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CREDIT OPINION
16 June 2016

New Issue

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Metropolitan Water District of Southern California

New Issue: Moody's assigns Aa1 rating to Metropolitan Water District of Southern California's Water Revenue Bonds

Summary Rating Rationale

Moody's Investors Service has assigned an Aa1 rating to the Metropolitan Water District of Southern California's (MWD) Water Revenue Refunding Bonds, 2016 Series A. The bonds will be issued in the expected par amount of $250 million. MWD has $4.2 billion of outstanding water revenue bonds not including the current sale.

The rating assignment reflects MWD's credit profile being largely in line with the expectations established in our last review in December 2015, including better than expected improvement to water availability. In the six months since that review, MWD has stayed on pace to produce narrowed fiscal 2016 debt service coverage that will remain sufficient for the rating given our expectation of improvement in fiscal 2017. The weakening of coverage has been driven by the impacts of water conservation and the district's efforts to manage supply and water demand. However, stronger water supply, rate increases, and an easing of conservation constraints will position MWD to produce a moderately stronger financial profile.

The rating also incorporates the beneficial effects of water conservation and improved precipitation this past winter and spring. This will allow the district to increase water storage for the first time since 2012. Given its role as the largest water wholesaler in Southern California, MWD's stored water supply has been a key component of its credit profile. This metric took on increasing importance as the drought continued to diminish storage over the last several years. MWD currently expects storage to increase appreciably by the end of the calendar year. Consequently, the district's stored water supply remains sufficient to allow the district to continue to effectively manage the impacts of the drought.

MWD's status as an essential water supplier to an exceptionally large and diverse service area of approximately 18.7 million people across Southern California is also a key rating driver. The district's effective management of a large and sophisticated debt portfolio has also been factored into the rating outcome.

The district continues to maintain sound cash resources to provide satisfactory coverage of its short-term obligations by its own liquidity and reliable market access.

Credit Strengths

» Water delivery from Colorado river remains stable

» Solid level of liquidity

» Essential water supplier to exceptionally large and diverse service area

» Improved water allocation from the State Water Project

Credit Challenges

» Weakened fiscal 2016 water sales revenue expected to be below budget

» Diminished debt service coverage

» Substantial variable rate debt exposure

Rating Outlook

The outlook is stable and a function of our view that MWD's projection of reduced coverage in fiscal 2016 will be a temporary condition that will improve materially in fiscal 2017 and fiscal 2018. This improvement will occur as a result of rate increases in both years and avoidance of one-time costs that drove expenses in fiscal 2016. If the district were to fall short of this expectation, then it could apply downward pressure to the rating. However, MWD’s history of effective financial and water resource management supports our view that the strategic reduction of coverage projected in fiscal 2016 will rebound quickly. The stable outlook is also supported by the improved water environment, which alleviates some of the pressure attendant to the state’s drought.

Factors that Could Lead to an Upgrade

» Material and sustained increase in debt service coverage by net revenues absent monies from reserves

» Long term alleviation of water supply pressure including sustained growth in stored water supply

Factors that Could Lead to a Downgrade

» Downward credit pressure will increase in concert with the severity, duration and impact of the drought on the district's access to cost effective water

» Weakening of debt service coverage below currently projected amount for the end of fiscal 2016

» Significant reduction in stored water supply

Key Indicators

Exhibit 1
Metropolitan Water District of Southern California

Metropolitan District of Southern California					
System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	27 years				
System Size - O&M (in $000s)	1,016,988				
Service Area Wealth: MFI % of US median	111.%				
Legal Provisions					
Rate Covenant (x)	1.00				
Debt Service Reserve Requirement	No DSRF				
Financial Strength					
	2011	2012	2013	2014	2015
Operating Revenue ($000)	1,177,846	1,230,000	1,479,739	1,681,685	1,590,818
O&M ($000)	759,692	792,000	791,031	1,681,685	1,590,818
Long-Term Debt ($000)	4,535,100	4,575,707	4,426,532	4,410,213	4,250,134
Annual Debt Service Coverage (x)	1.48	1.80	2.37	2.51	2.72
Cash on Hand	437 days	419 days	496 days	274 days	329 days
Debt to Operating Revenues (x)	3.9x	3.7x	3.0x	2.6x	2.7x

Source: Moody's Investors Service

Detailed Rating Considerations

Service Area and System Characteristics: Essential Water Provider to Extremely Large and Diverse Service Area; Improved Water Supply

The district serves a six county Southern California area that has a collective GDP that would rank among the top 15 of the world's countries. This service area includes portions of the counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura. Los Angeles County accounts for 48% of the assessed valuation with Orange and San Diego counties representing 20% and 17% respectively. Growing industry strength in technology, home building, logistics and shipping and tourism, will likely provide for continued improvement in incomes and employment in the region. The district's 2016 assessed valuation is $2.4 trillion, which is among the largest of any local government debt issuer in the country and likely to increase moderately in 2016.

