MOODY'S INVESTORS SERVICE

CREDIT OPINION
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Great Lakes Wtr Auth, MI

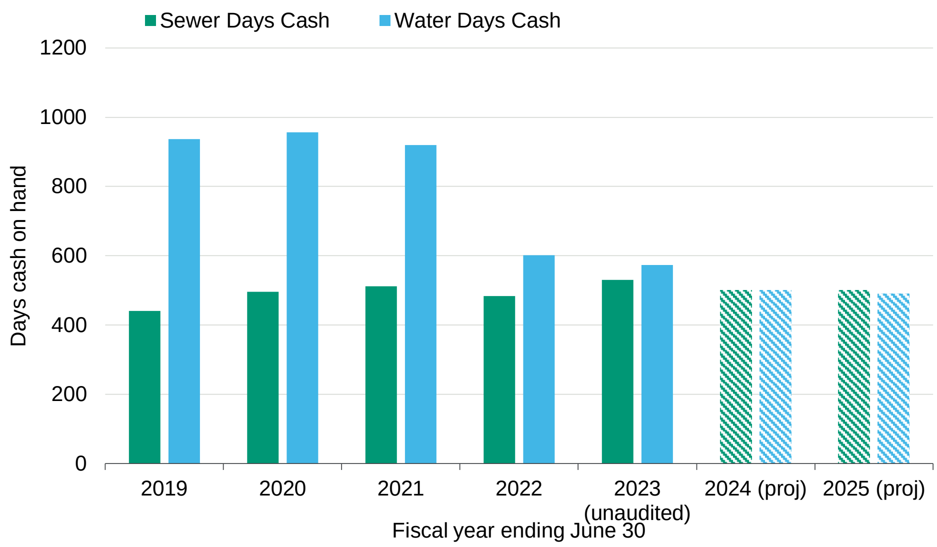
Update to credit analysis

Summary

The Great Lakes Water Authority's (GLWA) water and sewer enterprises (both senior liens rated Aa3 stable; both subordinate liens rated A1 stable) have solid credit profiles, bolstered by very large service areas that continue to improve and a sizable scale of operations. GLWA has effectively balanced its hefty capital needs with an affordable rate structure, stable operating performance, consistent debt service coverage (see exhibit 1) and good liquidity for both systems since its inception in 2016. The systems have above-average leverage, however, and the City of Detroit (Ba1 positive) makes up a significant portion of their service area. Building greater resilience to extreme wet-weather events will likely be an ongoing challenge.

On Oct. 24, we upgraded the authority's senior lien ratings to Aa3 from A1 and subordinate liens to A1 from A2. The outlook was revised to stable.

Exhibit 1
Liquidity will remain strong for both systems, even as cash is spent for water projects
Days cash on hand through audited fiscal 2022, unaudited 2023 and projected 2024 and 2025



Figures shown on a GAAP-basis
Source: Moody's Investors Service

Credit strengths

» Very large utility systems, providing essential water and wastewater services to a substantial portion of the state's population

» Commitment to annual revenue enhancements to support sound debt service coverage and healthy liquidity

» Track record of strong budget management and good transparency

Credit challenges

» Debt service coverage trails higher-rated large utilities

» High leverage will persist given outstanding capital needs and plans to issue additional debt

» Increasing occurrence of extreme wet weather events placing strain on stormwater and sewer treatment capacity in certain segments of the system

Rating outlook

The outlook is stable because the authority will maintain solid coverage and liquidity metrics given its strong management, stable operations and improving service area.

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 water or sewer system's liquidity or debt service coverage ratios

» Growth in leverage of the water or sewer system's net revenue

Exhibit 2

Great Lakes Water Authority, MI Sewer Enterprise						
System Characteristics						
Asset Condition (Net Fixed Assets / Annual Depreciation)	18 years					
System Size - O&M (in $000s)	$262,941					
Service Area Wealth: MFI % of US median	96%					
Legal Provisions						
Rate Covenant (x)	1.20					
Debt Service Reserve Requirement	DSRF funded at less than 3-prong test OR springing DSRF (A)					
Management						
Rate Management	Aa					
Regulatory Compliance and Capital Planning	Aa					
Financial Strength						
	2017	2018	2019	2020	2021	2022
Operating Revenue ($000)	$557,396	$561,784	$550,959	$562,231	$559,812	$607,690
System Size - O&M ($000)	$206,540	$250,551	$244,468	$243,438	$255,908	$262,941
Net Revenues ($000)	$350,856	$311,233	$306,491	$318,793	$303,904	$344,749
Net Funded Debt ($000)	$3,144,592	$3,076,993	$3,093,347	$3,039,222	$2,907,522	$2,788,196
Annual Debt Service ($000)	$234,555	$232,281	$239,172	$245,783	$230,163	$235,848
Annual Debt Service Coverage (x)	1.5x	1.3x	1.3x	1.3x	1.3x	1.5x
Cash on Hand	455 days	460 days	440 days	496 days	512 days	484 days
Debt to Operating Revenues (x)	5.6x	5.5x	5.6x	5.4x	5.2x	4.6x

