts should limit growth in delinquent retail accounts, especially if moderate economic growth continues.

Fiscal 2017 marked GLWA's first full year in operation, during which total sewer revenue grew 4.1%. Growth in revenue supported 2.5x coverage of senior lien debt service, 1.9x coverage on combined senior and second lien debt service, and 1.5x coverage of all debt service including junior lien state revolving fund payments. Though audited information is not yet available for fiscal 2018, management estimates coverage at 1.9x and 1.2x, respectively, of senior lien and total debt service.

Exhibit 4

Debt service coverage expected to remain stable

2018 figures are unaudited, 2019-2023 figures are projected

Source: Audited financial statements and projections of Great Lakes Water Authority

Per the master bond ordinance, revenue includes all money collected from the regional wholesale and local retail sewer customer payments deposited to a lockbox administered by a third-party trustee. O&M expenses are defined as cash transfers made to the GLWA's and DWSD's respective operation and maintenance funds. Bifurcated accounting between the GLWA's regional and DWSD's local operations means adjustments must be made to accurately assess coverage under the master bond ordinance.

LIQUIDITY

The sewer system's liquidity is strong and will remain so despite planned spending. At the close of fiscal 2017 the sewer fund had an unrestricted cash balance of \$205.2 million, equivalent to 324 days of O&M. The authority estimates cash increased to \$208.1 million at the close of fiscal 2018. The sewer fund also has significant restricted cash assets held for budget stabilization, debt service, and capital. The authority anticipates total combined cash will remain at or above 342 days of operations through 2023. This accounts for up to \$174 million of planned capital spending from reserves and surplus revenue over the next five years.

Debt and legal covenants: high debt burden could moderate with sustained revenue growth

Leverage of pledged sewer revenue is high. Current long-term debt across all liens is 5.5x fiscal 2017 operating revenue. Upcoming capital needs include improvements to the water resource recovery facility (\$238 million), collection system infrastructure (\$143 million), and general purpose, metering, and central services (\$148 million). In addition to financing these improvements with reserves and surplus revenue, GLWA plans to issue approximately \$354 million in revenue bonds and \$34 million in junior lien SRF loans over the next five years. The increase in debt will be offset by the amount of outstanding principal paid down over the next five years. Though we expect the system's debt burden will remain high, sustained revenue growth would make leverage less of a credit challenge going forward.

DEBT STRUCTURE

GLWA's rate covenant requires net revenue coverage of debt service equal to 120% for senior lien bonds, 110% for second lien bonds and 100% for any subordinate lien debt. Senior and second lien bonds benefit from debt service reserve funds (DSRF) sized at the lesser of the standard three-pronged test. As of July 1, 2018, approximately 24% and 42%, respectively, of the senior and second lien DSRF requirements are satisfied with cash. The balances of each are satisfied with various surety or insurance policies.

With the exception of the outstanding Series 2006D senior lien bonds, all debt paid from net sewer revenue is fixed rate. The Series 2006D bonds are floating rate notes and make up a modest 7% of total debt paid by sewer revenue.

DEBT-RELATED DERIVATIVES

GLWA is not party to any derivative agreements associated with its pledge of net sewer revenue.

PENSIONS AND OPEB

Current employees of GLWA are participants in a defined contribution benefit plan, though many are scheduled to receive accrued pension benefits from the City of Detroit's frozen defined benefit General Retirement System (GRS). Pursuant to the City of Detroit's bankruptcy settlement, GLWA will contribute \$45.4 million annually to GRS through fiscal 2023 to accelerate amortization of the GRS

unfunded liability associated with GLWA employees. The sewer enterprise's share of the annual GLWA payment to GRS will be \$25.9 million, or approximately 4.3% of fiscal 2017 gross revenue, not inclusive of operating revenue from DWSD pledged to debt service. Less than of the annual GRS payment is considered O&M and senior to debt service.

Beyond 2023, GLWA's payments to GRS will be based on the actuarial needs of the plan and sized to amortize any unfunded liability associated with GLWA employees. GLWA makes no payments towards accrued retiree healthcare liabilities as the City of Detroit's bankruptcy settlement eliminated those benefits. GLWA established a new defined contribution retiree healthcare savings plan, resulting in no potential unfunded liability.

Management and governance: management works to sustain regional cooperation

The management of GLWA has made strides in enhancing operational efficiencies and regional cooperations since its formation. To that end GLWA dramatically right-sized its work force, reducing full time employees by over 1,000 over the past several years. Additionally, management's master planning process has focused on leveraging the entire region's existing infrastructure to more efficiently address wet weather events, utilizing more green technology, and evaluating resource recovery options and energy reduction opportunities. Rate structure adjustments and payment assistance to low-income retail customers should support revenue stability. Additionally, the number of wholesale model contracts entered into points to increased regional collaboration.

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