While the district's water supplies are not its service territory's only supply source, its supplies are nevertheless critical for its customers. District supplies account for 40% to 60% of its service territory's total annual water use. Its individual member agencies' average annual reliance on District supplies ranges from about 30% to 100%, with some members' demands quite variable around their annual averages.

The drought has pressured many member agencies' local supply and has increased the reliance on MWD. The increased reliance on MWD during the drought underscores the district's critical importance to the region. Member agencies do not have an annual contractual obligation to purchase any water from the District, but their high reliance on District supplies over the long-run generally obviates the need for such commitments.

Stored Water Supply will Increase in 2016-17 allowing MWD the Flexibility to Manage Future Supply Reductions

The district's primary water source is derived from the State Water Project (SWP), which can allocate as much as 1.9 million acre feet of water per year to the district. This allocation is well above the 1.70 million acre feet the district uses as an expected sales volume for budgeting purposes. Based on current allocation expectations, MWD will receive 1.1 million acre-feet of SWP supply.

Since our last review, water allocation from the State Water Project has been increased to 60% of contract amounts versus only 20% for 2015. This is the highest level of allocation since 2012 and will enable MWD to increase stored water supply to its highest level in three years.

MWD closed 2015 (calendar year) with 1.5 million acre-feet of total storage. This reflected the positive effect of conservation, which greatly lowered the rate of reduction to stored water supply. On January 1, 2013, the district had 3.4 million acre feet of water in storage, which amounted to 57.9% of total water storage capacity. As of January 1, 2014, stored water had fallen to 3.0 million acre feet, 50.9% of capacity. The district drew additional stored supply to compensate for the low allocation from the SWP in 2014 and began 2015 with 1.8 million acre-feet of total storage consistent with projections and still modestly ahead of the previous storage low points reached in 2008 and 2009.

MWD projects ending calendar 2016 with 1.9 acre feet of stored water supply, which would be the highest amount since 2014. This projection assumes the continuation of normal level of Colorado River water deliveries , increased SWP deliveries and some easing of water conservation standards.

In 2015, MWD enacted a 15% water reduction for member agencies. Each of the district's 26 member agencies are on track to surpass the reduction target. However, as a result of the improved water conditions, the MWD board elected to rescind the “Condition 3 – Water Supply Allocation” standard and declare a “Condition 2-Water Supply Alert”. The board has chosen to not implement water restrictions on member agencies in 2017.

The district's second source of supply is the Colorado River, which is also in drought. The State of California's 4.4 million acre feet of entitlement is senior to the other lower basin states and would not be in jeopardy even in the most likely allocation scenarios that could take effect. MWD is entitled to 550,000 acre feet of California's share of Colorado River water. The district receives an additional 112,000 acre feet of Colorado River via the QSA agreement. Other Colorado River related water is expected to increase total Colorado River supplies, in fiscal year 2016, to 1.1 million acre feet. In April, the US Bureau of Reclamation lowered its projected likelihood of water shortage on the river in 2017 to just 10% from 37% as of January 2016.

Debt Service Coverage and Liquidity: Weakened Projected 2016 Debt Service Coverage Resulting from Increased Conservation and Supply Management Costs; Coverage will Rise with Rate Adjustments while Liquidity Remains Solid

MWD's fiscal 2016 debt service coverage is projected to decline considerably from the fiscal 2015 high of 2.7 times. While a reduction in coverage beyond the current projections would apply pressure to the rating, we anticipate that coverage will rebound as the district implements 4% rate increases in each of the next two fiscal years.

The district currently projects fiscal 2016 debt service coverage will be 1.36 times, a pronounced decline from the 2.3 times average annual debt service coverage maintained in the prior four years. The projected coverage is also well below the 2.02 times anticipated by management in last year's projection. In addition, the projected coverage is reliant upon a $275 million transfer from the rate stabilization fund, without which coverage would be notably weaker. However, the availability of reserves to offset single year revenue shortfalls is a material credit strength reflected in the rating assignment. Despite the challenges of the current fiscal year, the district has not adjusted its 2 times debt service coverage target.