Figures shown on a GAAP-basis. Revenue and O&M include GLWA wholesale operations and DWSD local retail operations.
Source: Moody's Investors Service

Exhibit 3

Great Lakes Water Authority, MI Water Ent.						
System Characteristics						
Asset Condition (Net Fixed Assets / Annual Depreciation)	18 years					
System Size - O&M (in $000s)	$178,539					
Service Area Wealth: MFI % of US median	96%					
Legal Provisions						
Rate Covenant (x)	1.20					
Debt Service Reserve Requirement	DSRF funded at less than 3-prong test OR springing DSRF (A)					
Management						
Rate Management	Aa					
Regulatory Compliance and Capital Planning	Aa					
Financial Strength						
	2017	2018	2019	2020	2021	2022
Operating Revenue ($000)	$428,044	$425,245	$407,231	$419,479	$411,583	$426,889
System Size - O&M ($000)	$145,499	$153,930	$163,519	$176,822	$164,995	$178,539
Net Revenues ($000)	$282,545	$271,315	$243,712	$242,657	$246,588	$248,351
Outstanding Revenue Debt ($000)	$2,358,137	$2,310,261	$2,250,181	$2,301,253	$2,361,338	$2,325,475
Annual Debt Service ($000)	$175,010	$172,550	$167,966	$172,869	$179,214	$176,589
Annual Debt Service Coverage (x)	1.6x	1.6x	1.5x	1.4x	1.4x	1.4x
Cash on Hand	676 days	912 days	937 days	956 days	920 days	602 days
Debt to Operating Revenues (x)	5.5x	5.4x	5.5x	5.5x	5.7x	5.4x

Figures shown on a GAAP-basis. Revenue and O&M include GLWA wholesale operations and DWSD local retail operations.
Source: Moody's Investors Service

Profile

The Great Lakes Water Authority (GLWA) is the regional wholesale provider of water and sewer services to southeast Michigan (Aa1 stable). The water enterprise treats water from Lake Huron, Lake St. Clair and the Detroit River and distributes treated water to a service area population of about 3.8 million. The sewer enterprise collects, treats and disposes of wastewater produced by a service area population of about 2.8 million. GLWA is an incorporated municipal authority, established in 2016, operating under the guidance of a six-member board, consisting of one appointee each of the counties of Macomb, Oakland and Wayne, two appointees of the Mayor of Detroit and one of the Governor of Michigan.

Detailed credit considerations

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

The systems will continue to benefit from large service areas with broad and diverse customer bases. The regional water supply system covers roughly 1,700 square miles in southeast Michigan, providing treated water to 112 communities and roughly 40% of the state's population. The sewer system is a little smaller; covering 944 square miles and providing wastewater services to about a third of the state's population across 79 communities.

