THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

# BOARD ACTION

- Board of Directors
  *Finance and Insurance Committee*

6/14/2016 Board Meeting

**8-2**

## Subject

Approve and authorize the distribution of Appendix A for use in the issuance and remarketing of Metropolitan's bonds

## Executive Summary

This board letter requests authorization to finalize and distribute Appendix A to Metropolitan's bond offering statements for use with future financings. Following Board approval, staff will work with a finance team to finalize Appendix A for distribution to potential investors as part of an offering statement.

## Details

Metropolitan's bond disclosures provide information to investors about Metropolitan's water supply, water delivery system, capital investment plan, governance and management, historical and projected revenues and expenditures, and power sources and costs in an appendix to its offering statements titled, "Appendix A." Federal securities regulations require that bond disclosures not misstate facts that would be material to a reasonable investor in Metropolitan's bonds or omit material facts that would mislead investors.

Metropolitan's procedures to ensure compliance with Federal securities regulations include board review and approval of Appendix A. Metropolitan's procedures have recently been updated to provide for the Board's biannual review of Appendix A. The Board's approval of the disclosures in Appendix A will support offering statements for financings through the next biannual update. Appendix A may be updated to describe events that occur after distribution of this letter, however, material updates to Appendix A for financings made prior to the Board's next biannual review will be provided to the Board for review and comment in advance of its use for a financing.

After Appendix A is approved, staff will work with a finance team, including bond counsel, underwriters, remarketing agents, a financial advisor and counsel for underwriters and remarketing agents, where applicable, to finalize bond offering statements that include Appendix A. Once finalized, the General Manager, or other designee of the Ad Hoc Committee authorized in Metropolitan's bond resolutions, will authorize distribution of the bond offering statements. (The Ad Hoc Committee is generally comprised of the Chairman of the Board, the Chairman of the Finance and Insurance Committee and the General Manager.)

The bond offering statements are then electronically distributed to potential investors to provide material information concerning the issuance of bonds and the financial and operating condition of Metropolitan, to assist with investment decisions concerning the bonds. Appendix A will be posted on the Financial Information-Financial Reports section of the Finance page of Metropolitan's website, under "Investor Information and Related Reports", and on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System.

## Policy

Metropolitan Water District Disclosure Procedures

## California Environmental Quality Act (CEQA)

**CEQA determination for Option #1:**

The proposed action is not defined as a project under CEQA because it involves continuing administrative activities, such as general policy and procedure making (Section 15378(b)(2) of the State CEQA Guidelines). In addition, the proposed action is not defined as a project because it involves other government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not defined as a project and therefore is not subject to CEQA pursuant to Sections 15378(b)(2) and 15378(b)(4) of the State CEQA Guidelines.

**CEQA determination for Option #2:**

None required

## Board Options

**Option #1**

Adopt the CEQA determination that the proposed action is not defined a project and therefore is not subject to CEQA, and

a. Approve the draft of Appendix A (**Attachment 1**) substantially in the form attached to this board letter;
b. Authorize the General Manager, or other designee of the Ad Hoc Committee, to finalize, with changes approved by the General Manager and General Counsel, Appendix A; and
c. Authorize distribution of Appendix A in connection with the sale or remarketing of bonds.

**Fiscal Impact:** Approval will enable Metropolitan to undertake bond issuance and remarketings which, in current market conditions, could result in significant debt service savings.
**Business Analysis:** It is Metropolitan's practice to take advantage of favorable market opportunities to issue new debt, and to remarket and refund outstanding debt and realize debt service savings.

**Option #2**

Do not approve Option #1.

**Fiscal Impact:** Metropolitan would not have a current disclosure in order to participate in bond financings and therefore, would not be able to remarket variable rate debt as it comes due, refund existing debt that would forgo potentially significant reductions in debt service costs, and issue new debt to finance a portion of the capital program.
**Business Analysis:** Metropolitan would forgo the opportunity to take advantage of favorable market conditions to issue new debt and to remarket and refund outstanding debt and realize debt service savings.

## Staff Recommendation

Option #1

5/31/2016
*Gary Breaux* *Date*
*Assistant General Manager/Chief Financial Officer*

6/1/2016
*Jeffrey Kightlinger* *Date*
*General Manager*

**Attachment 1 – Appendix A**

Ref# cfo12642749

*Board Distribution Draft, 5/31/16*

# APPENDIX A

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# The Metropolitan Water District of Southern California

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## INTRODUCTION

*This Appendix A provides general information regarding The Metropolitan Water District of Southern California ("Metropolitan"), including information regarding Metropolitan's operations and finances. Statements included or incorporated by reference in this Appendix A constitute "forward-looking statements." Such statements are generally identifiable by the terminology used such as "plan," "project," "expect," "estimate," "budget" or other similar words. Such statements are based on facts and assumptions set forth in Metropolitan's current planning documents including, without limitation, its most recent biennial budget. The achievement of results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Actual results may differ from Metropolitan's forecasts. Metropolitan is not obligated to issue any updates or revisions to the forward-looking statements in any event.*

*Metropolitan maintains a website that may include information on programs or projects described in this Appendix A; however, none of the information on Metropolitan's website is incorporated by reference or intended to assist investors in making an investment decision or to provide any additional information with respect to the information included in this Appendix A. The information presented on Metropolitan's website is not part of the Official Statement and should not be relied upon in making investment decisions.*

### Formation and Purpose

Metropolitan is a metropolitan water district created in 1928 under authority of the Metropolitan Water District Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended (herein referred to as the "Act")). The Act authorizes Metropolitan to: levy property taxes within its service area; establish water rates; impose charges for water standby and service availability; incur general obligation bonded indebtedness and issue revenue bonds, notes and short-term revenue certificates; execute contracts; and exercise the power of eminent domain for the purpose of acquiring property. In addition, Metropolitan's Board of Directors (the "Board") is authorized to establish terms and conditions under which additional areas may be annexed to Metropolitan's service area.

Metropolitan's primary purpose is to provide a supplemental supply of water for domestic and municipal uses at wholesale rates to its member public agencies. If additional water is available, such water may be sold for other beneficial uses. Metropolitan serves its member agencies as a water wholesaler and has no retail customers.

The mission of Metropolitan, as promulgated by the Board, is to provide its service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan's charges for water sales and availability are fixed by its Board, and are not subject to regulation or approval by the California Public Utilities Commission or any other state or federal agency. Metropolitan imports water from two principal sources: northern California via the Edmund G. Brown California Aqueduct (the "California Aqueduct") of the State Water Project owned by the State of California (the "State" or "California") and the Colorado River via the Colorado River Aqueduct ("CRA") owned by Metropolitan.

### Member Agencies

Metropolitan is comprised of 26 member public agencies, including 14 cities, 11 municipal water districts, and one county water authority, which collectively serve the residents and businesses of more than 300 cities and numerous unincorporated communities. Member agencies request water from Metropolitan at various delivery points within Metropolitan's system and pay for such water at uniform rates established by

the Board for each class of water service. Metropolitan's water is a supplemental supply for its member agencies, most of whom have other sources of water. See "METROPOLITAN REVENUES—Principal Customers" in this Appendix A for a listing of the ten member agencies with the highest water purchases from Metropolitan during the fiscal year ended June 30, 2015. Metropolitan's member agencies may, from time to time, develop additional sources of water. No member is required to purchase water from Metropolitan, but all member agencies are required to pay readiness-to-serve charges whether or not they purchase water from Metropolitan. See "METROPOLITAN REVENUES—Rate Structure", "—Member Agency Purchase Orders" and "—Additional Revenue Components" in this Appendix A.

The following table lists the 26 member agencies of Metropolitan.

| **Municipal Water Districts** | | **Cities** | | **County Water Authority** |
|---|---|---|---|---|
| Calleguas | Las Virgenes | Anaheim | Los Angeles | San Diego[(1)] |
| Central Basin | Orange County | Beverly Hills | Pasadena | |
| Eastern | Three Valleys | Burbank | San Fernando | |
| Foothill | West Basin | Compton | San Marino | |
| Inland Empire Utilities Agency | | Fullerton | Santa Ana | |
| Upper San Gabriel Valley | | Glendale | Santa Monica | |
| Western of Riverside County | | Long Beach | Torrance | |

(1) The San Diego County Water Authority, currently Metropolitan's largest customer, is a plaintiff in litigation challenging the allocation of costs to certain rates adopted by Metropolitan's Board. See "METROPOLITAN REVENUES—Litigation Challenging Rate Structure" in this Appendix A.

**Service Area**

Metropolitan's service area comprises approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. When Metropolitan began delivering water in 1941, its service area consisted of approximately 625 square miles. Its service area has increased by 4,500 square miles since that time. The expansion was primarily the result of annexation of the service areas of additional member agencies.

Metropolitan estimates that approximately 18.7 million people lived in Metropolitan's service area in 2015, based on official estimates from the California Department of Finance and on population distribution estimates from the Southern California Association of Governments ("SCAG") and the San Diego Association of Governments ("SANDAG"). Population projections prepared by SCAG in 2012 and SANDAG in 2010, as part of their planning process to update regional transportation and land use plans, show expected population growth of about 18 percent in Metropolitan's service area between 2010 and 2035. The 2010 Census population estimates are incorporated into SCAG's 2012 projections. The 2010 SANDAG regional growth projections do not incorporate the 2010 Census population estimates. The economy of Metropolitan's service area is exceptionally diverse. In 2015, the economy of the six counties which contain Metropolitan's service area had a gross domestic product larger than all but fifteen nations of the world. Metropolitan has historically provided between 40 and 60 percent of the water used annually within its service area. For additional economic and demographic information concerning the six county area containing Metropolitan's service area, see Appendix E – "SELECTED DEMOGRAPHIC AND ECONOMIC INFORMATION FOR METROPOLITAN'S SERVICE AREA."

The climate in Metropolitan's service area ranges from moderate temperatures throughout the year in the coastal areas to hot and dry summers in the inland areas. Annual rainfall in an average year has historically been approximately 13 to 15 inches along the coastal area, up to 20 inches in foothill areas and less than 10 inches inland.

## GOVERNANCE AND MANAGEMENT

### Board of Directors

Metropolitan is governed by a 38-member Board of Directors. Each member public agency is entitled to have at least one representative on the Board, plus an additional representative for each full five percent of the total assessed valuation of property in Metropolitan's service area that is within the member public agency. Changes in relative assessed valuation do not terminate any director's term. Accordingly, the Board may, from time to time, have more or fewer than 38 directors.

The Board includes business, professional and civic leaders. Directors serve on the Board without compensation from Metropolitan. Voting is based on assessed valuation, with each member agency being entitled to cast one vote for each $10 million or major fractional part of $10 million of assessed valuation of property within the member agency, as shown by the assessment records of the county in which the member agency is located. The Board administers its policies through the Metropolitan Water District Administrative Code (the "Administrative Code"), which was adopted by the Board in 1977. The Administrative Code is periodically amended to reflect new policies or changes in existing policies that occur from time to time.

### Management

Metropolitan's day-to-day management is under the direction of its General Manager, who serves at the pleasure of the Board, as do Metropolitan's General Counsel, General Auditor and Ethics Officer. Following is a biographical summary of Metropolitan's principal executive officers.

*Jeffrey Kightlinger, General Manager* – Mr. Kightlinger was appointed as General Manager in February 2006, leaving the position of General Counsel, which he had held since February 2002. Before becoming General Counsel, Mr. Kightlinger was a Deputy General Counsel and then Assistant General Counsel, representing Metropolitan primarily on Colorado River matters, environmental issues, water rights and a number of Metropolitan's water transfer and storage programs. Prior to joining Metropolitan in 1995, Mr. Kightlinger worked in private practice representing numerous public agencies including municipalities, redevelopment agencies and special districts. Mr. Kightlinger earned his bachelor's degree in history from the University of California, Berkeley, and his law degree from Santa Clara University.

*Marcia Scully, General Counsel* – Ms. Scully assumed the position of General Counsel in March 2012. She previously served as Metropolitan's Interim General Counsel from March 2011 to March 2012. Ms. Scully joined Metropolitan in 1995, after a decade of private law practice, providing legal representation to Metropolitan on construction, employment, Colorado River and significant litigation matters. From 1981 to 1985 she was assistant city attorney for the City of Inglewood. Ms. Scully served as president of University of Michigan's Alumnae Club of Los Angeles and is a recipient of the 1996 State Bar of California, District 7 President's Pro Bono Service Award and the Southern California Association of Non-Profit Housing Advocate of the Year Award. She is also a member of the League of Women Voters for Whittier and was appointed for two terms on the City of Whittier's Planning Commission, three years of which were served as chair. Ms. Scully earned a bachelor's degree in liberal arts from the University of Michigan, a master's degree in urban planning from Wayne State University and law degree from Loyola Law School.

*Gerald C. Riss, General Auditor* – Mr. Riss was appointed as Metropolitan's General Auditor in July 2002 and is responsible for the independent evaluation of the policies, procedures and systems of control throughout Metropolitan. Mr. Riss is a certified fraud examiner, certified financial services auditor and certified risk professional with more than 25 years of experience in accounting, audit and risk management. Prior to joining Metropolitan, Mr. Riss was Vice President and Assistant Division Head of Risk Management Administration at United California Bank/Bank of the West. He also served as Senior Vice President, director of Risk Management and General Auditor of Tokai Bank of California from 1988 until its reorganization as United California Bank in 2001. He earned a bachelor's degree in accounting and master's degree in business administration from Wayne State University in Detroit, Michigan.

*Deena Ghaly, Ethics Officer* – Ms. Ghaly was appointed Ethics Officer in November 2012. Ms. Ghaly joined Metropolitan with over 20 years of legal and ethics-related experience. Prior to joining Metropolitan, she served as an administrative law judge for the California Office of Administrative Hearings. She previously was head of enforcement and general counsel for the Los Angeles City Ethics Commission, which administers and enforces the laws regarding campaign contributions, lobbying, and government ethics for the city of Los Angeles. Before moving to Southern California in 2001, Ms. Ghaly lived and worked in New York City, where she headed the labor department in the general counsel's office of a large city agency. Licensed to practice law in California, New York and New Jersey, Ms. Ghaly is knowledgeable in workplace investigations, government ethics, regulatory affairs, and labor and employment matters. She has lectured throughout the nation on various topics, including parallel criminal and administrative prosecution, due process in administrative procedures, and effective internal investigations. Ms. Ghaly earned a bachelor's degree in philosophy from Wellesley College in Massachusetts and a law degree from Cornell Law School.

*Gary Breaux, Assistant General Manager/Chief Financial Officer* – Mr. Breaux has had extensive experience working for local governments since 1983. From 1994 until joining Metropolitan in October 2011, he served as Director of Finance for East Bay Municipal Utility District ("EBMUD"). At EBMUD, he was responsible for all financial areas, including treasury operations, debt management, rates, internal audit, accounting and reporting, risk management and customer and community services. Prior to joining EBMUD, he was Director of Finance for the City of Oakland, California. A native of Colorado, Mr. Breaux received a Bachelor of Science degree in Business from the University of Colorado in 1977 and a master's degree in Public Administration in 1987 from Virginia Commonwealth University.

*Debra Man, Assistant General Manager/Chief Operating Officer* – Ms. Man was appointed to this position in December 2003. Ms. Man has worked at Metropolitan since 1986, beginning as an engineer and advancing to Chief of the Planning and Resources Division. As Chief of Planning and Resources she was responsible for major initiatives adopted by Metropolitan's Board, such as the Integrated Water Resources Plan, rate structure, and facility plans for expansion of Metropolitan's distribution system. In 1999, she was appointed as Vice President of Water Transfers and Exchanges, responsible for securing water supplies through agreements and partnerships with other water and agricultural interests in San Joaquin Valley and Southern California and demonstrating Metropolitan's water supply reliability in compliance with current laws. Ms. Man is a registered professional civil engineer in California and Hawaii. She has a master's degree in civil/environmental engineering from Stanford University and a bachelor's degree in civil engineering from the University of Hawaii.

*Roger Patterson, Assistant General Manager/Strategic Initiatives* – Mr. Patterson was appointed Assistant General Manager in March 2006. He is responsible for overseeing water supply and planning issues, including the Colorado River and State Water Project. He previously served as a consultant to Metropolitan on Colorado River issues. Mr. Patterson was the director of the Nebraska Department of Natural Resources from 1999 to 2005, where he was responsible for water administration, water planning, flood-plain delineation, dam safety and the state databank. Prior to his work in Nebraska, Mr. Patterson spent 25 years with the Bureau of Reclamation, retiring from the Bureau as the Regional Director for the Mid-Pacific Region. He is a registered professional engineer in Nebraska and Colorado, and earned bachelor's and master's degrees in engineering from the University of Nebraska.

*Fidencio M. Mares, Interim Assistant General Manager/Chief Administrative Officer* – Mr. Mares was appointed the Interim Assistant General Manager/Chief Administrative Officer in July 2015 and is responsible for the strategic direction and management of Metropolitan's administrative functions. His primary responsibilities include managing human resources, information technology, business outreach, real property and administrative services. Prior to joining Metropolitan, Mr. Mares was the owner of the Mares Company, where he served as a consultant to companies in the overall assessment of their management programs and processes. Prior to becoming a consultant, Mares worked both in the private and public sectors, serving as vice president of human resources and corporate communications for Beckham Coulter and as chief administrative officer of BHP/Pacific Resources and President & CEO of Gas Operations. He worked

for more than 15 years for The Gas Company in Hawaii and Southern California Edison Company. A graduate of the California State University, Fresno, he also serves on the National Board of Visitors (Distinguished Graduates) for the University.

*Dee Zinke, Assistant General Manager/Chief External Affairs Officer*– Ms. Zinke was appointed Assistant General Manager in January 2016. She is responsible for Metropolitan's communications, outreach, education and legislative matters. She joined Metropolitan in 2009 as Manager of the Legislative Services Section. Before coming to Metropolitan, Ms. Zinke was the Manager of Governmental and Legislative Affairs at the Calleguas Municipal Water District for nearly 10 years, where she received recognition for her significant contributions to the Association of California Water Agencies, the Ventura County Special Districts Association and the Association of Water Agencies of Ventura County. During her tenure at Calleguas, she was named Chair of the Ventura County Watersheds Coalition and appointed by then-Secretary of Resources Mike Chrisman to the State Watershed Advisory Committee, a post she still holds today. Prior to her public service, she worked in the private sector as the Executive Officer and Senior Legislative Advocate for Building Industry Association of Greater Los Angeles and Ventura Counties and as Director of Communications for E-Systems, a defense contractor specializing in communication, surveillance and navigation systems in Washington, D.C. Ms. Zinke holds a Bachelor of Arts degree in Communication and Psychology from Virginia Polytechnic Institute and State University.

**Employee Relations**

The total number of regular full-time Metropolitan employees on May 1, 2016 was 1,754, of whom 1,220 were represented by AFSCME Local 1902, 93 by the Supervisors Association, 290 by the Management and Professional Employees Association and 128 by the Association of Confidential Employees. The remaining 23 employees are unrepresented. The four bargaining units represent 99 percent of Metropolitan's employees. The Memorandum of Understanding ("MOU") with the Association of Confidential Employees covers the period January 1, 2011 through December 31, 2016. The MOUs with the Management and Professional Employees Association and with AFSCME Local 1902 cover the period January 1, 2011 to December 31, 2016. The MOU with the Supervisors Association covers the period September 13, 2011 to December 31, 2016.

**Risk Management**

Metropolitan is exposed to various risks of loss related to the design, construction, treatment and delivery of water. With the assistance of third party claims administrators, Metropolitan is self-insured for liability, property and workers' compensation. Metropolitan self-insures the first $25 million per liability occurrence, with commercial liability coverage of $75 million in excess of the self-insured retention. The $25 million self-insured retention is maintained as a separate restricted reserve. Metropolitan is also self-insured for loss or damage to its property, with the $25 million self-insured retention also being accessible for emergency repairs and Metropolitan property losses. In addition, Metropolitan obtains other excess and specialty insurance coverage such as directors' and officers' liability, fiduciary liability and aircraft hull and liability coverage.

Metropolitan self-insures the first $5 million for workers' compensation with statutory excess coverage. The self-insurance retentions and reserve levels currently maintained by Metropolitan may be modified by Metropolitan's Board at its sole discretion.

## METROPOLITAN'S WATER SUPPLY

Metropolitan's principal sources of water supplies are the State Water Project and the Colorado River. Metropolitan receives water delivered from the State Water Project under State Water Contract provisions, including contracted supplies, use of carryover storage in San Luis Reservoir, and surplus supplies. See "—State Water Project" below. Metropolitan holds rights to a basic apportionment of Colorado River water and has priority rights to an additional amount depending on availability of surplus supplies. See "—Colorado

River Aqueduct" below. Water management programs supplement these Colorado River supplies. Metropolitan stores State Water Project and Colorado River supplies in Metropolitan surface water reservoirs and through storage and water transfer agreements. See "—Water Transfer, Storage and Exchange Programs" and "—Storage Capacity and Water in Storage" below.

Metropolitan faces a number of challenges in providing adequate, reliable and high quality supplemental water supplies for southern California. These include, among others: (1) population growth within the service area; (2) increased competition for low-cost water supplies; (3) variable weather conditions; (4) increased environmental regulations; and (5) climate change. Metropolitan's resources and strategies for meeting these long-term challenges are set forth in its Integrated Water Resources Plan, as updated from time to time. See "—Integrated Water Resources Plan" below. In addition, Metropolitan manages water supplies in response to the prevailing hydrologic conditions by implementing its Water Surplus and Drought Management ("WSDM") Plan, and in times of prolonged or severe shortages, the Water Supply Allocation Plan. See "—Water Surplus and Drought Management Plan" and "—Water Supply Allocation Plan" below.

Hydrologic conditions can have a significant impact on Metropolitan's imported water supply sources. For Metropolitan's State Water Project supplies, precipitation in California's northern Sierra Nevada during the fall and winter helps replenish storage levels in Lake Oroville, a key State Water Project facility. The subsequent runoff from the spring snowmelt helps satisfy regulatory requirements in the San Francisco Bay\Sacramento-San Joaquin River Delta ("Bay-Delta") bolstering water supply reliability in the same year. See "—State Water Project— *Endangered Species Act Considerations*" below. The source of Metropolitan's Colorado River supplies is primarily the watersheds of the Upper Colorado River basin in the states of Colorado, Utah, and Wyoming. Although precipitation is primarily observed in the winter and spring, summer storms are common and can affect water supply conditions.

As of April 1, 2016 the northern Sierra snowpack was 95 percent of normal. As of May 1, 2016, the northern Sierra runoff forecast is 104% of normal. The storage level in Lake Oroville, the principal State Water Project reservoir, was above normal. As of May 1, the California Department of Water Resources' ("DWR") calendar year 2016 allocation to State Water Contractors is 60 percent of contracted amounts, or 1,146,900 acre-feet for Metropolitan. (An acre-foot is the amount of water that will cover one acre to a depth of one foot and equals approximately 326,000 gallons, which represents the needs of two average families in and around the home for one year.) See "—State Water Project—*General*" below.

As of April 1, 2016, the Upper Colorado River Basin snowpack measured 97 percent of normal and total system storage in the Colorado River Basin was 48 percent of capacity. However, as of May 1, 2016 the Upper Colorado River Basin runoff forecast is below normal which may limit access to Metropolitan's intentionally-created surplus (as described under the caption "—Colorado River Aqueduct—Intentionally-Created Surplus Program" below) and the development of transfers and exchanges that would augment supplies. In calendar year 2016, projected net diversions of Colorado River water are estimated to be 961,000 acre-feet. See "—Colorado River Aqueduct" below.

Uncertainties from potential future temperature and precipitation changes in a climate driven by increased concentrations of atmospheric carbon dioxide also present challenges. Areas of concern to California water planners identified by researchers include: reduction in Sierra Nevada and Colorado Basin snowpack; increased intensity and frequency of extreme weather events; and rising sea levels resulting in increased risk of damage from storms, high-tide events, and the erosion of levees and potential cutbacks of deliveries of imported water. While potential impacts from climate change remain subject to study and debate, climate change is among the uncertainties that Metropolitan seeks to address through its planning processes.

**Drought Response Actions**

In calendar years 2012-2015, to offset reductions in State Water Project supplies and mitigate impacts of the California drought, Metropolitan met water demands in its service area by utilizing supplies from the Colorado River, State Water Project deliveries, supplemental water transfers and purchases, and drawing on storage reserves, while also encouraging responsible and efficient water use to lower demands. In calendar year 2016, as a result of increased State Water Project supplies and reduced demands, it is increasingly likely that Metropolitan will be able to return water to storage programs and meet water demands in its service area using only State Water Project deliveries and CRA deliveries while continuing to encourage responsible and efficient water use.

Actions taken in response to the drought by the State, Metropolitan's Board, and Metropolitan member agencies have contributed to reduced demands in Metropolitan's service area. On April 1, 2015, Governor Brown issued an Executive Order ("Order") calling for a 25 percent reduction in consumer water use in response to the historically dry conditions throughout the State of California. As a wholesale water agency providing a supplemental water supply to its member agencies, Metropolitan is not subject to the requirements of the Order, which applies to retail water agencies. However, Metropolitan's member agencies have reduced their water sales in order to comply with the Order. On May 18, 2016, the State Water Resources Control Board ("SWRCB") adopted regulations that mandate urban water suppliers take actions to ensure at least a three year supply of water to their customers under drought conditions.

To respond to the drought, Metropolitan has relied on its WSDM Plan to identify resource actions in times of shortage and its Water Supply Allocation Plan for equitable distribution of available water supplies in case of extreme shortages. On April 14, 2015, the Board declared the implementation of the Water Supply Allocation Plan at a Level 3 Regional Shortage Level for the allocation year, effective July 1, 2015 through June 30, 2016. Implementation of the Water Supply Allocation Plan at a Level 3 Regional Shortage Level and the Governor's Order is anticipated to reduce supplies delivered by Metropolitan to Metropolitan's member agencies in fiscal year 2015-16 to approximately 1.6 million acre-feet. See "—Storage Capacity and Water in Storage," "—Water Conservation," "—Water Surplus and Drought Management Plan" and "—Water Supply Allocation Plan" below. Due to improved hydrologic conditions, on May 10, 2016, the Board rescinded the Water Supply Allocation Plan, declared a Condition 2 Water Supply Alert, and decided not to implement the Water Supply Allocation Plan for fiscal year 2016-17.

In addition, since Governor Brown's initial drought emergency proclamation in January 2014, Metropolitan has worked proactively with its member agencies to conserve water supplies in its service area. In February 2014, Metropolitan declared a Water Supply Alert, calling upon local cities and water agencies to immediately implement extraordinary conservation measures and institute local drought ordinances, and significantly expanded its water conservation and outreach programs and increased funding for conservation incentive programs by $60 million, for a total of $100 million for fiscal years 2014-15 and 2015-16. Metropolitan has also increased incentives for large landscape customers to convert from potable water to recycled water for irrigation. In May 2015, due to the strong response to the water conservation incentive programs, especially the turf replacement program, Metropolitan increased funding for these programs by $350 million, for total funding of $450 million over fiscal years 2014-15 and 2015-16. On May 26, 2015, Metropolitan's Board approved the funding for this increase from the remaining balance in the Water Management Fund of $140 million, the projected amounts over target financial reserve levels for fiscal year 2014-15 of $160 million, and the remaining balance in the Water Stewardship Fund of $50 million. This is a one-time only increase to the conservation incentive program, and it is expected to result in 172 million square feet of turf removed and water savings of 800,000 acre-feet over the next ten years.

**Integrated Water Resources Plan**

The Integrated Water Resources Plan ("IRP") is Metropolitan's principal water resources planning document. Metropolitan, its member agencies, sub-agencies and groundwater basin managers developed their first IRP as a long-term planning guideline for resources and capital investments. The purpose of the IRP was

the development of a portfolio of preferred resources (see "—The Integrated Resources Plan Strategy" below) to meet the water supply reliability and water quality needs for the region in a cost-effective and environmentally sound manner. The first IRP was adopted by the Board in January 1996 and updated in 2004, 2010 and 2015.

On January 12, 2016, Metropolitan's Board adopted an IRP update (the "2015 IRP Update") as a strategy to set goals and a framework for water resources development. This strategy enables Metropolitan and its member agencies to manage future challenges and changes in California's water conditions and to balance investments with water reliability benefits. The 2015 IRP Update provides an adaptive management approach to address future uncertainty, including uncertainty from climate change. It was formulated with input from member agencies, retail water agencies, and other stakeholders including water and wastewater managers, environmental and business interests and the community. The framework places an emphasis on regional collaboration.

The 2015 IRP Update seeks to provide regional reliability through 2040 by stabilizing Metropolitan's traditional imported water supplies and continuing to develop additional conservation programs and local resources, with an increased emphasis on regional collaboration. It also advances long-term planning for potential future contingency resources, such as storm water capture and seawater desalination.

Specific projects that may be developed by Metropolitan in connection with the implementation of the 2015 IRP Update will be subject to future Board consideration and approval, as well as environmental and regulatory documentation and compliance. The 2015 IRP Update and associated materials can be found on Metropolitan's website at: http://www.mwdh2o.com/AboutYourWater/Planning/Planning-Documents/Pages/default.aspx. The information set forth on Metropolitan's website is not incorporated by reference.

**The Integrated Resources Plan Strategy**

The IRP Strategy identifies a balance of local and imported water resources within Metropolitan's service area. Metropolitan expects that the IRP Strategy will be continually reviewed and updated at least every five years to reflect changing demand and supply conditions. Foundational actions include technical studies and research (up to pilot projects, but not full-scale projects) that enable timely, future implementation of challenging resources, including, but not limited to, recycled water, seawater desalination, stormwater capture, and groundwater enhancement.

The following paragraphs describe several elements of the IRP Strategy.

*State Water Project.* The State Water Project is one of Metropolitan's two major sources of water. In addition to municipal and industrial use of this core supply, State Water Project supplies are important for maximizing local groundwater potential and the use of recycled water since State Water Project water has lower salinity content than CRA water and can be used to increase groundwater conjunctive use applications. See "—State Water Project" below and "REGIONAL WATER RESOURCES—Local Water Supplies" in this Appendix A.

*Colorado River Aqueduct.* The CRA delivers water from the Colorado River, Metropolitan's original source of supply. Metropolitan has helped to fund and implement agricultural conservation programs, improvements to river operation facilities, land management programs and water transfers and exchanges through agreements with agricultural water districts in southern California, entities in Arizona and Nevada that use Colorado River water, and the U.S Bureau of Reclamation. See "—Colorado River Aqueduct" below.

*Water Conservation.* Conservation and other water use efficiencies are integral components of Metropolitan's IRP. Metropolitan has invested in conservation programs since the 1980s. Historically, most

of the investments have been in water efficient fixtures in the residential sector. Metropolitan has offered outdoor water conservation programs in both the residential and commercial sectors since the 1990s, but since the end of California's drought in 2010, Metropolitan has increased its conservation efforts targeting outdoor water use in these sectors. See "—Water Conservation" below and "—Drought Response Actions" above.

*Recycled Water*. Reclaimed or recycled municipal and industrial water is a valuable water resource and can be used for landscape irrigation, agriculture, protecting groundwater basins from saltwater intrusion, industrial processes, and recharging local aquifers. Metropolitan offers financial incentives to member agencies for developing economically viable reclamation projects. See "REGIONAL WATER RESOURCES—Local Water Supplies" in this Appendix A.

*Conjunctive Use*. Conjunctive use is the coordinated use of surface water supplies and groundwater storage. It entails storing surplus imported water during the winter months or wet years in local surface reservoirs and recharging local groundwater basins, then using the stored supplies during dry months and droughts. See "REGIONAL WATER RESOURCES—Local Water Supplies" in this Appendix A.

*Water Transfers and Exchanges.* Under voluntary water transfer or exchange agreements, agricultural communities using irrigation water may periodically sell or conserve some of their water allotments for use in urban areas. The water may be delivered through existing State Water Project or CRA facilities, or may be exchanged for water that is delivered through such facilities. Metropolitan's policy toward potential transfers states that the transfers will be designed to protect and, where feasible, enhance environmental resources and avoid the mining of local groundwater supplies. See "—Water Transfer, Storage and Exchange Programs" below.

*Groundwater Recovery*. Natural groundwater reservoirs serve an important function as storage facilities for local and imported water. In cases where groundwater storage has become contaminated, water agencies have to rely more heavily on imported water supplies. Treatment for polluted groundwater is quite costly and poses environmental challenges. Metropolitan offers financial incentives to help fund member agency groundwater recovery projects. See "REGIONAL WATER RESOURCES—Local Water Supplies" in this Appendix A.

