Metropolitan Water District of Southern California

Revenue Bonds
Full Rating Report

Ratings

$3,200,000,000 Water Revenue and Refunding Bonds	AA+
$340,000,000 Special Water Revenue Refunding Bonds, Series 2013D, 2014D, and 2015A (Variable-Rate Self-Liquidity)	AA+/F1+
$536,000,000 Water Revenue and Refunding Bonds (SIFMA and Flexible Index)	AA+/F1+
Bank Bond Rating, Series 2008A-2	AA+

Rating Outlook
Stable

Related Research
Applicable Criteria

Revenue-Supported Rating Criteria (June 2014)

U.S. Water and Sewer Revenue Bond Rating Criteria (September 2015)

Rating U.S. Public Finance Short-Term Debt (November 2015)

Other Research

California Water – Striving for 25% Conservation (August 2015)

2016 Water and Sewer Medians (December 2015)

2016 Outlook: Water and Sewer Sector (December 2015)

Analysts
Kathy Masterson
+1 512 271-3730
kathy.masterson@fitchratings.com

Shannon Groff
+1 415 732-5628
shannon.groff@fitchratings.com

Key Rating Drivers

Wholesale Supplemental Water Supplier: Metropolitan Water District of Southern California (Metropolitan) is the supplemental wholesale water supplier to 18.7 million people in southern California. Revenues are provided from 26 member agencies that rely on water purchased from Metropolitan to supply their retail customers, although there are no minimum annual purchase or payment amounts.

Lower Financial Margins in 2016: Financial margins are expected to dip in fiscal 2016 as water sales are below already low budgeted levels. Debt service coverage is expected to dip to 1.38x on revenue bonds or 1.14x fixed-charge coverage, below Metropolitan's financial policy target of 1.20x fixed-charge coverage. Metropolitan has spent down its robust reserves on conservation programs but levels remain adequate.

Variable Sales Drive Margins: Financial performance exhibits a higher degree of cyclicality as compared to retail water utilities as a result of Metropolitan's role as the supplemental supplier and its highly volumetric rate structure. Financial margins are dependent on the volume of water sales achieved in any given year, which have fluctuated considerably in the past 10 years.

Strong Rate Flexibility: Fitch Ratings views Metropolitan's rate flexibility as relatively strong given the large increases occurring between 2008 and 2013 and continued modest annual increases in recent years. Nevertheless, some rate sensitivity and limitations exist given the varied reliance on Metropolitan by its purchasers and ongoing lawsuit with San Diego County Water Authority (SDCWA) regarding Metropolitan's rate structure.

Water Supply Pressures: Water is primarily provided from two independent supply sources. Supply fluctuations occur on both supplies — the State Water Project (SWP) and the Colorado River. Metropolitan's substantial storage facilities help balance this risk.

Self-Liquidity Variable-Rate Debt: The 'F1+' rating on the self-liquidity bonds reflects the liquidity provided by Metropolitan's $623.5 million in unrestricted cash and operating and maintenance reserve as of Oct. 31, 2015 and available liquidity provided by $280 million in revolving credit facilities, together covering the authority's maximum daily exposure to un-remarketed puts by over 1.25x.

Rating Sensitivities

Sustained Pressure from Drought: Fitch's 'AA+' rating and Stable Rating Outlook anticipate a degree of cyclicality in Metropolitan's coverage and reserve levels. However, multiple years of sustained lower coverage and/or reserve levels could pressure the rating.

Rating History

Rating	Action	Outlook/ Watch	Date
AA+	Affirmed	Stable	12/2/15
AA+	Affirmed	Stable	11/19/14
AA+	Affirmed	Stable	6/19/13
AA+	Affirmed	Stable	11/7/12
AA+	Downgraded	Stable	5/17/11
AAA	Affirmed	Stable	12/10/10
AAA	Revised[a]	Negative	4/30/10
AA+	Affirmed	Negative	1/6/09
AA+	Affirmed	Stable	7/1/08
AA+	Upgraded	Stable	2/11/04
AA	Affirmed	Positive	12/5/03
AA	Assigned	Stable	8/9/01

[a]Rating recalibration.