Much of the decline in coverage is a function of weaker than expected water revenues as water conservation rates exceeded the levels required by the district and state. The district's annual budget is built on selling 1.75 million acre feet of water. MWD implemented a 15% water conservation requirement, which would have resulted in 1.8 million acre feet, a mark consistent with the five-year average. However, actual water sales are tracking to be 1.63 million acre feet. This has resulted in water sales revenues that are expected to be $166 million lower than budget.

Expenditures are expected to be approximately $257 million higher than fiscal 2015 reflecting a significant increase in water transmission costs, one-time spending on land acquisition and major investment in conservation programs such as turf replacement. The land acquisition included purchase of agricultural land from the Palo Verde Irrigation District. This purchase enables the district to access up to an additional 50,000 acre feet of water per year depending on the amount of land fallowed. The district also expects to spend $450 million on conservation programs by the end of calendar year 2016, of which the largest component was $300 million for turf replacement.

Improved debt service coverage in fiscal 2017 will be driven in part by reducing the one-time spending of fiscal 2016.The turf replacement program will be scaled back but the district is in the process of purchasing properties in the Delta. Management believes the $175 million purchase will facilitate the district's participation in the California Water Fix as well as environmental remediation. However, the purchase has been challenged, and the final land use plan has yet to be determined. The purchase of the land will slow the rate of debt service coverage recovery but will not materially weaken available liquidity.

The district lowered its budgeted water sales target by 50,000 acre-feet to 1.7 million acre-feet. Beyond the current rate horizon through 2018, we expect that management will continue with moderate multi-year rate increases that will incorporate anticipated costs associated with the district's share of the California Water Fix.

LIQUIDITY

The district's liquidity remains sound and is a key component of the rating. The district's fiscal 2015 net working capital was a solid 144% of operations and maintenance. MWD also projects $408 million in unrestricted reserves for fiscal 2016, which is only a portion of the district's $1.2 billion million in total liquidity. The district closely monitors its weekly and monthly cash as part of its oversight of its short-term obligations that are supported by the district's self-liquidity. As of April 2016, the district's internal daily liquidity was sufficient to provide a sound 1.75 times coverage of its short-term debt.

Debt and Legal Covenants: Large, Complex Debt Portfolio

DEBT STRUCTURE

MWD's debt structure includes $3.2 billion in fixed rate obligations and $1.2 billion in variable rate obligations, which is a significant but manageable 29% of the district's total debt outstanding. The variable rate obligations include $340 million in weekly self-liquidity obligations, $151 million daily and weekly variable rate debt, and $537 million in SIFMA Index notes.

The district has soundly managed its self-liquidity bond program. MWD has recently maintained very solid self-liquidity coverage ratios that have recently diminished as cash has declined but remain satisfactory.

Since selling its first SIFMA note in 2009, the district has successfully remarketed various series an average of three months in advance of the scheduled mandatory tender date. The next mandatory tender date for the district's SIFMA notes will be August 16, 2016 and September 30, 2016, respectively.

The district's daily and weekly variable rate obligations are supported by standby bond purchase agreements with Wells Fargo Bank ($88.8 million) and Barclays Bank ($62.5 million). The agreements expire in February 2017 and September 2016 respectively. The district has not experienced any difficulty in either finding replacement providers or extending existing facilities.

DEBT-RELATED DERIVATIVES

Approximately 50% of the district's existing variable rate obligations are swapped to fixed, giving the District a correspondingly large interest rate swap portfolio. With the District's sound cash flow and reserves, managing fluctuating interest costs remains easily within its means. Each of the district's eight swaps are fixed-payer agreements.

PENSIONS AND OBEP

Metropolitan contributes to the California Public Employees' Retirement System (CalPERS), an agent multiple-employer public employee defined benefit pension plan. In fiscal 2015, MWD paid $47.3 million in pension costs (3.1% of total operating revenue). The pension plan is 85% funded with an unfunded liability of $259.5 million.

MWD also participates in the CalPERS OPEB plan. The district also contributed $29.5 million to fund the annually required contribution (2.0% of operating revenues). The fiscal 2016 ARC is $30 million, which the district will pay in full. MWD also has approximately $180 million in an irrevocable trust and a $258.8 million unfunded OPEB liability.

Management and Governance

MWD is governed by a 38 member board of directors with each member agency being represented by at least one board member. Member agencies can also have an additional board member for each 5% of MWD's full that is also within the member agency's service area. Board member votes are allocated proportionally by the percentage of MWD assessed value within the member agency's service area. The district has sole rate setting authority independent of the state and California Public Utilities Commission.

The administration is deep and experienced and comprised of a nine member executive team inclusive of the general manager. Due to the size and scope of the district's operations, its management team also actively participates in state and regional water resource planning.

