THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- Board of Directors
  Finance and Insurance Committee

5/14/2019 Board Meeting

8-1

Subject

Approve and authorize the distribution of Appendix A for use in the issuance and remarketing of Metropolitan's Bonds; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

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

Background

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 expenses, and power sources and costs in an appendix to its offering statements titled Appendix A, which is included as **Attachment 1**. 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, if undisclosed, would mislead investors.

Metropolitan's procedures to ensure compliance with federal regulations include Board review and approval of Appendix A. Metropolitan's procedures provide for the Board's biannual approval of Appendix A, unless there are no financial transactions requiring an update. 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.

Attachment 2 reflects changes to Appendix A that have been made to the disclosure since the Board's prior approval of Appendix A on November 6, 2018.

After Appendix A is approved, staff will work with a finance team, including disclosure counsel, bond counsel, underwriters, remarketing agents, a municipal advisor and counsel for underwriters and remarketing agents, where applicable, to finalize bond offering statements that include or incorporate 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 Chair of the Board, the Chair 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

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA (Public Resources Code Section 21065, State CEQA Guidelines Section 15378) because the proposed action will not cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment and 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 the creation of government funding mechanisms or 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).

CEQA determination for Option #2:

None required.

Board Options

Option #1

a. Approve the draft of Appendix A (Attachment 1) 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, finalized by the General Manager or other designee of the Ad Hoc Committee, 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 attractive borrowing costs for capital needs and/or 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

4/22/2019

June M. Skillman *Date*
Interim Assistant General Manager/
Chief Financial Officer

4/25/2019

Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – Appendix A

Attachment 2 – Appendix A (redline marked against prior approved Appendix A of November 6, 2018).

Ref# cfo12665225

Board Distribution Draft, 05/01/19

APPENDIX A

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. Certain 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 transactions 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 representing the highest level of water transactions and revenues of Metropolitan during the fiscal year ended June 30, 2018. 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 "–Other Charges" 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 based on water transactions, is a plaintiff in litigation challenging the allocation of costs to certain rates adopted by the Board and asserting other claims. 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 all or 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 4,575 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 19 million people lived in Metropolitan's service area in 2018, 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 2013, 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 economy of Metropolitan's service area is exceptionally diverse. In 2017, the economy of the six counties which contain Metropolitan's service area had a gross domestic product larger than all but twelve 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. Since 2000, annual rainfall has ranged from approximately 4 to 27 inches along the coastal area, 6 to 38 inches in foothill areas, and 5 to 20 inches in inland areas.

GOVERNANCE AND MANAGEMENT

Board of Directors

Metropolitan is governed by a 38-member Board of Directors, made up of representatives from all of Metropolitan's member agencies. 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 are appointed by member agencies in accordance with those agencies' processes and the Act. They 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 to 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 and Acting Ethics Officer – Mr. Riss was appointed as Metropolitan's General Auditor in July 2002 and has served as Acting Ethics Officer since September 2017. As General Auditor, he is responsible for the independent evaluation of the policies, procedures and systems of control throughout Metropolitan. As Acting Ethics Officer, he is responsible for helping to establish internal disclosure, lobbying, conflicts of interest, contracts, campaign contributions, and other internal ethics

rules and policies. 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 a master's degree in business administration from Wayne State University

June Skillman, Interim Assistant General Manager/Chief Financial Officer – Ms. Skillman has been serving as the Interim Assistant General Manager/Chief Financial Officer since July 2018. She has 30 years of experience in the water, electric and natural gas utility industries and has worked at Metropolitan for 15 years. In December 2016 she was promoted to Budget and Treasury Manager and is responsible for the development of Metropolitan's biennial budget and rates and charges; financial planning and analyses; management of Metropolitan's debt program; and treasury operations and investments. Ms. Skillman has a master's degree in business administration from the California State University, Fullerton.

Deven Upadhyay, Assistant General Manager/Chief Operating Officer – Mr. Upadhyay was appointed to his current position in November 2017. In this capacity, he oversees the management of Metropolitan's Water System Operations, Engineering Services and Water Resource Management. Mr. Upadhyay has over 20 years of experience in the water industry. He joined Metropolitan in 1996, beginning as a Resource Specialist and then left Metropolitan in 2005 to work at the Municipal Water District of Orange County. In 2008, he returned to Metropolitan as a Budget and Financial Planning Section Manager and became a Water Resource Management Group Manager in 2010. Mr. Upadhyay has a Bachelor of Arts degree in economics from the California State University, Fullerton and a master's degree in public administration from the University of La Verne.