Security

Revenue bonds are secured by net water revenues of the district. The series 2013D, 2014D, and 2015A (self-liquidity) bonds do not have external liquidity facilities that support the weekly tender but instead rely on Metropolitan's available internal liquidity, which includes cash reserves and revolving credit agreements. Payment of the tender price for these bonds, the 2013E flexible index mode, the 2009A-2, 2011A1-A4, and 2012B1-B2 SIFMA index mode bonds, or the series 2012E, 2014C, and 2014G term mode bonds is secured by remarketing proceeds and a subordinate pledge of Metropolitan's net revenues. Payment of principal at the final maturity or on prior redemption is secured by a senior pledge of net revenues, on parity with Metropolitan's other revenue bonds.

A failure by Metropolitan to provide sufficient proceeds to pay the purchase price of the flexible index mode, SIFMA index mode, term mode bonds, or the self-liquidity bonds at the tender date would not constitute an event of default on Metropolitan's revenue or GO bonds nor prompt an acceleration of debt.

Credit Profile

Metropolitan is a wholesale water supplier in southern California to 26 member agencies, many of whom have some form of local water supply. The largest three members (54% of water revenues in 2015) include the San Diego County Water Authority (senior lien revenue bonds rated 'AA+' with a Stable Rating Outlook by Fitch), Orange County Water District (revenue bonds rated 'AAA' with a Stable Rating Outlook by Fitch), and Los Angeles Department of Water and Power (water revenue bonds rated 'AA' with a Stable Rating Outlook by Fitch).

Significant developments to water supply sources and the demand profile from members have occurred in the past 10 years. Greater variability and uncertainty exists on Metropolitan's in-state water supply, the SWP. Demand level from members has declined from pre-recession levels of over 2.00 million acre-feet (maf) to low points of 1.63 maf in fiscal 2011 and an expected 1.60 maf in fiscal 2016. Management expects water sales to continue to exhibit a high degree of annual variability although expects to reduce assumed levels even further in the next budget for fiscal years 2017 and 2018 (assumed levels were significantly reduced in 2012 to between 1.7 maf and 1.75 maf annually).

Metropolitan's members are not required to buy minimum amounts of water from Metropolitan but instead use the imported water supply to supplement their other sources. However, Metropolitan's role in the region is crucial in that it supplies 40%–60% of Southern California's water supply. Fitch expects Metropolitan to remain a key water supplier, although over the long term there will very likely be further pressure on demand.

Metropolitan absorbs much of the regional demand variability from naturally occurring hydrological conditions that impact the member agencies' local supplies. As drought lowers available local supplies and households have greater outdoor watering demands, members increase their purchases from Metropolitan. Conversely, as one of the highest cost resources in the region, Metropolitan bears a disproportionate impact of reduced demand, such as from the current mandated conservation levels; members reduce purchases from Metropolitan before reducing production from their own local supplies.

The biggest swing in historical annual demand has exceeded 200,000 acre-feet (AF). With Metropolitan's primarily volumetric rate structure, the district budgets to achieve a strong financial cushion in order to absorb the revenue implications of a potential drop in water sales

Member Agencies

Anaheim (AAA)	Los Angeles (AA)
Beverly Hills (AAA)	Orange County MWD (AAA)
Burbank (AAA)	Pasadena (AA+)
Calleguas MWD	San Diego County Water Authority (AA+)
Central Basin MWD	San Fernando
Compton	San Marino
Eastern MWD (AA+)	Santa Ana
Foothill MWD	Santa Monica
Fullerton	Three Valleys MWD
Glendale (A+)	Torrance
Inland Empire Utilities Agency	Upper San Gabriel Valley
Las Virgenes MWD	West Basin MWD
Long Beach	Western MWD (AA)

Note: (Water revenue bond ratings from Fitch Ratings noted in parentheses.)
Source: Metropolitan and Fitch.

of this magnitude. A larger decline of 300,000 AF is expected to occur in fiscal 2016 with estimated water sales of 1.6 maf as compared to actual sales of 1.9 maf in fiscal 2015.