Legal Security

The 2016A Bonds are limited obligations of MWD payable solely from and secured solely by a pledge of and a lien and charge upon the net operating revenues.

Use of Proceeds

Metropolitan is issuing the 2016A Bonds to refund certain 2005 Series C Bonds, 2006 Series A Bonds, and 2006 Series B Bonds.

Obligor Profile

MWD is comprised of the 26 member agencies including 14 cities, 11 municipal water districts and one county water authority. MWD provides supplemental water to its member agencies that represent a critical portion of the members' water supply mix. Reliance on MWD water supply has increased during the drought, underscoring the essentiality of MWD water to the region. The district is a wholesale supplier only with no direct retail customers.

Methodology

The principal methodology used in this rating was US Municipal Utility Revenue Debt published in December 2014. Please see the Ratings Methodologies page on www.moodys.com for a copy of this methodology.

Ratings

Exhibit 2

Metropolitan Water District of So. California

Issue	Rating
Water Revenue Refunding Bonds, 2016 Series A	Aa1
Rating Type	Underlying LT
Sale Amount	$250,000,000
Expected Sale Date	06/22/2016
Rating Description	Revenue: Government Enterprise

Source: Moody's Investors Service

REPORT NUMBER 1031520

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SECTOR IN-DEPTH
5 April 2018

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Water and sewer utilities - US

Medians - Solid financial metrics, ability to raise rates underpin stable sector

Municipal water and sewer utilities continue to demonstrate a stable to modestly positive financial performance, according our latest medians data. The steady performance is primarily driven by utility systems' willingness and ability to raise rates to support operations and debt service. However, declining asset condition across the sector indicates an underinvestment in infrastructure. These credit factors, which are key to our stable outlook for the sector, are set to continue. (Basis for medians can be found on page 5.)

» **Debt service coverage remains strong and stable at around 2x.** The median sectorwide coverage remained strong at 2.1x in 2016, indicating a healthy cushion to absorb unforeseen fluctuations in revenues or expenses. Stable coverage trends have roots in systems' autonomous rate-setting authority and an ability and willingness to adjust rates to meet operating and debt service needs.

» **Strong liquidity provides operating flexibility and a cushion against contingencies while helping manage leverage**. Higher-rated entities have historically maintained cash positions with healthy margins relative to operating expenditures due to well-developed capital plans supported by rate increases. Strong liquidity is especially important for lower-rated entities, serving as a buffer against a limited ability to raise rates quickly to address unanticipated disruptions or capital needs.

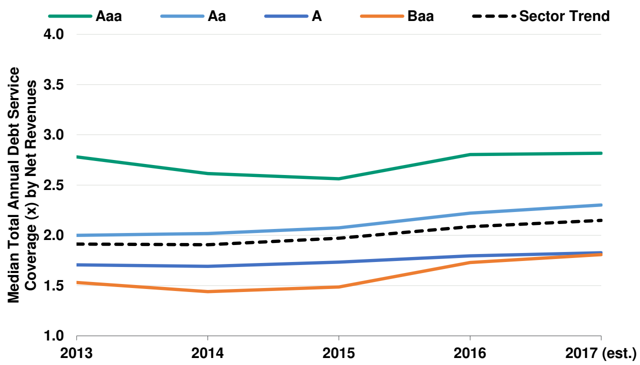
» **Leverage is manageable and declining, indicating capacity to finance future capital projects.** The downward trend in the median debt burden is driven by rate increases to support new debt issuances as well as an underinvestment in infrastructure. A low debt burden provides greater capacity to tackle capital needs. Highly leveraged systems exhibit elevated fixed costs, limiting operating flexibility.

» **Larger systems benefit from increased operating flexibility provided by economies of scale.** Larger utilities generally have financial resources and a broad customer base, helping manage unexpected capital needs and customer losses. Smaller systems often have higher risks, such as customer concentration or limited treatment facilities.

» **Utilities in areas with healthy socioeconomic indicators benefit from greater rate-raising flexibility** Wealthier service areas have greater capacity to absorb rate increases, providing more flexibility to manage operations, debt service and capital needs.

» **Asset condition continues to decline, resulting from underinvestment in infrastructure.** Deferral of capital projects is driving a decline in the remaining useful life of assets sectorwide as depreciation outpaces investment in infrastructure.