Roger Patterson, Assistant General Manager/Strategic Water Initiatives – Mr. Patterson was appointed to his current position 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 U.S. Bureau of Reclamation ("Bureau of Reclamation"), retiring from the Bureau of Reclamation 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.

Shane Chapman, Assistant General Manager/Chief Administrative Officer – Mr. Chapman was appointed to his current position in January 2018 and is responsible for the strategic direction and management of Metropolitan's administrative functions. His primary responsibilities include managing human resources, information technology, real property, environmental planning, and administrative services. Mr. Chapman joined Metropolitan as a Resource Specialist in 1991, progressing to the level of Program Manager in 2001. He became the Revenue, Rates and Budget Manager in 2003 and Assistant Group Manager in Water System Operations in 2006. Mr. Chapman served as General Manager of the Upper San Gabriel Valley Municipal Water District for seven years. Mr. Chapman has a Bachelor of Arts degree in economics from Claremont McKenna College and a master's degree in public administration from the University of Southern California.

Dee Zinke, Assistant General Manager/Chief External Affairs Officer – Ms. Zinke was appointed to her current position in January 2016. She is responsible for Metropolitan's communications, business 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. Prior to her public service, she worked in the private sector as the Executive Officer and Senior Legislative Advocate for the 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 April 1, 2019 was 1,757 of whom 1,230 were represented by AFSCME Local 1902, 87 by the Supervisors Association, 286 by the Management and Professional Employees Association and 125 by the Association of Confidential Employees. The remaining 29 employees are unrepresented. The four bargaining units represent 98 percent of Metropolitan's employees. The Memorandum of Understanding ("MOU") with each of AFSCME Local 1902, the Supervisors Association, the Management and Professional Employees Association and the Association of Confidential Employees were updated through negotiations and cover the period January 1, 2017 through December 31, 2021.

Risk Management

Metropolitan is exposed to various risks of loss related to, among other things, the design and construction of facilities, and the 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 coverages 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 the Board at its sole discretion.

Cybersecurity

Metropolitan has adopted and maintains an active Cybersecurity Program ("CSP") that includes policies reviewed annually by its internal Cybersecurity Team, Audit department and independent third party auditors and consultants. Metropolitan has appointed an Information Security Officer who is responsible for overseeing the annual review of the CSP and its alignment with Metropolitan's Strategic Plan. Metropolitan's policies and procedures on information governance, risk management, and compliance are consistent with the U.S. Commerce Department's National Institute of Standards and Technology Cybersecurity Framework. Metropolitan's Cybersecurity Team is responsible for identifying cybersecurity risks to Metropolitan, preventing, investigating, and responding to any cybersecurity incidents, and providing guidance and education on the implementation of new technologies at Metropolitan. All persons or entities authorized to use Metropolitan's computer resources are required to participate in Metropolitan's Cybersecurity Awareness Training.

METROPOLITAN'S WATER SUPPLY

General

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. 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. Water management programs supplement these Colorado River supplies. To secure additional supplies, Metropolitan also has groundwater banking partnerships and water transfer and storage arrangements within and outside its service area. Metropolitan's principal water supply sources, and other supply arrangements and water management are more fully described herein.

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." 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 (the "Water Supply Allocation Plan"). See "CONSERVATION AND WATER SHORTAGE MEASURES–Water Surplus and Drought Management Plan" and "–Water Supply Allocation Plan" in this Appendix A.

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 – Bay-Delta Proceedings Affecting State Water Project." 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.

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.

Current Water Conditions

As of April 16, 2019, the northern Sierra precipitation was 134 percent of the 50-year average for the time of year, and northern Sierra snow water content measured 164 percent of the 30-year seasonal peak average. On March 20, 2019, the California Department of Water Resources ("DWR") notified State Water Contractors (defined below) that its calendar year 2019 allocation estimate of State Water Project water was increased to 70 percent of contracted amounts, or 1,338,050 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 325,851 gallons,

which represents the needs of three average families in and around the home for one year within Metropolitan's the service area.) Changes to the 2019 allocation may occur and are dependent on the developing hydrologic conditions. See "–State Water Project."