*Seawater Desalination.* Seawater desalination is the process of removing salts from ocean water to produce potable supplies. It is a new local supply that could help increase supply reliability in Metropolitan's service area. Metropolitan offers financial incentives to member agencies for seawater desalination projects through its Seawater Desalination Program and Local Resource Program. See "REGIONAL WATER RESOURCES—Local Water Supplies" and "METROPOLITAN REVENUES—Rate Structure" in this Appendix A.

**State Water Project**

*General.* One of Metropolitan's two major sources of water is the State Water Project, which is owned by the State and operated by DWR. This project transports Feather River water stored in and released from Oroville Dam and unregulated flows diverted directly from the Bay-Delta south via the California Aqueduct to four delivery points near the northern and eastern boundaries of Metropolitan's service area. The total length of the California Aqueduct is approximately 444 miles.

In 1960, Metropolitan signed a water supply contract (as amended, the "State Water Contract") with DWR. Metropolitan is one of 29 agencies that have long-term contracts for water service from DWR, and is the largest agency in terms of the number of people it serves (approximately 18.7 million), the share of State Water Project water that it has contracted to receive (approximately 46 percent), and the percentage of total annual payments made to DWR by agencies with State water contracts (approximately 53 percent for 2015). For information regarding Metropolitan's obligations under the State Water Contract, see "METROPOLITAN EXPENDITURES—State Water Contract Obligations" in this Appendix A. Upon

expiration of the State Water Contract term (currently in 2035), Metropolitan has the option to continue service under substantially the same terms and conditions. Metropolitan and other agencies with state water supply contracts are currently in negotiations with DWR to extend the State Water Contract. In June 2014, DWR and the State Water Project Contractors reached an Agreement in Principle ("AIP") to extend the contract to 2085 and to make certain changes related to financial management of the State Water Project in the future. The AIP will serve as the "proposed project" for purposes of environmental review under the California Environmental Quality Act ("CEQA"). DWR issued a Notice of Preparation of an Environmental Impact Report ("EIR") for the proposed project on September 14, 2014. Following CEQA review, a State Water Project amendment will be prepared. Such amendment will be subject to review by the Legislature.

The State Water Contract, under a 100 percent allocation, provides Metropolitan 1,911,500 acre-feet of water. The 100 percent allocation is referred to as the contracted amount. Late each year, DWR announces an initial allocation estimate for the upcoming year, but may revise the initial estimate and subsequent estimates throughout the year if warranted by developing precipitation and water supply conditions. From calendar years 2004 through 2015, the amount of water received by Metropolitan from the State Water Project, including water from water transfer, groundwater banking and exchange programs delivered through the California Aqueduct, described below under "—Water Transfer, Storage and Exchange Programs," varied from a low of 593,000 acre-feet in calendar year 2015 to a high of 1,800,000 acre-feet in 2004. In calendar year 2014, DWR's allocation to State Water Project Contractors was five percent of contracted amounts, or 95,575 acre-feet. In calendar year 2015, DWR's allocation to State Water Project Contractors was 20 percent of contracted amounts, or 382,000 acre-feet.

In calendar year 2016, DWR's current allocation to State Water Project Contractors is 60 percent of contracted amounts, or 1,146,900 acre-feet. This allocation reflects improving hydrological conditions in California and increasing storage levels in the State's major reservoirs, but also federally mandated environmental restrictions which have been imposed upon water deliveries from the Bay-Delta, including the biological opinions discussed below. Metropolitan may augment these deliveries using withdrawals from its storage programs along the State Water Project and through water transfer and exchange programs. However it is anticipated that supplies will be higher than demands in calendar year 2016. As a result, Metropolitan staff estimates that storage reserves will increase by approximately 371,000 acre-feet in 2016, depending on developing supply and demand conditions. See "METROPOLITAN'S WATER SUPPLY—Water Transfer, Storage and Exchange Programs" in this Appendix A.

*State Water Project Operational Constraints*. DWR has altered the operations of the State Water Project to accommodate species of fish listed under the federal or California Endangered Species Acts (respectively, the "Federal ESA" and the "California ESA" and, collectively, the "ESAs") and to comply with SWRCB regulations and decisions. These changes in project operations have adversely affected State Water Project deliveries.

State Water Project operational requirements may be further modified under new biological opinions for listed species under the Federal ESA or by the California Department of Fish and Game's issuance of incidental take authorizations under the California ESA. Additionally, new litigation, listings of additional species or new regulatory requirements could further adversely affect State Water Project operations in the future by requiring additional export reductions, releases of additional water from storage or other operational changes impacting water supply operations. Operational constraints likely will continue until long-term solutions to the problems in the Bay-Delta are identified and implemented. Metropolitan cannot predict the ultimate outcome of any of the litigation or regulatory processes described below but believes they could have a materially adverse impact on the operation of State Water Project pumps, Metropolitan's State Water Project supplies and Metropolitan's water reserves.

*Endangered Species Act Considerations*

*General*. The listing of several fish species as threatened or endangered under the ESAs has adversely impacted State Water Project operations and limited the flexibility of the State Water Project. Currently, five species (the winter-run and spring-run Chinook salmon, Delta smelt, North American green sturgeon and Central Valley steelhead) are listed under the ESAs. In addition, the longfin smelt is listed as a threatened species under the California ESA.

The Federal ESA requires that before any federal agency authorizes funds or carries out an action it must consult with the appropriate federal fishery agency to determine whether the action would jeopardize the continued existence of any threatened or endangered species, or adversely modify habitat critical to the species' needs. The result of the consultation is known as a "biological opinion." In the biological opinion the federal fishery agency determines whether the action would cause jeopardy to a threatened or endangered species or adverse modification to critical habitat and recommends reasonable and prudent alternatives or measures that would allow the action to proceed without causing jeopardy or adverse modification. The biological opinion also includes an "incidental take statement." The incidental take statement allows the action to go forward even though it will result in some level of "take," including harming or killing some members of the species, incidental to the agency action, provided that the agency action does not jeopardize the continued existence of any threatened or endangered species and complies with reasonable mitigation and minimization measures recommended by the federal fishery agency.

*Delta Smelt and Salmon Federal ESA Biological Opinions*. The United States Fish and Wildlife Service released a biological opinion on the impacts of the State Water Project and Central Valley Project on Delta smelt on December 15, 2008. On June 4, 2009, the National Marine Fisheries Service released a biological opinion for salmonid species. These biological opinions on delta smelt and salmonid species contain water supply restrictions that could have a range of impacts on Metropolitan's deliveries from the State Water Project, depending on hydrologic conditions. The impact on total State Water Project deliveries to State Water Contractors attributable to the Delta smelt and salmonid species biological opinions combined is estimated to be one million acre-feet in an average year, reducing total State Water Project deliveries to State Water Contractors from approximately 3.3 million acre-feet to approximately 2.3 million acre-feet for the year under average hydrology. Reductions are estimated to range from 0.3 million acre-feet during critically dry years to 1.3 million acre-feet in above normal water years. Total State Water Project delivery impacts to Metropolitan for calendar years 2008 through 2015 are estimated to be roughly 1.5 million acre-feet.

*SWRCB Regulatory Activities.* The SWRCB is the agency responsible for setting water quality standards and administering water rights throughout California. The SWRCB exercises its regulatory authority over the Bay-Delta by means of public proceedings leading to regulations and decisions that can affect the availability of water to Metropolitan and other users of State Water Project water. These include the Water Quality Control Plan ("WQCP") for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, which establishes the water quality objectives and proposed flow regime of the estuary, and water rights decisions, which assign responsibility for implementing the objectives of the WQCP to users throughout the system by adjusting their respective water rights.

The WQCP gets reviewed periodically and new standards and allocations of responsibility can be imposed on the State Water Project as a result. The last review was completed in 2006, and current review has been ongoing since approximately 2010.

Since 2000, SWRCB's Water Rights Decision 1641 ("D-1641") has governed the State Water Project's ability to export water from the Bay-Delta for delivery to Metropolitan and other agencies receiving water from the State Water Project. D-1641 allocated responsibility for meeting flow requirements and salinity and other water quality objectives established earlier by the WQCP. In response to the recent drought conditions, DWR and Bureau of Reclamation requested temporary relief from certain WQCP standards and

filed petitions in 2014 and 2015 requesting changes to D-1641 terms that govern outflows and salinity standards in the Bay-Delta. The SWRCB approved temporary urgency changes in the Bay-Delta in 2014 and 2015, enabling water to be conserved in reservoirs in case of continued drought.

*Bay-Delta Planning Activities.* In 2000, several State and federal agencies released the CALFED Bay Delta Programmatic Record of Decision ("ROD") and Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") that outlined a 30-year plan to improve the Delta's ecosystem, water supply reliability, water quality, and levee stability. The CALFED ROD remains in effect and many of the state, federal, and local projects begun under CALFED continue.

Building on CALFED and other Bay-Delta planning activities, in 2006 multiple State and federal resource agencies, water agencies, and other stakeholder groups entered into a planning agreement for the Bay-Delta Conservation Plan ("BDCP"). The BDCP was originally conceived as a comprehensive conservation strategy for the Bay-Delta designed to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework to be implemented over a 50-year time frame with corresponding long-term permit authorizations from fish and wildlife regulatory agencies. The BDCP includes both alternatives for new water conveyance infrastructure and extensive habitat restoration in the Bay-Delta.

In 2015, the State and federal lead agencies decided to consider an alternative implementation strategy and new alternatives to the BDCP associated with that strategy. In this alternative approach, DWR and the Bureau of Reclamation would implement planned water conveyance improvements as a stand-alone project termed California WaterFix that would seek incidental take authorization for an unspecified period and would include only limited amounts of habitat restoration. Preliminary cost estimates for this project alternative are approximately $17 billion. When a decision selecting the final project has been made, costs will be updated and allocated. Metropolitan anticipates that it could bear approximately 25 percent of the costs of the project. A Partially Recirculated Draft EIR/Supplemental Draft EIS for the revised BDCP/California WaterFix alternatives has been circulated for public review. The public comment period ended on October 30, 2015. The final planning documents are expected to be completed in the summer of 2016.

*State of California Water Bond.* On November 4, 2014, California voters approved a state-wide ballot measure, Proposition 1, which authorized the issuance of up to $7.545 billion of State of California, General Obligation Bonds. Proposition 1 also enacted the Water Quality, Supply, and Infrastructure Improvement Act of 2014, which provides for the funding of a broad range of water projects. Metropolitan is not able to assess at this time the impact that the water bond measure or the Water Quality, Supply, and Infrastructure Improvement Act of 2014 may have on Metropolitan.

*California Water Impact Network Litigation*. On September 3, 2010, the California Water Impact Network and two other non-profit organizations filed a petition for writ of mandate and for declaratory and injunctive relief in Sacramento Superior Court against the SWRCB and DWR. The petition alleges that by permitting and carrying out the export of large volumes of water from the Delta through the State Water Project, the SWRCB and DWR have failed to protect public trust fishery resources in the Delta; have been diverting water from the Bay-Delta wastefully and unreasonably in violation of the prohibition against waste and unreasonable use in the California Constitution; and have failed to enforce and comply with water quality and beneficial use standards in D-1641, the 1995 SWRCB Water Quality Control Plan, and the Porter-Cologne Act. Among the relief sought in the petition is an injunction against Bay-Delta exports by the State Water Project pending compliance with the various laws and administrative orders that are alleged to have been violated. The State Water Contractors filed a motion to intervene in this action, which was granted on March 25, 2011. The court has ordered the plaintiffs to include the Bureau of Reclamation as a party. In response, the Bureau of Reclamation has asserted that federal sovereign immunity bars their inclusion in the state court action. The court determined that the Bureau of Reclamation is an indispensable party, and a hearing on its motion to dismiss the lawsuit, or portions of it, has been scheduled for June 3, 2016.

*Monterey Agreement Litigation.* On May 4, 2010, DWR completed an EIR and concluded a remedial CEQA review for the Monterey Agreement, which reflects the settlement of certain disputes regarding the allocation of State Water Project water. Following DWR's completion of the EIR, three lawsuits were filed challenging the project. Central Delta Water Agency, South Delta Water Agency, California Water Impact Network, California Sportfishing Protection Alliance, and the Center For Biological Diversity filed a lawsuit against DWR in Sacramento County Superior Court challenging the validity of the EIR under CEQA and the validity of underlying agreements under a reverse validation action (the "*Central Delta I*" case). These same plaintiffs filed a reverse validation lawsuit against the Kern County Water Agency in Kern County Superior Court ("*Central Delta II*"). This lawsuit targets a transfer of land from Kern County Water Agency to the Kern Water Bank, which was completed as part of the original Monterey Agreement. The third lawsuit is an EIR challenge brought by Rosedale-Rio Bravo Water Storage District and Buena Vista Water Storage District against DWR in Kern County Superior Court ("*Rosedale*"). The *Central Delta II* and *Rosedale* cases were transferred to Sacramento Superior Court and the three cases were consolidated for trial.

In January 2013, the Court ruled that the validation cause of action in *Central Delta I* was time barred by the statute of limitations. On October 2, 2014, the court issued its final rulings in *Central Delta I* and *Rosedale*, holding that DWR must complete a limited scope remedial CEQA review addressing the potential impacts of the Kern Water Bank. However, the court's ruling also allows operation of the State Water Project to continue under the terms of the Monterey Agreement while the remedial CEQA review is prepared and leaves in place the underlying project approvals while DWR prepares the remedial CEQA review. The *Central Delta II* case was stayed pending resolution of the *Central Delta I* case. The plaintiffs have appealed the decision. Any adverse impact of this litigation and ruling on Metropolitan's State Water Project supplies cannot be determined at this time.

**Colorado River Aqueduct**

*General*. The Colorado River was Metropolitan's original source of water after Metropolitan's establishment in 1928. Metropolitan has a legal entitlement to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior. Water from the Colorado River and its tributaries is also available to other users in California, as well as users in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming (the "Colorado River Basin States"), resulting in both competition and the need for cooperation among these holders of Colorado River entitlements. In addition, under a 1944 treaty, Mexico has an allotment of 1.5 million acre-feet of Colorado River water annually except in the event of extraordinary drought or serious accident to the delivery system in the United States, in which event the water allotted to Mexico would be curtailed. Mexico also can schedule delivery of an additional 200,000 acre-feet of Colorado River water per year if water is available in excess of the requirements in the United States and the 1.5 million acre-feet allotted to Mexico.

The CRA, which is owned and operated by Metropolitan, transports water from the Colorado River approximately 242 miles to its terminus at Lake Mathews in Riverside County. Up to 1.25 million acre-feet of water per year may be conveyed through the CRA to Metropolitan's member agencies, subject to availability of Colorado River water for delivery to Metropolitan as described below.

California is apportioned the use of 4.4 million acre-feet of water from the Colorado River each year plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada. Under the 1931 priority system that has formed the basis for the distribution of Colorado River water made available to California, Metropolitan holds the fourth priority right to 550,000 acre-feet per year. This is the last priority within California's basic apportionment. In addition, Metropolitan holds the fifth priority right to 662,000 acre-feet of water, which is in excess of California's basic apportionment. See the table "PRIORITIES UNDER THE 1931 CALIFORNIA SEVEN-PARTY AGREEMENT" below. Until 2003, Metropolitan had been able to take full advantage of its fifth priority right as a result of the availability of surplus water and water apportioned to Arizona and Nevada that was not needed by those states. However, during the 1990s Arizona and Nevada increased their use of water from the Colorado River, and by 2002 no

unused apportionment was available for California. In addition, a severe drought in the Colorado River Basin reduced storage in system reservoirs, ending the availability of surplus deliveries to Metropolitan. As a result, California has been limited to 4.4 million acre-feet since 2003. Prior to 2003, Metropolitan could divert over 1.25 million acre-feet in any year, but since that time, Metropolitan's net diversions of Colorado River water have ranged from a low of nearly 633,000 acre-feet in 2006 to a high of approximately 1,179,000 acre-feet in 2015. Projected net diversions of Colorado River water are estimated to be approximately 961,000 acre-feet in 2016. Average annual net deliveries for 2006 through 2015 were approximately 926,000 acre-feet, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. See "—*Quantification Settlement Agreement*" and "—*Interim Surplus Guidelines*" below.

**PRIORITIES UNDER THE 1931 CALIFORNIA SEVEN-PARTY AGREEMENT**(1)

| Priority | Description | Acre-Feet Annually |
|---|---|---|
| 1 | Palo Verde Irrigation District gross area of 104,500 acres of land in the Palo Verde Valley | 3,850,000 |
| 2 | Yuma Project in California not exceeding a gross area of 25,000 acres in California | |
| 3(a) | Imperial Irrigation District and other lands in Imperial and Coachella Valleys(2) to be served by All-American Canal | |
| 3(b) | Palo Verde Irrigation District - 16,000 acres of land on the Lower Palo Verde Mesa | |
| 4 | Metropolitan Water District of Southern California for use on the coastal plain | 550,000 |
| | **SUBTOTAL** | 4,400,000 |
| 5(a) | Metropolitan Water District of Southern California for use on the coastal plain | 550,000 |
| 5(b) | Metropolitan Water District of Southern California for use on the coastal plain(3) | 112,000 |
| 6(a) | Imperial Irrigation District and other lands in Imperial and Coachella Valleys to be served by the All-American Canal | 300,000 |
| 6(b) | Palo Verde Irrigation District - 16,000 acres of land on the Lower Palo Verde Mesa | |
| | **TOTAL** | 5,362,000 |
| 7 | Agricultural use in the Colorado River Basin in California | Remaining surplus |

*Source: Metropolitan.*

(1) Agreement dated August 18, 1931, among Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, Metropolitan, the City of Los Angeles, the City of San Diego and the County of San Diego. These priorities were memorialized in the agencies' respective water delivery contracts with the Secretary of the Interior.
(2) The Coachella Valley Water District serves Coachella Valley.
(3) In 1946, the City of San Diego, the San Diego County Water Authority, Metropolitan and the Secretary of the Interior entered into a contract that merged and added the City and County of San Diego's rights to storage and delivery of Colorado River water to the rights of Metropolitan.

Metropolitan has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water. Under a 1988 water conservation agreement (the "1988 Conservation Agreement") between Metropolitan and the Imperial Irrigation District ("IID"), Metropolitan provided funding for IID to construct and operate a number of conservation projects that have conserved up to 109,460 acre-feet of water per year that has been provided to Metropolitan. In 2015, 107,820 acre-feet of conserved water was made available by IID to Metropolitan. Under the October 2003 Quantification Settlement Agreement and related agreements, Metropolitan, at the request of Coachella Valley Water District ("CVWD"), forgoes up to 20,000 acre-feet of this water each year for diversion by CVWD. See "–*Quantification Settlement Agreement*" below. In 2014 and 2015, CVWD's requests were for 19,795 and 6,715 acre-feet respectively, leaving 84,305 acre-feet in 2014 and 101,105 acre-feet in 2015 for Metropolitan.

Metropolitan and the Palo Verde Irrigation District ("PVID") signed the program agreement for a Land Management, Crop Rotation and Water Supply Program in August 2004. This program provides up to 133,000 acre-feet of water to be available to Metropolitan in certain years. The term of the program is 35 years. Fallowing began on January 1, 2005. In March 2009, Metropolitan and PVID entered into a supplemental fallowing program within PVID that provided for the fallowing of additional acreage in 2009 and 2010. In calendar years 2009 and 2010, 24,100 acre-feet and 32,300 acre-feet of water, respectively, were saved and made available to Metropolitan under the supplemental program. The following table shows annual volumes of water saved and made available to Metropolitan:

**WATER AVAILABLE FROM PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM**

| Calendar Year | Volume (acre-feet) |
|---|---|
| 2006 | 105,000 |
| 2007 | 72,300 |
| 2008 | 94,300 |
| 2009* | 144,300 |
| 2010* | 148,600 |
| 2011 | 122,200 |
| 2012 | 73,700 |
| 2013 | 32,750 |
| 2014 | 43,010 |
| 2015 | 94,480 |

*Source: Metropolitan.*

* Includes water from the supplemental fallowing program that provided for fallowing of additional acreage in 2009 and 2010.

In May 2008, Metropolitan provided $28.7 million to join the Central Arizona Water Conservation District ("CAWCD") and the Southern Nevada Water Authority ("SNWA") in funding the Bureau of Reclamation's construction of an 8,000 acre-foot off-stream regulating reservoir near Drop 2 of the All-American Canal in Imperial County (officially named the Warren H. Brock Reservoir). Construction was completed in October 2010 and the Bureau of Reclamation refunded approximately $3.71 million in unused contingency funds to Metropolitan. The Warren H. Brock Reservoir conserves about 70,000 acre-feet of water per year by capturing and storing water that would otherwise be lost from the system. In return for its funding, Metropolitan received 100,000 acre-feet of water that was stored in Lake Mead for its future use. Besides the additional water supply, the new reservoir adds to the flexibility of Colorado River operations. As of January 1, 2016, Metropolitan had received 43,992 acre-feet of this water, and had 56,008 acre-feet remaining.

In September 2009, Metropolitan authorized participation with SNWA, the Colorado River Commission of Nevada, the CAWCD and the Bureau of Reclamation in the pilot operation of the Yuma Desalting Plant. The Bureau of Reclamation concluded the pilot operation of the Yuma Desalting Plant in March 2011. Metropolitan's contribution for the funding agreement was approximately $8.4 million, of which approximately $1.1 million was refunded to Metropolitan. Metropolitan's yield from the pilot run of the project was 24,397 acre-feet. That water is stored in Lake Mead for Metropolitan's future use.

In November 2012, Metropolitan executed agreements in support of a program to augment Metropolitan's Colorado River supply from 2013 through 2017 through an international pilot project in Mexico. Metropolitan's total share of costs will be $5 million for 47,500 acre-feet of project supplies. In December 2013, Metropolitan and IID executed an agreement under which IID will pay half of Metropolitan's program costs, or $2.5 million, in return for half of the project supplies, or 23,750 acre-feet. In addition, 23,750 acre-feet of conserved water will be credited to Metropolitan's intentionally-created surplus water account no later than 2017. See "— *Intentionally-Created Surplus Program*" below.

*Quantification Settlement Agreement*. The Quantification Settlement Agreement ("QSA"), executed by CVWD, IID and Metropolitan in October 2003, establishes Colorado River water use limits for IID and CVWD, and provides for specific acquisitions of conserved water and water supply arrangements for up to 75 years. The QSA and related agreements provide a framework for Metropolitan to enter into other cooperative Colorado River supply programs and set aside several disputes among California's Colorado River water agencies.

Specific programs under the QSA and related agreements include lining portions of the All-American and Coachella Canals, which conserve approximately 96,000 acre-feet annually. As a result, about 80,000 acre-feet of conserved water is delivered to the San Diego County Water Authority ("SDCWA") by exchange with Metropolitan. Metropolitan also takes delivery of 16,000 acre-feet annually that will be made available for the benefit of the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido and the Vista Irrigation District, upon completion of a water rights settlement. Also included under the QSA is the delivery and exchange agreement between Metropolitan and CVWD that provides for Metropolitan, when requested, to deliver annually up to 35,000 acre-feet of Metropolitan's State Water Project contractual water to CVWD by exchange with Metropolitan's available Colorado River supplies. In 2021, the transfer of water conserved annually by IID to SDCWA is expected to reach 205,000 acre-feet. See description below under the caption "—*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*"; see also "METROPOLITAN REVENUES—Principal Customers" in this Appendix A. With full implementation of the programs identified in the QSA, at times when California is limited to its basic apportionment of 4.4 million acre-feet per year, Metropolitan expects to be able to annually divert to its service area approximately 850,000 acre-feet of Colorado River water plus water from other water augmentation programs it develops, including the PVID program, which provides up to approximately 133,000 acre-feet of water per year. (Amounts of Colorado River water received by Metropolitan in 2006 through 2015 are discussed under the heading "—Colorado River Aqueduct—*General*" above.)

A complicating factor in completing the QSA was the fate of the Salton Sea, an important habitat for a wide variety of fish-eating birds as a stopover spot along the Pacific flyway. Some of these birds are listed as threatened or endangered species under the California and Federal ESAs. Located at the lowest elevations of an inland basin and fed primarily by agricultural drainage with no outflows other than evaporation, the Salton Sea is trending towards hyper-salinity, which has already impacted the Salton Sea's fishery. Without mitigation, the transfer of water from IID to SDCWA, one of the core programs implemented under the QSA, would reduce the volume of agricultural drainage from IID's service area into the Salton Sea, which in turn would accelerate this natural trend of the Salton Sea to hyper-salinity. See "—*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*" below. In passing legislation to implement the QSA, the Legislature committed the State to undertake restoration of the Salton Sea ecosystem. Restoration of the Salton Sea is subject to selection and approval of an alternative by the Legislature and funding of the

associated capital improvements and operating costs. The Secretary for the California Natural Resources Agency submitted an $8.9 billion preferred alternative for restoration of the Salton Sea to the Legislature in May 2007. While withholding authorization of the preferred alternative, the Legislature has appropriated funds from Proposition 84 to undertake demonstration projects and investigations called for in the Secretary's recommendation. On September 25, 2010, then-Governor Schwarzenegger signed Senate Bill 51, establishing the "Salton Sea Restoration Council" as a state agency in the Natural Resources Agency to oversee restoration of the Salton Sea. The council was directed to evaluate alternative Salton Sea restoration plans and to report to the Governor and the Legislature by June 30, 2013 with a recommended plan. However, Governor Brown's 2012 Reorganization Plan, as modified by budget trailer bill SB 1018 (Leno), Chapter 39, Statutes of 2012, effective December 31, 2012, eliminated the council before it ever met. The QSA implementing legislation also established the Salton Sea Restoration Fund, to be funded in part by payments made by the parties to the QSA and fees on certain water transfers among the parties to the QSA. Under the QSA agreements Metropolitan agreed to pay $20 per acre-foot (in 2003 dollars) into the Salton Sea Restoration Fund for any special surplus Colorado River water that Metropolitan receives under the Interim Surplus Guidelines, if available. Metropolitan also agreed to acquire up to 1.6 million acre-feet of water conserved by IID, excluding water transferred from IID to SDCWA (see "—*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*" below), if such water can be transferred consistent with plans for Salton Sea restoration, at an acquisition price of $250 per acre-foot (in 2003 dollars), with net proceeds to be deposited into the Salton Sea Restoration Fund. No conserved water has been made available to Metropolitan under this program. As part of an effort to mitigate the effects of the drought in the Colorado River Basin that began in 2000, Metropolitan elected not to take delivery of special surplus Colorado River water that was available from October 2003 through 2004 and from 2006 through 2007. No special surplus water has been available since 2007. Metropolitan may receive credit for the special surplus water payments against future contributions for the Lower Colorado River Multi-Species Conservation Program (see "—*Environmental Considerations*" below). In consideration of these agreements, Metropolitan will not have or incur any liability for restoration of the Salton Sea.

*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*. On April 29, 1998, SDCWA and IID executed an agreement (the "Transfer Agreement") for SDCWA's purchase from IID of Colorado River water that is conserved within IID. An amended Transfer Agreement, executed as one of the QSA agreements, set the maximum transfer amount at 205,000 acre-feet in 2021, with the transfer gradually ramping up to that amount over an approximately twenty-year period, then stabilizing at 200,000 acre-feet per year beginning in 2023.

No facilities exist to deliver water directly from IID to SDCWA. Accordingly, Metropolitan and SDCWA entered into an exchange agreement, pursuant to which SDCWA makes available to Metropolitan at its intake at Lake Havasu on the Colorado River the conserved Colorado River water acquired by SDCWA from IID and water allocated to SDCWA that has been conserved as a result of the lining of the All-American and Coachella Canals. See "—*Quantification Settlement Agreement"* above. Metropolitan delivers an equal volume of water from its own sources of supply through portions of its delivery system to SDCWA. The deliveries to both Metropolitan and SDCWA are deemed to be made in equal monthly increments. In consideration for the conserved water made available to Metropolitan by SDCWA, a lower rate is paid by SDCWA for the exchange water delivered by Metropolitan. The price payable by SDCWA is calculated using the charges set by Metropolitan's Board from time to time to be paid by its member agencies for the conveyance of water through Metropolitan's facilities. See "METROPOLITAN REVENUES–Wheeling and Exchange Charges" and "–Litigation Challenging Rate Structure" in this Appendix A for a description of Metropolitan's charges for the conveyance of water through Metropolitan's facilities and litigation in which SDCWA is challenging such charges. In 2015, 179,347 acre-feet were delivered by SDCWA for exchange, consisting of 100,000 acre-feet of IID conservation plus 79,347 acre-feet of conserved water from the Coachella Canal and All-American Canal lining projects.

*Navajo Nation Litigation.* The Navajo Nation filed litigation against the Department of the Interior, specifically the Bureau of Reclamation and the Bureau of Indian Affairs, in 2003, alleging that the Bureau of

Reclamation has failed to determine the extent and quantity of the water rights of the Navajo Nation in the Colorado River and that the Bureau of Indian Affairs has failed to otherwise protect the interests of the Navajo Nation. The complaint challenges the adequacy of the environmental review for the Interim Surplus Guidelines (as defined under "—*Interim Surplus Guidelines*" below) and seeks to prohibit the Department of the Interior from allocating any "surplus" water until such time as a determination of the rights of the Navajo Nation is completed. Metropolitan and other California water agencies filed motions to intervene in this action. In October 2004 the court granted the motions to intervene and stayed the litigation to allow negotiations among the Navajo Nation, federal defendants, CAWCD, State of Arizona and Arizona Department of Water Resources. After years of negotiations, a tentative settlement was proposed in 2012 that would provide the Navajo Nation with specified rights to water from the Little Colorado River and groundwater basins under the reservation, along with federal funding for development of water supply systems on the tribe's reservation. The proposed agreement was rejected by tribal councils for both the Navajo and the Hopi, who are now seeking to intervene. On May 16, 2013, the stay of proceedings was lifted. On June 3, 2013, the Navajo Nation moved for leave to file a first amended complaint, which the court granted on June 27, 2013. The amended complaint added a legal challenge to the Lower Basin Shortage Guidelines adopted by the Secretary of the Interior in 2007 that allow Metropolitan and other Colorado River water users to store water in Lake Mead. Metropolitan has used these new guidelines to store over 500,000 acre-feet of water in Lake Mead, a portion of which has been delivered, and the remainder of which may be delivered at Metropolitan's request in future years. See "—*Intentionally-Created Surplus Program*" below. On July 22, 2014, the district court dismissed the lawsuit in its entirety, ruling that the Navajo Nation lacked standing and that the claim was barred against the federal defendants. The district court denied a motion by the Navajo Nation for leave to amend the complaint further after the dismissal. On September 19, 2014, the Navajo Nation appealed the dismissal of its claims related to the Interim Surplus Guidelines, the Lower Basin Shortage Guidelines, and breach of the federal trust obligation to the tribe. Briefing by the parties was completed by May 20, 2015. No date for oral argument has been set. Metropolitan is unable to assess at this time the likelihood of success of this appeal or any future claims, or their potential effect on Colorado River water supplies.

*Interim Surplus Guidelines*. In January 2001, the Secretary of the Interior adopted guidelines (the "Interim Surplus Guidelines") for use through 2016 in determining if there is surplus Colorado River water available for use in California, Arizona and Nevada. The purpose of the Interim Surplus Guidelines is to provide a greater degree of predictability with respect to the availability and quantity of surplus water through 2016. The Interim Surplus Guidelines were amended in 2007 and now extend through 2026 (see "—*Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead*" below).

Under the Interim Surplus Guidelines, Metropolitan initially expected to divert up to 1.25 million acre-feet of Colorado River water annually under foreseeable runoff and reservoir storage scenarios from 2004 through 2016. However, an extended drought in the Colorado River Basin reduced these initial expectations. On May 16, 2002 SNWA and Metropolitan entered into an Agreement Relating to Implementation of Interim Colorado River Surplus Guidelines, in which SNWA and Metropolitan agreed to the allocation of unused apportionment as provided in the Interim Surplus Guidelines and on the priority of SNWA for interstate banking of water in Arizona. SNWA and Metropolitan entered into a storage and interstate release agreement on October 21, 2004. Under this program, SNWA can request that Metropolitan store unused Nevada apportionment in California. The amount of water stored through 2014 under this agreement is approximately 205,000 acre-feet. In subsequent years, SNWA may request recovery of this stored water. As part of a 2012 executed amendment, it is expected that SNWA will not request return of the water stored with Metropolitan before 2022. In October 2015, SNWA and Metropolitan executed an amendment under which Metropolitan will pay SNWA approximately $44.4 million and SNWA will store an additional 150,000 acre-feet with Metropolitan during 2015. Of that amount, 125,000 acre-feet will be added to SNWA's storage account with Metropolitan, increasing the total amount of water stored to 330,000 acre-feet. When SNWA requests the return of any of the stored 125,000 acre-feet, SNWA will reimburse

Metropolitan for an equivalent proportion of the $44.4 million based on the amount of water returned plus inflation. The stored water allowed Metropolitan to have a full water supply from the Colorado River in 2015.

*Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead*. In November 2007, the Bureau of Reclamation issued a Final Environmental Impact Statement ("EIS") regarding new federal guidelines concerning the operation of the Colorado River system reservoirs. These new guidelines provide water release criteria from Lake Powell and water storage and water release criteria from Lake Mead during shortage and surplus conditions in the Lower Basin, provide a mechanism for the storage and delivery of conserved system and non-system water in Lake Mead and extend the Interim Surplus Guidelines through 2026. The Secretary of the Interior issued the final guidelines through a Record of Decision signed in December 2007. The Record of Decision and accompanying agreement among the Colorado River Basin States protect reservoir levels by reducing deliveries during drought periods, encourage agencies to develop conservation programs and allow the Colorado River Basin States to develop and store new water supplies. The Colorado River Basin Project Act of 1968 insulates California from shortages in all but the most extreme hydrologic conditions.

*Intentionally-Created Surplus Program*. Metropolitan may store intentionally-created surplus water in Lake Mead under the federal guidelines for operation of the Colorado River system reservoirs described above under the heading "*Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead*." Only "intentionally-created surplus" water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) is eligible for storage in Lake Mead under this program. See the table "Metropolitan's Water Storage Capacity and Water in Storage" under the heading "—Storage Capacity and Water in Storage" below. The Secretary of the Interior delivers intentionally-created surplus water to Metropolitan in accordance with the terms of December 13, 2007 and January 6, 2010 Delivery Agreements between the United States and Metropolitan. As of January 1, 2016, Metropolitan had approximately 80,405 acre-feet in its intentionally-created surplus accounts. These surplus accounts are made up of water conserved by fallowing in the Palo Verde Valley, projects implemented with IID in its service area, groundwater desalination, the Warren H. Brock Reservoir Project and the Yuma Desalting Plant pilot run.

*Environmental Considerations*. Federal and state environmental laws protecting fish species and other wildlife species have the potential to affect Colorado River operations. A number of species that are on either "endangered" or "threatened" lists under the ESAs are present in the area of the Lower Colorado River, including among others, the bonytail chub, razorback sucker, southwestern willow flycatcher and Yuma clapper rail. To address this issue, a broad-based state/federal/tribal/private regional partnership that includes water, hydroelectric power and wildlife management agencies in Arizona, California and Nevada have developed a multi-species conservation program for the main stem of the Lower Colorado River (the Lower Colorado River Multi-Species Conservation Program or "MSCP"). The MSCP allows Metropolitan to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations of its Colorado River facilities and to minimize any uncertainty from additional listings of endangered species. The MSCP also covers operations of federal dams and power plants on the river that deliver water and hydroelectric power for use by Metropolitan and other agencies. The MSCP covers 27 species and habitat in the Lower Colorado River from Lake Mead to the Mexican border for a term of 50 years. Over the 50 year term of the program, the total cost to Metropolitan will be about $88.5 million (in 2003 dollars), and annual costs will range between $0.8 million and $4.7 million (in 2003 dollars).

*Quagga Mussel Control Program*. In January 2007 quagga mussels were discovered in Lake Mead. Quagga mussels can reproduce quickly and, if left unmanaged, can clog intakes and raw water conveyance systems, alter or destroy fish habitats and affect lakes and beaches. Quagga mussels were introduced in the Great Lakes in the late 1980s. These organisms infest much of the Great Lakes basin, the St. Lawrence Seaway, and much of the Mississippi River drainage system. The most likely source of the quagga mussel infestation in the Colorado River is recreational boats with exposure to water bodies around the Great Lakes.

Metropolitan developed a program in 2007 to address the long term introduction of mussel larvae into the CRA from the Lower Colorado River, which is now heavily colonized from Lake Mead through Lake Havasu. The quagga mussel control program consists of surveillance activities and control measures. Surveillance activities are conducted annually in conjunction with regularly scheduled two- to three-week long CRA shutdowns, which have the added benefit of desiccating exposed quagga mussels. Control activities consist of continuous chlorination at Copper Basin, quarterly use of a mobile chlorinator at outlet towers and physical removal of mussels from the trash racks in Lake Havasu. Recent shutdown inspections have demonstrated that the combined use of chlorine and regularly scheduled shutdowns effectively control mussel infestation in the CRA. Metropolitan's costs for controlling quagga mussels are between $4 million and $5 million per year.

**Water Transfer, Storage and Exchange Programs**

*General*. California's agricultural activities consume approximately 34 million acre-feet of water annually, which is approximately 80 percent of the total water used for agricultural and urban uses and 40 percent of the water used for all consumptive uses, including environmental demands. Voluntary water transfers and exchanges can make a portion of this agricultural water supply available to support the State's urban areas. Such existing and potential water transfers and exchanges are an important element for improving the water supply reliability within Metropolitan's service area and accomplishing the reliability goal set by Metropolitan's Board. Metropolitan is currently pursuing voluntary water transfer and exchange programs with State, federal, public and private water districts and individuals. The following are summary descriptions of some of these programs.

*Arvin-Edison/Metropolitan Water Management Program*. In December 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District ("Arvin-Edison"), an irrigation agency located southeast of Bakersfield, California. Under the program, Arvin-Edison stores water on behalf of Metropolitan. In January 2008, Metropolitan and Arvin-Edison amended the agreement to enhance the program's capabilities and to increase the delivery of water to the California Aqueduct. Up to 350,000 acre-feet of Metropolitan's water may be stored and Arvin-Edison is obligated to return up to 75,000 acre-feet of stored water in any year to Metropolitan, upon request. The agreement will terminate in 2035 unless extended. To facilitate the program, new wells, spreading basins and a return conveyance facility connecting Arvin-Edison's existing facilities to the California Aqueduct have been constructed. The agreement also provides Metropolitan priority use of Arvin-Edison's facilities to convey high quality water available on the east side of the San Joaquin Valley to the California Aqueduct. Metropolitan's current storage account under the Arvin-Edison/Metropolitan Water Management Program is shown in the table "Metropolitan's Water Storage Capacity and Water in Storage" under the heading "—Storage Capacity and Water in Storage" below.

*Semitropic/Metropolitan Groundwater Storage and Exchange Program*. In 1994, Metropolitan entered into an agreement with the Semitropic Water Storage District ("Semitropic"), located adjacent to the California Aqueduct north of Bakersfield, to store water in the groundwater basin underlying land within Semitropic. The minimum annual yield available to Metropolitan from the program is 39,700 acre-feet of water and the maximum annual yield is 231,200 acre-feet of water depending on the available unused capacity and the State Water Project allocation. Metropolitan's current storage account under the Semitropic program is shown in the table "Metropolitan's Water Storage Capacity and Water in Storage" under the heading "—Storage Capacity and Water in Storage" below.

*California Aqueduct Dry-Year Transfer Program*. Through agreements with the Kern Delta Water District, the Mojave Water Agency and the San Bernardino Valley Municipal Water District ("SBVMWD"), the California Aqueduct Dry-Year Transfer Program insures against regulatory and operational uncertainties in the State Water Project system that could impact the reliability of existing supplies. The total potential yield from the three agreements is approximately 80,000 acre-feet of water per year when sufficient water is available.

Metropolitan entered into an agreement with SBVMWD in April 2001 to coordinate the use of facilities and State Water Project water supplies. The agreement allows Metropolitan a minimum purchase of 20,000 acre-feet on an annual basis with the option to purchase additional water when available. The program includes 50,000 acre-feet of storage capacity for the carryover of water purchased from SBVMWD. In addition to water being supplied using the State Water Project, the previously stored water can be returned using an interconnection between the San Bernardino Central Feeder and Metropolitan's Inland Feeder. On October 14, 2014, the Board approved the extension of this agreement to December 31, 2035.

Metropolitan entered into an agreement with Kern Delta Water District on May 27, 2003, for a groundwater banking and exchange transfer program to allow Metropolitan to store up to 250,000 acre-feet of State Water Contract water in wet years and permit Metropolitan, at Metropolitan's option, a return of up to 50,000 acre-feet of water annually during hydrologic and regulatory droughts.

Additionally, Metropolitan entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency on October 29, 2003. This agreement was amended in 2011 to allow for the cumulative storage of up to 390,000 acre-feet. The agreement allows for Metropolitan to store water in an exchange account for later return. Through 2021, and when the State Water Project allocation is 60 percent or less, Metropolitan can annually withdraw the Mojave Water Agency's State Water Project contractual amounts in excess of a 10 percent reserve. When the State Water Project allocation is over 60 percent, the reserved amount for Mojave's local needs increases to 20 percent. Under a 100 percent allocation, the State Water Contract provides Mojave Water Agency 82,800 acre-feet of water. Metropolitan's current storage account under these programs is shown in the table "Metropolitan's Water Storage Capacity and Water in Storage" under the heading "—Storage Capacity and Water in Storage" below.

*Other Water Purchase, Storage and Exchange Programs in the San Joaquin and Sacramento Valleys*. Metropolitan has been negotiating, and will continue to pursue, water purchase, storage and exchange programs with other agencies in the Sacramento and San Joaquin Valleys. These programs involve the storage of both State Water Project supplies and water purchased from other sources to enhance Metropolitan's dry-year supplies and the exchange of normal year supplies to enhance Metropolitan's water reliability and water quality, in view of dry conditions and potential impacts from the ESA cases discussed above under the heading "—State Water Project—*Endangered Species Act Considerations*." In addition, in the fall of 2008 DWR convened the State Drought Water Bank (the "Drought Water Bank") to help mitigate water shortages. In 2015, Metropolitan participated in the Drought Water Bank with other State Water Contractors, resulting in deliveries of 9,886 acre-feet to Metropolitan.

Metropolitan entered into an agreement with DWR in December 2007 to purchase a portion of the water released by the Yuba County Water Agency ("YCWA"). YCWA was involved in a SWRCB proceeding in which it was required to increase Yuba River fishery flows. Within the framework of agreements known as the Yuba River Accord, DWR entered into an agreement for the long-term purchase of water from YCWA. The agreement permits YCWA to transfer additional supplies at its discretion. Metropolitan, other State Water Project Contractors, and the San Luis Delta Mendota Water Authority entered into separate agreements with DWR for the purchase of portions of water made available. Metropolitan's agreement allows Metropolitan to purchase, in dry years through 2025, available water supplies which have ranged from approximately 6,555 acre-feet to 67,068 acre-feet per year.

*Metropolitan/CVWD/Desert Water Agency Exchange and Advance Delivery Agreement*. Metropolitan has agreements with the CVWD and the Desert Water Agency ("DWA") in which Metropolitan exchanges its Colorado River water for those agencies' State Water Project contractual water on an annual basis. Because DWA and CVWD do not have a physical connection to the State Water Project, Metropolitan takes delivery of DWA's and CVWD's State Water Project supplies and delivers a like amount of Colorado River water to the agencies. In accordance with an advance delivery agreement executed by Metropolitan, CVWD and DWA, Metropolitan has delivered Colorado River water in advance to these agencies for storage in the Upper Coachella Valley groundwater basin. In years when it is necessary to augment available supplies

to meet local demands, Metropolitan has the option to meet the exchange delivery obligation through drawdowns of the advance delivery account, rather than deliver its Colorado River supply. Metropolitan's current storage account under the CVWD/DWA program is shown in the table "Metropolitan's Water Storage Capacity and Water in Storage" under the heading "—Storage Capacity and Water in Storage" below. In addition to the CVWD/DWA exchange agreements, Metropolitan has entered into separate agreements with CVWD and DWA for delivery of non-State Water Project supplies acquired by CVWD or DWA. Similarly, Metropolitan takes delivery of these supplies from State Water Project facilities and incurs an exchange obligation to CVWD or DWA. From 2008 through 2015, Metropolitan has received a net additional supply of 71,461 acre-feet of water acquired by CVWD and DWA.

*Other Agreements*. Metropolitan is entitled to storage and access to stored water in connection with various storage programs and facilities. See "METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct" and "REGIONAL WATER RESOURCES—Local Water Supplies—*Conjunctive Use*" in this Appendix A, as well as the table "Metropolitan's Water Storage Capacity and Water in Storage" under the heading "—Storage Capacity and Water in Storage" below.

**Storage Capacity and Water in Storage**

Metropolitan's storage capacity, which includes reservoirs, conjunctive use and other groundwater storage programs within Metropolitan's service area and groundwater and surface storage accounts delivered through the State Water Project or CRA, is approximately 5.83 million acre-feet. In 2015, approximately 626,000 acre-feet of stored water was emergency storage that was reserved for use in the event of supply interruptions from earthquakes or similar emergencies (see "METROPOLITAN'S WATER DELIVERY SYSTEM—Seismic Considerations" in this Appendix A), as well as extended drought. Metropolitan's emergency storage requirement is established periodically to provide a six-month water supply at 75 percent of member agencies retail demand under normal hydrologic conditions. Metropolitan's ability to replenish water storage, both in the local groundwater basins and in surface storage and banking programs, has been limited by Bay-Delta pumping restrictions under the biological opinions issued for listed species. See "—State Water Project—*Endangered Species Act Considerations*" above. Metropolitan replenishes its storage accounts when imported supplies exceed demands. Effective storage management is dependent on having sufficient years of excess supplies to store water so that it can be used during times of shortage. Historically, excess supplies have been available in about seven of every ten years. Metropolitan forecasts that, with anticipated supply reductions from the State Water Project due to pumping restrictions, it will need to draw down on storage in about seven of ten years and will be able to replenish storage in about three years out of ten. This reduction in available supplies extends the time required for storage to recover from drawdowns and could require Metropolitan to implement its Water Supply Allocation Plan during extended dry periods.

As a result of increased State Water Project supplies and reduced demands from 2010 to 2012, Metropolitan rebuilt its storage after several years of withdrawals to approximately 3.375 million acre-feet, including emergency storage. This was the highest end-of-year total water reserves in Metropolitan's history. In 2013, Metropolitan drew 407,000 acre-feet from storage to meet demands, reducing overall storage to 2.968 million acre-feet. In 2014, Metropolitan withdrew approximately 1.2 million acre-feet from storage, reducing overall storage to approximately 1.8 million acre-feet. Approximately 300,000 acre-feet were withdrawn from storage reserves in 2015, leaving approximately 1.54 million acre-feet in storage reserves as of January 1, 2016. Metropolitan staff estimates that storage reserves will increase by approximately 376,000 acre-feet in 2016 depending on developing supply and demand conditions. The following table shows three years of Metropolitan's water in storage as of January 1, including emergency storage.

**METROPOLITAN'S WATER STORAGE CAPACITY AND WATER IN STORAGE[1]**
**(in Acre-Feet)**

| Water Storage Resource | Storage Capacity | Water in Storage January 1, 2016 | Water in Storage January 1, 2015 | Water in Storage January 1, 2014 |
|---|---|---|---|---|
| ***Colorado River Aqueduct*** | | | | |
| Desert / CVWD Advance Delivery Account | 800,000 | 201,000 | 249,000 | 260,000 |
| Lake Mead ICS | 1,500,000 | 80,000 | 151,000 | 474,000 |
| **Subtotal** | **2,300,000** | **281,000** | **400,000** | **734,000** |
| ***State Water Project*** | | | | |
| Arvin-Edison Storage Program | 350,000 | 123,000 | 165,000 | 180,000 |
| Semitropic Storage Program | 350,000 | 128,000 | 186,000 | 238,000 |
| Kern Delta Storage Program | 250,000 | 120,000 | 152,000 | 169,000 |
| San Bernardino Valley MWD Coordinated Operating Agreement | 50,000 | -0- | -0- | -0- |
| Mojave Storage Program | 390,000[5] | 31,000 | 39,000 | 39,000 |
| Castaic Lake and Lake Perris[2] | 219,000 | 30,000 | -0- | 219,000 |
| Metropolitan Article 56 Carryover[3] | 200,000[6] | 2,000 | 36,000 | 49,000 |
| Other State Water Project Carryover[4] | n/a | -0- | -0- | 174,000 |
| Emergency Storage | 334,000 | 328,000 | 328,000 | 334,000 |
| **Subtotal** | **2,143,000** | **762,000** | **906,000** | **1,402,000** |
| ***Within Metropolitan's Service Area*** | | | | |
| Diamond Valley Lake | 810,000 | 315,000 | 394,000 | 584,000 |
| Lake Mathews | 182,000 | 141,000 | 78,000 | 139,000 |
| Lake Skinner | 44,000 | 34,000 | 30,000 | 36,000 |
| **Subtotal[7]** | **1,036,000** | **490,000** | **502,000** | **759,000** |
| ***Member Agency Storage Programs*** | | | | |
| Cyclic Storage, Conjunctive Use, and Supplemental Storage | 352,000 | 7,000 | 28,000 | 73,000 |
| **Total** | **5,831,000** | **1,540,000** | **1,836,000** | **2,968,000** |

*Source: Metropolitan.*

(1) Water storage capacity and water in storage are measured based on engineering estimates and are subject to change.
(2) Flexible storage allocated to Metropolitan under its State Water Contract. Withdrawals must be returned within 5 years.
(3) Article 56 Carryover storage capacity is dependent on the annual State Water Project allocation, which varies from year to year. Article 56 supplies represent water that is allocated to a State Water Project contractor in a given year and carried over to the next year pursuant to the State Water Contract.
(4) Includes Article 56 Carryover from prior years, non-project carryover, and carryover of curtailed deliveries pursuant to Article 14(b) of Metropolitan's State Water Contract.
(5) The Mojave Storage Program agreement was amended in 2011 to allow for cumulative storage of up to 390,000 acre-feet.
(6) Metropolitan's State Water Project carryover capacity ranges from 100,000 to 200,000 acre-feet, on a sliding scale that depends on the final State Water Project allocation. At allocations of 50 percent or less, Metropolitan may store 100,000 acre-feet, and at allocations of 75 percent or greater, Metropolitan may store up to 200,000 acre-feet. For the purposes of this table, the highest possible carryover capacity is displayed.
(7) Includes 292,000 acre-feet of emergency storage in Metropolitan's reservoirs in 2014, and 298,000 acre-feet in 2015 and 2016.

**Water Conservation**

The central objective of Metropolitan's water conservation program is to help ensure adequate, reliable and affordable water supplies for Southern California by actively promoting efficient water use. The importance of conservation to the region has increased in recent years because of drought conditions in the State Water Project watershed and court-ordered restrictions on Bay-Delta pumping, as described under "—State Water Project" above. Water conservation is an integral component of Metropolitan's IRP Strategy, WSDM plan and Water Supply Allocation Plan, each described in this Appendix A under "METROPOLITAN'S WATER SUPPLY."

Metropolitan's conservation program has largely been developed to assist its member agencies in meeting the "best management practices" ("BMP") of the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California ("CUWCC MOU") and to meet the conservation goals of the most recent IRP Update. See "—Integrated Water Resources Plan" above. Under the terms of the CUWCC MOU and Metropolitan's Conservation Credits Program, Metropolitan assists and co-funds member agency conservation programs designed to achieve greater water use efficiency in residential, commercial, industrial, institutional and landscape uses. Metropolitan uses its Water Stewardship Rate, which is charged for every acre-foot of water conveyed by Metropolitan, together with available grant funds, to fund conservation incentives and other water management programs. All users of Metropolitan's system benefit from the system capacity made available by investments in demand management programs like the Conservation Credits Program. See "METROPOLITAN REVENUES—Rate Structure—*Water Stewardship Rate*" in this Appendix A. Direct spending by Metropolitan on active conservation incentives, including rebates for water-saving plumbing fixtures, appliances and equipment, from fiscal year 1989-90 through fiscal year 2014-15 was about $487 million. On May 26, 2015, the Board approved an additional $350 million for Metropolitan's conservation budget, resulting in total funding of $450 million over fiscal years 2014-15 and 2015-16. As of March 2016, $340 million was rebated and an additional $18 million has been committed to the turf replacement program. The 2015 IRP Update estimates that 1,197,000 acre-feet of water will be conserved annually in southern California by 2025. See "—Integrated Water Resources Plan" and —Drought Response Actions" above.

In addition to ongoing conservation, Metropolitan has developed a WSDM plan, which splits resource actions into two major categories: Surplus Actions and Shortage Actions. See "—Water Surplus and Drought Management Plan" below. Conservation and water efficiency programs are part of Metropolitan's resource management strategy which makes up these Surplus and Shortage actions.

Metropolitan's plan for allocation of water supplies in the event of shortage (the "Water Supply Allocation Plan"; see "—Water Supply Allocation Plan" below) allocates Metropolitan's water supplies among its member agencies, based on the principles contained in the WSDM plan, to reduce water use and drawdowns from water storage reserves. Metropolitan's member agencies and retail water suppliers in Metropolitan's service area also have the ability to implement water conservation and allocation programs, and some of the retail suppliers in Metropolitan's service area have initiated conservation measures. The success of conservation measures in conjunction with the Water Supply Allocation Plan is evidenced as a contributing factor in the lower than budgeted water sales during fiscal years 2009-10, 2010-11 and 2011-12.

Legislation approved in November 2009 sets a statewide conservation target for urban per capita water use of 20 percent reductions by 2020 (with credits for existing conservation) at the retail level, providing an additional catalyst for conservation by member agencies and retail suppliers. Metropolitan's water sales projections incorporate an estimate of conservation savings that will reduce retail demands. Current projections include an estimate of additional water use efficiency savings that would result from local agencies reducing their per capita water use in response to the 20 percent by 2020 conservation savings goals required by recent legislation as well as an estimate of additional conservation that would have to occur to reach Metropolitan's IRP goal of reducing overall regional per capita water use by 20 percent by 2020.

**Water Surplus and Drought Management Plan**

The WSDM plan, which was adopted by Metropolitan's Board in April 1999, evolved from Metropolitan's experiences during the droughts of 1976-77 and 1987-92. The WSDM plan is a planning document that Metropolitan uses to guide inter-year and intra-year storage operations, and splits resource actions into two major categories: surplus actions and shortage actions. The surplus actions emphasize storage of surplus water inside the region, followed by storage of surplus water outside the region. The shortage actions emphasize critical storage programs and facilities and conservation programs that make up part of Metropolitan's response to shortages. Implementation of the plan is directed by a WSDM team, made up of Metropolitan staff, that meets regularly throughout the year and more frequently between November and April as hydrologic conditions develop. The WSDM team develops and recommends storage actions to senior management on a regular basis and provides updates to the Board on hydrological conditions, storage levels and planned storage actions through detailed reports.

**Water Supply Allocation Plan**

The Water Supply Allocation Plan was approved by Metropolitan's Board in February 2008 and has since been implemented three times, including the most recent in April 2015. The Water Supply Allocation Plan provides a formula for equitable distribution of available water supplies in case of extreme water shortages within Metropolitan's service area. Although the Act gives each of Metropolitan's member agencies a preferential entitlement to purchase a portion of the water served by Metropolitan (see "METROPOLITAN REVENUES—Preferential Rights"), historically, these rights have not been used in allocating Metropolitan's water. Metropolitan's member agencies and retail water suppliers in Metropolitan's service area also may implement water conservation and allocation programs within their respective service territories in times of shortage.

On December 9, 2014, the Board approved adjustments to the formula for calculating member agency supply allocations for future implementation of the Water Supply Allocation Plan. On April 14, 2015, the Board declared a Water Supply Condition 3 and the implementation of the Water Supply Allocation Plan at a Level 3 Regional Shortage Level, effective July 1, 2015 through June 30, 2016. Implementation of the Water Supply Allocation Plan at a Level 3 Regional Shortage Level, and response to the Governor's Order (see "—Drought Response Actions" above) is anticipated to reduce supplies delivered by Metropolitan to Metropolitan's member agencies to approximately 1.6 million acre-feet in fiscal year 2015-16. Due to improved hydrologic conditions, on May 10, 2016, the Board rescinded the Water Supply Allocation Plan, declared a Condition 2 Water Supply Alert, and decided not to implement the Water Supply Allocation Plan for fiscal year 2016-17. See "—Drought Response Actions" above.

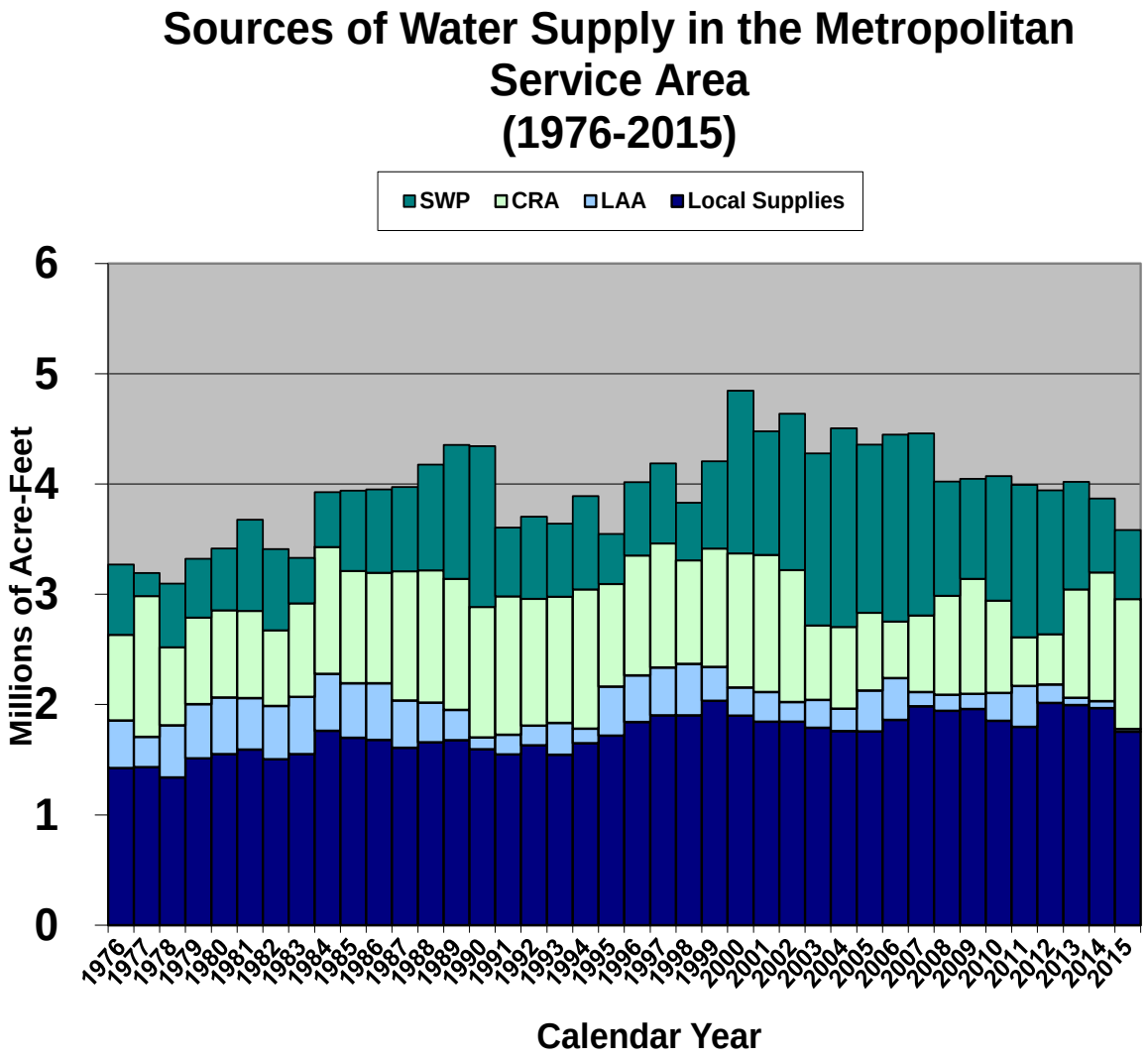
## REGIONAL WATER RESOURCES

The water supply for Metropolitan's service area is provided in part by Metropolitan and in part by non-Metropolitan sources available to members. Approximately 60 percent of the water supply for Metropolitan's service area is imported water received by Metropolitan from the CRA and the State Water Project and by the City of Los Angeles (the "City") from the Los Angeles Aqueduct. While the City is one of the largest water customers of Metropolitan, it receives a substantial portion of its water from the Los Angeles Aqueduct and local groundwater supply. The balance of water within the region is produced locally, primarily from groundwater supplies and runoff.

Metropolitan's member agencies are not required to purchase or use any of the water available from Metropolitan. Some agencies depend on Metropolitan to supply nearly all of their water needs, regardless of the weather. Other agencies, with local surface reservoirs or aqueducts that capture rain or snowfall, rely on Metropolitan more in dry years than in years with heavy rainfall, while others, with ample groundwater supplies, purchase Metropolitan water only to supplement local supplies and to recharge groundwater basins. The demand for supplemental supplies provided by Metropolitan is dependent on water use at the retail consumer level and the amount of locally supplied and conserved water. See "METROPOLITAN'S WATER

SUPPLY—Water Conservation" in this Appendix A and "—Local Water Supplies" below. Consumer demand and locally supplied water vary from year to year, resulting in variability in water sales. Future reliance on Metropolitan supplies will be dependent, among other things, on local projects and the amount of water, if any, that may be derived from sources other than Metropolitan. In recent years, supplies and demands have been affected by drought, water use restrictions, economic conditions, weather conditions and environmental laws, regulations and judicial decisions, as described in this Appendix A under "METROPOLITAN'S WATER SUPPLY." For information on Metropolitan's water sales revenues, see "METROPOLITAN REVENUES" and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

The following graph shows a summary of the regional sources of water supply for the years 1971 to 2014. Local supplies available within Metropolitan's service area are augmented by water imported by the City through the Los Angeles Aqueduct and Metropolitan supplies provided through the CRA and State Water Project.




*Source: Metropolitan.*

The major sources of water for Metropolitan's member agencies in addition to supplies provided by Metropolitan are described below.

**Los Angeles Aqueduct**

The City, through its Department of Water and Power ("LADWP"), operates its Los Angeles Aqueduct system to import water from the Owens Valley and the Mono Basin on the eastern slopes of the Sierra Nevada in eastern California. Prior to the 1990-1991 drought, the City had imported an average of 440,000 acre-feet of water annually from the combined Owens Valley/Mono Basin system, of which about 90,000 acre-feet came from the Mono Basin. Under the Mono Lake Basin Water Right Decision (Decision 1631) issued in September 1994, which revised LADWP's water rights licenses in the Mono Basin, the City is limited to export 4,500 acre-feet annually when Mono Basin is between 6,377 to 6,380 feet above mean sea level, 16,000 acre-feet annually when the elevation is between 6,380 to 6,391 feet above mean sea level. As of April 2015, Mono Lake elevations dropped to 6,379 feet above mean sea level which will limits its exports to 4,500 acre-feet annually.

Pursuant to the City's turnout agreement with DWR, Antelope Valley-East Kern Water Agency ("AVEK") and Metropolitan, LADWP commenced construction in 2010 of the turnout facilities along the California Aqueduct within AVEK's service area. Upon completion, expected in 2017 or 2018, the turnout will enable delivery of water from the California Aqueduct to the Los Angeles Aqueduct. Conditions precedent to such delivery of water include obtaining agreements for the transfer of non-State Water Project water directly from farmers, water districts or others in Northern and Central California, available capacity in the California Aqueduct and compliance with State Water Project water quality requirements. The agreement allows for use of the turnout for delivery of non-State Water Project water to the City in amounts not to exceed the supplies lost to the City as a result of its Eastern Sierra environmental obligations.

Historically, the Los Angeles Aqueduct and local groundwater supplies have been nearly sufficient to meet the City's water demands during normal water supply years. As a result, prior to the 1990-1991 drought, only about 13 percent of the City's water needs (approximately 82,000 acre-feet) were supplied by Metropolitan. From fiscal year 2000-01 to fiscal year 2014-15, approximately 31 to 75 percent of the City's total water requirements were met by Metropolitan. For the five fiscal years ended June 30, 2015, the City's water deliveries from Metropolitan averaged approximately 314,000 acre-feet per year, which constituted approximately 57 percent of the City's total water supply. Deliveries from Metropolitan to the City during this period varied between approximately 166,000 acre-feet per year and approximately 442,000 acre-feet per year. See "METROPOLITAN REVENUES—Principal Customers" in this Appendix A. According to LADWP's Year 2015 draft Urban Water Management Plan, the City is planning to increase locally-developed supplies including recycled water, new conservation, stormwater capture and local groundwater from the average for the five-year period ending June 30, 2015 of 14 percent to 47 percent of its normal year supplies by fiscal year 2039-40. Accordingly, the City's reliance on Metropolitan supplies is expected to decrease from the five year average ending June 30, 2015 of 57 percent to 11 percent of its normal year supplies by fiscal year 2039-40. However, the City may still purchase up to 319,000 acre-feet per year or 50 percent of its dry year supplies from Metropolitan until 2040. This corresponds to an increase from normal to dry years of approximately 244,000 acre-feet in potential demand for supplies from Metropolitan.