Exhibit 1
Debt service coverage remains stable with trend set to continue

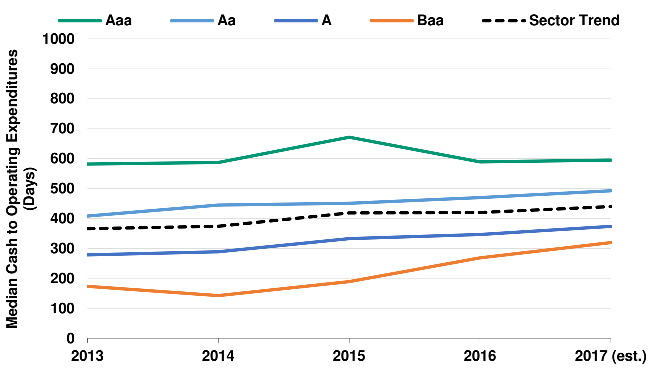


Debt service coverage: annual net revenues (including connection or impact fees) divided by annual debt service.
Source: Moody's Investors Service

Debt service coverage remains strong and stable

- Median debt service coverage across all rating categories remained stable or improved between 2013 and 2016, due to a willingness and ability to adjust rates. The sectorwide median of 2.1x in 2016 is strong and will likely remain so in 2017.
- The modest increase in coverage across all rating categories in 2016 reflects rate adjustments to meet growing operating expenses. Higher-rated utilities demonstrate greater coverage levels with the median for Aaa systems at 2.8x compared to 1.7x for the Baa category.
- For example, Broad River Water Authority, NC (A1) has implemented steady rate increases, allowing it to address capital needs using pay-go. A 2.5% rate increase in fiscal 2016 increased coverage to 1.8x from 1.3x the year before.

Exhibit 2
Continued healthy liquidity signals sound financial management



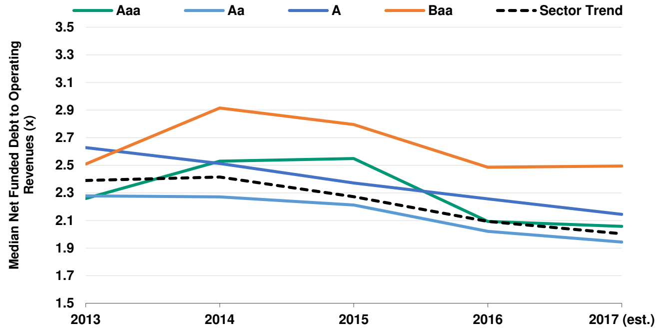
Liquidity: unrestricted cash and liquid investments multiplied by 365 and divided by operating and maintenance expenses (net of depreciation), expressed in days.
Source: Moody's Investors Service

Strong liquidity offers flexibility for contingencies, leverage

- Liquidity improved across most rating categories in fiscal 2016, giving systems the flexibility to address capital needs and maintain low leverage. Reserves help with rate stabilization, system shocks and capital needs.
- Average growth in liquidity has been in the low-to-mid single-digit range as growing cash levels outpace inflation. We expect this healthy trend to continue since utilities face manageable growth in core operating costs.
- Higher-rated entities continued to demonstrate a strong cash position in 2016, with Aaa- and Aa-rated utilities maintaining over one year's worth of liquidity relative to operating expenses.
- For example, Charleston (City of) SC Water & Sewer Enterprise (Aaa stable) had 1,131 unrestricted days cash on hand at fiscal year-end 2016, providing operating flexibility in the event of damage from hurricanes or flooding.

Exhibit 3

Higher-rated systems maintain lower leverage; Baa-rated credits face elevated leverage due to limited ability to increase rates



Debt to operating revenues: net long-term debt less debt service reserve funds divided by most recent year's operating revenues.
Source: Moody's Investors Service

Leverage is trending downward for most rating categories

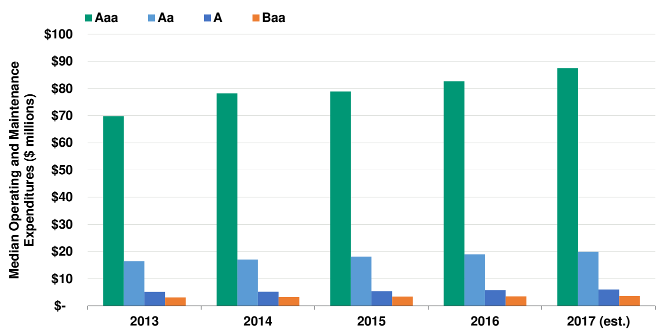
» Declining leverage creates more capacity to finance capital projects in the face of aging infrastructure. This declining trend will likely continue, albeit at a slightly slower pace, as utilities launch capital projects.