As of April 16, 2019, the Upper Colorado River Basin peak snowpack accumulation measured 133 percent of the 30-year median value. On April 24, 2019, the total system storage in the Colorado River Basin was 46 percent of capacity. As of such date, the projected base supply of Colorado River water in calendar year 2019 was estimated to be 963,209 acre-feet. See "–Colorado River Aqueduct."

See also "–Storage Capacity and Water in Storage."

Integrated Water Resources Plan

Overview. The Integrated Water Resources Plan ("IRP") is Metropolitan's principal water resources planning document. Metropolitan, its member agencies, subagencies 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 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 has been subsequently updated in 2004, 2010 and 2015. The next IRP update is expected to occur in 2020.

On January 12, 2016, Metropolitan's Board adopted the most recent 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 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 are available 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.

An Adaptive Management Strategy. Adaptive water management, as opposed to a rigid set of planned actions over the coming decades, is the most nimble and cost-effective manner for Metropolitan and local water districts throughout Southern California to effectively prepare for the future. An adaptive management approach began to evolve with Metropolitan's first IRP in 1996, after drought-related shortages in 1991 prompted a rethinking of Southern California's long-term water strategy. Reliance on imported supplies to meet future water needs has decreased steadily over time, replaced by plans for local actions to meet new demands. The 2015 IRP Update continues to build a robust portfolio approach to water management.

The following paragraphs describe the goals, approaches and targets for each of the resource areas that are needed to ensure reliability under planned conditions.

State Water Project. The State Water Project is one of Metropolitan's two major sources of water. The goal for State Water Project supplies is to adaptively manage flow and export regulations in the near term and to achieve a long-term Bay-Delta solution that addresses ecosystem and water supply reliability challenges. In furtherance of this goal, Metropolitan continues to participate and seek successful outcomes in the California WaterFix and the California EcoRestore efforts. See "–State Water Project," "–California WaterFix" and "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A. The stated goal of the IRP is to manage State Water Project supplies in compliance with regulatory restrictions in the near-term for an average of 980,000 acre-feet of annual supplies, and to pursue an outcome in the California WaterFix and California EcoRestore efforts aimed towards achieving long-term average supplies of approximately 1.2 million acre-feet annually from this resource. See "–State Water Project – Bay-Delta Proceedings Affecting State Water Project."

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 Bureau of Reclamation. See "–Colorado River Aqueduct" and "–Water Transfer, Storage and Exchange Programs – Colorado River Aqueduct Agreements and Programs." The stated goal of the IRP for the CRA supplies is to maintain current levels of water supplies from existing programs, while also developing flexibility through dry-year programs and storage to ensure that a minimum of 900,000 acre-feet of CRA deliveries are available when needed, with a target of 1.2 million acre-feet in dry years.

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." The stated goal of the IRP is to pursue transfers and exchanges to hedge against shorter-term water demand and supply imbalances while long-term water supply solutions are developed and implemented.

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. With outdoor water use comprising at least 50 percent of residential water demand, Metropolitan has increased its conservation efforts to target outdoor water use reduction in its service area. See "CONSERVATION AND WATER SHORTAGE MEASURES" in this Appendix A. The stated goal of the IRP is to pursue further water conservation savings of 485,000 acre-feet annually by 2040 through continued increased emphasis on outdoor water-use efficiency using incentives, outreach/education and other programs.

Local Water Supplies. Local supplies are a significant and growing component of the region's diverse water portfolio. While the extent to which each member agency's water supply is provided by imported water purchased from Metropolitan varies, in the aggregate, local supplies can provide over half of the region's water in a given year, and the maintenance of these supplies remain an integral part of the IRP. Similar to water conservation, local supplies serve the important function of reducing demands for imported water supplies and thereby making regional water system capacity and storage available and accessible to meet the needs of the region. Local water supply projects may include, among other things, recycled water, groundwater recovery, conjunctive use, stormwater, and seawater desalination. Metropolitan offers financial incentives to member agencies to help fund the development of a number of these types of local supply projects. The stated goal of the IRP is to seek to develop 230,000 acre-feet of additional local supplies

produced by existing and future projects, with the region reaching a target of 2.4 million acre-feet of total dependable local supplies by 2040. See "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A.