Governance and Management

Metropolitan's large board of directors consists of 38 members. Each member agency has a minimum of one board member plus an additional representative for every full 5% of total assessed valuation (AV) in the district's service area. Voting is based on AV, with one vote for every $10 million of AV within each member agency's service area. A simple majority determines most actions.

Given the large number of member agencies and the increasing cost of Metropolitan's water supply, there is disagreement at times at the board level. This has manifested itself in ongoing rate litigation since 2010 between Metropolitan and its largest member, SDCWA. SDCWA buys water from the Imperial Irrigation District but has no means to transport the water to its service area. SDCWA pays Metropolitan for the transportation of this water. SDCWA has filed litigation challenging the rate setting and allocation of system costs into Metropolitan's transportation rate. In 2015, the court issued a final judgement to SDCWA and damages of $188.3 million plus interest.

Metropolitan had $220 million reserved as of Oct. 31, 2015 within its unrestricted cash balances for this litigation, as required, although it has appealed the decision. Fitch views the rate recovery issue as a customer equity issue and not a material risk to bondholders. Fitch assumes that Metropolitan will recover the revenues from the remaining member customer base, including any settlement payments, if the final determination is that the costs were inappropriately included in the transportation rate.

Operating Profile

Service Territory

Metropolitan's massive service area encompasses about 5,200 square miles, including the urban and economic core of Southern California. The area includes approximately 85% of the six-county area population consisting of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. The six-county area is the most densely populated and heavily industrialized portion of Southern California, with 57% of the state's population. The current district population of more than 18.7 million is expected to continue growing although growth has been slowing since 2000.

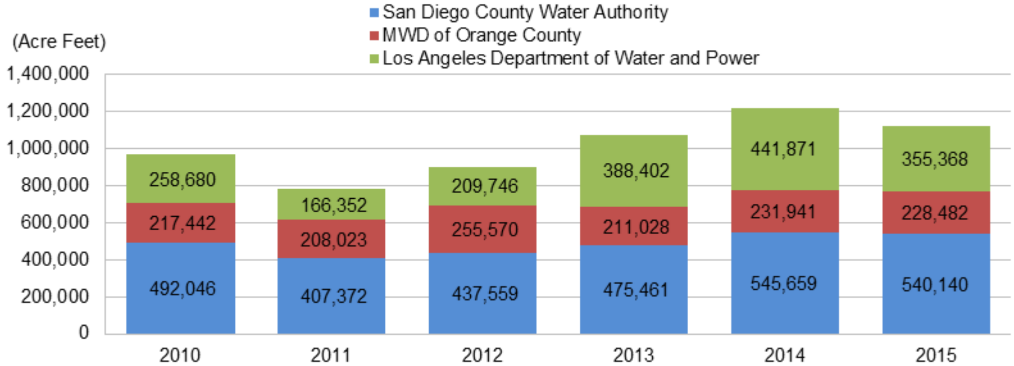
Customer Base

The credit quality of Metropolitan's purchasing members is supportive of the rating. The broad nature of the customer base and Metropolitan's rate setting authority that allows costs to be recovered across all members results in the rating being less sensitive to the credit quality of individual members. However, the overall credit quality of Metropolitan's member agencies is considered to be quite strong.

Metropolitan's 26 member agencies are not required to purchase water from Metropolitan but the essentiality of Metropolitan's water supply in the region and the lack of alternative replacements for the volume of water provided by Metropolitan helps to support long-term demand for Metropolitan's water. While Metropolitan continues to provide a regional planning role, much of the incremental water supply development occurring at the region is taking place at the member level. Although Metropolitan may not be in a position to serve growth in the region, its business model depends on the continued demand for a core supply of Tier 1 water.