LADWP analyzed the additional impacts to the Los Angeles Aqueduct's water supply deliveries for various environmental projects aimed at improving air quality and fish and riparian habitat in the Owens Valley. In November 2014, LADWP reached an agreement over implementation of dust control measures on Owens Lake which saved approximately 12,000 to 14,000 acre-feet of water in 2015 and is expected to expand water savings in the future. LADWP reports that in 2015, 132,000 acre-feet of water was devoted to dust and environmental mitigation projects in the Owens Valley and Eastern Sierra, resulting in the need to purchase an equivalent amount of Metropolitan supply.

**Local Water Supplies**

Local water resources include groundwater production, recycled water production and diversion of surface flows. While local water resources are non-Metropolitan sources of water supply, Metropolitan has executed agreements for storage of Metropolitan supplies in local groundwater basins and provided incentives for local supply development. Metropolitan's primary incentive program for local supply development is the Local Resource Program ("LRP"), which provides financial incentives up to $340 per acre-foot of water production from local water recycling, groundwater recovery and seawater desalination projects. Member agencies and other local agencies have also independently funded and developed additional local supplies, including groundwater storage and clean-up, recycled water and desalination of brackish or high salt content water.

Metropolitan's water sales projections are based in part on projections of locally-supplied water. Projections of future local supplies are based on estimated yields from sources and projects that are currently producing water or are under construction at the time a water sales projection is made. Additional reductions in Metropolitan's water sales projections are made to account for future local supply augmentation projects, based on the IRP Update goals. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES—Water Sales Projections" and "METROPOLITAN'S WATER SUPPLY—The Integrated Water Resources Plan" in this Appendix A.

*Groundwater*. Demands for about 1.35 million acre-feet per year, about one-third of the annual water demands for approximately 18.7 million residents of Metropolitan's service area, are met from groundwater production. Local groundwater supplies are supported by recycled water, which is blended with imported water and recharged into groundwater basins, and also used for creating seawater barriers that protect coastal aquifers from seawater intrusion.

*Groundwater Storage Programs.* Metropolitan has executed agreements with a number of agencies to develop groundwater storage projects in its service area. These projects are designed to help meet the water delivery reliability goals of storing surplus imported supplies when available so that local agencies can withdraw stored groundwater during droughts or other periods of water supply shortage. In 2000, Metropolitan was allocated $45 million in State Proposition 13 bond proceeds to develop groundwater storage projects in Metropolitan's service area. The nine projects provide about 210,000 acre-feet of groundwater storage and have a combined extraction capacity of about 70,000 acre-feet per year. As of June 2015, the balance in the nine accounts was approximately 20,000 acre-feet. Metropolitan called the remaining acre-feet to be produced from these storage accounts during the 12-month period from July 2015 through June 2016. See table "Metropolitan's Water Storage Capacity and Water in Storage" under "METROPOLITAN'S WATER SUPPLY—Storage Capacity and Water in Storage" in this Appendix A.

*Recovered Groundwater.* Contamination of groundwater supplies is a growing threat to local groundwater production. Metropolitan has been supporting increased groundwater production and improved regional supply reliability by offering financial incentives to agencies for production and treatment of degraded groundwater since 1991. Metropolitan has executed agreements with local agencies to provide financial incentives to 24 projects that recover contaminated groundwater with total contract yields of about 112,500 acre-feet per year. During fiscal year 2014-15, Metropolitan provided incentives for approximately 57,500 acre-feet of recovered water under these agreements. Total groundwater recovery use under executed agreements is expected to grow to 82,000 acre-feet in 2020.

*Surface Runoff.* Local surface water resources consist of runoff captured in storage reservoirs and diversions from streams. Since 1980, agencies have used an average of 116,000 acre-feet per calendar year of local surface water. Local surface water supplies are heavily influenced by year to year local weather conditions, varying from a high of 188,000 acre-feet in calendar year 1998 to a low of 65,000 acre-feet in calendar year 2003.

*Conjunctive Use*. Conjunctive use is accomplished when groundwater basins are used to store imported supplies during water abundant periods. The stored water is used during shortages and emergencies with a corresponding reduction in surface deliveries to the participating agencies. Regional benefits include enhancing Metropolitan's ability to capture excess surface flows during wet years from both the State Water Project and Colorado River. Groundwater storage is accomplished using spreading basins, injection wells, and in-lieu deliveries where imported water is substituted for groundwater, and the groundwater not pumped is considered stored water.

Metropolitan has promoted conjunctive use at the local agency level under its Replenishment Service Program by discounting rates for imported water placed into groundwater or reservoir storage during wet months. The discounted rate and program rules encouraged construction of additional groundwater production facilities allowing local agencies to be more self-sufficient during shortages. (See "*–Groundwater Storage Programs*" above.) In calendar year 2006, Metropolitan delivered approximately 247,000 acre-feet of water as replenishment water. In calendar year 2007, Metropolitan delivered approximately 46,000 acre-feet of water as replenishment water through May 1, 2007 then discontinued such deliveries until May 10, 2011 when Metropolitan's Board authorized sale of up to 225,000 acre-feet of discounted replenishment service deliveries to member agencies for the remainder of calendar year 2011. In calendar year 2011, Metropolitan delivered approximately 225,000 acre-feet of this discounted replenishment water. No replenishment sales were budgeted for fiscal year 2012-13 and thereafter. The Replenishment Service Program was discontinued effective December 31, 2012. See "METROPOLITAN REVENUES—Classes of Water Service—*Replenishment*" and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES—Water Sales Projections" in this Appendix A.

*Recycled Water*. Metropolitan has supported recycled water use to offset water demands and improve regional supply reliability by offering financial incentives to agencies for production and sales of recycled water since 1982. Metropolitan has executed agreements with local agencies to provide financial incentives to 75 recycled water projects with total contract yields of about 306,400 acre-feet per year. During fiscal year 2014-15, Metropolitan provided incentives for approximately 184,700 acre-feet of reclaimed water under these agreements. Total recycled water use under executed agreements is expected to be approximately 179,000 acre-feet by 2020.

*Seawater Desalination.* Metropolitan's IRP includes seawater desalination as a part of the region's local supply that could help increase supply reliability in Metropolitan's service area and supports foundational actions to lay the groundwork for accelerating seawater desalination development as needed in the future. To encourage local development, Metropolitan has signed Seawater Desalination Program ("SDP") incentive agreements with three of its member agencies: Long Beach, Municipal Water District of Orange County ("MWDOC") and West Basin Municipal Water District. The SDP agreements provide incentives to the member agencies of up to $250 per acre-foot when the desalinated supplies are produced. Agreement terms are for the earlier of 25 years or through 2040 and are designed to phase out if Metropolitan's rates surpass the unit cost of producing desalinated seawater. SDP agreements are subject to final approval by Metropolitan's Board after review of the complete project description and environmental documentation. These projects are currently in the development phase and collectively are anticipated to produce up to 46,000 acre-feet annually. In addition, in October 2014, seawater desalination projects became eligible for funding under Metropolitan's Local Resources Program.

In late 2015, Poseidon Resources LLC ("Poseidon") completed and began operating the 56,000 acre-foot capacity Carlsbad Desalination Project (Carlsbad Project) and associated pipeline. The SDCWA has a purchase agreement with Poseidon for a minimum of 48,000 acre-feet per year with an option to purchase an addition 8,000 acre-feet per year. Other seawater desalination projects that could provide supplies to Metropolitan's service area are under development or consideration. Poseidon is also developing a 56,000 acre-feet per year plant in Huntington Beach which is currently in the permitting phase. SDCWA is also studying the potential for a seawater desalination plant in Camp Pendleton which would initially produce up to 56,000 acre-feet per year and potentially up to 168,000 acre-feet per year with a phased build out.

Calleguas Municipal Water District is studying the potential for a 20,000 to 80,000 acre-feet per year project in Ventura County. Otay Water District, located in San Diego County along the Mexico border, is considering the feasibility of purchasing water from a privately-developed seawater desalination project in Rosarito Beach, Mexico. The 56,000 to 112,000 acre-feet per year project is in the pilot testing phase, and could also supply Metropolitan's service area through exchange agreements. Approvals from a number of U.S. and Mexican federal agencies, along with State and local approvals, would be needed for the cross-border project to proceed.

## METROPOLITAN'S WATER DELIVERY SYSTEM

### Method of Delivery

Metropolitan's water delivery system is made up of three basic components: the CRA, the California Aqueduct of the State Water Project and Metropolitan's internal water distribution system. Metropolitan's delivery system is integrated and designed to meet the differing needs of its member agencies. Metropolitan seeks redundancy in its delivery system to assure reliability in the event of an outage. Current system expansion and other improvements will be designed to increase the flexibility of the system. Since local sources of water are generally used to their maximum each year, growth in the demand for water is partially met by Metropolitan. Accordingly, the operation of Metropolitan's water system is being made more reliable through the rehabilitation of key facilities as needed, improved preventive maintenance programs and the upgrading of Metropolitan's operational control systems. See "CAPITAL INVESTMENT PLAN" in this Appendix A.

*Colorado River Aqueduct.* Work on the CRA commenced in 1933 and water deliveries started in 1941. Additional facilities were completed by 1961 to meet additional requirements of Metropolitan's member agencies. The CRA is 242 miles long, starting at the Lake Havasu intake and ending at the Lake Mathews terminal reservoir. Metropolitan owns all of the components of the CRA, which include five pump plants, 64 miles of canal, 92 miles of tunnels, 55 miles of concrete conduits and 144 underground siphons totaling 29 miles in length. The pumping plants lift the water approximately 1,617 feet over several mountain ranges to Metropolitan's service area. See "METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct" in this Appendix A.

*State Water Project.* The initial portions of the State Water Project serving Metropolitan were completed in 1973. State Water Project facilities are owned and operated by DWR. Twenty-nine agencies have entered into contracts with DWR to receive water from the State Water Project. See "METROPOLITAN'S WATER SUPPLY—State Water Project" in this Appendix A.

*Internal Distribution System.* Metropolitan's internal water distribution system includes components that were built beginning in the 1930s and through the present. Metropolitan owns all of these components, including 14 dams and reservoirs, five regional treatment plants, over 800 miles of transmission pipelines, feeders and canals, and 16 hydroelectric plants with an aggregate capacity of 131 megawatts.

*Diamond Valley Lake.* Diamond Valley Lake, a man-made reservoir located southwest of the city of Hemet, California, covers approximately 4,410 acres and has capacity to hold approximately 810,000 acre-feet or 265 billion gallons of water. Diamond Valley Lake was constructed to serve approximately 90 percent of Metropolitan's service area by gravity flow. Imported water is delivered to Diamond Valley Lake during surplus periods. The reservoir provides more reliable delivery of imported water from the State Water Project and the CRA during summer months, droughts and emergencies. In addition, Diamond Valley Lake is capable of providing more than one-third of Southern California's water needs from storage for approximately six months after a major earthquake (assuming that there has been no impairment of Metropolitan's internal distribution network). See the table "Metropolitan's Water Storage Capacity and Water in Storage" under "METROPOLITAN'S WATER SUPPLY—Storage Capacity and Water in Storage" in this Appendix A for the amount of water in storage at Diamond Valley Lake. Excavation at the project site

began in May 1995. Diamond Valley Lake was completed in March 2000, at a total cost of $2 billion, and was in full operation in December 2001.

*Inland Feeder.* The Inland Feeder is a 44-mile-long conveyance system that connects the State Water Project to Diamond Valley Lake and the CRA. The Inland Feeder provides greater flexibility in managing Metropolitan's major water supplies and allows greater amounts of State Water Project water to be accepted during wet seasons for storage in Diamond Valley Lake. In addition, the Inland Feeder increases the conveyance capacity from the East Branch of the State Water Project by 1,000 cubic feet per second, allowing the East Branch to operate up to its full capacity. Construction of the Inland Feeder was completed in September 2009 at a total cost of $1.14 billion.

*Operations Control Center.* Metropolitan's water conveyance and distribution system operations are coordinated from the Operations Control Center ("OCC") located in the Eagle Rock area of Los Angeles. The OCC plans, balances and schedules daily water and power operations to meet member agencies' demands, taking into consideration the operational limits of the entire system.

**Water Treatment**

Metropolitan filters and disinfects water at five water treatment plants: the F.E. Weymouth Treatment Plant, the Joseph Jensen Treatment Plant, the Henry J. Mills Treatment Plant, the Robert B. Diemer Treatment Plant and the Robert A. Skinner Treatment Plant. The plants treat an average of between 0.9 billion and 1.2 billion gallons of water per day, and have a maximum capacity of approximately 2.6 billion gallons per day. Approximately 55 percent of Metropolitan's water deliveries are treated water.

Federal and state regulatory agencies continually monitor and establish new water quality standards. New water quality standards could affect availability of water and impose significant compliance costs on Metropolitan. The Safe Drinking Water Act ("SDWA") was amended in 1986 and again in 1996. The SDWA establishes drinking water quality standards, monitoring, public notification and enforcement requirements for public water systems. To achieve these objectives, the U.S. Environmental Protection Agency ("USEPA"), as the lead regulatory authority, promulgates national drinking water regulations and develops the mechanism for individual states to assume primary enforcement responsibilities. For the first time in more than 30 years, the USEPA recently revised the federal Water Quality Standards ("WQS") regulation that helps to implement the Clean Water Act ("CWA"). As a result of the WQS changes, states and authorized tribes may need to consider and implement new provisions, or revise existing provisions, in their WQS. Also, WQS may be used in determining National Pollutant Discharge Elimination System permit limits or in implementing other CWA programs. The revised WQS regulation became effective on October 20, 2015. The SWRCB Division of Drinking Water ("DDW") has lead authority over California water agencies. Metropolitan continually monitors new water quality laws and regulations and frequently comments on new legislative proposals and regulatory rules.

**Seismic Considerations**

*General.* Although the magnitude of damages resulting from a significant seismic event are impossible to predict, Metropolitan's water conveyance and distribution facilities are designed to either withstand a maximum probable seismic event or to minimize the potential repair time in the event of damage. The five pumping plants on the CRA have been buttressed to better withstand seismic events. Other components of the CRA are monitored for any necessary rehabilitation and repair. Metropolitan personnel and independent consultants periodically reevaluate the internal water distribution system's vulnerability to earthquakes. As facilities are evaluated and identified for seismic retrofitting, they are prioritized, with those facilities necessary for delivering or treating water scheduled for upgrade before non-critical facilities. However, major portions of the California Aqueduct and the CRA are located near major earthquake faults, including the San Andreas Fault. A significant earthquake could damage structures and interrupt the supply of water, adversely affecting Metropolitan's revenues and its ability to pay its obligations. Therefore, emergency supplies are stored for use throughout Metropolitan's service area, and a six-month reserve supply

of water normally held in local storage (including emergency storage in Diamond Valley Lake) provides reasonable assurance of continuing water supplies during and after such events.

Metropolitan has an ongoing surveillance program that monitors the safety and structural performance of its 14 dams and reservoirs. Operating personnel perform regular inspections that include monitoring and analyzing seepage flows and pressures. Engineers responsible for dam safety review the inspection data and monitor the horizontal and vertical movements for each dam. Major on-site inspections are performed at least twice each year. Instruments that transmit seismic acceleration time histories for analysis any time a dam is subjected to strong motion during an earthquake are located at a number of selected sites.

In addition, Metropolitan has developed an emergency plan that calls for specific levels of response appropriate to an earthquake's magnitude and location. Included in this plan are various communication tools as well as a structured plan of management that varies with the severity of the event. Pre-designated personnel follow detailed steps for field facility inspection and distribution system patrol. Approximately 40 employees are designated to respond immediately under certain identifiable seismic events. An emergency operations center is maintained at the OCC. The OCC, which is specifically designed to be earthquake resistant, contains communication equipment, including a radio transmitter, microwave capability and a response line linking Metropolitan with its member agencies, DWR, other utilities and the State's Office of Emergency Services.

Metropolitan also maintains machine, fabrication and coating shops at its facility in La Verne, California. Several construction contracts have been completed over the last few years to upgrade and expand these shops. A total of nearly $37 million has been invested to enhance Metropolitan's capacity to not only provide fabrication and coating services for planned rehabilitation work, maintenance activities, and capital projects, but to also perform emergency fabrication support to Metropolitan and its member agencies. Metropolitan has also maintained reimbursable agreements with DWR to perform machining, fabrication, and coating services for critical repair and rehabilitation of State Water Project facilities. These agreements have enhanced timely and cost-effective emergency response capabilities. Materials to fabricate pipe and other appurtenant fittings are kept in inventory at the La Verne site. In the event of earthquake damage, Metropolitan has taken measures to provide the design and fabrication capacity to fabricate pipe and related fittings. Metropolitan is also staffed to perform emergency repairs and has pre-qualified contractors for emergency repair needs at various locations throughout Metropolitan's service area.

*State Water Project Facilities.* The California Aqueduct crosses all major faults either by canal at ground level or by pipeline at very shallow depths to ease repair in case of damage from movement along a fault. State Water Project facilities are designed to withstand major earthquakes along a local fault or magnitude 8.1 earthquakes along the San Andreas Fault without major damage. Dams, for example, are designed to accommodate movement along their foundations and to resist earthquake forces on their embankments. Earthquake loads have been taken into consideration in the design of project structures such as pumping and power plants. The location of check structures on the canal allows for hydraulic isolation of the fault-crossing repair.

While the dams, canals, pump stations and other constructed State Water Project facilities have been designed to withstand earthquake forces, the critical supply of water from Northern California must traverse the Bay-Delta through hundreds of miles of varying levels of engineered levees that are susceptible to major failures due to flood and seismic risk. In the event of a failure of the Bay-Delta levees, the quality of the Bay-Delta's water could be severely compromised as salt water comes in from the San Francisco Bay. Metropolitan's supply of State Water Project water would be adversely impacted if pumps that move Bay-Delta water southward to the Central Valley and Southern California are shut down to contain the salt water intrusion. Metropolitan estimates that stored water supplies, CRA supplies and local water resources that would be available in case of a levee breach or other interruption in State Water Project supplies would meet demands in Metropolitan's service area for approximately twelve months. See "METROPOLITAN'S

WATER SUPPLY—Storage Capacity and Water in Storage" in this Appendix A. Since the State and Federal governments control the Bay-Delta levees, repair of any levee failures would be the responsibility of and controlled by the State and Federal governments.

Metropolitan, in cooperation with the State Water Contractors, developed recommendations to DWR for emergency preparedness measures to maintain continuity in export water supplies and water quality during emergency events. These measures include improvements to emergency construction materials stockpiles in the Bay-Delta, improved emergency contracting capabilities, strategic levee improvements and other structural measures of importance to Bay-Delta water export interests, including development of an emergency freshwater pathway to export facilities in a severe earthquake. DWR utilized $12 million in fiscal year 2007-08 for initial stockpiling of rock for emergency levee repairs and development of Bay-Delta land and marine loading facilities and has identified future funding for expanded stockpiles.

*Perris Dam.* Perris Dam forms Lake Perris, the terminal reservoir for the State Water Project in Riverside County, with maximum capacity of approximately 130,000 acre-feet of water. DWR reported in July 2005 that seismic studies indicate that DWR's Perris Dam facility could sustain damage from moderate earthquakes along the San Jacinto or San Andreas faults due to potential weaknesses in the dam's foundation. In late 2005, DWR lowered the water level in the reservoir by about 25 feet and reduced the amount of water stored in the reservoir to about 75,000 acre-feet as DWR evaluated alternatives for repair of the dam. In December 2006, DWR completed a study identifying various repair options, began additional geologic exploration along the base of Perris Dam and started preliminary design. DWR's preferred alternative is to repair the dam to restore the reservoir to its historical level. On November 11, 2011, DWR certified the final EIR and filed a Notice of Determination stating its intent to proceed with the preferred alternative. DWR estimates that repairs will cost approximately $141 million to be completed in mid-2017. Under the original allocation of joint costs for this facility, the State would have paid approximately six percent of the repair costs. However, because of the recreational benefit this facility provides to the public, the Legislature has approved a recommendation from DWR that the State assume 32.2 percent of these repair costs. The remaining 67.8 percent of repairs costs will be paid for by the three agencies that use the water stored in Lake Perris: Metropolitan (42.9 percent), Desert Water Agency (3.0 percent) and Coachella Valley Water District (21.9 percent). See "METROPOLITAN EXPENDITURES–State Water Contract Obligations" in this Appendix A.

**Security Measures**

Metropolitan conducts ground and air patrols of the CRA and monitoring and testing at all treatment plants and along the CRA. Similarly, DWR has in place security measures to protect critical facilities of the State Water Project, including both ground and air patrols of the State Water Project.

Although Metropolitan has constructed redundant systems and other safeguards to ensure its ability to continually deliver water to its customers, and DWR has made similar efforts, a terrorist attack or other security breach against water facilities could materially impair Metropolitan's ability to deliver water to its customers, its operations and revenues and its ability to pay its obligations.

## CAPITAL INVESTMENT PLAN

**General Description**

Metropolitan's current Capital Investment Plan (the "Capital Investment Plan" or "CIP") involves expansion and rehabilitation of existing facilities and construction of new facilities to meet future water demands, ensure system reliability as well as enhance operational efficiency and flexibility, and comply with water quality regulations. Metropolitan's CIP is regularly reviewed and updated. Implementation and construction of specific elements of the program are subject to Board approval, and the amount and timing of borrowings will depend upon, among other factors, status of construction activity and water demands within Metropolitan's service area. From time to time projects that have been undertaken are delayed, redesigned or

deferred by Metropolitan for various reasons and no assurance can be given that a project in the CIP will be completed in accordance with its original schedule or that any project will be completed as currently planned.

**Projection of Capital Investment Plan Expenditures**

The table below sets forth the projected CIP expenditures in the adopted biennial budget for fiscal years 2016-17 and 2017-18, including replacement and refurbishment expenditures, by project type for the fiscal years ending June 30, 2017 through 2021. This estimate is updated bi-annually as a result of the periodic review and adoption of the capital budget by Metropolitan's Board of Directors. See "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

**CAPITAL INVESTMENT PLAN**
**PROJECTION OF EXPENDITURES[(1) (2)]**
**(Fiscal Years Ended June 30 - Dollars in Thousands)**

| Cost of Service | 2017 | 2018 | 2019 | 2020 | 2021 | Total |
|---|---|---|---|---|---|---|
| Conveyance &Aqueduct | $19,772 | $32,934 | $32, 433 | $30,396 | $29,042 | $144,578 |
| Storage | 1,455 | -0- | - | - | - | 1,455 |
| Distribution | 50,818 | 80,197 | 95,411 | 107,446 | 126,015 | 459,887 |
| Treatment | 88,345 | 67,691 | 55,746 | 50,292 | 37,678 | 299,753 |
| Administrative and General | 36,649 | 18,846 | 16,325 | 11,398 | 7,229 | 90,448 |
| Hydroelectric | 2,960 | 332 | 84 | 468 | 36 | 3,880 |
| **Total[(2)]** | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $1,000,000 |

*Source: Metropolitan.*

(1) Fiscal years 2016-17 through 2020-21 based on the adopted biennial budget for fiscal years 2016-17 and 2017-18. Totals are rounded.
(2) Annual totals include replacement and refurbishment expenditures for fiscal years 2016-17 through 2020-21 of $115 million, $159 million, $176 million, $182 million, and $192 million, respectively, for a total of $823 million for fiscal years 2016-17 through 2020-21.

The above projections do not include amounts for contingencies, but include escalation at 2.77 percent per year for projects for which formal construction contracts have not been awarded. Additional capital costs may arise in the future as a result of, among other things, federal and State water quality regulations, project changes and mitigation measures necessary to satisfy environmental and regulatory requirements, and for additional facilities. See "METROPOLITAN'S WATER DELIVERY SYSTEM—Water Treatment" in this Appendix A.

**Capital Investment Plan Financing**

The CIP requires funding from debt financing (see "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A) as well as from pay-as-you-go funding. The Board has adopted an internal funding objective to fund 60 percent of capital program expenditures required for replacements and refurbishments of Metropolitan facilities from current revenues. The remainder of capital program expenditures will be funded through the issuance from time to time of water revenue bonds, which are payable from Net Operating Revenues. However, as in prior years, pay-as-you-go funding may be reduced or increased by the Board during the fiscal year.

On April 8, 2014, Metropolitan's Board approved a total of $466 million for pay-as-you-go expenditures as part of the biennial budget for fiscal year 2014-15 and fiscal year 2015-16. These

pay-as-you-go funds, together with funds available in the Replacement and Refurbishment Fund, were expected to fund $513 million in CIP expenditures for fiscal year 2014-15 and fiscal year 2015-16. On July 14, 2015, Metropolitan's Board approved $264 million to acquire various properties in Riverside and Imperial Counties, with $160 million funded from the Replacement and Refurbishment Fund and the remaining amount from unrestricted reserves. On October 13, 2015, Metropolitan's Board adopted an ordinance that made certain findings that are required prior to the issuance of new revenue bonds in an amount not to exceed $500 million. On December 17, 2015, Metropolitan issued $208,255,000 Water Revenue Bonds, 2015 Authorization Series A, to reimburse pay-as-you-go expenditures for CIP expenditures for fiscal year 2014-15 and fiscal year 2015-16 and for future CIP expenditures.

Metropolitan's budget assumptions for the adopted biennial budget for fiscal years 2016-17 and 2017-18 and projections for later years provide for the issuance of approximately $80 million of additional water revenue bonds to fund the CIP in each of fiscal years 2016-17 through 2020-21 . The cost of these projected bond issues are reflected in the financial projections under, "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

On March 8, 2016, Metropolitan's Board authorized the General Manager to enter into an agreement to purchase certain property from Delta Wetlands Properties, LLC in Contra Costa, San Joaquin, and Solano Counties. If the purchase of these properties is completed, Metropolitan expects to issue bonds under the Master Subordinate Resolution at the end of June 2016 in an aggregate principal amount of $175 million. See "METROPOLITAN EXPENDITURES— Subordinate Revenue Obligations" in this Appendix A.

**Major Projects of Metropolitan's Capital Investment Plan**

*Oxidation Retrofit Facilities.* The oxidation retrofit facilities program includes the design and construction of oxidation facilities and appurtenances at all of Metropolitan's treatment plants. This program is intended to allow Metropolitan to meet drinking water standards for disinfection by-products and reduce taste and odor incidents. The first phase of the oxidation retrofit program, at Metropolitan's Henry J. Mills Treatment Plant in Riverside County, was completed in 2003. Oxidation retrofit at the Joseph Jensen Treatment Plant was completed July 1, 2005. The cost for these two projects was approximately $236.4 million. Oxidation retrofit at the Robert A. Skinner plant was substantially completed in December 2009 and operational in 2010, with additional follow-up work planned for completion in June 2018. Expenditures at the Skinner plant through March 2016 were $244.0 million. Total oxidation program costs at the Skinner plant are estimated to be $245.5 million. Construction of the oxidation retrofit facilities at the Robert B. Diemer Treatment Plant was completed in June 2013. All testing and start-up work was completed in 2015 and the new facilities are in full operation. Program expenditures at the Diemer plant through March 2016 were $363.3 million and the total program cost is projected to be $370.2 million. Expenditures at the Weymouth plant through March 2016 were $218.4 million and completion is expected in fiscal year 2018-19. Total oxidation program costs at the F.E. Weymouth plant are estimated to be $270.0 million.

*F.E. Weymouth Treatment Plant Improvements*. The F.E. Weymouth Treatment Plant was built in 1938 and subsequently expanded several times over the following 25 years. It is Metropolitan's oldest water treatment facility. Metropolitan has completed several upgrades and refurbishment/replacement projects to maintain the plant's reliability and improve its efficiency. These include power systems upgrades, a residual solids dewatering facility, refurbishment/replacement of the mechanical equipment in two of the eight flocculation and settling basins, a new plant maintenance facility, new chemical feed systems and storage tanks, replacement of the plant domestic/fire water system, seismic upgrades to the plant inlet structure and filter buildings, and a new chlorine handling and containment facility. Planned projects over the next several years include refurbishment of the plant's filters and settling basins, seismic retrofits to the administration building, and replacement of the valves used to control filter operation. The cost estimate for all prior and projected improvements at the Weymouth plant, not including the ozone facilities, is approximately $406.9 million, with $228 million spent through March 2016. Budgeted aggregate capital expenditures for improvements at the Weymouth plant for fiscal years 2016-17 and 2017-18 are $31.5 million.

*Robert B. Diemer Treatment Plant Improvements*. The Robert B. Diemer Treatment Plant was built in 1963 and subsequently expanded in 1968. It is Metropolitan's second oldest water treatment facility and has a capacity to treat 520 million gallons of water a day. Several upgrades and refurbishment/replacement projects have been completed at the Diemer plant, including power system upgrades, a new residual solids dewatering facility, new vehicle and plant maintenance facilities, new chemical feed systems and storage tanks, a new chlorine handling and containment facility, construction of a roller-compacted concrete slope stabilization system and a new secondary access road. Planned projects over the next several years include refurbishment of the plant's settling basins, seismic retrofits to the filter buildings and administration building, and replacement of the valves used to control filter operation. The current cost estimate for all prior and projected improvements at the Diemer Treatment Plant, not including the ozone facilities, is approximately $381.1 million, with $220 million spent through March 2016. Budgeted aggregate capital expenditures for improvements at the Diemer plant for fiscal years 2016-17 and 2017-18 are $42.3 million.

*Colorado River Aqueduct Facilities*. Deliveries through the CRA began in 1941. Through annual inspections and maintenance activities, the performance and reliability of the various components of the CRA are regularly evaluated. A major overhaul of the pump units at the five pumping plants was completed in 1988. Refurbishment or replacement of many of the electrical system components, including the transformers, circuit breakers and motor control centers, is currently under way. Projects completed over the past 10 years include replacement of high voltage circuit breakers and transformers at the five pumping plant switchyards, refurbishment of operators and power centers on the head gates downstream of the pumping plants, refurbishment/replacement of 15 isolation/control gates, replacement of cast iron pipe and other components at over 200 outlet structures with stainless steel components, replacement of pumping plant inlet trash racks, replacement of several miles of deteriorated concrete canal liner, and replacement of the outlet gates and appurtenant electrical, mechanical, and control systems at the Copper Basin Reservoir. Additionally, many of the mechanical and electrical components at all five pumping plants will be evaluated and replaced or refurbished over the next several years. The currently projected cost estimate for all prior and planned refurbishment or replacement projects is $650.2 million. Costs through March 2016 were $188.5 million. Budgeted aggregate capital expenditures for improvements on the CRA for fiscal years 2016-17 and 2017-18 are $87.9 million.

*Distribution System – Prestressed Concrete Cylinder Pipe.* Metropolitan's distribution system (see "METROPOLITAN'S WATER DELIVERY SYSTEM" in this Appendix A) is comprised of approximately 830 miles of pipelines ranging in diameter from 30 inches to over 200 inches. 163 miles of the distribution system is made up of prestressed concrete cylinder pipe ("PCCP"). In response to PCCP failures experienced by several water agencies, Metropolitan initiated the PCCP Assessment Program in December 1996 to evaluate the condition of Metropolitan's PCCP lines and investigate inspection and refurbishment methods. As a result, Metropolitan has identified and made repairs to several sections of PCCP. The costs for these repairs through March 2016 were $75.4 million. Rather than continue to make spot repairs to pipe segments, Metropolitan has initiated a long-term capital program to rehabilitate approximately 100 miles of PCCP in five pipelines. This rehabilitation, which is currently planned to consist of relining the pipelines with a steel liner, will be performed in stages to minimize delivery impacts to customers. Priority lining repairs have begun on portions of the Second Lower Feeder and Sepulveda Feeder. This effort is anticipated to take 8 to 10 years to complete at a cost of approximately $606 million. Final design is currently underway. Design for rehabilitation of the remaining four pipelines will be initiated over the next several years. The estimated cost to reline all 100 miles of PCCP is approximately $2.6 billion.