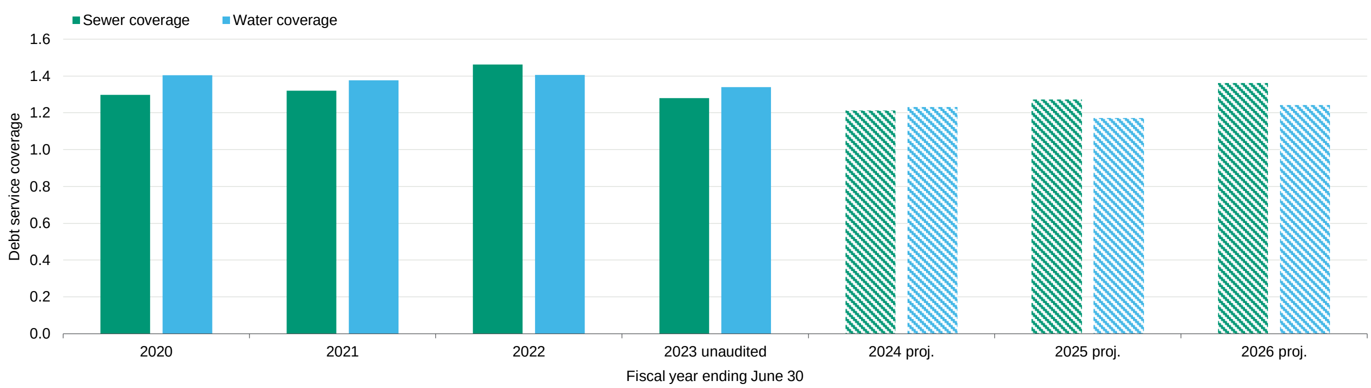
The bulk of water and sewer revenue comes from wholesale contracts with suburban communities. Wholesale contracts generate roughly three quarters of water revenue and a little over half of sewer revenue. Detroit residents and businesses are retail customers of the Detroit Water and Sewerage Department (DWSD), which manages the system assets within the city as an agent of GLWA. The revenue generated within the City of Detroit is assigned to GLWA and is deposited directly with the bond trustee.

GLWA's water usage rates, like many systems, have fallen somewhat over the past several years because of conservation efforts and the region's stagnant population. While that trend will likely stabilize, it is unlikely to materially reverse without an expansion of the system.

Debt service coverage and liquidity: coverage likely to narrow in short-term and then will improve

Coverage will narrow for both systems through fiscal 2025 (year-end June 30) because of rising costs, planned borrowing and the authority's commitment to a 4% revenue growth limit through fiscal 2025. The revenue limit sunsets in fiscal 2026 and the authority then plans to grow its water and sewer budgets by 6% and 5%, respectively, in fiscal 2026. The authority projects 1.2x total debt service coverage for both water and sewer revenue bonds in fiscal 2024 and 1.3x coverage for both systems for unaudited fiscal 2023 (see exhibit 2). The system could outperform management's projections. The narrowing coverage in fiscal 2024 and 2025 does not assume any savings from its current tender refunding bonds.

Exhibit 4
Coverage will narrow through fiscal 2025 and likely recover thereafter
Total debt service coverage



Source: Moody's Investors Service

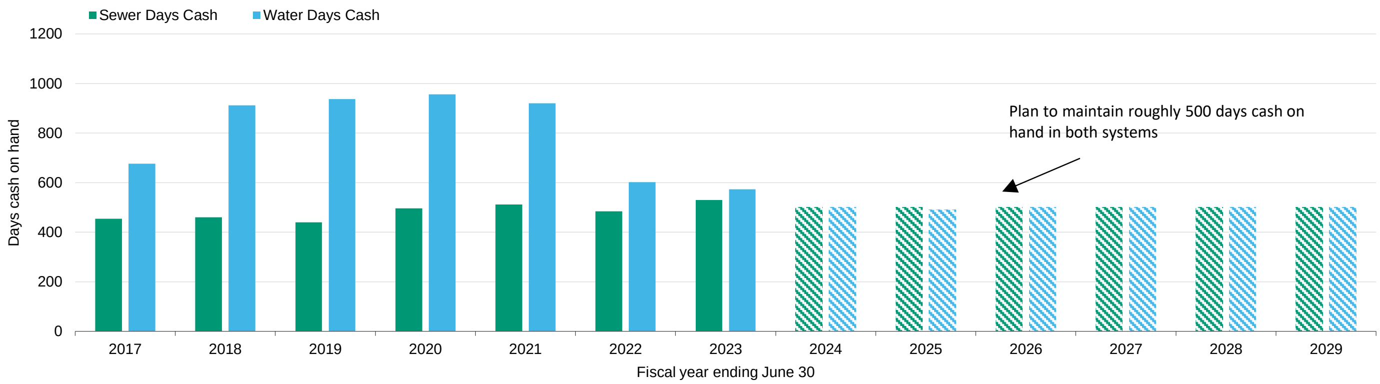
The authority typically maintains adequate annual debt service coverage and ample liquidity because of management's close monitoring of revenue targets, the stability of its wholesale charges and its ability to set rates. Most revenue in both systems comes from fixed monthly wholesale charges (roughly 60% in the water system and 100% in the sewer system), which enhances revenue reliability and dependability.

Liquidity

Liquidity is strong for both systems and will remain so even after planned spending for capital investments in the water system (Exhibit 4). Management plans to maintain roughly 500 days cash on hand. The two systems also have significant restricted cash assets held for budget stabilization, debt service and capital.