State Water Project

Background

One of Metropolitan's two major sources of water is the State Water Project, which is owned by the State, and managed and operated by DWR. The State Water Project is the largest state-built, multipurpose, user-financed water project in the country. It was designed and built primarily to deliver water, but also provides flood control, generates power for pumping, is used for recreation, and enhances habitat for fish and wildlife. The State Water Project provides irrigation water to 750,000 acres of farmland, mostly in the San Joaquin Valley, and provides municipal and industrial water to approximately 27 million of California's estimated 39.8 million residents, including the population within the service area of Metropolitan.

The State Water Project's watershed encompasses the mountains and waterways around the Feather River, the principal tributary of the Sacramento River, in the Sacramento Valley of Northern California. Through the State Water Project, Feather River water stored in and released from Oroville Dam (located about 70 miles north of Sacramento, east of the city of Oroville, California) and unregulated flows diverted directly from the Bay-Delta are transported south through the Central Valley of California, over the Tehachapi Mountains and into Southern California, 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. See "METROPOLITAN'S WATER DELIVERY SYSTEM–Primary Facilities and Method of Delivery –State Water Project" in this Appendix A.

State Water Contract

Terms of the Contract. In 1960, Metropolitan signed a water supply contract (as amended, the "State Water Contract") with DWR to receive water from the State Water Project. Metropolitan is one of 29 agencies and districts that have long-term contracts for water service from DWR (known collectively as the "State Water Contractors" and sometimes referred to herein as "Contractors"). Metropolitan is the largest of the State Water Contractors in terms of the number of people it serves (approximately 19 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 supply contracts (approximately 49 percent for 2018). Metropolitan received its first delivery of State Water Project water in 1972.

Pursuant to the terms of the State water supply contracts, all water-supply related expenditures for capital and operations, maintenance, power, and replacement costs associated with the State Water Project facilities are paid for by the State Water Contractors as components of their annual payment obligations to DWR. In exchange, Contractors have the right to participate in the system, with an entitlement to water service from the State Water Project and the right to use the portion of the State Water Project conveyance system necessary to deliver water to them. Each year DWR estimates the total State Water Project water available for delivery to the State Water Contractors and allocates the available project water among the State Water Contractors in accordance with the State water supply contracts. DWR's total water supply availability projections are refined over the course of the calendar year based upon updated rainfall and snowpack values and allocations to the State Water Contractors are adjusted accordingly.

Metropolitan's State Water Contract has been amended a number of times since its original execution and delivery. Several of the amendments, entered into by DWR and various subsets of State Water Contractors, relate to the financing and construction of a variety of State Water Project facilities and improvements and impose certain cost responsibility therefor on the affected Contractors, including Metropolitan. For a description of Metropolitan's financial obligations under its State Water Contract,

including with respect to such amendments, see "METROPOLITAN EXPENSES–State Water Contract Obligations" in this Appendix A.

Amendments, approved by Metropolitan's Board in 1995, and since executed by DWR and 27 of the State Water Contractors (collectively known as the "Monterey Amendment"), among other things, made explicit that the Contractors' rights to use the portion of the State Water Project conveyance system necessary to deliver water to them also includes the right to convey non-State Water Project water at no additional cost as long as capacity exists. These amendments also expanded the ability of the State Water Contractors to carry over State Water Project water in State Water Project storage facilities, allowed participating Contractors to borrow water from terminal reservoirs, and allowed Contractors to store water in groundwater storage facilities outside a Contractor's service area for later use. These amendments provided the means for individual Contractors to increase supply reliability through water transfers and storage outside their service area. Metropolitan has subsequently developed and actively manages a portfolio of water supplies to convey through the California Aqueduct pursuant to these contractual rights. See "–Water Transfer, Storage and Exchange Programs." The Monterey Amendment is the subject of ongoing litigation. See "– Related Litigation–Monterey Amendment" below.

Under its State Water Contract, Metropolitan has a contractual right to its proportionate share of the State Water Project water that DWR determines annually is available for allocation to the Contractors. This determination is made by DWR each year based on existing supplies in storage, forecasted hydrology, and other factors. Available State Water Project water is then allocated to the Contractors in proportion to the amounts set forth in "Table A" of their respective State water supply contract. Pursuant to Table A of its State Water Contract, Metropolitan is entitled to approximately 46 percent of the total annual allocation made available to State Water Contractors each year.