As the swing supplier, the demand by members for water can change drastically from year to year. LADWP, in particular, has its own large supply. The table below shows the 400,000 AF difference in purchases by the largest three customers in a dry year in the LA Aqueduct (2014) versus a wet year in the LA Aqueduct (2011). The 2016 water year swing is expected to be more pronounced but is driven in large part by the state's mandated conservation and not just the natural hydrological cycles of the members' own supplies.

Top Three Customers - Sales



Water Supply

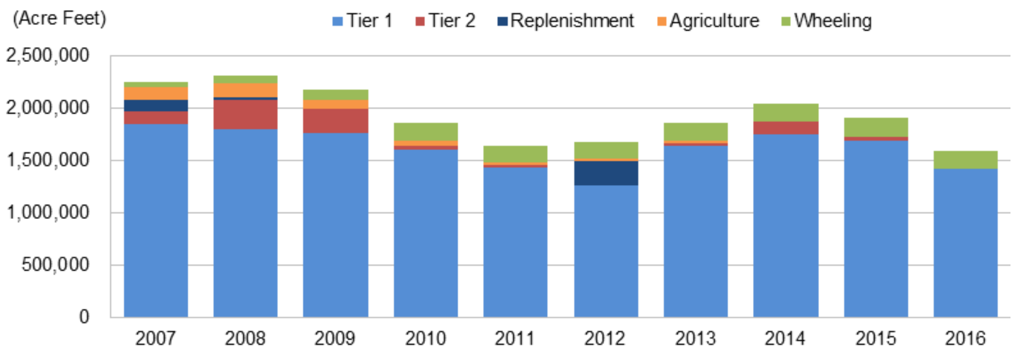
The district's water supply is derived from Northern California's bay/delta through a long-term contract with the California Department of Water Resources (DWR) for water from the SWP and the Colorado River. In recent years, the SWP supply has exhibited a greater amount of variability than the Colorado River supply but both supplies have suffered from drought conditions over the last decade.

Major Water Conveyance Facilites To Southern California

As a result of continued drought, California's governor issued an Executive Order calling for a 25% voluntary water use reduction in January 2015, followed by an emergency regulation in May 2015 mandating individual conservation standards ranging from 4% to 36% for all retail utilities, including many of Metropolitan's 26 member agencies. This coincided with Metropolitan's implementation of Stage 3 of its Water Supply Allocation Plan in April 2015 that similarly sought to reduce sales to members given the increasing severity of the drought. The state individual mandates have been extended to Oct. 31, 2016.

MWD's position as supplemental supplier, providing the balance of supply to its members, is in the most likely position to absorb the full impact of the mandated water sales reductions. As a result, Metropolitan projects water sales to decline to around 1.6 maf in fiscal 2016. This will fall below the previous low point of 1.63 maf during California's last drought in fiscal 2011. The table below shows the increasing impact of regional conservation and the overall downward trends of Metropolitan's water sales. Agricultural sales as a distinct rating category have been phased out and replenishment sales have not been available since 2012 and the onset of the drought. MWD relies primarily on its Tier 1 sales.

Metropolitan Water Sales by Type



State Water Project

The SWP is owned by the state and operated by DWR. The project transports Feather River water released from Oroville Dam and unregulated flows diverted directly from the bay/delta via a 444-mile aqueduct (the California Aqueduct) to Metropolitan's service territory. Metropolitan is the largest of the 29 agencies with an SWP water contract with DWR in terms of service area population and water allocation (at about 46%). Metropolitan's contract with DWR allocates the district slightly more than 1.9 maf per year, although the actual average delivery to contracted agencies has been lower than the full allocation in most recent years and is driven by water conditions in the Sierra Mountains.

DWR announces initial allocation levels in December for the following calendar year. The allocations may be increased over the next few months, as DWR has better information on the snowfall and snowpack in the Sierra Mountains. The table to the left shows initial allocations and final allocations for the past 13 years. Given the regulatory demands on pumping, even in normal water conditions, the SWP contractors typically only rely on receiving around 60% of their allocation.