*Distribution System – Refurbishments and Improvements.* In addition to the long-term program to rehabilitate Metropolitan's PCCP lines, several other components of the distribution system are being refurbished and/or improved. Past and ongoing projects to ensure the reliability of the distribution system, primarily due to age, include multiple replacements or refurbishments of isolation and control valves and gates, refurbishment to pressure control and hydroelectric power facilities, and various other upgrades totaling approximately $183.3 million through March 2016. The currently projected cost estimate for the prior and planned refurbishment or replacement projects is $750 million. For fiscal years 2016-17 and 2017-18,

budgeted aggregate capital expenditures for improvements on the distribution system, other than PCCP rehabilitation, are $68.8 million.

Also, as a result of the current statewide drought, Metropolitan initiated a project to enable reverse-flow through a series of existing pipelines to deliver water stored in Diamond Valley Lake to Metropolitan's Henry J. Mills Treatment Plant, which has historically received only raw water from DWR's State Water Project. Construction contracts were awarded in June and August 2014 to complete this effort. The total estimated cost for this project is approximately $38.8 million. The majority of the work to allow reverse-flow deliveries from Diamond Valley Lake was completed in April 2015. Costs through March 2016 were approximately $34.2 million.

## METROPOLITAN REVENUES

### General

Until water deliveries began in 1941, Metropolitan's activities were, by necessity, supported entirely through the collection of *ad valorem* property taxes. Since the mid-1980s, water sales revenues have provided approximately 75 to 85 percent of total revenues and *ad valorem* property taxes have accounted for about 10 percent of revenues, declining to six percent of revenues in fiscal year 2014-15. See "— Revenue Allocation Policy and Tax Revenues" below. The remaining revenues have been derived principally from the sale of hydroelectric power, interest on investments and additional revenue sources (water standby charges and availability of service charges) beginning in 1992. *Ad valorem* taxes do not constitute a part of Operating Revenues and are not available to make payments with respect to the water revenue bonds issued by Metropolitan.

The basic rate for untreated water for domestic and municipal uses is $594 per acre-foot for Tier 1 water, effective January 1, 2016. This rate will increase to $666 effective January 1, 2017, and to $695 effective January 1, 2018. See "—Rate Structure" and "—Water Rates by Water Category" below. The *ad valorem* tax rate for Metropolitan purposes has gradually been reduced from a peak equivalent rate of 0.1250 percent of full assessed valuation in fiscal year 1945-46 to 0.0035 percent of full assessed valuation for fiscal year 2015-16. The rates charged by Metropolitan represent the cost of Metropolitan wholesale water service to its member agencies, and not the cost of water to the ultimate consumer. Metropolitan does not exercise control over the rates charged by its member agencies or their subagencies to their customers.

### Summary of Receipts by Source

The following table sets forth Metropolitan's sources of receipts for the five fiscal years ended June 30, 2015. The table provides cash basis information, which is unaudited. Audited financial statements for the fiscal years ended June 30, 2015 and June 30, 2014 and unaudited financial statements for the nine months ended March 31, 2016 and March 31, 2015 are provided in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."

**SUMMARY OF RECEIPTS BY SOURCE[1]**
**Fiscal Years Ended June 30**
**(Dollars in Millions)**

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| Water Sales[2] | $995.6 | $1,062.5 | $1,250.9 | $1,455.3 | $1,448.7 |
| Net Tax Collections[3] | 88.0 | 90.1 | 96.5 | 98.4 | 103.0 |
| Additional Revenue Sources[4] | 153.5 | 167.1 | 174.2 | 179.8 | 200.1 |
| Interest on Investments | 18.9 | 17.8 | 11.7 | 14.8 | 17.0 |
| Hydroelectric Power Sales | 22.1 | 31.0 | 26.3 | 15.2 | 8.3 |
| Other Collections & Trust Funds[5] | 61.0 | 53.6 | 19.9 | 20.6 | 85.0 |
| Total Receipts | $1,339.1 | $1,422.1 | $1,579.5 | $1,784.1 | $1,862.1 |

*Source: Metropolitan.*

(1) Does not include any proceeds from the sale of bonded indebtedness.
(2) Gross receipts in each year are for sales in the twelve months ended April 30 of such year. Water sales revenues include revenues from water wheeling and exchanges. See "METROPOLITAN REVENUES—Wheeling and Exchange Charges" in this Appendix A. Includes $25.7 million in fiscal year 2010-11 from the Calleguas Municipal Water District related to termination of the Las Posas water storage program.
(3) *Ad valorem* taxes levied by Metropolitan are applied solely to the payment of outstanding general obligation bonds of Metropolitan and to State Water Contract obligations.
(4) Includes receipts derived from water standby charges, readiness-to-serve, and capacity charges. See "—Rate Structure" and "—Additional Revenue Components" below.
(5) In fiscal year 2010-11 includes $10.8 million reimbursement from State Proposition 13 bond funds and $28.2 million from the termination of the Las Posas water storage program. In fiscal year 2011-12, includes $27.5 million from CVWD for delivery of 105,000 acre-feet under an exchange agreement between Metropolitan and CVWD. In fiscal year 2014-15, includes the transfer of $78.1 million from the Water Management Fund, which funded a like amount of water conservation and water purchase expenditures. See the table entitled "Summary of Expenditures" in "METROPOLITAN EXPENDITURES—General" in this Appendix A.

### Revenue Allocation Policy and Tax Revenues

The Board determines the water revenue requirement for each fiscal year after first projecting the *ad valorem* tax levy for that year. The tax levy for any year is subject to limits imposed by the State Constitution, the Act and Board policy and to the requirement under the State Water Contract that in the event that Metropolitan fails or is unable to raise sufficient funds by other means, Metropolitan must levy upon all property within its boundaries not exempt from taxation a tax or assessment sufficient to provide for all payments under the State Water Contract. See "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A. From fiscal year 1990-91 through 2012-13, and pursuant to the Act, the tax levy was set to not exceed the amount needed to pay debt service on Metropolitan's general obligation bonds and to satisfy a portion of Metropolitan's State Water Contract obligation. However, Metropolitan has authority to impose a greater tax levy to pay debt service on Metropolitan's general obligation bonds and to satisfy Metropolitan's State Water Contract obligations in full if, following a public hearing, the Board finds that such revenue is essential to its fiscal integrity. For each fiscal year since 2013-14, the Board has exercised that authority and voted to suspend the tax limit clause in the Act, maintaining the fiscal year 2012-13 *ad valorem* tax rate for fiscal years 2013-14 through 2016-17. Any deficiency between tax levy receipts and Metropolitan's share of debt service obligations on general obligation bonded debt issued by the State is expected to be paid from Operating Revenues, as defined in the Master Resolution.

### Water Sales Revenues

*Authority*. Water rates are established by the Board and are not subject to regulation or approval by the Public Utilities Commission of California or by any other local, State or federal agency. In accordance with the Act, water rates must be uniform for like classes of service. Metropolitan has provided three classes of water service: (1) full service; (2) replenishment (discontinued effective December 31, 2012); and

(3) interim agricultural (discontinued effective December 31, 2012). See "—Classes of Water Service" below.

No member agency of Metropolitan is obligated to purchase water from Metropolitan. However, 21 of Metropolitan's 26 member agencies have entered into 10-year voluntary water supply purchase orders effective through December 31, 2024. See "—Member Agency Purchase Orders" below. Consumer demand and locally supplied water vary from year to year, resulting in variability in water sales revenues. Metropolitan uses its financial reserves and budgetary tools to manage the financial impact of the variability in revenues due to fluctuations in annual water sales. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

*Payment Procedure*. Water is delivered to the member agencies on demand and is metered at the point of delivery. Member agencies are billed monthly and a late charge of one percent of the delinquent payment is assessed for a payment that is delinquent for no more than five business days. A late charge of two percent of the amount of the delinquent payment is charged for a payment that is delinquent for more than five business days for each month or portion of a month that the payment remains delinquent. Metropolitan has the authority to suspend service to any member agency delinquent for more than 30 days. Delinquencies have been rare; in such instances late charges have been collected. No service has been suspended because of delinquencies.

*Water Sales*. The following table sets forth the acre-feet of water sold and water sales (including sales from water wheeling and exchanges) for the five fiscal years ended June 30, 2015. Water sales revenues of Metropolitan for the three fiscal years ended June 30, 2013 through June 30, 2015, respectively, on an accrual basis, are shown in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."

**SUMMARY OF WATER SOLD AND WATER SALES**
**Fiscal Years Ended June 30**

| Year | Acre-Feet[1] Sold | Water Sales[4] (in millions) | Dollars Per Acre-Foot[5] | Average Dollars Per 1,000 Gallons |
|---|---|---|---|---|
| 2011[2] | 1,632,277 | $995.6 | $610 | $1.87 |
| 2012[3] | 1,676,855 | 1,062.5 | 634 | 1.94 |
| 2013 | 1,856,685 | 1,282.5 | 691 | 2.12 |
| 2014 | 2,043,720 | 1,484.6 | 726 | 2.23 |
| 2015 | 1,905,502 | 1,383.0 | 726 | 2.23 |

*Source: Metropolitan.*

(1) Year ended April 30 for fiscal years 2010-11 and 2011-12, water sales recorded on a cash-basis. Beginning fiscal year 2012-13, water sales recorded on an accrual basis, with water sales for the fiscal year ended June 30.
(2) Includes the sale of 34,519 acre-feet and the receipt of $25.7 million from the Calleguas Municipal Water District related to termination of the Las Posas water storage program.
(3) Includes 225,000 acre-feet of replenishment sales.
(4) Water Sales in fiscal years 2010-11 and 2011-12 are recorded on a cash basis for sales in the twelve months ended April 30 of such year, with rates and charges invoiced in May and payable by the last business day of June of each year. Water sales for fiscal years 2012-13 thru 2014-15 are recorded on a modified accrual basis for sales in the twelve months ended June 30 of such year, with rates and charges recorded as revenues in the same months as invoiced. Includes revenues from water wheeling and exchanges. See "METROPOLITAN REVENUES—Wheeling and Exchange Charges" in this Appendix A.
(5) Gross water sales divided by acre-feet sold. An acre-foot is approximately 326,000 gallons. See table entitled "SUMMARY OF WATER RATES" under "-Water Rates by Water Category" below for a description of water rates and classes of service.

**Rate Structure**

The following rates and charges are elements of Metropolitan's rate structure for full service water deliveries:

*Tier 1 and Tier 2 Water Supply Rates*. The Tier 1 and Tier 2 Water Supply Rates are designed to recover Metropolitan's water supply costs. The Tier 2 Supply Rate is designed to reflect Metropolitan's costs of acquiring new supplies. Member agencies are charged the Tier 1 or Tier 2 Water Supply Rate for water purchases, as described under "–Member Agency Purchase Orders" below.

*System Access Rate*. The System Access Rate is intended to recover a portion of the costs associated with the conveyance and distribution system, including capital, operating and maintenance costs. All users (including member agencies and third-party entities wheeling or exchanging water; see "—Wheeling and Exchange Charges" below) of the Metropolitan system pay the System Access Rate.

*Water Stewardship Rate*. The Water Stewardship Rate is charged on a dollar per acre-foot basis to collect revenues to support Metropolitan's financial commitment to conservation, water recycling, groundwater recovery and other demand management programs approved by the Board. The Water Stewardship Rate is charged for every acre-foot of water conveyed by Metropolitan because all users of Metropolitan's system benefit from the system capacity made available by investments in demand management programs.

*System Power Rate*. The System Power Rate is charged on a dollar per acre-foot basis to recover the cost of power necessary to pump water from the State Water Project and Colorado River through the conveyance and distribution system for Metropolitan's member agencies. The System Power Rate is charged for all Metropolitan supplies. Entities wheeling non-Metropolitan water supplies will pay the actual cost of power to convey water on the State Water Project, the CRA or the Metropolitan distribution system, whichever is applicable.

*Treatment Surcharge*. Metropolitan charges a treatment surcharge on a dollar per acre-foot basis for treated deliveries. The treatment surcharge is set to recover the cost of providing treated water service, including capital and operating cost.

*Delta Supply Surcharge*. On April 13, 2010, Metropolitan's Board adopted a Delta Supply Surcharge of $51 and $58 per acre-foot, effective January 1, 2011 and January 1, 2012, respectively, and applicable to all Tier 1, Interim Agricultural Water Program and Replenishment water rates. The Delta Supply Surcharge was designed to recover the additional supply costs Metropolitan faces as a result of pumping restrictions associated with the United States Fish and Wildlife Service biological opinion on Delta smelt and other actions to protect endangered fish species. The Delta Surcharge was intended to remain in effect until a long-term solution for the Bay-Delta is achieved. Metropolitan anticipated that the Delta Supply Surcharge would be reduced or suspended as interim Delta improvements ease pumping restrictions, resulting in lower costs for additional supplies. On April 10, 2012, the Board suspended the Delta Supply Surcharge, effective January 1, 2013.

The amount of each of these rates since September 1, 2009, is shown in the table entitled "SUMMARY OF WATER RATES" under "—Water Rates by Water Category" below.

**Litigation Challenging Rate Structure**

SDCWA filed *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.* on June 11, 2010. The complaint alleges that the rates adopted by the Board on April 13, 2010, which became effective January 1, 2011 and January 1, 2012, misallocate State Water Contract costs to the System Access Rate and the System Power Rate, and thus to charges for transportation of water, and that this results in an overcharge to SDCWA by at least $24.5 million per year. The complaint alleges that all

State Water Project costs should be allocated instead to Metropolitan's Supply Rate, even though under the State Water Contract Metropolitan is billed separately for transportation, power and supply costs. It states additionally that Metropolitan will overcharge SDCWA by another $5.4 million per year by including the Water Stewardship Rate in transportation charges. Eight of Metropolitan's member agencies (the Cities of Glendale, Los Angeles and Torrance, Municipal Water District of Orange County and Foothill, Las Virgenes, Three Valleys and West Basin Municipal Water Districts) answered the complaint in support of Metropolitan. IID joined the litigation in support of SDCWA's challenge to Metropolitan's charges for transportation of water, but withdrew and dismissed all claims against Metropolitan with prejudice on October 30, 2013.

The complaint requested a court order invalidating the rates adopted April 13, 2010, and that Metropolitan be mandated to allocate costs associated with State Water Project supplies and the Water Stewardship Rate to water supply rates and not to transportation rates. Rates in effect in prior years are not challenged in this lawsuit. Metropolitan contends that its rates are reasonable, equitably apportioned among its member agencies and lawful, and were adopted under a valid rate structure and cost of service approach developed in a multi-year collaborative process with its member agencies that was adopted in 2001 and has been in place since 2003. Nevertheless, to the extent that a final reviewing court invalidates Metropolitan's adopted rates, Metropolitan will be obligated to reconsider and modify rates to comply with any final court rulings related to Metropolitan's rates. While components of the rate structure and costs may change as a result of any such rulings, Metropolitan expects that aggregate rates and charges would still recover Metropolitan's cost of service. As such, revenues would not be affected. If Metropolitan's rates are revised in the manner proposed by SDCWA in the complaint, other member agencies may pay higher rates unless other actions are taken by the Board.

SDCWA filed its First Amended Petition for Writ of Mandate and Complaint on October 27, 2011, adding five new claims to this litigation, two of which were eliminated from the case on January 4, 2012. The three remaining new claims are for breach of the water exchange agreement between Metropolitan and SDCWA (described herein under "METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct—*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*") based on allegedly illegal calculation of rates; improper exclusion of SDCWA's payments under this exchange agreement from calculation of SDCWA's preferential rights to purchase Metropolitan supplies (see "—Preferential Rights" below); and illegality of the "rate structure integrity" provision in conservation and local resources incentive agreements between Metropolitan and SDCWA. Such "rate structure integrity" provision permits the Board to terminate incentives payable under conservation and local resources incentive agreements between Metropolitan and a member agency due to certain actions by the member agency to challenge the rates that are the source of incentive payments. In June 2011, Metropolitan's Board authorized termination of two incentive agreements with SDCWA under the "rate structure integrity" provision in such agreements after SDCWA filed its initial complaint challenging Metropolitan's rates. SDCWA filed a Second Amended Petition for Writ of Mandate and Complaint on April 17, 2012, which contains additional allegations but no new causes of action.

On June 8, 2012, SDCWA filed a new lawsuit challenging the rates adopted by Metropolitan on April 10, 2012 and effective on January 1, 2013 and January 1, 2014. See "–Rate Structure" above and "–Water Rates by Water Category" below for a description of Metropolitan's water rate structure and the rates and charges adopted on April 10, 2012. The complaint contains allegations similar to those in the Second Amended Petition for Writ of Mandate and Complaint and new allegations asserting that Metropolitan's rates, adopted in April 2012, violate Proposition 26. See "–California Ballot Initiatives" below for a description of Proposition 26. Metropolitan contends that its rates adopted on April 10, 2012 are reasonable, equitably apportioned among its member agencies and lawful and were adopted under a valid rate structure and cost of service approach. Ten of Metropolitan's member agencies (the eight member agency parties to SDCWA's first lawsuit, Eastern Municipal Water District and Western Municipal Water District of Riverside County) answered the complaint in support of Metropolitan and IID joined the litigation in support of SDCWA.

Subsequently, IID dismissed all claims with prejudice in this second case too, and the City of Glendale withdrew from both cases.

SDCWA filed a Third Amended Petition for Writ of Mandate and Complaint on January 23, 2013, to add new allegations that Metropolitan's rates adopted in April 2010 did not meet the requirements of Proposition 26, approved by California voters in November 2010. The court granted Metropolitan's motion to strike allegations relating to Proposition 26 on March 29, 2013, expressly ruling that SDCWA may not allege a violation of Proposition 26 in its challenge to the rates adopted in April 2010. This ruling does not affect SDCWA's separate challenge to Metropolitan's rates adopted in April 2012, which also includes Proposition 26 allegations. On December 4, 2013, the court granted Metropolitan's motion for summary adjudication of the cause of action alleging illegality of the "rate structure integrity" provision in conservation and local resources incentive agreements, dismissing this claim in the first lawsuit.

Trial of the first phase of both lawsuits before the Superior Court of California, County of San Francisco (Case Nos. CPF-10-510830 and CPF-12-512466) concluded January 23, 2014. This phase concerned the challenges to Metropolitan's rates. On April 24, 2014, the trial court issued its "Statement of Decision on Rate Setting Challenges," determining that SDCWA prevailed on two of its claims and that Metropolitan prevailed on the third claim. The trial court found that there was not sufficient evidence to support Metropolitan's inclusion in its transportation rates, and hence in its wheeling rate, of 100 percent of (1) payments it makes to the California Department of Water Resources for the State Water Project, or (2) the costs incurred by Metropolitan for conservation and local water supply development programs recovered through the Water Stewardship Rate. The trial court decision stated that the System Access Rate, System Power Rate, Water Stewardship Rate and wheeling rate violate specified statutes and the common law and such rates effective in 2013 and 2014 violate Proposition 26. The trial court's decision was based on its conclusion that these rates are unfair to wheelers. The trial court found that SDCWA failed to prove its "dry-year peaking" claim that Metropolitan's rates do not adequately account for variations in member agency purchases.

SDCWA's claims asserting breach of the exchange agreement and miscalculation of preferential rights were tried in a second phase of the case which concluded April 30, 2015. On August 28, 2015, the trial court issued a final statement of decision for the second phase. The decision found in favor of SDCWA on both claims and that SDCWA is entitled to damages in the amount of $188,295,602 plus interest. On October 9, 2015, the trial court granted SDCWA's motion for prejudgment interest at the statutory rate of 10 percent on these damages. On November 18, 2015, the court issued the Final Judgment and a Peremptory Writ of Mandate in the 2010 and 2012 SDCWA v Metropolitan cases. The prejudgment interest award through entry of judgment is $46,637,180. After entry of judgment, post-judgment interest began accruing at the rate of 7%. The trial court's rulings, including the decision that specific rates violate certain laws, are subject to appeal to the California court of appeals. On November 19, 2015, Metropolitan filed a Notice of Appeal of the Judgment and Writ in each case. On January 21, 2016, the trial court awarded $320,084 in costs to SDCWA. On March 24, 2016, the trial court awarded $8,910,354 in attorneys' fees to SDCWA. On April 11, 2016, Metropolitan filed a Notice of Appeal of the attorneys' fees order and on April 19, 2016, SDCWA filed a Notice of Cross-Appeal of the order. On May 5, 2016, Metropolitan and the nine member agency parties filed their Appellants' Opening Brief. Metropolitan is unable to assess at this time the likelihood of success of this litigation, including the appeal, or any future claims.

Due to SDCWA's litigation challenging Metropolitan's rates, and pursuant to the exchange agreement between Metropolitan and SDCWA, as of April 30, 2016, Metropolitan held $246.1 million in a designated fund, the Exchange Agreement Set-Aside Fund. See "—Financial Reserve Policy" below. This amount includes both SDCWA's disputed payments and interest earned thereon, which is based on the rate earned by Metropolitan's investment portfolio. Amounts held pursuant to the exchange agreement will continue to accumulate based on the quantities of exchange water that Metropolitan provides to SDCWA and the payments disputed by SDCWA, until the litigation, including all appeals, is concluded. The amounts held

do not include the statutory prejudgment interest, post-judgment interest, attorneys' fees, or costs awards, none of which the exchange agreement requires to be held.

In May 2014, SDCWA filed a new lawsuit asserting essentially the same rate claims and breach of contract claim in connection with the Board's April 2014 rate adoption. Metropolitan filed its answer on June 30, 2014. On February 9, 2015, pursuant to stipulation by the parties, the court ordered that the case be stayed. The stay may be lifted upon motion by any party. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On April 13, 2016, SDCWA filed a new lawsuit that alleges all rates and charges for 2017 and 2018 adopted by Metropolitan's Board on April 12, 2016 violate the California Constitution, statutes, and common law. The Petition for Writ of Mandate and Complaint asserts misallocation of costs as alleged in the previous cases listed above and additional claims of over-collection and misallocation of costs and procedural violations, and states SDCWA intends to amend to allege further claims including breach of contract. On May 9, 2016, Metropolitan filed a motion to transfer venue from Los Angeles County. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

**Member Agency Purchase Orders**

Member Agency purchase orders are voluntary agreements that determine the amount of water that a member agency can purchase at the Tier 1 Supply Rate. On November 18, 2014, the Board approved the terms for purchase orders with a 10-year term to be effective from January 1, 2015 through December 31, 2024. Twenty-one purchase orders were executed. In consideration of executing a purchase order, each member agency whose purchase order is in effect is allowed to purchase up to 90 percent of its base amount at the Tier 1 Supply Rate in any fiscal year during the term of the purchase order. Member agencies chose a base amount of either (1) the member agency's highest fiscal year purchases during the 13-year period of fiscal year 1990 through fiscal year 2002, or (2) the highest year purchases in the most recent 12-year period of fiscal year 2003 through fiscal year 2014. Amounts purchased by such agencies over the applicable base amount will be priced at the Tier 2 Supply Rate. See "—Rate Structure—*Tier 1 and Tier 2 Water Supply Rates*" above. Member agencies that accrue a cumulative Tier 2 obligation by virtue of exceeding their Tier 1 maximum at the end of year five of the purchase order will pay their Tier 2 obligation annually. Otherwise, any obligation to pay the Tier 2 Supply Rate will be calculated over the ten-year period, consistent with the calculation of any purchase order commitment obligation. Member agencies that do not have purchase orders in effect are subject to Tier 2 Supply Rates for amounts exceeding 60 percent of their base amount (equal to the member agency's highest fiscal year demand between 1989-90 and 2001-02) annually.

Under each purchase order, a member agency agrees to purchase, over the term of the contract, an amount of water equal to at least 60 percent of the chosen base period demand multiplied by the number of years in the contract. Member agencies are allowed to vary their purchases from year to year, but a member agency will be obligated to pay for the full amount committed under the purchase order, even if it does not take its full purchase order commitment by the end of the contract period.

**Classes of Water Service**

*Full Service Water*. Full service water service, formerly known as non-interruptible water service, includes water sold for domestic and municipal uses. Full service treated water rates are the sum of the applicable supply rate, system access rate, water stewardship rate, system power rate and treatment surcharge. Full service untreated water rates are the sum of the applicable supply rate, system access rate, water stewardship rate and system power rate. Full service water sales are the major component of Metropolitan water sales.

*Interim Agricultural Water Program*. This program provided a discounted rate for agricultural water users that, pursuant to the Act, were permitted to receive only surplus water not needed for domestic or municipal purposes. Metropolitan delivered approximately 40,000 acre-feet of agricultural water under this

program in fiscal year 2009-10, approximately 21,000 acre-feet in fiscal year 2010-11 and approximately 29,000 acre-feet in fiscal year 2011-12. On October 14, 2008, the Board approved annual reductions of the Interim Agricultural Water Program discount beginning January 1, 2010 and discontinuance of the program when the discount reached zero on January 1, 2013.

*Replenishment*. Under the Replenishment Service Program, water was sold at a discounted rate to member agencies, subject to interruption upon notice by Metropolitan. The program allowed Metropolitan to deliver surplus imported water to local groundwater basins and surface storage facilities when supplies were available, with the intent that member agencies could reduce imported water deliveries from Metropolitan during periods of high demand, emergencies or times of shortage. See table entitled "SUMMARY OF WATER RATES" below.

On December 11, 2012, Metropolitan's Board eliminated the Replenishment Service Program and approved adjustments to increase member agency Tier 1 limits to reflect the historical demand for water used for long-term groundwater and surface storage replenishment. See "—Rate Structure—*Tier 1 and Tier 2 Water Supply Rates*" above. Water for groundwater replenishment now is priced at applicable full service rates. This adjustment provides additional Tier 1 limits for member agencies that historically purchased water for long-term replenishment purposes and limits their exposure to the higher Tier 2 rates.

**Water Rates by Water Category**

The following table sets forth Metropolitan's water rates by category beginning January 1, 2012. See also "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES—Water Sales Revenues" in this Appendix A. In addition to the base rates for untreated water sold in the different classes of service, the columns labeled "Treated" include the surcharge that Metropolitan charges for water treated at its water treatment plants. See "—Rate Structure" and "—Classes of Water Service" above for a description of current rates. See "—Litigation Challenging Rate Structure" above for a description of litigation challenging Metropolitan's water rates.

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**SUMMARY OF WATER RATES**
**(Dollars per Acre-Foot)**

| | SUPPLY RATE | | SYSTEM ACCESS RATE | WATER STEWARDSHIP RATE | SYSTEM POWER RATE | TREATMENT SURCHARGE |
|---|---|---|---|---|---|---|
| | Tier 1 | Tier 2 | | | | |
| January 1, 2012 | $164[2] | $290 | $217 | $43 | $136 | $234 |
| January 1, 2013 | $140 | $290 | $223 | $41 | $189 | $254 |
| January 1, 2014 | $148 | $290 | $243 | $41 | $161 | $297 |
| January 1, 2015 | $158 | $290 | $257 | $41 | $126 | $341 |
| January 1, 2016 | $156 | $290 | $259 | $41 | $138 | $348 |
| January 1, 2017* | $201 | $295 | $289 | $52 | $124 | $313 |
| January 1, 2018* | $209 | $295 | $299 | $55 | $132 | $320 |

| | FULL SERVICE TREATED[3] | | FULL SERVICE UNTREATED[4] | | INTERIM AGRICULTURAL PROGRAM | | REPLENISHMENT RATE | |
|---|---|---|---|---|---|---|---|---|
| | Tier 1 | Tier 2 | Tier 1 | Tier 2 | Treated | Untreated | Treated | Untreated |
| January 1, 2012 | $794 | $920 | $560 | $686 | $765 | $537 | $651 | $442 |
| January 1, 2013 | $847 | $997 | $593 | $743 | ** | ** | ** | ** |
| January 1, 2014 | $890 | $1,032 | $593 | $735 | ** | ** | ** | ** |
| January 1, 2015 | $923 | $1,055 | $582 | $714 | ** | ** | ** | ** |
| January 1, 2016 | $942 | $1,076 | $594 | $728 | ** | ** | ** | ** |
| January 1, 2017* | $979 | $1,073 | $666 | $760 | ** | ** | ** | ** |
| January 1, 2018* | $1,015 | $1,101 | $695 | $781 | ** | ** | ** | ** |

*Source: Metropolitan.*

* Rates effective January 1, 2017 and January 1, 2018 were adopted by Metropolitan's Board on April 12, 2016.
** The Interim Agricultural Water Program and Replenishment Service Program were discontinued after 2012.
(1) Includes $69 per acre-foot Delta Supply Surcharge, which replaced Water Supply Surcharge.
(2) Includes $51 and $58 per acre-foot Delta Supply Surcharge for January 1, 2011 and January 1, 2012, respectively.
(3) Full service treated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate, System Power Rate and Treatment Surcharge.
(4) Full service untreated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate and System Power Rate.

## Additional Revenue Components

The following paragraphs describe the additional charges for the availability of Metropolitan's water:

*Readiness-to-Serve Charge*. This charge is designed to recover the portion of capital expenditures for infrastructure projects needed to provide standby service and peak conveyance needs. The Readiness-to-

Serve Charge ("RTS") is allocated to each member agency in proportion to the rolling ten-year share of firm deliveries through Metropolitan's system. The RTS generated $144.0 million in fiscal year 2012-13, $154.0 million in fiscal year 2013-14, and $162.0 million in 2014-15. Based on the adopted rates and charges, the RTS is projected to generate $156.1 million in fiscal year 2015-16, $144 million in fiscal year 2016-17 and $137.5 million in fiscal year 2017-18.

*Water Standby Charges*. The Board is authorized to impose water standby or availability of service charges. In May 1993, the Board imposed a water standby charge for fiscal year 1993-94 ranging from $6.94 to $15 for each acre or parcel less than an acre within Metropolitan's service area, subject to specified exempt categories. Water standby charges have been continued at the same rate in each year since 1993-94. Standby charges are assessments under the terms of Proposition 218, a State constitutional ballot initiative approved by the voters on November 5, 1996, but Metropolitan's current standby charges are exempt from Proposition 218's procedural requirements. See "—California Ballot Initiatives" below.

Member agencies have the option to utilize Metropolitan's existing standby charge authority as a means to collect all or a portion of their RTS charge. Standby charge collections are credited against the member agencies' RTS charges. See "—*Readiness-to-Serve Charge*" above. Twenty-two member agencies collect their RTS charges through standby charges. For fiscal years 2012-13, 2013-14, and 2014-15, RTS charges collected by means of such standby charges were $41.6 million, $41.7 million, and $41.7 million, respectively.

*Capacity Charge*. The Capacity Charge is a fixed charge intended to recover the cost of providing peak capacity within the distribution system. It is levied on the maximum summer day demand placed on Metropolitan's system between May 1 and September 30 for the three-calendar-year period ended December 31 two years prior to the date of the capacity charge. Effective January 1, 2014, the Capacity Charge was $8,600 per cubic feet per second. The Capacity Charge was $11,100 per cubic feet per second on January 1, 2015, and $10,900 per cubic feet per second on January 1, 2016, and will be $8,000 per cubic feet per second on January 1, 2017, and $8,700 per cubic feet per second on January 1, 2018.

**Financial Reserve Policy**

Metropolitan's reserve policy currently provides for a minimum unrestricted reserve balance at June 30 of each year that is based on probability studies of the wet periods that affect Metropolitan's water sales. The policy establishes a minimum targeted unrestricted reserve level based on an 18-month revenue shortfall estimate and a target level based on an additional two years revenue shortfall estimate. Funds representing the minimum reserve level are held in the Revenue Remainder Fund, and any funds in excess of the minimum reserve level are held in the Water Rate Stabilization Fund. Metropolitan established the Water Rate Stabilization Fund for the principal purpose of maintaining stable and predictable water rates and charges. Funds above the target reserve level may be utilized for pay-as-you-go funding of capital expenditures, for the redemption, defeasance or purchase of outstanding bonds or for any lawful purpose of Metropolitan, as determined by the Board, provided that Metropolitan's fixed charge coverage ratio, which measures the total coverage of all fixed obligations (which includes all revenue bond debt service obligations, State Water Contract capital payments paid from current year operations and subordinate obligations) after payment of operating expenditures, is at or above 1.2 times. See "CAPITAL INVESTMENT PLAN—Capital Investment Plan Financing" in this Appendix A.

On May 26, 2015, Metropolitan's Board approved the use of $160 million of unrestricted reserves, above the target reserve level, for conservation incentives. In addition, $50 million from the Water Stewardship Fund and $140 million from the Water Management Fund funded conservation incentives. At June 30, 2015, unrestricted reserves, which consist of the Water Rate Stabilization Fund and the Revenue Remainder Fund, totaled $476 million on a modified accrual basis. As of June 30, 2015, the minimum reserve requirement was $205 million and the target reserve level was $482 million.