Exhibit 5

Days cash on hand will remain strong for both systems, even as the authority spends down cash for water projects



Source: Moody's Investors Service

Debt and legal covenants: high debt burden will stay level with sustained revenue growth

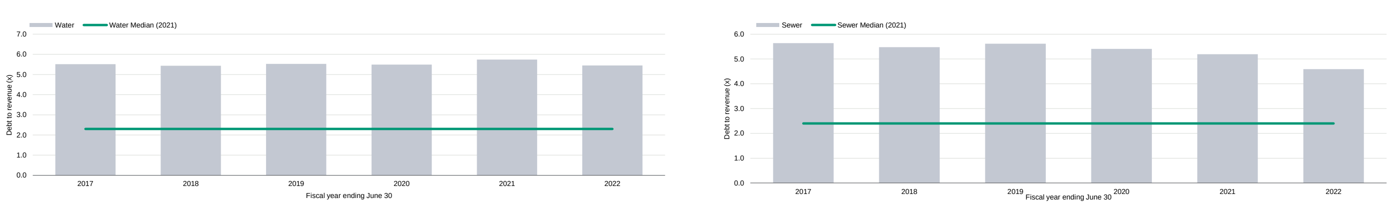
Each system has a very high debt burden that will remain elevated because of high capital needs. Still, leverage metrics will likely remain stable because GLWA has control over its rates and it plans to finance a portion its CIP with cash. The CIP for fiscal 2024 through 2029 includes about $1.3 billion of water projects and $1.13 billion of sewer projects.

The systems have a variety of capital needs, including reducing combined sewer overflow (CSO) and enhancing transmission and storage. The systems will also likely need to build greater resilience to extreme wet-weather events over the long-term. Favorably, the systems are not operating under any federal or state consent decrees. The authority has historically had high nonrevenue water volume because of pipe leaks and breaks. While water loss and other nonrevenue water increased to 14.6% in fiscal 2022 from 10.6% the year before, both are materially improved from where the system performed in the past.

The water and sewer systems' long-term debt leverage across all liens is materially higher than sector medians (Exhibit 5). GLWA had about $5.1 billion of combined total revenue debt outstanding at the end of fiscal 2022, about $2.3 billion for the water system and $2.8 billion for the sewer system.

Exhibit 6

Leverage metrics are much higher than US medians for both the water and sewer systems



Latest medians are for fiscal 2021

Source: Moody's Investors Service

Legal security

Water and sewer revenue bonds are backed by the net revenue of the respective systems. Legal provisions are solid and are the same for both systems. The rate covenant requires projected 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. Per the master bond ordinance, projected net revenue includes the revenue of the respective systems plus any estimated revenue increase from approved rate increases.

The money collected from regional wholesale and local retail customer payments are deposited to a lockbox, which is administered by a third-party trustee. Operations and maintenance (O&M) expenses are defined as cash transfers made to GLWA's and DWSD's respective O&M funds. The revenue and O&M expenses related to GLWA are reported in its segregated business funds while the revenue and expenses of DWSD are accounted for in Detroit's water and sewer funds, respectively. The bifurcated accounting requires adjustments from reported figures to assess rate covenant coverage under the master bond ordinance.

Senior and second lien bonds benefit from debt service reserve funds (DSRF) sized at the lesser of the standard three-prong test and are primarily funded via surety from various providers including Financial Guaranty Insurance Company (FGIC), Municipal Bond Insurance Association (MBIA, Ba3 stable), Assured Guaranty Municipal Corp. (AGM/FSA, A1 stable). The MBIA portion is reinsured by National Public Finance Guarantee Corp (Baa2) and the FGIC sureties are also backed by National via a notation agreement. The authority is allowed to reduce or eliminate its reserve requirement if the senior lien is rated Aa3/AA- by two or more rating agencies.

Debt structure

All of GLWA's water revenue debt and most of its sewer bonds are fixed rate. The sewer system has one series of variable rate debt: its Series 2006D bonds. The bonds are floating rate notes, are fully callable and make up a little less than 10% of sewer debt. The bonds do not have any demand risk. Interest rates are reset quarterly based upon a formula using a three-month Term SOFR rate.