SWP Allocations

Year	Initial Allocation	Final Allocation
2004	35	65
2005	40	90
2006	55	100
2007	60	60
2008	25	35
2009	15	40
2010	5	50
2011	25	80
2012	60	60
2013	30	35
2014	5	5
2015	10	20
2016	10	45*

[a]Increased to 45% on March 17, 2016 due to increasing reservoir levels. Source: Fitch-rated utilities.

Environmental Constraints

The State Water Project is home to several listed species of endangered fish either under the Federal Endangered Species Act (ESA) or the California ESA. As a result, protection of each species is covered under separate biological opinions, leading to isolated and distinct protocols for the project for each species. As a result, DWR alters the operation of the project to accommodate requirements to protect fish. There are multiple ongoing lawsuits related to the various biological opinions that impact operation of the SWP.

DWR estimates there are significant impacts to its ability to deliver water from the SWP as a result of the biological opinions. The ongoing litigation results in continuous uncertainty in the available water supply from the SWP. Fitch views the litigation risk as a moderate credit risk that will likely result in cost escalation in SWP water over time. Resolution of most of the litigation appears unlikely in the short term.

Proposed California WaterFix

The state remains divided over the most recent iteration of the Bay Delta Conservation Plan, now called the California WaterFix. The WaterFix is a proposed underground conveyance facility (two 45-mile long tunnels each 40 feet in diameter) and three intakes on the Sacramento River, along with environmental measures, designed to increase reliability of water transported via the State Water Project. Metropolitan has indicated its support for the project in that it should increase the ability to transport water south of the delta during wet periods, which would be able to be stored for later years in Metropolitan's substantial storage capacity. However, complicating the plan is a measure slated for the November 2016 ballot that would require voter approval for public works projects funded with more than $2 billion of revenue bonds, which would include the California Water Fix.

Given its complexity and many competing interests, Fitch views the proposed California Water Fix as a long-term, evolving project. While the cost is very large and Metropolitan's share — if the project moves forward — will be substantial, it is not viewed as a material credit risk at this time. Construction remains uncertain at present. If the project does move forward, Metropolitan's credit profile could remain unchanged if timely rate adjustments or new revenue sources are implemented to recover Metropolitan's share of the project costs.

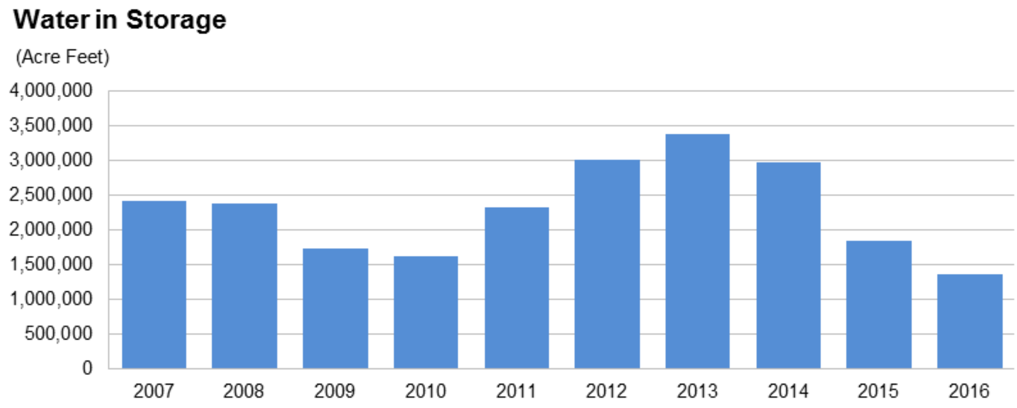
Colorado River

California's total apportionment of the Colorado River water supply is 4.4 maf per year plus one-half of any combined surplus available to Arizona, California, and Nevada. Metropolitan has a fourth-priority right to the Colorado River water, totaling 550,000 AF per year, which is the fourth and last-ranked priority right under California's 4.4-maf-per-year firm allocation. The district also holds a fifth-priority right to 662,000 AF per year in excess of the state's allotment. However, receipt of the fifth-priority right depends on water conditions and the Colorado River system has experienced a drought since 2000. The Colorado River source is viewed as having little risk of interruption related to Metropolitan's priority rights.