On July 14, 2015, Metropolitan's Board approved $264 million to acquire various properties in Riverside and Imperial Counties, with $160 million funded from the Replacement and Refurbishment Fund and the remaining amount from unrestricted reserves. On September 22, 2015, Metropolitan's Board approved $44.4 million to pay SNWA to store 150,000 acre-feet of water with Metropolitan. Metropolitan took delivery of this water in 2015. When SNWA requests the return of any of the stored water, SNWA will reimburse Metropolitan for an equivalent proportion of the $44.4 million, based on the amount of water returned plus inflation. See "METROPOLITAN'S WATER SUPPLY—*Interim Surplus Guidelines"* in this Appendix A.

Due to SDCWA's litigation challenging Metropolitan's rates and pursuant to the exchange agreement between Metropolitan and SDCWA, Metropolitan is required to set aside funds based on the quantities of exchange water that Metropolitan provides to SDCWA and the amount of charges disputed by SDCWA. As of March 31, 2016, Metropolitan had set aside $242.0 million in its unrestricted financial reserves pursuant to the exchange agreement. This amount included disputed payments and interest earned thereon, which is based on the rate earned by Metropolitan's investment portfolio. In April 2016, Metropolitan transferred these funds from unrestricted financial reserves to a new designated fund, the Exchange Agreement Set-Aside Fund. As of April 30, 2016, Metropolitan had set aside $246.1 million in the Exchange Agreement Set-Aside Fund. This amount includes disputed payments and interest earned thereon based on the rate earned by Metropolitan's investment portfolio. Amounts held pursuant to the exchange agreement will continue to accumulate based on the quantities of exchange water that Metropolitan provides to SDCWA and the payments disputed by SDCWA, until the litigation, including all appeals, is concluded. See "METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct—*Sale of Water by the Imperial Irrigation District to San Diego County Water Authority*" and "METROPOLITAN REVENUES—Litigation Challenging Rate Structure" in this Appendix A.

Also in April 2016, Metropolitan entered into credit facilities with RBC Municipal Products, LLC, and U.S. Bank N.A, each with a maximum principal amount of $200 million. Metropolitan has drawn $125 million from each credit facility, for a total of $250 million, and deposited these monies in Metropolitan's unrestricted financial reserves.

Metropolitan projects that its unrestricted reserves as of June 30, 2016 will be approximately $408 million. This projection is based on the assumptions set forth in the table entitled "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" under "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A. In addition, this projection is based on the assumption that Metropolitan's Board will not authorize the use of any additional amounts in the unrestricted reserves. Accordingly, the actual amount of unrestricted reserves as of June 30, 2016 may differ if these assumptions are not realized.

**Wheeling and Exchange Charges**

The process for the delivery of water not owned or controlled by Metropolitan is referred to as "wheeling." Under the current rate structure, wheeling parties pay the System Access Rate and Water Stewardship Rate, Treatment Surcharge (if applicable) and power costs for wheeling transactions. See "—Rate Structure" above. These payments are included in Net Operating Revenues. Wheeling and exchange revenues totaled $74.6 million during fiscal year 2012-13, $81.3 million in fiscal year 2013-14, and $78.8 million during fiscal year 2014-15. See "—Litigation Challenging Rate Structure" above for a description of litigation by the SDCWA challenging Metropolitan's System Access Rate and Water Stewardship Rate.

**Hydroelectric Power Recovery Revenues**

Metropolitan has constructed 16 small hydroelectric plants on its distribution system. The plants are located in Los Angeles, Orange, Riverside and San Diego Counties at existing pressure control structures and other locations. The combined generating capacity of these plants is approximately 131 megawatts. The total capital cost of these 16 facilities is approximately $176.1 million. Since 2000, annual energy generation sales

revenues have ranged between $8.5 million and nearly $29.6 million. Energy generation sales revenues were $14.6 million in fiscal year 2013-14 and $8.5 million in fiscal year 2014-15.

**Principal Customers**

All of Metropolitan's regular customers are member agencies. Total water sales to the member agencies accrued for the fiscal year ended June 30, 2015 were 1.91 million acre-feet, generating $1.38 billion in water sales revenues for such period. Metropolitan's ten largest water customers in the year ended June 30, 2015 are shown in the following table, on an accrual basis. The SDCWA has filed litigation challenging Metropolitan's rates. See "—Litigation Challenging Rate Structure" above.

**TEN LARGEST WATER CUSTOMERS**
**Year Ended June 30, 2015**
**Accrual Basis (Dollars in Millions)**

| Agency | Water Sales Revenues[1] | Percent of Total | Water Sales in Acre-Feet[1] | Percent of Total |
|---|---|---|---|---|
| San Diego County Water Authority | $ 323.54 | 23.4% | 540,140 | 28.3% |
| City of Los Angeles | 236.88 | 17.1 | 355,368 | 18.7 |
| MWD of Orange County | 182.94 | 13.2 | 228,482 | 12.0 |
| West Basin MWD | 102.22 | 7.4 | 112,893 | 5.9 |
| Calleguas MWD | 87.86 | 6.4 | 97,103 | 5.1 |
| Eastern MWD | 71.87 | 5.2 | 89,737 | 4.7 |
| Western MWD | 55.63 | 4.0 | 68,386 | 3.6 |
| Three Valleys MWD | 46.65 | 3.4 | 58,053 | 3.0 |
| City of Long Beach | 41.69 | 3.0 | 46,045 | 2.4 |
| Central Basin MWD | 36.23 | 2.6 | 45,360 | 2.4 |
| **Total** | $1,185.53 | 85.7% | 1,641,567 | 86.2% |
| **Total Water Sales Revenues** | $ 1,382.90 | **Total Acre-Feet** | 1,905,425 | |

*Source: Metropolitan.*

(1) Includes wheeling and exchange water sales, revenues and deliveries. See "—Wheeling and Exchange Charges" above.

**Preferential Rights**

Section 135 of the Act gives each of Metropolitan's member agencies a preferential entitlement to purchase a portion of the water served by Metropolitan, based upon a ratio of all payments on tax assessments and otherwise, except purchases of water, made to Metropolitan by the member agency compared to total payments made by all member agencies on tax assessments and otherwise since Metropolitan was formed, except purchases of water. Historically, these rights have not been used in allocating Metropolitan's water. The California Court of Appeal has upheld Metropolitan's methodology for calculation of the respective member agencies' preferential rights under Section 135 of the Act. SDCWA's litigation challenging Metropolitan's water rates also challenges Metropolitan's exclusion of payments for exchange water from the calculation of SDCWA's preferential right. On August 28, 2015, the trial court ruled that SDCWA "is entitled to a judicial declaration (a) that Metropolitan's current methodology for calculating San Diego's preferential rights violates Section 135 of the Metropolitan Water District Act; and (b) directing Metropolitan to include San Diego's payments for the transportation of water under the Exchange Agreement in Metropolitan's calculation of San Diego's preferential rights." This ruling is subject to appeal. See "—Litigation Challenging Rate Structure" above.

**California Ballot Initiatives**

Proposition 218, a State ballot initiative known as the "Right to Vote on Taxes Act," was approved by the voters on November 5, 1996 adding Articles XIIIC and XIIID to the California Constitution. Article XIIID provides substantive and procedural requirements on the imposition, extension or increase of any "fee" or "charge" levied by a local government upon a parcel of real property or upon a person as an incident of property ownership. As a wholesaler, Metropolitan serves water to its member agencies, not to persons or properties as an incident of property ownership. Thus, water rates charged by Metropolitan to its member agencies are not property related fees and charges and therefore are exempt from the requirements of Article XIIID. Fees for water service by Metropolitan's member agencies or their agencies providing retail water service are subject to the requirements of Article XIIID.

Article XIIID also imposes certain procedures with respect to assessments. Under Article XIIID, "standby charges" are considered "assessments" and must follow the procedures required for "assessments," unless they were in existence on the effective date of Article XIII D. Metropolitan has imposed its water standby charges since 1992 and therefore its current standby charges are exempt from the Article XIII D procedures. Changes to Metropolitan's current standby charges could require notice to property owners and approval by a majority of such owners returning mail-in ballots approving or rejecting any imposition or increase of such standby charge. Twenty-two member agencies have elected to collect all or a portion of their readiness-to-serve charges through standby charges. See "—Additional Revenue Components—*Readiness-to-Serve Charge*" and "—*Water Standby Charges*" above. Even if Article XIIID is construed to limit the ability of Metropolitan and its member agencies to impose or collect standby charges, the member agencies will continue to be obligated to pay the readiness-to-serve charges.

Article XIIIC extends the people's initiative power to reduce or repeal previously authorized local taxes, assessments, fees and charges. This extension of the initiative power is not limited by the terms of Article XIIIC to fees imposed after November 6, 1996 or to property-related fees and charges and absent other authority could result in retroactive reduction in existing taxes, assessments or fees and charges.

Proposition 26, a State ballot initiative aimed at restricting regulatory fees and charges, was approved by the California voters on November 2, 2010. Proposition 26 broadens the definition of "tax" in Article XIIIC of the California Constitution to include levies, charges and exactions imposed by local governments, except for charges imposed for benefits or privileges or for services or products granted to the payor (and not provided to those not charged) that do not exceed their reasonable cost; regulatory fees that do not exceed the cost of regulation and are allocated in a fair or reasonable manner; fees for the use of local governmental property; fines and penalties imposed for violations of law; real property development fees; and assessments and property-related fees imposed under Article XIIID of the California Constitution. Special taxes imposed by a special district such as Metropolitan are subject to approval by two-thirds of the electorate voting on the ballot measure for authorization. Proposition 26 applies to charges imposed or increased by local governments after the date of its approval. Metropolitan believes its water rates and charges are not taxes under Proposition 26. SDCWA's lawsuit challenging the rates adopted by Metropolitan in April 2012, part of which became effective January 1, 2013 and part of which became effective January 1, 2014, alleged that such rates violate Proposition 26. On April 24, 2014, a trial court decision stated such rates, effective in 2013 and 2014, violate Proposition 26. The trial court's rulings, including the decision that specific rates violate certain laws, are on appeal. (See "–Litigation Challenging Rate Structure" above.)

Propositions 218 and 26 were adopted as measures that qualified for the ballot pursuant to the State's initiative process. From time to time, other initiative measures could be adopted or legislative measures could be approved by the Legislature, which may place limitations on the ability of Metropolitan or its member agencies to increase revenues or to increase appropriations. Such measures may further affect Metropolitan's ability to collect taxes, assessments or fees and charges, which could have an effect on Metropolitan's revenues.

**Investment of Moneys in Funds and Accounts**

All moneys in any of the funds and accounts established pursuant to Metropolitan's water revenue or general obligation bond resolutions are invested by the Treasurer in accordance with Metropolitan's Statement of Investment Policy. All Metropolitan funds available for investment are currently invested in United States Treasury and agency securities, commercial paper, negotiable certificates of deposit, banker's acceptances, corporate notes, municipal bonds, asset-backed securities, mortgage-backed securities and the California Local Agency Investment Fund ("LAIF"). The LAIF is a voluntary program created by statute as an investment alternative for California's local governments and special districts. LAIF permits such local agencies to participate in an investment portfolio, which invests billions of dollars, using the investment expertise of the State Treasurer's Office.

The Statement of Investment Policy provides that in managing Metropolitan's investments, the primary objective shall be to safeguard the principal of the invested funds. The secondary objective shall be to meet all liquidity requirements and the third objective shall be to achieve a return on the invested funds. Although the Statement of Investment Policy permits investments in some asset-backed securities, the portfolio does not include any of the special investment vehicles related to sub-prime mortgages. The Statement of Investment Policy allows Metropolitan to exceed the portfolio and single issuer limits for purchases of California local agency securities when purchasing Metropolitan tendered bonds in conjunction with its self-liquidity program. See "METROPOLITAN EXPENDITURES—Variable Rate and Swap Obligations" in this Appendix A. Metropolitan's current investments comply with the Statement of Investment Policy.

As of April 30, 2016, the total market value (cash-basis) of all Metropolitan funds was $1.45 billion, including bond reserves of $76.9 million. The market value of Metropolitan's investment portfolio is subject to market fluctuation and volatility and general economic conditions. In fiscal year 2014-15, Metropolitan's earnings on investments, including adjustments for gains and losses and premiums and discounts, including construction account and trust fund earnings, on a cash basis (unaudited) were $21.4 million. In fiscal year 2013-14, Metropolitan's earnings on investments, on a cash basis (unaudited) were $15.7 million. In fiscal year 2012-13, Metropolitan's earnings on investments, on a cash basis (unaudited) were $9.4 million. Over the three years ended April 30, 2016, the market value of the month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) averaged approximately $1.221 billion. The minimum month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) during such period was approximately $941.2 million on July 31, 2013. See Footnote 3 to Metropolitan's audited financial statements in Appendix B for additional information on the investment portfolio.

Metropolitan's regulations require that (1) the Treasurer provide an annual Statement of Investment Policy for approval by Metropolitan's Board, (2) the Treasurer provide a monthly investment report to the Board and the General Manager showing by fund the description, maturity date, yield, par, cost and current market value of each security, and (3) the General Counsel review as to eligibility the securities invested in by the Treasurer for that month and report his or her determinations to the Board. The Board approved the Statement of Investment Policy for fiscal year 2015-16 on June 9, 2015.

Subject to the provisions of Metropolitan's water revenue or general obligation bond resolutions, obligations purchased by the investment of bond proceeds in the various funds and accounts established pursuant to a bond resolution are deemed at all times to be a part of such funds and accounts and any income realized from investment of amounts on deposit in any fund or account therein will be credited to such fund or account. The Treasurer is required to sell or present for redemption any investments whenever it may be necessary to do so in order to provide moneys to meet required payments or transfers from such funds and accounts. For the purpose of determining at any given time the balance in any such funds, any such investments constituting a part of such funds and accounts will be valued at the then estimated or appraised market value of such investments.

All investments, including those authorized by law from time to time for investments by public agencies, contain certain risks. Such risks include, but are not limited to, a lower rate of return than expected and loss or delayed receipt of principal. The occurrence of these events with respect to amounts held under Metropolitan's water revenue or general obligation revenue bond resolutions, or other amounts held by Metropolitan, could have a material adverse effect on Metropolitan's finances. These risks may be mitigated, but are not eliminated, by limitations imposed on the portfolio management process by Metropolitan's Statement of Investment Policy.

The Statement of Investment Policy requires that investments have a minimum credit rating of "A1/P1/F1" for short-term securities and "A" for longer-term securities at the time of purchase. If immediate liquidation of a security downgraded below these levels is not in the best interests of Metropolitan, the Treasurer or investment manager, in consultation with an ad hoc committee made up of the Chairman of the Board, the Chairman of the Finance and Insurance Committee and the General Manager, and with the concurrence of the General Counsel, may dispose of the security in an orderly and prudent manner considering the circumstances, under terms and conditions approved by a majority of the members of such ad hoc committee. The Treasurer is required to include a description of any securities that have been downgraded below investment grade and the status of their disposition in the Treasurer's monthly report.

The Statement of Investment Policy also limits the amount of securities that can be purchased by category, as well as by issuer, and prohibits investments that can result in zero interest income. Metropolitan's securities are settled on a delivery versus payment basis and are held by an independent third-party custodian. See APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."for a description of Metropolitan's investments at March 30, 2016.

Metropolitan retains two outside investment firms to manage the long-term portion of Metropolitan's portfolio. The outside managers are required to adhere to Metropolitan's Statement of Investment Policy. As of April 30, 2016, such managers were managing approximately $343.2 million in investments on behalf of Metropolitan. Metropolitan's Statement of Investment Policy may be changed at any time by the Board (subject to State law provisions relating to authorized investments). There can be no assurance that the State law and/or the Statement of Investment Policy will not be amended in the future to allow for investments that are currently not permitted under State law or the Statement of Investment Policy, or that the objectives of Metropolitan with respect to investments or its investment holdings at any point in time will not change.

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## METROPOLITAN EXPENDITURES

### General

The following table sets forth a summary of Metropolitan's expenditures, by major function, for the five years ended June 30, 2015. The table provides cash basis information, which is unaudited. Expenses of Metropolitan for the fiscal years ended June 30, 2014 and June 30, 2015, on an accrual basis, are shown in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."

**SUMMARY OF EXPENDITURES**
**Fiscal Years Ended June 30**
**(Dollars in Millions)**

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| Operation and Maintenance Costs[1] | $ 430.8 | $ 425.3 | $ 413.6 | $ 561.3 | $ 640.6 |
| Total State Water Project and Water Transfers[2] | 593.4 | 535.4 | 531.1 | 472.5 | 519.7 |
| Total Debt Service[3] | 306.7 | 323.0 | 326.9 | 372.0 | 291.0 |
| Construction Disbursements from Revenues[4] | 45.0 | 44.2 | 54.7 | 89.3 | 210.2 |
| Other[5] | 2.4 | 2.8 | 6.2 | 6.3 | 5.7 |
| Total Disbursements (net of reimbursements) [6] | $1,378.3 | $1,330.7 | $1,332.5 | $1,501.4 | $1,667.2 |

*Source: Metropolitan.*

(1) Includes inventories, undistributed payroll, local resource programs, conservation programs and CRA power. See the table headed "Summary of Receipts by Source" under "METROPOLITAN REVENUES" in this Appendix A. For fiscal year 2015, includes $48.9 million of conservation projects funded from transfers from the Water Management Fund. See "METROPOLITAN'S REVENUES— Summary of Receipts by Source", in this Appendix A.

(2) Includes both operating and capital expense portions. See "METROPOLITAN'S WATER SUPPLY—Water Transfer, Storage and Exchange Programs" and "POWER SOURCES AND COSTS" in this Appendix A. For fiscal year 2015, includes $29.3 million of water purchases funded from transfers from the Water Management Fund. See "METROPOLITAN'S REVENUES—Summary of Receipts by Source", in this Appendix A.

(3) Net of Build America Bond reimbursement of $10.4 million, $13.3 million, $12.7 million, $12.3 million, and $12.3 million, in fiscal years 2011 thru 2015, respectively. See "METROPOLITAN EXPENDITURES—"Build America Bonds".

(4) At the discretion of the Board, in any given year, Metropolitan may increase or decrease funding available for construction disbursements to be paid from revenues. Does not include expenditures of bond proceeds.

(5) Includes operating equipment and arbitrage rebate.

(6) Disbursements exceeded revenues in the fiscal year ended June 30, 2011. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A.

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**Revenue Bond Indebtedness**

The water revenue bonds outstanding as of June 1, 2016, are set forth below:

| Name of Issue | Principal Outstanding |
|---|---|
| Water Revenue Refunding Bonds, 1993 Series A | $86,540,000 |
| Water Revenue Bonds, 2000 Authorization, Series B-3(1) | 88,800,000 |
| Water Revenue Bonds, 2005 Authorization, Series C* | 175,000,000 |
| Water Revenue Refunding Bonds, 2006 Series B* | 24,055,000 |
| Water Revenue Bonds, 2006 Authorization, Series A* | 389,235,000 |
| Water Revenue Refunding Bonds, 2008 Series A-2(1) | 62,465,000 |
| Water Revenue Refunding Bonds, 2008 Series B | 126,980,000 |
| Water Revenue Refunding Bonds, 2008 Series C | 34,700,000 |
| Water Revenue Bonds, 2008 Authorization, Series A | 179,115,000 |
| Water Revenue Refunding Bonds, 2009 Series A-2(1) | 104,180,000 |
| Water Revenue Refunding Bonds, 2009 Series B | 106,690,000 |
| Water Revenue Refunding Bonds, 2009 Series C | 91,165,000 |
| Water Revenue Bonds, 2008 Authorization, Series B | 12,735,000 |
| Water Revenue Bonds, 2008 Authorization, Series C(2) | 78,385,000 |
| Water Revenue Bonds, 2008 Authorization, Series D(2) | 250,000,000 |
| Water Revenue Refunding Bonds, 2009 Series D | 58,860,000 |
| Water Revenue Refunding Bonds, 2009 Series E | 15,590,000 |
| Water Revenue Bonds, 2010 Authorization, Series A(2) | 250,000,000 |
| Water Revenue Refunding Bonds, 2010 Series B | 79,330,000 |
| Water Revenue Refunding Bonds, 2011 Series A1-A4(1) | 228,875,000 |
| Water Revenue Refunding Bonds, 2011 Series B | 35,760,000 |
| Water Revenue Refunding Bonds, 2011 Series C | 147,935,000 |
| Water Revenue Refunding Bonds, 2012 Series A | 181,180,000 |
| Water Revenue Refunding Bonds, 2012 Series B-1 and B-2(1) | 98,585,000 |
| Water Revenue Refunding Bonds, 2012 Series C | 190,600,000 |
| Water Revenue Refunding Bonds, 2012 Series D | 605,000 |
| Water Revenue Refunding Bonds, 2012 Series E-3 | 31,220,000 |
| Water Revenue Refunding Bonds, 2012 Series F | 59,335,000 |
| Water Revenue Refunding Bonds, 2012 Series G | 111,890,000 |
| Special Variable Rate Water Revenue Refunding Bonds, 2013 Series D(1) | 87,445,000 |
| Special Variable Rate Water Revenue Refunding Bonds, 2013 Series E(1) | 104,820,000 |
| Water Revenue Refunding Bonds, 2014 Series A | 95,935,000 |
| Water Revenue Refunding Bonds, 2014 Series B | 10,575,000 |
| Water Revenue Refunding Bonds, 2014 Series C1-C3 | 30,335,000 |
| Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D(1) | 63,575,000 |
| Water Revenue Refunding Bonds, 2014 Series E | 86,060,000 |
| Water Revenue Refunding Bonds, 2014 Series G1-G5 | 57,840,000 |
| Special Variable Rate Water Revenue Refunding Bonds, 2015 Series A-1and A-2(1) | 188,900,000 |
| Water Revenue Bonds, 2015 Authorization, Series A | 208,255,000 |
| **Total** | **$4,233,550,000** |

*Source: Metropolitan.*

(1) Outstanding variable rate obligation.
(2) Designated as "Build America Bonds" pursuant to the American Recovery and Reinvestment Act of 2009.
* All or a portion of these bonds may be refunded with proceeds of the Water Revenue Refunding Bonds, 2016 Series A

**Limitations on Additional Revenue Bonds**

Resolution 8329, adopted by Metropolitan's Board on July 9, 1991, as amended and supplemented (collectively with all such supplemental resolutions, the "Revenue Bond Resolutions"), provides for the issuance of Metropolitan's water revenue bonds. The Revenue Bond Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Revenue Bond Resolutions, no additional bonds, notes or other evidences of indebtedness payable out of Operating Revenues may be issued having any priority in payment of principal, redemption premium, if any, or interest over any water revenue bonds authorized by the Revenue Bond Resolutions ("Parity Bonds") or other obligations of

Metropolitan having a lien and charge upon, or being payable from, the Net Operating Revenues on parity with such water revenue bonds ("Parity Obligations"). No additional Parity Bonds or Parity Obligations may be issued or incurred unless the conditions of the Revenue Bond Resolutions have been satisfied.

The laws governing Metropolitan's ability to issue water revenue bonds currently provide two additional limitations on indebtedness that may be incurred by Metropolitan. The Act provides for a limit on general obligation bonds, water revenue bonds and other evidences of indebtedness at 15 percent of the assessed value of all taxable property within Metropolitan's service area. As of June 1, 2016, outstanding general obligation bonds, water revenue bonds and other evidences of indebtedness in the amount of $4.34 billion represented approximately 0.18 percent of the fiscal year 2015-16 taxable assessed valuation of $2,451 billion. The second limitation under the Act specifies that no revenue bonds may be issued, except for the purpose of refunding, unless the amount of net assets of Metropolitan as shown on its balance sheet as of the end of the last fiscal year prior to the issuance of such bonds, equals at least 100 percent of the aggregate amount of revenue bonds outstanding following the issuance of such bonds. The net assets of Metropolitan at June 30, 2015 were $6.88 billion. The aggregate amount of revenue bonds outstanding as of June 1, 2016 was $4.23 billion. The limitation does not apply to other forms of financing available to Metropolitan. Audited financial statements including the net assets of Metropolitan as of June 30, 2015 and June 30, 2014, respectively, are shown in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."

Metropolitan provides no assurance that the Act's limitations on indebtedness will not be revised or removed by future legislation. Limitations under the Revenue Bond Resolutions respecting the issuance of additional obligations payable from Net Operating Revenues on a parity with water revenue bonds of Metropolitan will remain in effect so long as any water revenue bonds authorized pursuant to the Revenue Bond Resolutions are outstanding, provided however, that the Revenue Bond Resolutions are subject to amendment and supplement in accordance with their terms.

**Variable Rate and Swap Obligations**

As of June 1, 2016, Metropolitan had outstanding $1.28 billion of variable rate obligations, including bonds bearing interest in the Index Mode or Flexible Index Mode (the "Index Tender Bonds"), special variable rate bonds initially designated as self-liquidity bonds (the "Self-Liquidity Bonds"), variable rate demand obligations supported by standby bond purchase agreements between Metropolitan and various liquidity providers ("Liquidity Supported Bonds"), and Short-Term Revolving Credit Facilities.

*Index Tender Bonds.* The Index Tender Bonds have substantially similar terms and conditions; however, the unscheduled mandatory tender dates and related tender periods for the Index Tender Bonds may differ. The Index Tender Bonds bear interest at a rate that fluctuates weekly based on the SIFMA Municipal Swap Index published weekly by Municipal Market Data. The Index Tender Bonds outstanding as of June 1, 2016, are summarized in the following table:

| Series | Date of Issuance | Original Principal Amount Issued | Next Scheduled Mandatory Tender Date | Maturity Date |
|---|---|---|---|---|
| 2009 A-2 | May 20, 2009 | $104,180,000 | August 30, 2016[1] | July 1, 2030 |
| 2011 A-1 | June 2, 2011 | 64,440,000 | August 16, 2016[1] | July 1, 2036 |
| 2011 A-2 | June 2, 2011 | 50,000,000 | March 27, 2018 | July 1, 2036 |
| 2011 A-3 | June 2, 2011 | 64,435,000 | August 16, 2016[1] | July 1, 2036 |
| 2011 A-4 | June 2, 2011 | 50,000,000 | March 27, 2018 | July 1, 2036 |
| 2012 B-1 | April 27, 2012 | 49,295,000 | March 27, 2018 | July 1, 2027 |
| 2012 B-2 | April 27, 2012 | 49,290,000 | March 27, 2018 | July 1, 2027 |
| 2013 E [2] | July 2, 2013 | 104,820,000 | September 30, 2016[1] | July 1, 2030 |
| **Total** | | **$536,460,000** | | |

*Source: Metropolitan.*

(1) It is anticipated that in July 2016, the bonds will be refunded.
(2) Flexible Index Mode Bonds. The terms and conditions of Flexible Index Mode Bonds are substantially similar to Index Mode Bonds except that each tender period may not exceed 270 days.

The Index Tender Bonds are subject to mandatory tender under certain circumstances. Metropolitan anticipates that it will pay the purchase price of tendered Index Tender Bonds from the proceeds of remarketing such Index Tender Bonds or from other available funds. Metropolitan's obligation to pay the purchase price of such Index Tender Bonds is an unsecured obligation of Metropolitan that it would pay from Net Operating Revenues only after it has made payments and deposits with respect to its Operating Revenues, the Parity Bonds, Parity Obligations and other obligations secured by Net Operating Revenues. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of Index Tender Bonds in connection with a scheduled mandatory tender. If the purchase price of the Index Tender Bonds of any Series is not paid from the proceeds of remarketing or other funds following a scheduled mandatory tender, such Index Tender Bonds then will bear interest at a default rate of up to 12 percent per annum until purchased by Metropolitan or redeemed. Failure to pay the purchase price of a series of Index Tender Bonds on a scheduled mandatory tender date is a default under the related paying agent agreement, upon the occurrence and continuance of which a majority in aggregate principal amount of the owners of such series of Index Tender Bonds may elect a bondholders' committee to exercise rights and powers of such owners under such paying agent agreement. Failure to pay the purchase price of a series of Index Tender Bonds on a scheduled mandatory tender date is not a default under the Master Resolution. If the purchase price of the Index Tender Bonds of any series is not paid on a scheduled mandatory tender date, such Index Tender Bonds will also be subject to special mandatory redemption, in part, 18, 36 and 54 months following the purchase default. Any such special mandatory redemption payment will constitute a Bond Obligation payable on parity with the Parity Bonds and the Parity Obligations

*Self-Liquidity Bonds.* As of June 1, 2016, Metropolitan had $339.9 million of outstanding self-liquidity bonds, comprised of $87.4 million Special Variable Rate Water Revenue Refunding Bonds, 2013 Series D, $63.6 million Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D, and $188.9 million Special Variable Rate Water Revenue Refunding Bonds, 2015 Series A1 and A2. The Self-Liquidity Bonds are subject to optional tender upon seven days' notice by the owners thereof and mandatory tender upon specified events. Metropolitan is irrevocably committed to purchase all Self-Liquidity Bonds tendered pursuant to any optional or mandatory tender to the extent that remarketing proceeds are insufficient therefor and no standby bond purchase agreement or other liquidity facility is in effect. Metropolitan's obligation to pay the purchase price of any tendered Self-Liquidity Bonds is an unsecured, special limited obligation of Metropolitan payable from Net Operating Revenues. In addition, Metropolitan's investment policy permits it to purchase tendered Self-Liquidity Bonds as an investment for its investment portfolio (other than amounts in its investment portfolio consisting of bond reserve funds). Thus, while Metropolitan is only obligated to

purchase tendered Self-Liquidity Bonds from Net Operating Revenues, it may use the cash and investments in its investment portfolio (other than amounts in its investment portfolio consisting of bond reserve funds and amounts posted as collateral with interest rate swap counterparties as described below) to purchase tendered Self-Liquidity Bonds. Metropolitan has not secured any liquidity facility or letter of credit to pay the purchase price of any tendered Self-Liquidity Bonds; however, Metropolitan has entered into Revolving Credit Agreements (as described below) pursuant to which it may make borrowings for the purpose of paying the purchase price of Self-Liquidity Bonds. See "—Revolving Credit Agreements" below. Failure to pay the purchase price of Self-Liquidity Bonds upon optional or mandatory tender is not a default under the related paying agent agreement or a default under the Master Resolution.

*Liquidity Supported Bonds.* The interest rates for Metropolitan's other variable rate demand obligations, totaling $151.3 million as of June 1, 2016, are reset on a daily or weekly basis. Such variable rate demand obligations are supported by Standby Bond Purchase Agreements between Metropolitan and liquidity providers that provide for purchase of variable rate bonds by the applicable liquidity provider upon tender of such variable rate bonds and a failed remarketing. A decline in the creditworthiness of a liquidity provider will likely result in an increase in the interest rate of the applicable variable rate bonds, as well as an increase in the risk of a failed remarketing of such tendered variable rate bonds. Variable rate bonds purchased by a liquidity provider bear interest at a significantly higher interest rate and Metropolitan's obligation to reimburse the liquidity provider may convert the term of the variable rate bonds purchased by the liquidity provider into a term loan amortizable over a period of up to three years, depending on the applicable liquidity facility.

The following table lists the liquidity providers, the expiration date of each facility and the principal amount of outstanding variable rate demand obligations covered under each facility as of June 1, 2016.

| **Liquidity Provider** | **Bond Issue** | **Principal Outstanding** | **Facility Expiration** |
|---|---|---|---|
| Wells Fargo Bank, N.A. | 2000 Authorization Series B-3 | $ 88,800,000 | February 2017 |
| Barclays Bank PLC | 2008 Series A-2 | $62,465,000 | September 2016 |
| **Total** | | $151,265,000 | |

*Source: Metropolitan.*

*Variable Rate Exposure Policy.* As of June 1, 2016, of Metropolitan's $1.28 billion of variable rate obligations, $493.6 million of variable rate demand obligations which are treated by Metropolitan as fixed rate debt, by virtue of interest rate swap agreements, for the purpose of calculating debt service requirements. The remaining $784 million of variable rate obligations represent approximately 17.5 percent of total outstanding water revenue bonds and parity obligations, as of June 1, 2016.

Metropolitan's variable rate exposure policy requires that variable rate debt be managed to limit net interest cost increases within a fiscal year as a result of interest rate changes to no more than $5 million. In addition, the maximum amount of variable interest rate exposure (excluding variable rate bonds associated with interest rate swap agreements) is limited to 40 percent of total outstanding water revenue bond debt. Variable rate debt capacity will be reevaluated as interest rates change and managed within these parameters.