Metropolitan's 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 periodically provides subsequent estimates throughout the year if warranted by developing precipitation and water supply conditions. From calendar years 2004 through 2018, 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 under "–Water Transfer, Storage and Exchange Programs" below), 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 2018, DWR's allocation to State Water Contractors was 35 percent of contracted amounts, or 669,025 acre-feet, for Metropolitan.

On November 30, 2018, DWR announced an initial calendar year 2019 allocation of 10 percent. On January 25, 2019, DWR increased the allocation estimate to 15 percent. Improved hydrologic conditions, including above-average precipitation in the month of January, led to a further allocation increase to 35 percent on February 20, 2019. DWR again increased the allocation estimate on March 20, 2019 to 70 percent. The current allocation estimate of 70 percent reflects substantial improvements in runoff forecasts and storage in State Water Project conservation reservoirs aided by the third wettest February on record in the Northern Sierra since 1921. In light of current water conditions in California and the estimated 2019 allocation, projected supplies are expected to exceed projected demands. If available, Metropolitan can utilize its storage programs to store supplies to meet future demands. Changes to the 2019 allocation may occur and are dependent on the developing hydrologic conditions.

The term of Metropolitan's State Water Contract currently extends to December 31, 2035 or until all DWR bonds issued to finance construction of project facilities are repaid, whichever is longer. Upon expiration of the State Water Contract term, Metropolitan has the option to continue service under substantially the same terms and conditions. Metropolitan and other State Water Contractors have undertaken negotiations with DWR to extend their State water supply contracts. In June 2014, DWR and the State Water

Contractors reached an Agreement in Principle (the "Agreement in Principle") on an amendment to the State water supply contract to extend the contract and to make certain changes related to financial management of the State Water Project in the future. DWR and 25 of the State Water Contractors, including Metropolitan, have signed the Agreement in Principle. Under the Agreement in Principle, the term of the State water supply contract for each Contractor that signs an amendment would be extended until December 31, 2085. The Agreement in Principle served as the "proposed project" for purposes of environmental review under the California Environmental Quality Act ("CEQA"). DWR issued a Notice of Availability of the Draft Environmental Impact Report ("EIR") for the proposed project on August 17, 2016. The public review period ended October 17, 2016. State law requires DWR to make a presentation to the State Legislature at an informational hearing at least 60 days prior to final approval of a State water supply contract extension. That hearing occurred on September 11, 2018. DWR released the Final EIR on November 16, 2018, and certified the Final EIR and issued a Notice of Determination on December 11, 2018. Concurrently, Metropolitan considered the certified Final EIR and approved the water supply contract extension amendment at its December 11, 2018 board meeting. On January 8, 2019, North Coast Rivers Alliance and others filed petition for writ of mandate and complaint for declaratory and injunctive relief challenging DWR's final EIR and approval of the State Water Contract Extension Amendment. On January 10, 2019, Planning and Conservation League and others filed petition for writ of mandate challenging DWR's final EIR and approval of the State Water Contract Extension Amendment. Mandatory settlement conferences were held on February 22, 2019 but the administrative records have not been prepared and no briefing has occurred in either action. Any adverse impact of this litigation and rulings on Metropolitan's State Water Project supplies cannot be determined at this time.

Metropolitan and other State Water Contractors have undertaken separate negotiations with DWR to amend their State water supply contracts to clarify how costs for California WaterFix will be allocated. Contractors are also negotiating modifications to the terms of the existing State water supply contract to clarify the criteria applicable to single and multi-year water transfers and exchanges. Any modifications to the State water supply contract will have to be approved by all State Water Contractors. See also "– California WaterFix."

Related Litigation–Monterey Amendment. On May 4, 2010, DWR completed an EIR and concluded a remedial CEQA review for the Monterey Amendment (described under " – Terms of the Contract" above), which reflects the settlement of certain disputes regarding the allocation of State Water Project water. 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). In January 2013, the Court ruled that the validation cause of action in Central Delta I was time barred by the statute of limitations. The court also held that DWR must complete a limited scope remedial CEQA review addressing the potential impacts of the Kern Water Bank, a portion of the Monterey Amendment that does not directly affect Metropolitan. The court also ruled that the State Water Project may continue to be operated under the terms of the Monterey Amendment while the remedial CEQA review is prepared and leaves in place the underlying project approvals while DWR prepares the remedial CEQA review. Plaintiffs appealed. Briefing by the parties was completed, but no date for oral argument has been set.