Storage Capacity

MWD made substantial investment in its physical storage facilities and interagency water storage agreements in the past 20 years. Storage capacity is nearly four times what it was in 1994. Metropolitan has approximately 5.8 maf of storage capacity, including reservoirs, conjunctive use, and other groundwater storage programs, both in its service territory and in other areas. Approximately 626,000 AF of local stored water is designated by the board as emergency storage and is reserved for use in the event of a seismic event. The remaining storage provides Metropolitan with the ability to withstand typical weather variability.

Metropolitan's stored water position allowed it to meet the increased water demand of members during the initial years of both the current and most recent (2007–2009) drought. As members are already maximizing their available local water sources, increased demand in the initial years of the droughts were supplied by purchasing more water from Metropolitan. LADWP, in particular, doubled their purchases from Metropolitan in 2014 from 2012 levels, as a direct result of the drought's impact on their local supply. Going into the current drought, Metropolitan had built its stored water to the highest point in a decade — 3.4 million AF in 2013. Stored water had declined to around 1.5 million AF by the end of calendar 2015.



Debt Profile

Debt levels are manageable and use both long-term financing and pay-as-you-go spending to address capital needs. Total long-term revenue bonds outstanding equal approximately $4.0 billion. Metropolitan's $1.4 billion five-year capital investment plan for fiscal years 2016–2020 (down from $1.45 billion for fiscal years 2013–2017) will require an estimated $390 million in additional revenue bonds. When combined with the relatively slow amortization of Metropolitan's existing debt, the result is an increasing fixed-cost burden associated with debt service. Debt service on the outstanding revenue bonds accounts for around 20% of total revenues.

Metropolitan has a complex debt portfolio that includes extensive variable-rate debt products, liquidity facilities, and swaps. Metropolitan has 75% fixed-rate debt, another 12% in synthetically fixed debt and 13% unhedged variable-rate debt, which includes the SIFMA index notes and self-liquidity variable rate debt. However, its exposure to expiring liquidity facilities has diminished significantly over the past few years and there appears to be little risk of Metropolitan not finding replacements for its remaining facilities. Metropolitan's $493.6 million swap portfolio includes four counterparties and a collection of fixed payor swaps.

Financial Profile

Volumetric Rates

Metropolitan's rate structure is heavily weighted toward volumetric charges. Metropolitan is largely a voluntary wholesale supplier in the region. It does not have minimum amounts that members are required to buy. Members do pay readiness-to-serve (RTS) charges but they are modest at 10% of Metropolitan's water revenues. However, member agencies enter into 10-year purchase order agreements that provide a pricing incentive by allowing them to buy a higher amount of water at Tier 1 rates. Fitch views the contracts as helpful in providing some planning parameters from Metropolitan's sales but members still retain a high degree of flexibility to vary their purchases. Metropolitan absorbs much of the regional risk associated with declining water sales.

Metropolitan's board formulates the revenue structure and typically adopts two years of rate adjustments at one time. Rates were last adopted in April 2014, when the board adopted 1.5% average rate increases that were implemented on Jan. 1, 2015 and Jan. 1, 2016. These increases were most modest than past recent years. Full-service Tier 1 rates ($942 per AF for treated water as of Jan. 1, 2016) has increased from $478 in 2007. The table to the left shows the impact on Tier 1 rates, which account for the majority of member sales. The next rate

Full Service Treated Tier 1 Rates

Year	$/AF	% Change
2007	478	5.5
2008	508	6.3
2009	579	14.0
2010	701	21.1
2011	744	6.1
2012	794	6.7
2013	847	6.7
2014	890	5.1
2015	923	3.7
2016	942	2.1

AF – Acre feet.

consideration will occur in spring 2016 for implementation on Jan. 1, 2017 and Jan. 1, 2018. The rate consideration in 2014 assumed annual water sales in the range of 1.7–1.75 million AF. Fitch expects the next rate consideration to reflect the lower sales environment.