*Interest Rate Swap Transactions*. By resolution adopted on September 11, 2001, Metropolitan's Board authorized the execution of interest rate swap transactions and related agreements in accordance with a master swap policy, which was subsequently amended by resolutions adopted on July 14, 2009 and May 11, 2010. Metropolitan may execute interest rate swaps if the transaction can be expected to reduce exposure to

changes in interest rates on a particular financial transaction or in the management of interest rate risk derived from Metropolitan's overall asset/liability balance, result in a lower net cost of borrowing or achieve a higher net rate of return on investments made in connection with or incidental to the issuance, incurring or carrying of Metropolitan's obligations or investments, or manage variable interest rate exposure consistent with prudent debt practices and Board-approved guidelines. The Chief Financial Officer reports to the Finance and Insurance Committee of Metropolitan's Board each quarter on outstanding swap transactions, including notional amounts outstanding, counterparty exposures and termination values based on then-existing market conditions.

Metropolitan currently has one type of interest rate swap, referred to in the table below as "Fixed Payor Swaps." Under this type of swap, Metropolitan receives payments that are calculated by reference to a floating interest rate and makes payments that are calculated by reference to a fixed interest rate.

Net payments under the terms of the interest rate swap agreements are payable on a parity with the Parity Obligations. Termination payments under the 2002A and 2002B interest rate swap agreements would be payable on a parity with the Parity Obligations. All other termination payments related to interest rate swap agreements would be subordinate to the Parity Obligations.

The following swap transactions were outstanding as of June 1, 2016:

**FIXED PAYOR SWAPS:**

| Designation | Notional Amount Outstanding | Swap Counterparty | Fixed Payor Rate | MWD Receives | Maturity Date |
|---|---|---|---|---|---|
| 2002 A | $75,838,400 | Morgan Stanley Capital Services, Inc. | 3.300 | 57.74% of one-month LIBOR | 7/1/2025 |
| 2002 B | 28,371,600 | JPMorgan Chase Bank | 3.300 | 57.74% of one-month LIBOR | 7/1/2025 |
| 2003(1) | 158,597,500 | Wells Fargo Bank | 3.257 | 61.20% of one-month LIBOR | 7/1/2030 |
| 2003 | 158,597,500 | JPMorgan Chase Bank | 3.257 | 61.20% of one-month LIBOR | 7/1/2030 |
| 2004 C | 7,760,500 | Morgan Stanley Capital Services, Inc. | 2.980 | 61.55% of one-month LIBOR | 10/1/2029 |
| 2004 C | 6,349,500 | Citigroup Financial Products, Inc. | 2.980 | 61.55% of one-month LIBOR | 10/1/2029 |
| 2005 | 29,057,500 | JPMorgan Chase Bank | 3.360 | 70% of 3-month LIBOR | 7/1/2030 |
| 2005 | 29,057,500 | Citigroup Financial Products, Inc. | 3.360 | 70% of 3-month LIBOR | 7/1/2030 |
| Total | $493,630,000 | | | | |

*Source: Metropolitan.*

(1) The obligations under this interest rate swap agreement were assigned by Deutsche Bank AG, New York Branch, to Wells Fargo Bank, pursuant to novation transactions dated July 1, 2015.

These interest rate swap agreements entail risk to Metropolitan. The counterparty may fail or be unable to perform, interest rates may vary from assumptions, Metropolitan may be required to post collateral in favor of its counterparties and Metropolitan may be required to make significant payments in the event of an early termination of an interest rate swap. Metropolitan believes that if such an event were to occur, it

would not have a material adverse impact on its financial position. Metropolitan seeks to manage counterparty risk by diversifying its swap counterparties, limiting exposure to any one counterparty, requiring collateralization or other credit enhancement to secure swap payment obligations, and by requiring minimum credit rating levels. Initially swap counterparties must be rated at least "Aa3" or "AA-", or equivalent by any two of the nationally recognized credit rating agencies; or use a "AAA" subsidiary as rated by at least one nationally recognized credit rating agency. Should the credit rating of an existing swap counterparty drop below the required levels, Metropolitan may enter into additional swaps if those swaps are "offsetting" and risk-reducing swaps. Each counterparty is initially required to have minimum capitalization of at least $150 million. See Note 5(f) in APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."

Early termination of an interest rate swap agreement could occur due to a default by either party or the occurrence of a termination event. As of March 31, 2016, Metropolitan would have been required to pay to its counterparties termination payments if some of its swaps were terminated on that date and would have been entitled to receive termination payments from its counterparties if other swaps were terminated. Metropolitan's net exposure to its counterparties for all such termination payments on that date was approximately $99.6 million. Metropolitan does not presently anticipate early termination of any of its interest rate swap agreements due to default by either party or the occurrence of a termination event. However, effective June 28, 2012, Metropolitan exercised optional early termination provisions to terminate all or a portion of certain interest rate swap agreements totaling a notional amount of $322 million. Effective February 12, 2014, Metropolitan exercised optional early termination provisions to terminate a portion of certain interest rate swap agreements, totaling a notional amount of $147 million. Effective July 29, 2014, Metropolitan optionally terminated portions of certain interest rate swap agreements totaling a notional amount of $163 million.

Metropolitan is required to post collateral in favor of a counterparty to the extent that Metropolitan's total exposure for termination payments to that counterparty exceeds the threshold specified in the applicable swap agreement. Conversely, the counterparties are required to release collateral to Metropolitan or post collateral for the benefit of Metropolitan as market conditions become favorable to Metropolitan. As of March 31, 2016, Metropolitan had no collateral posted with any counterparty. The highest, month-end, amount of collateral posted was $36.8 million, on June 30, 2012, which was based on an outstanding swap notional amount of $1.4 billion. The amount of required collateral varies from time to time due primarily to interest rate movements and can change significantly over a short period of time. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A. In the future, Metropolitan may be required to post additional collateral, or may be entitled to a reduction or return of the required collateral amount. Collateral deposited by Metropolitan is held by the counterparties; a bankruptcy of any counterparty holding collateral posted by Metropolitan could adversely affect the return of the collateral to Metropolitan. Moreover, posting collateral limits Metropolitan's liquidity. If collateral requirements increase significantly, Metropolitan's liquidity may be materially adversely affected. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A.

**Build America Bonds**

Metropolitan previously issued and designated three series of Bonds in the aggregate principal amount of $578,385,000 as "Build America Bonds" under the provisions of the American Recovery and Reinvestment Act of 2009 (the "Build America Bonds"). Except as they may be reduced by sequestration as described in the following paragraph, Metropolitan currently expects to receive cash subsidies from the United States Treasury equal to 35 percent of the interest payable on all such outstanding Build America Bonds (the "Interest Subsidy Payments"). The Interest Subsidy Payments in connection with the Build America Bonds do not constitute Operating Revenues under the Master Resolution. Such Interest Subsidy Payments will constitute Additional Revenues, which Metropolitan may take into consideration when

establishing its rates and charges and will be available to Metropolitan to pay principal of and interest on Metropolitan's Bonds.

The Budget Control Act of 2011 (the "Budget Control Act") provided for increases in the federal debt limit and established procedures designed to reduce the federal budget deficit. The Budget Control Act provided that a failure to reduce the deficit would result in sequestration, which are automatic, generally across-the-board, spending reductions. These reductions began on March 1, 2013 pursuant to an executive order that reduced budgetary authority for expenditures subject to sequestration, including subsidies for Build America Bonds. Pursuant to this executive order, the approximately $6.64 million Interest Subsidy Payment that Metropolitan was to receive on or about July 1, 2013 was reduced by 8.7 percent, or $578,000, to $6.06 million. Interest Subsidy Payments processed on or after October 1, 2014 and on or before September 30, 2015 were reduced by the federal fiscal year 2014-2015 sequestration rate of 7.3 percent, and Interest Subsidy Payments processed on or after October 1, 2015 and on or before September 30, 2016 are anticipated to be reduced by the federal fiscal year 2015-16 sequestration rate of 6.8 percent. The sequestration reduction rate will be applied unless and until a law is enacted that cancels or otherwise impacts the sequester, at which time the sequestration reduction rate is subject to change. Metropolitan can offer no assurances as to future subsidy payments and expects that once it receives less than any full 35 percent subsidy payment, the United States Treasury will not thereafter reimburse Metropolitan for payments not made.

**Other Revenue Obligations**

As of June 1, 2016, Metropolitan had outstanding $31.2 million of 2012 Series E-3 Bonds, $30.3 million of 2014 Series C Bonds in three series, and $57.8 million of 2014 Series G in five series, bearing interest in a term mode (the "Term Mode Bonds"). The Term Mode Bonds initially bear interest at a fixed rate for a specified period from their date of issuance, after which there shall be determined a new interest mode for each series (which may be another term mode, a daily mode, a weekly mode, a short-term mode or an index mode) or the Term Mode Bonds may be converted to bear fixed interest rates through the maturity date thereof. The owners of the Term Mode Bonds of a series must tender for purchase, and Metropolitan must purchase, all of the Term Mode Bonds of such series on the specified scheduled mandatory tender date of each term period for such series. The scheduled mandatory tender date for the 2012 Series E-3 Bonds is October 1, 2016. For the three series of 2014 Series C Bonds, the scheduled mandatory tender dates are October 1, 2019, October 1, 2020 and October 1, 2021. For the five series of 2014 Series G Bonds, the scheduled mandatory tender dates are October 1, 2016, 2017, 2018, 2019, and 2020, respectively. Metropolitan may call the Term Mode Bonds on or after the Call Protection Date for each of the series of Term Mode Bonds. Metropolitan plans to redeem the Term Mode Bonds, 2012 Series E-3 and 2015 Series G-1, with a scheduled mandatory tender date of October 1, 2016, on their call protection date of July 1, 2016.

Metropolitan will pay the principal of, and interest on, the Term Mode Bonds on parity with its other Parity Bonds. Metropolitan anticipates that it will pay the purchase price of tendered Term Mode Bonds from the proceeds of remarketing such Term Mode Bonds or from other available funds. Metropolitan's obligation to pay the purchase price of such Term Mode Bonds is an unsecured obligation of Metropolitan that it would pay from Net Operating Revenues only after it has made payments and deposits with respect to its Operating Revenues, the Bonds and Parity Obligations and other obligations secured by Net Operating Revenues. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of Term Mode Bonds in connection with any scheduled mandatory tender. If the purchase price of the Term Mode Bonds of any series is not paid from the proceeds of remarketing or other funds following a scheduled mandatory tender, such Term Mode Bonds will then bear interest at a default rate of up to 12 percent per annum until purchased by Metropolitan or redeemed. If the purchase price of the Term Mode Bonds of any series is not paid on a scheduled mandatory tender date, such Term Mode Bonds will also be subject to special mandatory redemption, in part, 18, 36 and 54 months following the purchase default. Any such special mandatory redemption payment will constitute a Bond Obligation payable on parity with the Parity Bonds and the Parity Obligations.

**Revolving Credit Agreements**

Metropolitan currently has $180.0 million of available revolving credit agreement facilities. On July 1, 2015, Metropolitan executed a revolving credit agreement with Wells Fargo Bank, N.A., (the "Wells Fargo Revolving Credit Agreement"). Under the terms and conditions of the Wells Fargo Revolving Credit Agreement, Metropolitan will be able to borrow up to $180 million for purposes of paying the purchase price of any Self-Liquidity Bonds. The scheduled expiration date of the Wells Fargo Revolving Credit Agreement is July 1, 2018. On November 4, 2015, Wells Fargo Bank assigned $100 million of its share of the Wells Fargo Revolving Credit Agreement to the Industrial and Commercial Bank of China ("ICBC"). Wells Fargo will retain the remaining $80 million commitment. ICBC assumed all of Wells Fargo's obligations with respect to its $100 million share under the Wells Fargo Revolving Credit Agreement.

Under the Wells Fargo Revolving Credit Agreement, a failure by Metropolitan to perform or observe certain covenants could result in a termination of Wells Fargo Bank and ICBC's commitments and entitle them to declare all amounts then outstanding to be immediately due and payable. Metropolitan has secured its obligation to pay principal and interest under the Wells Fargo Revolving Credit Agreement as Parity Obligations under the Master Resolution. Metropolitan has no obligation to make borrowings under, maintain, or renew the Wells Fargo Revolving Credit Agreement. See "—Limitations on Additional Revenue Bonds" above.

In the Wells Fargo Revolving Credit Agreement, Metropolitan designated the principal and interest payable as Excluded Principal Payments under the Master Resolution and thus, for purposes of calculating Maximum Annual Debt Service, included the amount of principal and interest due and payable under the Revolving Credit Agreements on a schedule of Assumed Debt Service. This schedule of Assumed Debt Service assumes that Metropolitan will pay the principal under the Revolving Credit Agreements over a period of 30 years at a fixed interest rate of 3.75 percent. Pursuant to the terms of the Master Resolution, while the Revolving Credit Agreements are in force and effect, when Metropolitan calculates its covenant relating to the creation or incurrence of additional indebtedness, it will add an amount to its Net Operating Revenues relating to an assumed annual debt service payment that Metropolitan would receive if it were to use the proceeds of the Revolving Credit Agreements to purchase Self-Liquidity Bonds.

**Short-Term Revolving Credit Facilities**

In April 2016, Metropolitan entered into a noteholder's agreement with RBC Municipal Products, LLC ("RBC") for the purchase by RBC and sale by Metropolitan of Metropolitan's Index Notes, Series 2016 ("RBC Facility"). Also in April 2016, Metropolitan entered into a note purchase and continuing covenant agreement with U.S. Bank National Association ("US Bank"), for the purchase by US Bank and sale by Metropolitan of Metropolitan's Flexible Rate Revolving Notes, Series 2016 ("US Bank Facility," and together with the RBC Facility, the "Short-Term Revolving Credit Facilities"). Metropolitan is permitted to sell up to $200 million of notes under each of the Short-Term Revolving Credit Facilities for an aggregate amount of available borrowings of $400 million. Metropolitan may borrow, pay down and re-borrow amounts under each of the Short-Term Revolving Credit Facilities. Currently, Metropolitan has sold $250 million of notes under the Short-Term Revolving Credit Facilities ($125 million under each of the Short-Term Revolving Credit Facilities). See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A.

Each of the Short-Term Revolving Credit Facilities bear interest at a variable rate of interest. The US Bank Facility bears interest at a spread to one-month London interbank offering rate ("LIBOR") for taxable borrowings or to 70% of one-month LIBOR for tax-exempt borrowings, while the RBC Facility bears interest at a spread to one-month LIBOR for taxable borrowings or to the SIFMA Municipal Swap Index for tax-exempt borrowings. Under the Short-Term Revolving Credit Facilities, a failure by Metropolitan to perform or observe its covenants could result in a termination of the respective bank commitments and entitle them to declare all amounts then outstanding to be immediately due and payable. Metropolitan has secured its

obligation to pay principal and interest under the Short-Term Credit Facilities as Parity Obligations under the Master Resolution.

In the Short-Term Revolving Credit Facilities agreements, Metropolitan designated the principal and interest payable as Excluded Principal Payments under the Master Resolution and thus, for purposes of calculating Maximum Annual Debt Service, included the amount of principal and interest due and payable under the Short-Term Revolving Credit Facilities on a schedule of Assumed Debt Service. This schedule of Assumed Debt Service assumes that Metropolitan will pay the principal under the Short-Term Revolving Credit Facilities over a period of 30 years at a fixed interest rate of approximately 3.3 percent. Pursuant to the terms of the Master Resolution, while the Short-Term Revolving Credit Facilities are in force and effect, when Metropolitan calculates its covenant relating to the creation or incurrence of additional indebtedness, it will add an amount to its Net Operating Revenues relating to an assumed annual debt service payment that Metropolitan would receive if it were to sell the remaining notes under the Short-Term Revolving Credit Facilities.

**Subordinate Revenue Obligations**

In March 2016, Metropolitan adopted a new Master Subordinate Resolution, which permits Metropolitan to issue bonds and other obligations secured with a pledge that is subordinate to the pledge securing Parity Bonds and Parity Obligations. Metropolitan expects to issue its first series of bonds under the Master Subordinate Resolution at the end of June 2016 in an aggregate principal amount of $175 million.

Metropolitan currently is authorized to issue subordinate debt of up to $400,000,000 of Commercial Paper Notes payable from Net Operating Revenues on a basis subordinate to the Parity Bonds and the Parity Obligations. Although no Commercial Paper Notes are currently outstanding, the authorization remains in full force and effect and Metropolitan may issue Commercial Paper Notes from time to time. In addition, Metropolitan obtained a $20 million California Safe Drinking Water Revolving Fund Loan in 2003 at an interest rate of 2.39 percent per annum to reimburse construction costs for oxidation retrofit facilities at the Henry J. Mills Treatment Plant in Riverside County. The loan payment obligation is subordinate to the Parity Bonds and Parity Obligations. As of June 1, 2016, the principal balance outstanding was $9.7 million. Metropolitan expects to refund this loan in July 2016.

**General Obligation Bonds**

As of June 1, 2016, $92,865,000 aggregate principal amount of general obligation bonds payable from *ad valorem* property taxes were outstanding. See "METROPOLITAN REVENUES — General" and "— Revenue Allocation Policy and Tax Revenues" in this Appendix A. Metropolitan's revenue bonds are not payable from the levy of *ad valorem* property taxes.

| General Obligation Bonds | Amount Issued[1] | Principal Outstanding |
|---|---|---|
| Waterworks General Obligation Refunding Bonds, 2009 Series A | $45,515,000 | $30,745,000 |
| Waterworks General Obligation Refunding Bonds, 2010 Series A | 39,485,000 | 23,065,000 |
| Waterworks General Obligation Refunding Bonds, 2014 Series A | 49,645,000 | 39,055,000 |
| Total | $134,645,000 | $92,865,000 |

*Source: Metropolitan.*

(1) Voters authorized Metropolitan to issue $850,000,000 of Waterworks General Obligation Bonds, Election 1966, in multiple series, in a special election held on June 7, 1966. This authorization has been fully utilized. This table lists bonds that refunded such Waterworks General Obligation Bonds, Election 1966.

**State Water Contract Obligations**

*General*. On November 4, 1960, Metropolitan entered into its State Water Contract with DWR, under which Metropolitan receives an entitlement to water service from the State Water Project. Subsequently, other public agencies also entered into water supply contracts with DWR, all of which were patterned after Metropolitan's State Water Contract. Metropolitan's State Water Contract accounts for nearly one-half of the total entitlement for State Water Project water contracted for by all contractors.

The State Water Contract will remain in effect until 2035 or until all DWR bonds issued to finance construction of project facilities are repaid, whichever is longer. At the expiration of the State Water Contract, Metropolitan has the option to continue service under substantially the same terms and conditions. In June 2014, DWR and State Water Project Contractors reached an AIP to extend the contract to 2085 and to make certain changes related to the financial management of the State Water Project in the future. See "METROPOLITAN'S WATER SUPPLY—State Water Project" in this Appendix A. As of June 1, 2016, the latest maturity of outstanding DWR bonds issued for such purpose was December 1, 2035.

Under the State Water Contract, Metropolitan is obligated to pay allocable portions of the cost of construction of the system and ongoing operating and maintenance costs through at least 2035, regardless of quantities of water available from the project. Other payments are based on deliveries requested and actual deliveries received, costs of power required for actual deliveries of water, and offsets for credits received. Metropolitan's payment obligation for the State Water Project for the fiscal year ended June 30, 2015 was $437 million, which amount reflects prior year's credits of $74.2 million. For the fiscal year ended June 30, 2015, Metropolitan's payment obligations under the State Water Contract were approximately 31 percent of Metropolitan's total annual expenditures. A portion of Metropolitan's annual property tax levy is for payment of State Water Contract obligations, as described above under "METROPOLITAN REVENUES—General" in this Appendix A. See Note 9(a) to Metropolitan's audited financial statements in Appendix B for an estimate of Metropolitan's payment obligations under the State Water Contract. Also see "POWER SOURCES AND COSTS" in this Appendix A for a description of current and future costs for electric power required to operate State Water Project pumping systems and a description of litigation involving the federal relicensing of the Hyatt-Thermalito hydroelectric generating facilities at Lake Oroville.

The State Water Contract requires that in the event that Metropolitan fails or is unable to raise sufficient funds by other means, Metropolitan must levy upon all property within its boundaries not exempt from taxation a tax or assessment sufficient to provide for all payments under the State Water Contract. Currently, a portion of the capital costs under the State Water Contract are paid from *ad valorem* taxes levied by Metropolitan. In the opinion of Metropolitan's General Counsel, a tax increase to provide for additional payments under the State Water Contract would be within the exemption permitted under Article XIIIA of the State Constitution as a tax to pay pre-1978 voter approved indebtedness.

Metropolitan capitalizes its share of system construction costs as participation rights in State Water Project facilities as such costs are billed by DWR. Unamortized participation rights essentially represent a prepayment for future water deliveries through the State Water Project system. Metropolitan's share of system operating and maintenance costs are annually expensed.

Metropolitan has entered into amendments to the State Water Contract that represent additional long-term obligations, as described below.

*Devil Canyon-Castaic Contract*. On June 23, 1972, Metropolitan and five other southern California public agencies entered into a contract (the "Devil Canyon-Castaic Contract") with DWR for the financing and construction of the Devil Canyon and Castaic power recovery facilities, located on the aqueduct system of the State Water Project. Under this contract, DWR agreed to build the Devil Canyon and Castaic facilities, using the proceeds of revenue bonds issued by DWR under the State Central Valley Project Act. DWR also agreed to use and apply the power made available by the construction and operation of such facilities to

deliver water to Metropolitan and the other contracting agencies. Metropolitan, in turn, agreed to pay to DWR 88 percent of the debt service on the revenue bonds issued by DWR. For calendar year 2015, this represented a payment of $7.7 million. In addition, Metropolitan agreed to pay 78.5 percent of the operation and maintenance expenses of the Devil Canyon facilities and 96 percent of the operation and maintenance expenses of the Castaic facilities. Metropolitan's obligations under the Devil Canyon-Castaic Contract continue until the bonds are fully retired in 2022 even if DWR is unable to operate the facilities or deliver power from these facilities.

*Off-Aqueduct Power Facilities*. In addition to system "on-aqueduct" power facilities costs, DWR has, either on its own or by joint venture, financed certain off-aqueduct power facilities. The power generated is utilized by the system for water transportation and other State Water Project purposes. Power generated in excess of system needs is marketed to various utilities and the California Independent System Operator. Metropolitan is entitled to a proportionate share of the revenues resulting from sales of excess power. By virtue of a 1982 amendment to the State Water Contract and the other water supply contracts, Metropolitan and the other water contractors are responsible for paying the capital and operating costs of the off-aqueduct power facilities regardless of the amount of power generated. Other costs of Metropolitan in relation to the State Water Project and the State Water Contract may increase as a result of restructuring of California's electric utility industry and new Federal Energy Regulatory Commission ("FERC") regulations.

*East Branch Enlargement Amendment*. In 1986, Metropolitan's State Water Contract and the water supply contracts of certain other State Water Project Contractors were amended for the purpose, among others, of financing the enlargement of the East Branch of the California Aqueduct. Under the amendment, enlargement of the East Branch can be initiated either at Metropolitan's request or by DWR finding that enlargement is needed to meet demands. Metropolitan, the other State Water Contractors on the East Branch, and DWR are currently in discussions on the timetable and plan for future East Branch enlargement actions.

The amendment establishes a separate subcategory of the Transportation Charge under the State Water Contract for the East Branch Enlargement and provides for the payment of costs associated with financing and operating the East Branch Enlargement. Under the amendment, the annual financing costs for such facilities financed by bonds issued by DWR are allocated among the participating contractors based upon the delivery capacity increase allocable to each participating contractor. Such costs include, but are not limited to, debt service, including coverage requirements, deposits to reserves, and certain operation and maintenance expenses, less any credits, interest earnings or other moneys received by DWR in connection with this facility.

If any participating contractor defaults on payment of its allocable charges under the amendment, among other things, the non-defaulting participating contractors may assume responsibility for such charges and receive delivery capability that would otherwise be available to the defaulting participating contractor in proportion to the non-defaulting contractor's participation in the East Branch Enlargement. If participating contractors fail to cure the default, Metropolitan will, in exchange for the delivery capability that would otherwise be available to the defaulting participating contractor, assume responsibility for the capital charges of the defaulting participating contractor.

*Water System Revenue Bond Amendment*. In 1987, the State Water Contract and other water supply contracts were amended for the purpose of financing State Water Project facilities through revenue bonds. This amendment establishes a separate subcategory of the Delta Water Charge and the Transportation Charge for projects financed with DWR water system revenue bonds. This subcategory of charge provides the revenues required to pay the annual financing costs of the bonds and consists of two elements. The first element is an annual charge for repayment of capital costs of certain revenue bond financed water system facilities under the existing water supply contract procedures. The second element is a water system revenue bond surcharge to pay the difference between the total annual charges under the first element and the annual financing costs, including coverage and reserves, of DWR's water system revenue bonds.

If any contractor defaults on payment of its allocable charges under this amendment, DWR is required to allocate a portion of the default to each of the nondefaulting contractors, subject to certain limitations, including a provision that no nondefaulting contractor may be charged more than 125 percent of the amount of its annual payment in the absence of any such default. Under certain circumstances, the nondefaulting contractors would be entitled to receive an allocation of the water supply of the defaulting contractor.

The following table sets forth Metropolitan's projected costs of State Water Project water based upon DWR's Annual Billing to Metropolitan for calendar year 2016 and, for fiscal year 2015-16, actual financial results through March 31, 2016 and revised projections for the balance of fiscal year 2015-16. For all other years the projections are based on Metropolitan's adopted biennial budget for fiscal years 2016-17 and 2017-18 and the ten-year financial forecast included in the adopted budget. See "METROPOLITAN'S WATER SUPPLY—State Water Project—*Bay-Delta Planning Activities*" in this Appendix A.

**PROJECTED COSTS OF METROPOLITAN FOR STATE WATER PROJECT WATER[(1)]**
**(Dollars in Millions)**

| Year Ending June 30 | Capital Costs | Minimum OMP&R[(2)] | Power Costs[(3)] | Refunds & Credits | Total[(4)] |
|---|---|---|---|---|---|
| 2016 | $168.9 | $278.8 | $140.6 | $(60.9) | $527.3 |
| 2017 | 181.7 | 282.1 | 157.1 | (38.6) | 582.3 |
| 2018 | 184.2 | 294.7 | 158.4 | (37.9) | 599.4 |
| 2019 | 195.3 | 315.9 | 170.4 | (36.1) | 645.5 |
| 2020 | 212.1 | 340.5 | 191.1 | (35.3) | 708.7 |

*Source: Metropolitan.*

(1) Projections are based upon DWR's Annual Billing to Metropolitan for 2016 and attachments (dated July 1, 2015) and, for fiscal year 2015-16, actual financial results through March 31, 2016 and revised projections for the balance of the fiscal year. For other years, the projections are based on Metropolitan's adopted biennial budget for fiscal years 2016-17 and 2017-18, and the ten-year financial forecast included in the adopted budget. All costs are adjusted from calendar year to fiscal year periods ending June 30. The total charges shown above differ from those shown in Note 9 of Metropolitan's audited financial statements for the fiscal year ended June 30, 2015 and June 30, 2014, in Appendix B, due to the inclusion of allowances for inflation and anticipated construction of additional State Water Project facilities. See "POWER SOURCES AND COSTS—State Water Project" in this Appendix A.

(2) Minimum Operations, Maintenance, Power and Replacement ("OMP&R") represents costs which are fixed and do not vary with the amount of water delivered.

(3) Assumptions for water deliveries through the California Aqueduct (not including SBVMWD and DWA/CVWD transfers and exchanges) into Metropolitan's service area and to storage programs are as follows: 0.63 million acre-feet for fiscal year 2015-16, 0.74 million acre-feet for fiscal year 2016-17, 0.77 million acre-feet for fiscal year 2017-18, 0.79 million acre-feet for fiscal year 2018-19, and 0.87 million acre-feet for fiscal year 2019-20. Availability of State Water Project supplies vary and deliveries may include transfers and storage. All deliveries are within maximum contract amount and are based upon availability, as determined by hydrology, water quality and wildlife conditions. See "METROPOLITAN'S WATER SUPPLY—State Water Project—*Endangered Species Act Considerations*" in this Appendix A.

(4) Annual totals include California WaterFix related costs for the fiscal years ended June 30, 2016 through June 30, 2020 of $-0- in fiscal year 2015-16 through fiscal year 2017-18, $20 million in fiscal year 2018-19, and $38 million in fiscal year 2019-20. Projected California WaterFix costs are reflected in the ten-year financial forecast provided in the biennial budget for fiscal years 2016-17 and 2017-18 that was approved by Metropolitan's Board on April 12, 2016.

## Other Long-Term Commitments

Metropolitan also has various ongoing fixed annual obligations under its contract with the United States Department of Energy for power from the Hoover Power Plant. Under the terms of the Hoover Power Plant contract, Metropolitan purchases energy to pump water through the CRA. In fiscal year 2014-15

Metropolitan paid approximately $39.6 million under this contract. Payments made under the Hoover Power Plant contract are treated as operation and maintenance expenses. On March 12, 2014, Metropolitan and the other Hoover Contractors funded the defeasance of $124 million of bonds issued by the U.S. Treasury Department for facilities related to the Hoover Dam and Power Plant. Following this repayment, Metropolitan expects to reduce its annual payment for Hoover power by approximately $2.3 million. See "POWER SOURCES AND COSTS—Colorado River Aqueduct" in this Appendix A.

**Defined Benefit Pension Plan and Other Post-Employment Benefits**

Metropolitan is a member of the California Public Employees' Retirement System ("PERS"), a multiple-employer pension system that provides a contributory defined-benefit pension for substantially all Metropolitan employees. PERS provides retirement and disability benefits, annual cost-of-living adjustments and death benefits to plan members and beneficiaries. PERS acts as a common investment and administrative agent for participating public entities within the State. PERS is a contributory plan deriving funds from employee contributions as well as from employer contributions and earnings from investments. A menu of benefit provisions is established by State statutes within the Public Employees' Retirement Law. Metropolitan selects optional benefit provisions from the benefit menu by contract with PERS.

Metropolitan makes contributions to PERS based on actuarially determined employer contribution rates. The actuarial methods and assumptions used are those adopted by the PERS Board of Administration. Employees are required to contribute seven percent of their earnings (excluding overtime pay) to PERS. Pursuant to the current memoranda of understanding, Metropolitan contributes the requisite seven percent contribution for all employees represented by the Management and Professional Employees Association, the Association of Confidential Employees, Supervisors and Professional Personnel Association and AFSCME Local 1902 and who were hired prior to January 1, 2012. Employees in all four bargaining units who were hired on or after January 1, 2012, pay the full seven percent employee contribution to PERS. Metropolitan contributes the entire seven percent on behalf of unrepresented employees. In addition, Metropolitan is required to contribute the actuarially determined remaining amounts necessary to fund the benefits for its members.

The contribution requirements of the plan members are established by State statute and the employer contribution rate is established and may be amended by PERS. The fiscal year 2014-15 contribution requirement is based on the June 30, 2012 valuation report, the fiscal year 2015-16 contribution is based on the June 30, 2013 valuation report, and the fiscal year 2016-17 contribution is based on the June 30, 2014 valuation report. The PERS' projected investment return (the discount rate) for each of these fiscal years is 7.5 percent.

For fiscal year 2014-15, Metropolitan contributed 17.65 percent of annual covered payroll. The fiscal year 2014-15 annual pension cost was $47.0 million, of which $12.7 million was for Metropolitan's pick-up of the employees' seven percent share. For fiscal years 2015-16 and 2016-17, Metropolitan is required to contribute 19.74 and 20.75 percent of annual covered payroll, respectively, in addition to member contributions paid by Metropolitan.

On April 17, 2013, the PERS Board of Administration approved changes to the amortization and smoothing policies to spread all gains and losses over a fixed 30-year period from a rolling 30-year period, and to recognize increases or decreases in investment returns over a 5-year period versus a 15-year period. In addition, PERS will no longer use an actuarial valuation of assets. These changes will result in higher employer contribution rates in the near term but lower rates in the long term. The new policies are effective for fiscal year 2015-16. The following table shows the funding progress of Metropolitan's pension plan.