» Median leverage across all rating categories was moderate at 2.1x operating revenues in 2016. Relatively low leverage provides the ability to issue additional debt to fund capital needs.

» Many Baa-rated systems face greater capital needs resulting from consent orders, leading to higher leverage. They are often challenged to implement timely rate increases given a lack of proactive management or lower resident wealth.

Exhibit 4

Higher-rated systems tend to be larger with an increased ability to manage expenditures and absorb unforeseen shocks



Operating expenses less depreciation.
Source: Moody's Investors Service

Larger systems benefit from increased flexibility provided by economies of scale

» Higher-rated utilities have larger budgets and more diverse customer bases and water sources, affording greater capacity to mitigate unexpected capital needs or operating shocks.

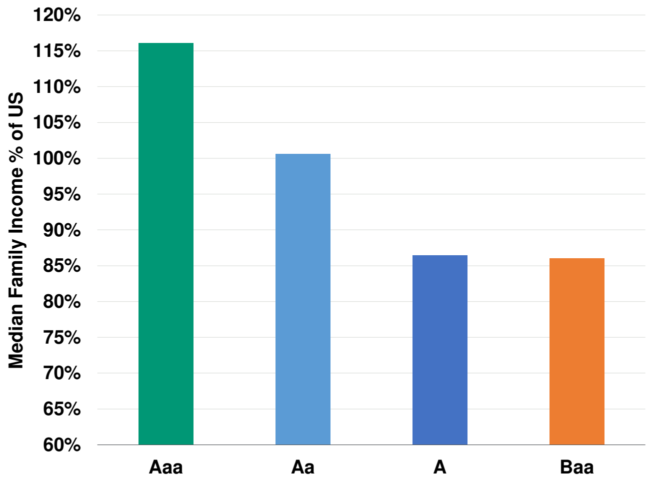
» Lower-rated entities exhibit more narrow fiscal resources limiting their ability to manage operating risks, such as customer concentration or a single supply of water or treatment plant.

» Operating expenditures have shown modest increases over the past several years largely due to service area growth, offset somewhat by more energy efficient upgrades to facilities and flat to declining water usage driven by increased conservation.

» Lower-rated systems (A and Baa) have maintained stable operating expenditures because they often serve stagnant, if not shrinking, areas.

Exhibit 5

Higher-rated systems tend to serve wealthier areas, allowing greater flexibility to raise rates



Median family income data is from the 2016 US Census American Community Survey.
Source: Moody's Investors Service

Utilities serving areas with stronger socioeconomic indicators have greater rate-raising flexibility

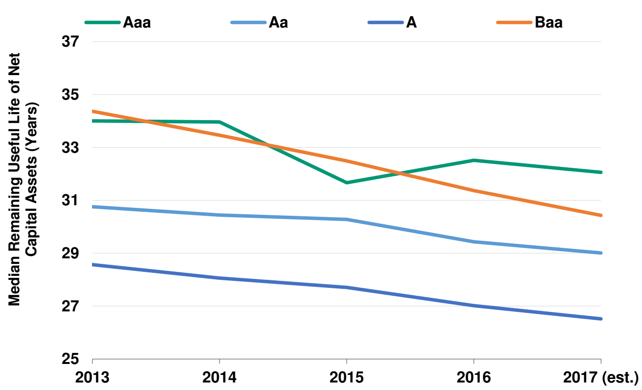
» Service charges are the primary revenue source for utilities, meaning ratepayers bear the costs of growing operating and capital expenditures. Highly rated systems tend to serve wealthier areas, providing greater capacity for customers to absorb rate increases.

» For example, Palo Alto (City of) CA Water Enterprise (Aa1) serves a very broad, wealthy, and economically dynamic service area, which provides a strong and reliable customer base with a 2016 median family income at 260.5% of the nation. This allows the city flexibility to implement required rate increases.

» Service areas with lower income levels limit a utility's practical ability to raise rates annually to keep pace with growing expenses and capital needs.

Exhibit 6

Declining asset condition indicative of underinvestment in infrastructure



Asset condition: net fixed assets divided by depreciation expense, expressed in years.
Source: Moody's Investors Service

Remaining useful life continues to decline as depreciation outpaces investment in infrastructure

» Continued deferral of maintenance increases the risk of operational issues such as sewer overflows or pipe bursts, which can lead to service disruptions and increased expenses to meet regulatory requirements.

» Despite the downward trend, the 2016 sector-wide median asset condition (or remaining useful life) of 29 years affords systems adequate time to implement capital plans before acute system failures.