Financial Performance

Financial performance in fiscal years 2014 and 2015 exceeded budget expectations and debt service coverage exceeded 2.5x. Fixed-charge coverage in those years was above 2.0x, in excess of Metropolitan's internal target for rate-setting of 1.2x. Fitch uses fixed-charge coverage as the key financial metric for Metropolitan (a proxy for total debt service coverage) and Metropolitan uses this calculation for internal rate-setting as well. The fixed-charge calculation includes the amount of SWP costs that are a capitalized expense as if they were paid as debt service. This expense is paid to the state for SWP expenses and is a cash outflow, much as principal on debt financed assets is paid but not considered an operating expense.

Most recent indications for water sales in fiscal 2016 are 1.60 maf, which is well below the 1.75 maf assumed in the budget. In addition, SWP costs are above budget even with the power cost savings from pumping a lower allocation from the project. Management projects debt service coverage of 1.38x and fixed-charge coverage may fall below Metropolitan's 1.2x target level. Management believes that the occurrence is a low-point and that coverage levels will improve in fiscal 2017. Fitch also believes that the sizable decline in financial margins was driven by the state's very quick implementation of mandatory conservation requirements on Metropolitan's members and that Metropolitan will have time to address its assumed water sales in fiscal 2017 to even more conservative levels as it establishes rates to be implemented Jan. 1, 2017. Sales are likely to remain lower in 2017 given the governor's announcement that mandatory conservation requirements will remain in effect through October 2016.

Cash Reserves

The healthy water sales in the initial years of the drought bolstered unrestricted cash reserves to approximately $1 billion and $686 million, respectively, (days cash on hand of 389 and 316, respectively) at the end of fiscal years 2014 and 2015 that exceeded Metropolitan's minimum reserve target of approximately $200 million and maximum reserve target of approximately $480 million. In the past eight months, reserves above the maximum target have largely been spent down to fund $450 million of conservation programs and to purchase property and related water rights, as an opportunity became available.

Fitch views the rapid spend down in reserves as reasonable from a credit perspective, given the starting point of Metropolitan's reserves in excess of the maximum target level, the extreme nature of the current drought and the governor's executive order that requires each of Metropolitan's members to significantly reduce water sales. Metropolitan's historically strong reserves have provided a high degree of financial flexibility. Financial flexibility is reduced with unrestricted reserves anticipated to reach a low point at the end of fiscal 2016, projected at $440 million, but should begin to recover in fiscal 2017. Unrestricted reserves are used to provide liquidity for Metropolitan's $340 million in self-liquidity variable-rate bonds, in addition to Metropolitan's revolving credit agreements.

Financial Summary

($000, Audited Fiscal Years Ending June 30)

	2011	2012	2013	2014	2015	2016[a]
Balance Sheet						
Unrestricted Cash and Investments	395,256	465,886	685,670	1,012,780	1,072,838	—
Accounts Receivable	191,935	225,197	256,803	288,556	223,397	—
Net Working Capital	511,079	557,356	382,104	794,926	995,207	—
Net Fixed Assets	8,573,541	8,624,388	10,081,412	10,104,603	10,098,122	—
Net Long-Term Debt Outstanding	4,892,617	4,834,474	4,838,179	4,616,386	4,478,238	—
Operating Statement						
Operating Revenues	1,177,846	1,323,350	1,479,739	1,681,685	1,590,818	1,354,000
Non-Operating Revenues	103,277	83,953	100,506	76,499	102,880	45,000
Gross Revenues	1,284,723	1,413,903	1,586,305	1,771,284	1,693,698	1,399,000
Operating Expenses (Excluding Depreciation)	(759,692)	(817,589)	(791,031)	(949,757)	(1,016,988	(982,757)
Depreciation	(286,365)	(290,098)	(265,392)	(261,516)	(374,826)	(261,516)
Operating Income	238,666	306,216	529,882	560,011	301,884	154,727
Net Revenues Available for Debt Service[b]	525,031	596,314	795,274	821,527	676,710	416,243
Senior Lien Debt Service Requirements	277,000	297,000	298,000	370,594	289,691	302,000
Total Debt Service Requirements	435,000	448,000	426,000	477,162	417,125	408,000
Financial Statistics						
Senior Lien Debt Service Coverage (x)	1.90	2.01	2.67	2.22	2.34	1.38
Total Debt Service Coverage (x)	1.21	1.33	1.87	1.72	1.62	1.02
Days Cash on Hand	189.9	208.0	316.4	389.2	385.0	216.5
Days Working Capital	245.6	248.8	176.3	305.5	357.2	—
Debt to Net Plant (%)	57	56	48	46	44	—
Outstanding Long-Term Debt per Capita ($)	258	254	255	250	243	243
Free Cash to Depreciation (%)[c]	31	51	139	132	69	(9)