In September 2016, DWR certified the Final Revised Draft EIR for the Monterey Amendment, recorded a Notice of Determination, and filed papers in the trial demonstrating compliance with the court's order for remedial CEQA review. On October 21, 2016, the petitioner group from Central Delta I and a new lead petitioner, Center for Food Safety, filed litigation against DWR challenging this EIR and named Metropolitan and the other State Water Project contractors as respondent parties. On October 2, 2017, the court denied Center for Food Safety's petition. Plaintiffs appealed. Briefing in this appeal has been completed. No date for oral argument has been set. Any adverse impact of any of the litigation and rulings

relating to the Monterey amendment on Metropolitan's State Water Project supplies cannot be determined at this time.

2017 Oroville Dam Spillway Incident

Oroville Dam, the earthfill embankment dam on the Feather River which impounds Lake Oroville, is operated by DWR as a facility of the State Water Project. On February 7, 2017, the main flood control spillway at Oroville Dam, a gated and concrete lined facility, experienced significant damage as DWR released water to manage higher inflows driven by continued precipitation in the Feather River basin. The damaged main spillway impaired DWR's ability to manage lake levels causing water to flow over the emergency spillway structure, an ungated, 1,730 foot long concrete barrier located adjacent to and north of the main flood control spillway structure. Use of the emergency spillway structure resulted in erosion that threatened the stability of the emergency spillway structure. This concern prompted the Butte County Sheriff, on February 12, 2017, to issue an evacuation order for approximately 200,000 people living in Oroville and the surrounding communities.

On November 1, 2018, DWR completed reconstruction of the main spillway to its original design capacity of approximately 270,000 cubic feet per second ("cfs"), a capacity almost twice its highest historical outflow. Work on the emergency spillway was substantially completed in April 2019. Mitigation measures such as slope revegetation are expected to be completed in 2021. Although the full extent of the costs of the response and recovery efforts are unknown at this time, DWR has indicated that the total costs of the recovery and restoration project prior to any federal or other reimbursement are estimated to be approximately $1.1 billion. Cost estimates are based on actual and projected work and may be adjusted further as work continues through completion of the project in 2021. As of March 7, 2019, the Federal Emergency Management Agency ("FEMA") had approved reimbursement to DWR of $128 million for emergency response work and $205 million for spillway reconstruction, with total approved reimbursement of $333 million. FEMA has excluded costs for the upper spillway reconstruction and emergency spillway repair from its approval. DWR is appealing that decision and has indicated that it will advocate for reimbursement of 75 percent of all costs. FEMA funding is generally available to recover costs to restore facilities damaged as a result of natural disasters to their pre-disaster condition. Any costs to be paid for by the State Water Contractors under the State water supply contracts are expected to be financed long-term with DWR bonds. Metropolitan is unable to assess at this time what costs it will ultimately incur as a State Water Contractor associated with the spillway repairs.

Bay-Delta Proceedings Affecting State Water Project

General. In addition to being a source of water for diversion into the State Water Project, the Bay-Delta is the source of water for local agricultural, municipal and industrial needs, and also supports significant resident and anadromous fish and wildlife resources and important recreational uses of water. Both the State Water Project's upstream reservoir operations and its Bay-Delta diversions can at times affect these other uses of Bay-Delta water directly, or indirectly, through impacts on Bay-Delta water quality. A variety of proceedings and other activities are ongoing with the participation of various State and federal agencies, as well as California's environmental, urban and agricultural communities, in an effort to develop long-term, collectively-negotiated solutions to the environmental and water management issues concerning the Bay-Delta, and Metropolitan actively participates in these proceedings. Metropolitan cannot predict the ultimate outcome of any of the litigation or regulatory processes described below, but believes that a materially adverse impact on the operation of State Water Project pumps, Metropolitan's State Water Project deliveries or Metropolitan's water reserves could result.

SWRCB Regulatory Activities and Decisions. The State Water Resources Control Board (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 permits.