The water system held about 45% of total GLWA debt at the end of fiscal 2022, with roughly $1.5 billion of senior lien bonds, $638 million of second lien water revenue bonds and $109 million of junior lien state revolving fund (SRF) loans. The remainder is held by the sewer system, inclusive of $1.7 billion of senior lien bonds, $715 million of second lien sewer revenue bonds and $377 million junior lien state revolving fund (SRF) loans. The debt service schedule is front-loaded and the bulk of both system's debt matures over the next 15 years.

Debt-related derivatives

The GLWA is not party to any derivative agreements.

Pensions and OPEB

GLWA employees are participants in a defined contribution benefit plan. There are some former DWSD employees who were hired by GLWA that qualify for accrued pension benefits from the City of Detroit's frozen defined benefit General Retirement System (GRS). Pursuant to the City of Detroit's bankruptcy plan of adjustment, GLWA contributed annually to GRS through fiscal 2023 to accelerate amortization of the GRS unfunded liability associated with GLWA's agreed share, which was based on the liability determined to be associated with the regional system before GLWA began operations. A little less than half of the annual GRS payment is considered O&M, making it effectively senior to debt service.

Starting in fiscal 2024, 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's agreed upon share that is still remaining. GLWA makes no payments toward accrued retiree healthcare liabilities because 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.

ESG considerations

The authority's ESG Credit Impact Score of CIS-2 indicates that ESG considerations have a low impact on its credit rating, reflecting moderately negative exposure to environmental risks and low exposure to social and governance risks.

Environmental

The authority's E Issuer Profile Score is E-3 reflecting moderately negative exposure to physical climate and water management risks and low exposure to carbon transition, natural capital, and waste and pollution risks. Climate change and extreme weather are likely to impact the authority's future operations, particularly on the sewer system. For example, major wet weather events, like those that occurred during the summer of 2021, can overwhelm the system's ability to store and process infiltration. The water system benefits from access to a vast amount of fresh water and the sewer system includes one of the largest single-site wastewater treatment plants in the world. Both systems are subject to extensive regulation pursuant to the federal Clean Water Act, the Clean Air Act, the Michigan Natural Resources and Environmental Protection Act and various administrative rules and regulations. The authority is in material compliance with all existing permits relating to the operation of the regional water and sewer systems.

Social

The authority's Issuer Profile Score is S-2, reflecting moderately negative responsible production risks because of ongoing product quality risks and low exposure to most social risks including customer relations, demographic and social trends, health and safety and human capital. Population in the Detroit MSA grew a little over 2% between 2010 and 2020. The system's sizable service area and customer base provides a high level of diversity, balancing social challenges in portions of the customer base, such as high poverty areas in the City of Detroit. GLWA provides payment and conservation assistance to low-income retail customers through its Water Residential Assistance Program, which helps to avoid delinquencies and support revenue stability.

Governance

The authority's governance Issuer Profile Score is G-2, reflecting strong management credibility and compliance and reporting, a moderately negative organizational structure given its heavy exposure to the City of Detroit, and low financial strategy and board structure risks. GLWA was created in the aftermath of the Detroit bankruptcy. It obtained possession and control of the city's water supply and sewage disposal systems via regional system leases (effective January 1, 2016) for an initial 40-year term and replaced the city as the obligor on all outstanding debt obligations related to the systems, pursuant to bondholder consent. Pursuant to the lease, the City of Detroit has irrevocably assigned its right, title and interest in all revenue of the sewer and water enterprises to GLWA. The lease will automatically extend to correspond with scheduled repayment of newly issued revenue debt. All revenues of both systems were assigned to GLWA.

GLWA is governed by a six-member board. The board has full authority to set service charges on municipal customers. Rates charged to retail customers in the City of Detroit are established by the city's Board of Water Commissioners pursuant to an agency agreement with GLWA. The lease agreement grants the GLWA board the ability to override the city's authority of retail rates and collections should the city not make adjustments sufficient to meet annual revenue requirements. All wholesale customers retain responsibility for levying local charges sufficient to cover costs charged by GLWA. Pursuant to the memorandum of understanding between GLWA and DWSD, GLWA assumes an annual increase of not more than 4% in the revenue requirements through fiscal 2025.

GLWA has demonstrated strong budget management since its inception, enhancing operational efficiencies and regional cooperation. Each year GLWA conducts an extensive study of both its wholesale service charges and allocated annual revenue requirement to retail customers, with the purpose of adjusting revenue to reflect the cost of operations, depreciation expense and return on the rate base. Additionally, since system capacity exceeds demand, management is de-rating parts of its water treatment plants. This allows the water system to reduce capital costs while preserving flexibility to put the facilities back to use.

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