[a]Projected. [b]Equals gross revenues less operating expenses. [c]Equals net revenues available for debt service less operating transfers out, less total debt service, divided by depreciation. Note: Numbers may not add due to rounding.

The ratings above were solicited by, or on behalf of, the issuer, and therefore, Fitch has been compensated for the provision of the ratings.

ALL FITCH CREDIT RATINGS ARE SUBJECT TO CERTAIN LIMITATIONS AND DISCLAIMERS PLEASE READ THESE LIMITATIONS AND DISCLAIMERS BY FOLLOWING THIS LINK: HTTPS://FITCHRATINGS.COM/UNDERSTANDINGCREDITRATINGS. IN ADDITION, RATING DEFINITIONS AND THE TERMS OF USE OF SUCH RATINGS ARE AVAILABLE ON THE AGENCY'S PUBLIC WEB SITE AT WWW.FITCHRATINGS.COM. PUBLISHED RATINGS, CRITERIA, AND METHODOLOGIES ARE AVAILABLE FROM THIS SITE AT ALL TIMES. FITCH'S CODE OF CONDUCT, CONFIDENTIALITY, CONFLICTS OF INTEREST, AFFILIATE FIREWALL, COMPLIANCE, AND OTHER RELEVANT POLICIES AND PROCEDURES ARE ALSO AVAILABLE FROM THE CODE OF CONDUCT SECTION OF THIS SITE. FITCH MAY HAVE PROVIDED ANOTHER PERMISSIBLE SERVICE TO THE RATED ENTITY OR ITS RELATED THIRD PARTIES. DETAILS OF THIS SERVICE FOR RATINGS FOR WHICH THE LEAD ANALYST IS BASED IN AN EU-REGISTERED ENTITY CAN BE FOUND ON THE ENTITY SUMMARY PAGE FOR THIS ISSUER ON THE FITCH WEBSITE.

Copyright © 2016 by Fitch Ratings, Inc., Fitch Ratings Ltd. and its subsidiaries. 33 Whitehall Street, NY, NY 10004. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved. In issuing and maintaining its ratings and in making other reports (including forecast information), Fitch relies on factual information it receives from issuers and underwriters and from other sources Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings and reports should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information Fitch relies on in connection with a rating or a report will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to Fitch and to the market in offering documents and other reports. In issuing its ratings and its reports, Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings and forecasts of financial and other information are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings and forecasts can be affected by future events or conditions that were not anticipated at the time a rating or forecast was issued or affirmed.

The information in this report is provided "as is" without any representation or warranty of any kind, and Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion and reports made by Fitch are based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings and reports are the collective work product of Fitch and no individual, or group of individuals, is solely responsible for a rating or a report. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals identified in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at any time for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US$1,000 to US$750,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from US$10,000 to US$1,500,000 (or the applicable currency equivalent). The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of the United Kingdom, or the securities laws of any particular jurisdiction. Due to the relative efficiency of electronic publishing and distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.

For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001.