» The median asset condition for the Baa category is higher than the Aa and A categories for multiple reasons, namely because lower-rated systems are often forced to reinvest at a faster pace due to consent orders.

» Remaining useful life medians are unlikely to change significantly over the next year due to multiyear capital planning.

Basis for medians

This medians report conforms to our US Municipal Utility Revenue Debt rating methodology published in October 2017. As such, the medians presented here are based on the key metrics outlined in the methodology and the associated scorecard. The appendix of this report provides additional metrics broken out by sector and rating category.

We use data from a variety of sources to calculate the medians, some of which have differing reporting schedules. Whenever possible, we calculated these medians using available data for fiscal year 2016. The median family income data was derived from the 2016 US Census American Community Survey.

Medians for some rating levels, namely Aaa- and Baa-rated issuers, are based on relatively small sample sizes. These medians may therefore be subject to substantial year-over-year variation.

Our ratings reflect our forward-looking opinion derived partly from forecasts of financial performance and qualitative factors, as opposed to strictly historical quantitative data. Our expectation of future performance, combined with the relative importance of certain metrics on individual local government ratings, account for the range of values that can be found within each rating category.

Key ratios

» Debt service coverage: annual net revenues (including connection or impact fees) divided by annual debt service.

» Liquidity: unrestricted cash and liquid investments multiplied by 365 and divided by operating and maintenance expenses (net of depreciation), expressed in days.

» Debt to operating revenues: net long-term debt less debt service reserve funds divided by most recent year's operating revenues.

» Asset condition: net fixed assets divided by depreciation expense, expressed in years.

Exhibit 7

Medians for all US water, sewer, stormwater and combined utilities

Selected Indicators	2013	2014	2015	2016
Moody's Median Senior Revenue Rating				Aa3
Median Family Income (% of US Median)	97%	96%	96%	96%
Asset Condition: (Remaining Useful Life)	30	30	29	29
Debt to Operating Revenues	2.4	2.4	2.3	2.1
Annual Debt Service Coverage	1.9	1.0	2.0	2.1
Days Cash on Hand	366	374	419	420
System Size: (O&M, $000)	10,585	10,954	11,146	11,933
Debt Service ($000)	3,846	4,013	3,975	3,981
Net Revenues ($000)	7,931	7,986	8,985	8,861
Net Funded Debt ($000)	41,843	40,964	40,819	41,621
Total Revenues ($000)	18,309	19,382	20,123	21,675

Exhibit 8

Medians for US water utilities

Selected Indicators	2013	2014	2015	2016
Moody's Median Senior Revenue Rating				Aa2
Median Family Income (% of US Median)	99%	100%	99%	100%
Asset Condition: (Remaining Useful Life)	32	32	32	31
Debt to Operating Revenues	2.1	2.2	2.2	2.0
Annual Debt Service Coverage	2.0	2.0	2.0	2.1
Days Cash on Hand	307	344	383	382
System Size: (O&M, $000)	6,876	6,963	7,251	8,349
Debt Service ($000)	2,471	2,755	2,795	2,835
Net Revenues ($000)	5,981	5,956	6,367	6,953
Net Funded Debt ($000)	25,544	26,026	28,732	28,434
Total Revenues ($000)	13,023	13,845	13,951	14,932

Exhibit 9

Medians for US sewer utilities

Selected Indicators	2013	2014	2015	2016
Moody's Median Senior Revenue Rating				Aa3
Median Family Income (% of US Median)	98%	98%	99%	99%
Asset Condition: (Remaining Useful Life)	31	30	30	30
Debt to Operating Revenues	2.9	2.7	2.7	2.5
Annual Debt Service Coverage	1.9	1.9	2.1	1.9
Days Cash on Hand	535	525	561	565
System Size: (O&M, $000)	9,151	9,048	9,312	10,048
Debt Service ($000)	4,200	4,300	3,740	3,813
Net Revenues ($000)	7,676	8,614	9,373	8,998
Net Funded Debt ($000)	40,485	37,937	37,022	40,881
Total Revenues ($000)	17,651	18,298	19,549	20,481

Exhibit 10

Medians for US water and sewer utilities

Selected Indicators	2013	2014	2015	2016
Moody's Median Senior Revenue Rating				Aa3
Median Family Income (% of US Median)	92%	91%	91%	91%
Asset Condition: (Remaining Useful Life)	29	28	27	27
Debt to Operating Revenues	2.4	2.4	2.3	2.1
Annual Debt Service Coverage	1.9	1.8	2.0	2.1
Days Cash on Hand	358	356	388	399
System Size: (O&M, $000)	14,009	14,627	16,047	15,859
Debt Service ($000)	4,954	5,025	5,175	5,160
Net Revenues ($000)	10,447	10,874	11,479	11,890
Net Funded Debt ($000)	55,104	55,161	51,311	50,840
Total Revenues ($000)	25,032	25,820	26,680	28,306