**Metropolitan Pension Plan Assets**
**(dollars in billions)**

| | | | | Funded (Unfunded) | | Funded Ratios | |
|---|---|---|---|---|---|---|---|
| **Valuation Date** | **Accrued Liability** | **Actuarial Value of Assets** | **Market Value of Assets** | **Actuarial Value** | **Market Value** | **Actuarial Value** | **Market Value** |
| 6/30/14 | $1.983 | N/A | $1.560 | N/A | $(0.423) | N/A | 78.7% |
| 6/30/13 | $1.805 | N/A | $1.356 | N/A | ($0.449) | N/A | 75.1% |
| 6/30/12 | $1.731 | $1.471 | $1.227 | ($0.260) | ($0.504) | 85.0% | 70.9% |
| 6/30/11 | $1.674 | $1.416 | $1.257 | ($0.258) | ($0.417) | 84.5% | 75.1% |
| 6/30/10 | $1.563 | $1.351 | $1.059 | ($0.212) | ($0.504) | 86.4% | 67.7% |
| 6/30/09 | $1.478 | $1.287 | $0.940 | ($0.191) | ($0.538) | 87.1% | 63.6% |

*Source: California Public Employees' Retirement System.*

For more information on the plan, see APPENDIX B—"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITOR'S REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014 AND BASIC FINANCIAL STATEMENTS FOR THE NINE MONTHS ENDED MARCH 31, 2016 AND 2015 (UNAUDITED)."

Metropolitan currently provides post-employment medical insurance to retirees and pays the post-employment medical insurance premiums to PERS. On January 1, 2012, Metropolitan implemented a longer vesting schedule for retiree medical benefits, which applies to all new employees hired on or after January 1, 2012. Payments for this benefit were $13.0 million in fiscal year 2014-15. Under Governmental Accounting Standards Board Statement No. 45, Accounting and Financial Reporting by Employers for Post-employment Benefits Other Than Pensions, Metropolitan is required to account for and report the outstanding obligations and commitments related to such benefits, commonly referred to as other post-employment benefits ("OPEB"), on an accrual basis.

The actuarial valuation dated June 30, 2015, was released in May of 2016. This valuation indicates that the Annual Required Contribution ("ARC") in fiscal years 2016-17 and 2017-18 will be $29.3 million and $30.1 million, respectively. The ARC was based on the entry-age normal actuarial cost method with contributions determined as a level percent of pay. The actuarial assumptions included (a) a 7.25 percent investment rate of return, (b) a general inflation component of 3.0 percent and (c) increases to basic medical premiums of 8.0 percent for non-Medicare plans for 2015, grading down to 5.0 percent for 2021 and thereafter. As of June 30, 2015, the date of the OPEB actuarial report, the unfunded actuarial accrued liability was estimated to be $258.8 million.. The unfunded actuarial accrued liability is amortized over a fixed 30-year period starting with fiscal year 2007-08 and ending in 2037. Changes to assumptions are amortized over a fixed 20-year period. Actuarial gains and losses are amortized over a fixed 15-year period.

In September 2013, Metropolitan's Board established an irrevocable OPEB trust fund with an initial deposit of $40.0 million. During fiscal year 2013-14, the Board approved funding of an additional $100.0 million which was deposited into the irrevocable OPEB trust fund. As part of its biennial budget process, the Board approved the full funding of the ARC for fiscal years 2016-17 and 2017-18.

## HISTORICAL AND PROJECTED REVENUES AND EXPENSES

The "Historical and Projected Revenues and Expenses" table below for fiscal year 2011-12 provides a summary of revenues and expenditures of Metropolitan prepared on a cash basis, which conforms to the Revenue Bond Resolution provisions regarding rates and additional Bonds (as defined in the Master Resolution) and Parity Obligations (as defined in the Master Resolution). See "METROPOLITAN EXPENDITURES—Limitations on Additional Revenue Bonds" in this Appendix A. Under cash basis accounting, water sales revenues are recorded when received (two months after billed) and expenses when paid (approximately one month after invoiced). The actual financial reports beginning in fiscal year 2012-13 and the financial projections for fiscal years 2015-16 through 2019-20 are prepared on a modified accrual basis. This is consistent with the adopted biennial budget for fiscal years 2016-17 and 2017-18, which was prepared on a modified accrual basis instead of a cash basis. The table does not reflect the accrual basis of accounting, which is used to prepare Metropolitan's annual audited financial statements. The modified accrual basis of accounting varies from the accrual basis of accounting in the following respects: depreciation and amortization will not be recorded and payments of debt service will be recorded when due and payable. Under the modified accrual basis of accounting, revenues are recognized in the fiscal year in which they are earned and expenses are recognized when incurred. Thus water sales revenues are recognized in the month the water is sold and expenses are recognized when goods have been received and services have been rendered. The change to modified accrual accounting is for budgeting purposes and Metropolitan will continue to calculate compliance with its rate covenant, limitations on additional bonds and other financial covenants in the Resolutions in accordance with their terms.

The projections are based on assumptions concerning future events and circumstances that may impact revenues and expenses and represent management's best estimates of results at this time. See footnotes to the table below entitled "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" for relevant assumptions, including projected water sales and average annual increase in the effective water rate, and "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" for a discussion of potential impacts. Some assumptions inevitably will not materialize and unanticipated events and circumstances may occur. Therefore, the actual results achieved during the projection period will vary from the projections and the variations may be material.

For fiscal year 2014-15, Miscellaneous Revenues reflect the use of $142 million from reserves to fund a like amount of costs for conservation and supply programs. Fiscal year 2015-16 reflects actual financial results through March 31, 2016 and projections for the balance of the fiscal year. Projections for fiscal year 2015-16 reflect the use of $275 million from reserves to fund a like amount of costs for conservation and supply programs. For fiscal years 2016-17 through 2019-20, the projections reflect the ten-year financial forecast provided in the biennial budget for fiscal years 2016-17 and 2017-18 that was approved on April 12, 2016. This includes the projected issuance of $320 million of bonds in fiscal years 2017-18 through 2019-20 to finance the CIP. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES—Water Sales Revenues" and "CAPITAL INVESTMENT PLAN—Capital Investment Plan Financing" in this Appendix A.

Water sales were 1.91 million acre-feet in fiscal year 2014-15. Water sales are projected to be 1.60 million acre-feet in fiscal year 2015-16 and 1.70 million acre-feet for each of fiscal years 2016-17 through 2019-20. Rates and charges increased by 1.5 percent on January 1, 2015 and by 1.5 percent on January 1, 2016. On April 12, 2016 the Board adopted average increases in rate and charges of 4.0 percent, which will become effective on January 1, 2017, and an additional 4.0 percent, effective on January 1, 2018. Rates and charges are projected to increase an average of 4.5 percent annually thereafter. Actual rates and charges to be effective in 2019 and thereafter are subject to adoption by Metropolitan's Board. The projections were prepared by Metropolitan and have not been reviewed by independent certified public accountants or any entity other than Metropolitan. Dollar amounts are rounded.

Metropolitan's resource planning projections are developed using a comprehensive analytical process that incorporates demographic growth projections from recognized regional planning entities, historical and projected data acquired through coordination with local agencies, and the use of generally accepted empirical and analytical methodologies. See "METROPOLITAN'S WATER SUPPLY—Integrated Water Resources Plan" and "—The Integrated Resources Plan Strategy" in this Appendix A. Metropolitan has conservatively set the water sales projections in the following table which are below its projections for resource planning purposes. Metropolitan estimates that its water sales projections have a seventy percent statistical likelihood of being exceeded, compared to the fifty percent exceedance levels in the projections of water sales used to set prior years' budgets and rates. Nevertheless, Metropolitan's assumptions have been questioned by directors representing SDCWA on Metropolitan's Board. Metropolitan has reviewed SDCWA's concerns and, while recognizing that assumptions may vary, believes that the estimates and assumptions that support Metropolitan's projections are reasonable based upon history, experience and other factors as described above.

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## HISTORICAL AND PROJECTED REVENUES AND EXPENSES[a]
## (Dollars in Millions)

| | Actual | | | | Projected | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Water Sales[b] | $1,062 | $1,283 | $1,485 | $1,383 | $1,156 | $1,305 | $1,375 | $1,473 | $1,533 |
| Additional Revenue Sources[c] | 168 | 173 | 182 | 199 | 200 | 182 | 173 | 179 | 184 |
| Total Operating Revenues | 1,230 | 1,456 | 1,667 | 1,582 | 1,356 | 1,487 | 1,548 | 1,652 | 1,717 |
| O&M, CRA Power and Water Transfer Costs[d] | (476) | (456) | (512) | (697) | (847) | (618) | (631) | (661) | (680) |
| Total SWC OMP&R and Power Costs[e] | (316) | (337) | (342) | (308) | (415) | (439) | (453) | (486) | (532) |
| Total Operation and Maintenance | (792) | (793) | (854) | (1,005) | (1,262) | (1,057) | (1,084) | (1,147) | (1,212) |
| Net Operating Revenues | $ 438 | $ 663 | $ 813 | $ 577 | $94 | $431 | $ 464 | $505 | $505 |
| Miscellaneous Revenue[f] | 56 | 23 | 19 | 21 | 24 | 23 | 24 | 24 | 24 |
| Transfer from Reserve Funds[g] | - | - | - | 142 | 275 | - | - | - | - |
| Sales of Hydroelectric Power[h] | 31 | 25 | 15 | 8 | 6 | 15 | 22 | 22 | 23 |
| Interest on Investments[i] | 11 | (2) | 19 | 13 | 14 | 13 | 12 | 19 | 19 |
| Adjusted Net Operating Revenues[j] | 536 | 709 | 866 | 761 | 413 | 482 | 521 | 570 | 571 |
| Bonds and Additional Bonds Debt Service[k] | (297) | (298) | (343) | (280) | (302) | (310) | (330) | (328) | (322) |
| Subordinate Revenue Obligations[l] | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Funds Available from Operations | $ 238 | $ 410 | $ 522 | $ 480 | $ 110 | $ 171 | $ 190 | $ 241 | $ 248 |
| Bonds and Additional Bonds Debt Service Coverage[m] | 1.81 | 2.38 | 2.52 | 2.72 | 1.37 | 1.55 | 1.58 | 1.74 | 1.77 |
| Debt Service Coverage on all Obligations[n] | 1.80 | 2.37 | 2.51 | 2.71 | 1.36 | 1.55 | 1.57 | 1.73 | 1.77 |
| Funds Available from Operations | $ 238 | $ 410 | $ 522 | $ 480 | $ 110 | $ 171 | $ 190 | $ 241 | $ 248 |
| Other Revenues (Expenses) | (3) | (5) | (6) | (7) | (8) | (6) | (8) | (7) | (7) |
| Pay-As-You Go Construction[p] | (45) | (55) | (117) | (210) | (284) | (120) | (120) | (120) | (120) |
| Pay-As-You Go Funded from Replacement & Refurbishment Fund Reserves[p] | | | | | 160 | | | | |
| Total SWC Capital Costs Paid from Current Year Operations | (112) | (88) | (68) | (46) | (32) | (68) | (65) | (71) | (86) |
| Remaining Funds Available from Operations | 77 | 262 | 331 | 217 | (54) | (22) | 1 | 43 | 34 |
| Fixed Charge Coverage[o] | 1.31 | 1.83 | 2.10 | 2.33 | 1.23 | 1.27 | 1.32 | 1.43 | 1.40 |
| Property Taxes | 90 | 95 | 95 | 104 | 104 | 98 | 101 | 103 | 105 |
| General Obligation Bonds Debt Service | (39) | (40) | (40) | (22) | (22) | (23) | (19) | (14) | (14) |
| SWC Capital Costs Paid from Taxes | (51) | (55) | (55) | (82) | (82) | (75) | (82) | (88) | (91) |
| Net Funds Available from Current Year[p] | $77 | $262 | $331 | $217 | $(54) | $(22) | $1 | $43 | $34 |

*Source: Metropolitan.*

*(Footnotes on next page)*

(a) Unaudited. Prepared on a cash basis for fiscal year ending June 30, 2012, and on a modified accrual basis for fiscal years ending June 30, 2013 through June 30, 2020. Projected revenues and expenditures in fiscal year 2015-16 are based on actual financial results through March 31, 2016 and revised projections for the balance of the fiscal year. Projections for fiscal years 2016-17 thru 2019-20 are based on assumptions and estimates used in the adopted fiscal years 2016-17 and 2017-18 biennial budget and reflect the projected issuance of additional bonds.

(b) During the fiscal years ended June 30, 2012 through June 30, 2015, annual water sales (in acre-feet) were 1.68 million, (including 225,000 acre-feet of replenishment sales), 1.86 million, 2.04 million and 1.905 million, respectively. See "METROPOLITAN REVENUES—Water Sales Revenues," the table entitled "SUMMARY OF WATER SOLD AND WATER SALES" in this Appendix A. The water sales projections (in acre-feet) are 1.60 million acre-feet for fiscal year 2015-16 and 1.70 million for fiscal years 2016-17 through 2019-20. Projections reflect Board adopted rate and charge increases of 4.0 percent, which will become effective on January 1, 2017 and 4.0 percent, which will become effective on January 1, 2018. Rates and charges are projected to increase an average of 4.5 percent per fiscal year thereafter, subject to adoption by Metropolitan's Board. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" below.

(c) Includes receipts from water standby, readiness-to-serve and capacity charges. The term Operating Revenues excludes *ad valorem* taxes. See "METROPOLITAN REVENUES — Additional Revenue Components" in this Appendix A.

(d) Water Transfer Costs are included in operation and maintenance expenses for purposes of calculating the debt service coverage on all Obligations.

(e) Includes on and off aqueduct power and operation, maintenance, power and replacement costs payable under the State Water Contract. See "METROPOLITAN EXPENDITURES—State Water Contract Obligations" in this Appendix A.

(f) May include lease and rental net proceeds, net proceeds from sale of surplus property, reimbursements, and federal interest subsidy payments for Build America Bonds. Also includes in fiscal year 2011-12, $27.5 million from CVWD for delivery of 105,000 acre-feet under an exchange agreement between Metropolitan and CVWD. See "METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct—*Quantification Settlement Agreement*" in this Appendix A.

(g) Reflects transfers from the Water Management Fund, the Water Stewardship Fund, and the Water Rate Stabilization Fund, of $142 million in fiscal year 2014-15, and projected transfers of $275 million in fiscal year 2015-16.

(h) Includes CRA power sales.

(i) Does not include interest applicable to Bond Construction Funds, the Excess Earnings Funds, other trust funds and the Deferred Compensation Trust Fund. Fiscal year 2012-13 included Fair Value Adjustment of $(13.8) million, as per modified accrual accounting

(j) Adjusted Net Operating Revenues is the sum of all available revenues that the revenue bond resolutions specify may be considered by Metropolitan in setting rates and issuing additional Bonds and Parity Obligations.

(k) Includes debt service on outstanding Bonds, and additional Bonds (projected). Includes issuance of $208 million of revenue bonds in December 2015. Assumes issuance of $80 million, annually in additional Bonds as provided in budget assumptions for the adopted biennial budget for fiscal years 2016-17 and 2017-18 and as projected for fiscal years 2018-19 and 2019-20. For fiscal years 2013-14 and 2014-15, reflects the defeasance of the 2004 Series B Water Revenue Refunding Bonds, payable on July 1, 2014, through a payment of $33.7 million to an escrow account on May 29, 2014. See "CAPITAL INVESTMENT PLAN—Capital Investment Plan Financing" in this Appendix A.

(l) Consisting of subordinate lien California Safe Drinking Water Revolving Fund Loan debt service.

(m) Adjusted Net Operating Revenues divided by the sum of debt service on outstanding Bonds and additional Bonds (projected)

(n) Adjusted Net Operating Revenues, divided by the sum of debt service on outstanding Bonds, the subordinate lien California Safe Drinking Water Revolving Fund Loan and additional Bonds (projected). See "METROPOLITAN EXPENDITURES—Subordinate Revenue Obligations" in this Appendix A.

(o) Adjusted Net Operating Revenues, divided by the sum of State Water Contract capital costs paid from current year operations and debt service on outstanding Bonds, the subordinate lien California Safe Drinking Water Revolving Fund Loan, and additional Bonds (projected).

(p) For Fiscal Year 2012-13, includes amounts that were transferred prior to June 30, 2013: $25 million to the Water Transfer Fund, $25 million to a trust to pre-fund Metropolitan's unfunded liability for other post-employment benefits, and $25 million for pay-as-you-go Construction. For Fiscal Year 2013-14, includes amounts transferred prior to June 30, 2014: $100 million to a trust to pre-fund Metropolitan's unfunded liability for other post-employment benefits; $100 million for pay-as-you-go Construction, $232 million to the Water Management Fund, for water purchases to replenish storage and funding drought response programs. For Fiscal Year 2014-15, includes amounts transferred prior to June 30, 2015: $160 million to the Water Management Fund, for water conservation programs. For fiscal year 2015-16, Metropolitan plans to use $264 million for acquiring properties in Riverside and Imperial Counties, funded by $160 million from the Replacement and Refurbishment Fund Reserves and the balance from unrestricted reserves. This land purchase will be reflected as a Pay-As-You-Go expenditure for fiscal year 2015-16.

## MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES

### Water Sales Revenues

Metropolitan relies on revenues from water sales for about 80 to 85 percent of its total revenues. In adopting the budget and rates and charges for each fiscal year, Metropolitan's board reviews the anticipated revenue requirements and projected water sales to determine the rates necessary to produce the required revenues to be derived from water sales during the fiscal year. Metropolitan sets rates and charges estimated to provide operating revenues sufficient, with other sources of funds, to provide for payment of its expenses. See "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

Metropolitan's Board has adopted annual increases in water rates each year beginning with the rates effective January 1, 2004. See "METROPOLITAN REVENUES—Rate Structure" and "—Classes of Water

Service" in this Appendix A. On April 12, 2016, Metropolitan's Board adopted an average 4.0 percent water rate increase, to become effective January 1, 2017, and an additional average 4.0 percent water rate increase to become effective January 1, 2018. Previously, on April 8, 2014, Metropolitan's Board adopted a 1.5 percent water rate increase, which became effective January 1, 2015, and an additional 1.5 percent water rate increase which became effective January 1, 2016; and on April 10, 2012, Metropolitan's Board adopted annual water rate increases of 5.0 percent, which became effective January 1, 2013 and January 1, 2014.

Projections for fiscal year 2015-16, in the table above, reflect actual financial results through March 31, 2016 and revised projections for the balance of the fiscal year. The financial projections for fiscal years 2016-17 and 2017-18 reflect the adopted biennial budget for these fiscal years that was approved by the Board on April 12, 2016. Financial projections for fiscal years 2018-19 and 2019-20 are reflected in the ten-year financial forecast provided in the adopted biennial budget. The fiscal year 2016-17 and 2017-18 biennial budget and rates set the stage for predictable and reasonable rate increases over the ten-year planning period, with Board adopted rate increases of 4 percent annually in both fiscal years 2016-17 and 2017-18, and projected average increases of 4.5 percent per year thereafter. Actual rates and charges to be effective in fiscal year 2018-19 and thereafter are subject to adoption by Metropolitan's Board as part of the biennial budget process at which point the ten-year forecast will also be updated as well. Increases in rates and charges reflect the impact of reduced water sales projections, increasing operations and maintenance costs, and increasing State Water Project costs, when compared to prior fiscal years.

Metropolitan's revenues exceeded expenses during fiscal year 2014-15, resulting in a significant increase in unrestricted reserves. On May 29, 2015, Metropolitan's Board approved the use of $160 million of unrestricted reserves over the target reserve level, $50 million from the Water Stewardship Fund, and $140 million from the Water Management Fund to fund conservation incentives. As of June 30, 2015, Metropolitan's unrestricted reserves were $476 million, on a modified accrual basis. On July 14, 2015, Metropolitan's Board approved $264 million to acquire various properties in Riverside and Imperial Counties, with $160 million funded from the Replacement and Refurbishment Fund and the remaining amount from unrestricted reserves. Unrestricted reserves, as of April 30, 2016, include $250 million drawn from Short-Term Revolving Credit Facilities with RBC Municipal Products, LLC, and U.S. Bank N.A, and deposited in Metropolitan's financial reserves. See "METROPOLITAN REVENUES—Litigation Challenging Rate Structure" and "Financial Reserve Policy" in this Appendix A.

Financial projections for fiscal year 2015-16 reflect lower water sales revenues that are estimated to be $153 million below budget, based on the revised water sales projection of 1.60 million acre-feet, compared to the budgeted 1.75 million acre-feet. In addition, State Water Project operating expenditures are projected to be $94 million above budget, which offset $56 million in lower projected State Water Project power costs, based on a lower than budgeted water allocation. In addition, in October 2015, Metropolitan's Board approved $44.4 million to pay SNWA to store 150,000 acre-feet of water with Metropolitan. See "—METROPOLITAN'S WATER SUPPLY—Colorado River Aqueduct—*Interim Surplus Guidelines"* in this Appendix A. The combination of lower than budgeted water sales revenue and higher than budgeted expenditures has resulted in projected fiscal year 2015-16 revenue bond debt service coverage to be 1.37x and fixed charge coverage to be 1.23x. Higher conservation spending for fiscal year 2015-16 is being funded from estimated transfers of $275 million from the Water Management Fund, as reflected in the table above. The fiscal year 2015-16 CIP, currently estimated at $235 million, will be primarily funded from bond proceeds rather than from budgeted current year pay-as-you-go expenditures and General and Replacement and Refurbishment Fund balances. Metropolitan projects that its unrestricted reserves as of June 30, 2016 will be approximately $408 million. See "METROPOLITAN REVENUES— "Financial Reserve Policy" in this Appendix A.

**Water Sales Projections**

Water sales forecasts in the table above are: 1.60 million acre-feet for fiscal year 2015-16 and 1.70 million acre-feet, for each of fiscal years 2016-17 through 2019-20. For purposes of comparison,

Metropolitan's highest water sales during the past eight fiscal years was approximately 2.30 million acre-feet in fiscal year 2007-08 and the lowest was 1.63 million acre-feet in fiscal year 2010-11. See "METROPOLITAN REVENUES—Water Sales Revenues" in this Appendix A.

Metropolitan's water sales projections are the result of a comprehensive retail demand, conservation, and local supply estimation process, including supply projections from member agencies and other water providers within Metropolitan's service area. Retail demands for water are estimated with a model driven by projections of relevant demographics provided by SCAG and SANDAG. Retail demands are adjusted downward for conservation savings and local supplies, with the remainder being the estimated demand for Metropolitan supplies. Conservation savings estimates include all conservation programs in place to date as well as estimates of future conservation program goals that will result from regional 20 percent reductions by 2020 conservation savings. See "METROPOLITAN'S WATER SUPPLY—Water Conservation" in this Appendix A. Local supplies include water produced by local agencies from various sources including but not limited to groundwater, surface water, locally-owned imported supplies, and recycled water (see "REGIONAL WATER RESOURCES" in this Appendix A). For example, water sales projections for fiscal year 2015-16 assumed that local projects such as groundwater recovery and desalination projects (see "REGIONAL WATER RESOURCES—Local Water Supplies" in this Appendix A) would become operational and produce local supplies in 2016. For additional description of Metropolitan's water sales projections, see "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

The water sales projections used to determine water rates and charges assume an average year hydrology. Actual water sales are likely to vary from projections. Over the eleven-year period from fiscal year 2004-05 through fiscal year 2014-15, actual water sales exceeded budgeted sales in six fiscal years, with the greatest positive variance in fiscal year 2013-14 when actual sales of 2.04 million acre-feet were 120 percent of budgeted sales (1.70 million acre-feet). Actual sales were less than budgeted sales in five fiscal years, with the greatest negative variance in fiscal year 2010-11 when actual sales of 1.63 million acre-feet were 84 percent of budgeted sales (1.93 million acre-feet). In years when actual sales exceed projections, the revenues from water sales during the fiscal year will exceed budget, potentially resulting in an increase in financial reserves. In years when actual sales are less than projections, Metropolitan uses various tools to manage reductions in revenues, such as reducing expenses below budgeted levels, reducing funding of capital from revenues, and drawing on reserves. See "METROPOLITAN REVENUES—Financial Reserve Policy" in this Appendix A. Metropolitan considers actual sales, revenues and expenses, and financial reserve balances in setting rates for future fiscal years.

**Operation and Maintenance Expenses**

Operation and maintenance expenses in fiscal year 2015-16 are projected to be $1.05 billion, which represent approximately 66 percent of total costs. These expenses include the costs of labor, electrical power, materials and supplies of both Metropolitan and its contractual share of the State Water Project. Direct operation and maintenance expenditures are projected to be $29 million lower than budgeted in fiscal year 2015-16. Metropolitan's share of State Water Project costs are projected to be $12.3 million higher than budgeted. State Water Project operating expenditures, in fiscal year 2015-16, are projected to be $94 million higher than budgeted, due to higher costs for environmental related projects in the Delta, and higher than projected labor costs. This projected negative variance will offset a projected $56 million favorable variance for lower State Water Project power costs, due to a lower-than-budgeted water allocation.

Metropolitan's Board adopted a budget benchmark in September 2004 to limit the annual increase in departmental operations and maintenance budgets to no more than the five-year rolling average change in the Los Angeles/Orange/Riverside Counties consumer price index. The fiscal year 2014-15 departmental expenses of $380 million were approximately 2.7 percent higher than such expenses in fiscal year 2013-14, which, in turn, were 6.9 percent higher than fiscal year 2012-13 expenses.

## POWER SOURCES AND COSTS

### General

Current and future costs for electric power required for operating the pumping systems of the CRA and the State Water Project are a substantial part of Metropolitan's overall expenses. Expenses for electric power for the CRA (not including credits from power sales and related revenues) for the fiscal years 2012-13, 2013-14 and 2014-15 were approximately $18.4 million, $29.6 million, and $39.6 million, respectively. Expenses for electric power and transmission service for the State Water Project for fiscal years 2012-13, 2013-14 and 2014-15 were approximately $218.1 million, $157.4 million and $140.8 million, respectively. Given the continuing uncertainty surrounding the electricity markets in California and in the electric industry in general, Metropolitan is unable to give any assurance with respect to the magnitude of future power costs.

### Colorado River Aqueduct

Generally 55 to 70 percent of the annual power requirements for pumping at full capacity (1.25 million acre-feet of Colorado River water) in Metropolitan's CRA are secured through long-term contracts with the United States Department of Energy for energy generated from facilities located on the Colorado River (Hoover Power Plant and Parker Power Plant) and Southern California Edison ("Edison"). These contracts provide Metropolitan with reliable and economical power resources to pump Colorado River water to Metropolitan's service area.

On December 20, 2011, President Obama signed into law the Hoover Power Allocation Act of 2011 (H.R. 470). This new law requires the Western Area Power Administration to renew existing contracts for electric energy generated at the Hoover Power Plant for an additional 50 years through September 2067. The contractors will retain 95 percent of their existing power rights. The law will allow Metropolitan to continue to receive a significant amount of power from the Hoover power plant after the current contract expires in 2017.

The remaining approximately 30 to 45 percent of annual pumping power requirements for full capacity pumping on the CRA is obtained through energy purchases from municipal and investor-owned utilities or power marketers. Gross diversions of water from Lake Havasu for the fiscal years ended June 30, 2014 and June 30, 2015 were approximately 1.12 million acre-feet and 1.19 million acre-feet, respectively, including Metropolitan's basic apportionment of Colorado River water and supplies from water transfer and storage programs.

The Metropolitan-Edison 1987 Service and Interchange Agreement includes provisions for the sharing of the benefits realized by the integrated operation of Edison's and Metropolitan's electric systems. Under this agreement, with a prior year pumping operation of 1 million acre-feet, Edison provides Metropolitan additional energy (benefit energy) sufficient to pump approximately 140,000 acre-feet annually. As the amount of pumping is increased, the amount of benefit energy provided by Edison is reduced.

Under maximum pumping conditions, Metropolitan can require up to one million megawatt-hours per year in excess of the base resources available to Metropolitan from the Hoover Power Plant, the Parker Power Plant, and Edison benefit energy. Metropolitan is a member of the Western Systems Power Pool ("WSPP"), and utilizes its industry standard form contract to make wholesale power purchases at market cost. Metropolitan also purchases California market-priced power through its agreement with Edison. In calendar year 2013, Metropolitan pumped approximately 1.013 million acre-feet of its Colorado River water and additional supplies from other Colorado River sources but did not purchase any additional energy supplies above its base power resources. In calendar years 2014 and 2015, Metropolitan purchased approximately 527,000 and 710,000 megawatt-hours, respectively, of additional energy.

**State Water Project**

The State Water Project's power requirements are met from a diverse mix of resources, including State-owned hydroelectric generating facilities. DWR has long-term contracts with Metropolitan (hydropower), Kern River Conservation District (hydropower), Northern California Power Agency (natural gas generation), Alameda Municipal Power (geothermal and landfill gas), Sun Power Corporation (solar) and Dominion Solar Holdings (solar). The remainder of its power needs is met by short-term purchases. Metropolitan pays approximately 70 percent of State Water Project power costs.

DWR is seeking renewal of the license issued by FERC for the State Water Project's Hyatt-Thermalito hydroelectric generating facilities at Lake Oroville. A Settlement Agreement containing recommended conditions for the new license was submitted to FERC in March 2006. That agreement was signed by over 50 stakeholders, including Metropolitan and other State Water Project Contractors. With only a few minor modifications, FERC staff recommended that the Settlement Agreement be adopted as the condition for the new license. DWR issued a Final EIR for the relicensing project on July 22, 2008. On August 21, 2008, Butte County and Plumas County filed separate lawsuits against DWR challenging the adequacy of the Final EIR. This lawsuit also named all of the signatories to the Settlement Agreement as "real parties in interest," since they could be adversely affected by this litigation. A trial was conducted in January 2012. On May 16, 2012, the court found that the EIR prepared in conjunction with the relicensing was adequate and dismissed the lawsuit against DWR. On August 7, 2012, Butte and Plumas Counties filed a notice of appeal. Briefing on the appeal was completed in May 2013. No date has been set for oral argument. Regulatory permits and authorizations are required before the new license can take effect. Chief among these is a biological opinion from the National Marine Fisheries Service setting forth the terms and conditions under which the relicensing project must operate in order to avoid adverse impacts to threatened and endangered species. DWR has filed an application requesting this biological opinion. FERC has issued one-year renewals of the existing license since its initial expiration date on January 31, 2007, and is expected to issue successive one-year renewals until a new license is obtained.

DWR receives transmission service from investor-owned utilities under existing contracts and from the California Independent System Operator, a nonprofit public benefit corporation formed in 1996 pursuant to legislation that restructured and deregulated the electric utility industry in California. The transmission service provider may seek increased transmission rates, subject to the approval of FERC. DWR has the right to contest any such proposed increase. DWR may be subject to increases in the cost of transmission service as new electric grid facilities are constructed.

**Energy Management Program**

Metropolitan's Board adopted energy management policies in August 2010 that provide objectives for future energy-related projects to contain costs and reduce Metropolitan's exposure to energy price volatility, increase operational reliability through renewable energy projects, provide a revenue stream to offset energy costs and move Metropolitan toward energy independence. Metropolitan's Energy Management Program includes: setting design standards for energy-efficient facilities; taking advantage of available rebates for energy efficiency and energy-saving projects; operating Metropolitan's facilities in the most energy-efficient manner; and continuing to investigate alternative energy sources, such as solar, small hydroelectric generation and wind power. Metropolitan has completed construction of a one-megawatt ("MW") solar generation facility at the Robert A. Skinner Treatment Plant and is constructing a three MW solar facility at its F. E. Weymouth Treatment Plant. Metropolitan also plans to install a one MW solar facility at the Joseph Jensen Treatment Plant. Finally, Metropolitan continues integrating fuel-efficient hybrid vehicles into its fleet and is assessing the use of alternative fuels for its off-road vehicles and construction equipment.

Metropolitan reports its greenhouse gas emissions to The Climate Registry, a nonprofit North American emission registry. Metropolitan also reports required emissions data to the California Air Resources Board ("CARB") under mandatory reporting regulations adopted pursuant to AB 32, California's

Global Warming Solutions Act of 2006. On October 20, 2011, CARB approved a regulation for a California cap on greenhouse gas emissions under AB 32, with compliance deferred to 2013. Under the regulation, Metropolitan is regulated as an importer of energy and is required to acquire cap and trade compliance instruments, such as allowances and offsets, to cover any greenhouse gas emissions associated with its supplemental imported energy. Metropolitan did not incur cap and trade allowance obligations in 2013. However, Metropolitan did incur an obligation in 2014 and 2015. For the three-year period from January 1, 2013 through December 31, 2015, Metropolitan's expenditures on cap and trade compliance instruments were approximately $3.3 million.