Exhibit 11

Medians for US stormwater utilities

Selected Indicators	2013	2014	2015	2016
Moody's Median Senior Revenue Rating				Aa2
Median Family Income (% of US Median)	94%	91%	90%	91%
Asset Condition: (Remaining Useful Life)	48	49	47	43
Debt to Operating Revenues	2.3	2.0	1.9	1.7
Annual Debt Service Coverage	2.2	1.9	1.8	2.8
Days Cash on Hand	618	552	733	700
System Size: (O&M, $000)	2,845	3,004	3,284	3,539
Debt Service ($000)	1,336	1,249	1,527	1,668
Net Revenues ($000)	2,767	3,536	3,852	4,041
Net Funded Debt ($000)	9,832	8,707	11,245	10,606
Total Revenues ($000)	6,812	7,475	7,351	8,892

Exhibit 12

Medians for Aaa-Rated US water and sewer utilities

Selected Indicators	2013	2014	2015	2016
Median Family Income (% of US Median)	125%	124%	124%	124%
Asset Condition: (Remaining Useful Life)	30	29	28	28
Debt to Operating Revenues	1.9	1.8	1.8	1.6
Annual Debt Service Coverage	2.9	3.5	3.4	3.0
Days Cash on Hand	625	674	700	779
System Size: (O&M, $000)	81,351	84,240	87,702	90,024
Debt Service ($000)	17,328	18,660	19,419	21,187
Net Revenues ($000)	74,786	70,650	71,920	75,469
Net Funded Debt ($000)	226,617	257,415	284,273	292,951
Total Revenues ($000)	148,618	149,803	146,159	150,265

Exhibit 13
Medians for Aa-Rated US water and sewer utilities

Selected Indicators	2013	2014	2015	2016
Median Family Income (% of US Median)	96%	95%	95%	95%
Asset Condition: (Remaining Useful Life)	29	28	28	28
Debt to Operating Revenues	2.3	2.3	2.2	2.0
Annual Debt Service Coverage	2.0	1.9	2.0	2.3
Days Cash on Hand	400	424	449	448
System Size: (O&M, $000)	19,075	20,484	21,123	22,335
Debt Service ($000)	7,674	7,775	7,712	7,831
Net Revenues ($000)	14,539	14,790	16,735	18,097
Net Funded Debt ($000)	81,323	76,097	74,742	72,648
Total Revenues ($000)	34,437	34,500	36,757	40,000

Exhibit 14
Medians for A-Rated US water and sewer utilities

Selected Indicators	2013	2014	2015	2016
Median Family Income (% of US Median)	83%	84%	84%	83%
Asset Condition: (Remaining Useful Life)	28	26	25	25
Debt to Operating Revenues	2.6	2.5	2.4	2.3
Annual Debt Service Coverage	1.7	1.7	1.7	1.8
Days Cash on Hand	242	248	289	296
System Size: (O&M, $000)	6,381	6,610	7,001	7,613
Debt Service ($000)	2,105	2,267	2,429	2,279
Net Revenues ($000)	4,096	4,038	4,462	4,477
Net Funded Debt ($000)	25,614	24,587	24,114	25,905
Total Revenues ($000)	10,916	11,626	11,745	11,995

Exhibit 15
Medians for Baa-Rated US water and sewer utilities

Selected Indicators	2013	2014	2015	2016
Median Family Income (% of US Median)	92%	94%	94%	97%
Asset Condition: (Remaining Useful Life)	27	23	25	23
Debt to Operating Revenues	2.6	3.5	2.7	2.4
Annual Debt Service Coverage	1.5	1.5	1.5	1.6
Days Cash on Hand	155	128	128	184
System Size: (O&M, $000)	3,105	3,234	3,763	3,335
Debt Service ($000)	614	779	663	850
Net Revenues ($000)	966	871	1,476	2,119
Net Funded Debt ($000)	8,711	10,902	10,555	10,234
Total Revenues ($000)	4,360	4,626	5,384	5,994

Moody's related publications

Methodology

» US Municipal Utility Revenue Debt, October 19, 2017

Outlook

» 2018 outlook stable as strong rate management and liquidity support sector, December 6, 2017

Sector-In-Depth

» Medians - Sound Financial Metrics Signal Continued Stability, March 16, 2017

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REPORT NUMBER 1114292