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 the 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 ongoing drought conditions in 2014 and 2015, DWR and the Bureau of Reclamation requested temporary relief from certain WQCP standards and filed petitions 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 for 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 and disclosed the environmental impacts of a 30-year plan to improve the Bay-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 proposed an alternative implementation strategy and new alternatives to the BDCP to provide for the protection of water supplies conveyed through the Bay-Delta and the restoration of the ecosystem of the Bay-Delta, termed "California WaterFix" and "California EcoRestore," respectively. In this alternative approach, DWR and the Bureau of Reclamation would implement planned water conveyance improvements as a stand-alone project (California WaterFix, as further described below) that would seek incidental take authorization for an unspecified period and would include only limited amounts of habitat restoration. The habitat restoration to be required would be directly related to construction mitigation and the associated costs of such mitigation which would be underwritten by the public water agencies participating in the California WaterFix project. Ecosystem improvements and habitat restoration more generally (California EcoRestore) would be undertaken under a more phased approach than previously contemplated by the BDCP and would not be linked with the California WaterFix project or permits. Accelerated restoration actions totaling 30,000 acres of tidal marsh habitat were proposed to be undertaken in the coming decade to provide public benefits for listed fish in the Bay-Delta. Subsequent actions would be based on the proven merits of restoration. (See also "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations – State Water Project.")

The Delta Reform Act of 2009 (the "Delta Reform Act") established the Delta Stewardship Council (the "Council"), which is required to develop, adopt, and oversee implementation of a comprehensive management plan for the Delta (the "Delta Plan"). The Delta Plan is required to further the State's coequal

goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Bay Delta ecosystem. The Delta Reform Act granted the Council specific regulatory and appellate authority over certain actions that take place in whole or in part in the Sacramento-San Joaquin Delta and Suisun Marsh (Delta), referred to as "covered actions."

State and local agencies are required to certify consistency with the applicable regulatory policies when carrying out, approving, or funding a covered action prior to initiating the implementation of that action. On July 27, 2018, DWR submitted a Certification of Consistency for the California WaterFix (the "Certification") to the Council. On August 27, 2018, nine appeals were filed with the Council alleging that California WaterFix is not consistent with the Delta Plan, and as a result of the alleged inconsistencies, the project would adversely affect achieving one or both of the coequal goals. The Council held a public hearing on October 24-26, 2018 to receive testimony from the parties and the Delta Protection Commission on the issue of whether DWR's Certification is supported by substantial evidence in the administrative record. On November 8, 2018, Delta Council staff issued a Draft Determination recommending that the Council conclude that substantial evidence does not exist in the record to support DWR's findings that California WaterFix is consistent with five of the nine applicable Delta Plan policies, and that the Council remand the Certification to DWR. The Council held a public workshop on the Draft Determination on November 15-16, 2018. On December 7, 2018, DWR sent a letter to the Council withdrawing the Certification of Consistency for the California WaterFix and stated their plan to resubmit the application with changes in 2019.

On February 12, 2019, recently elected Governor Gavin Newsom presented at the State of the State address a conceptual proposal supporting a single-tunnel configuration for California WaterFix. On March 1, 2019, DWR and the Bureau of Reclamation sent a request to the SWRCB to temporarily place their petition for a change in point of diversion (an ongoing water right proceeding) for the California WaterFix in abeyance and issue a temporary 60 day stay on all proceedings for the California WaterFix change in point of diversion. DWR and the Bureau of Reclamation indicated that the request was being submitted in light of the Governor's State of the State address to allow DWR sufficient time to assess the effects on the California WaterFix and the nature and the extent the effects would have on any new permit and planning work for California WaterFix. The request for a 60-day stay of the proceedings was granted by the SWRCB on March 5, 2019.

California WaterFix

History and Description of the Project. California WaterFix is a project that was approved by DWR in July 2017 as an improvement to the State Water Project. As approved by DWR, upon completion, California WaterFix would provide new conveyance facilities for the transportation of State Water Project and Central Valley Project water from the north Delta, principally from three new intakes through two 30-mile long tunnels running under the Delta, to the existing aqueduct systems in the south Delta. The existing State Water Project Delta water conveyance system needs to be improved and modernized to address operational constraints on pumping in the south Delta as well as risks to water supplies and water quality from climate change, earthquakes, and flooding. The State Water Project is subject to biological opinions and incidental take permits that substantially limit the way DWR operates the State Water Project. Therefore, under the California WaterFix, DWR would extend the delivery system from new north Delta water intakes on the Sacramento River to a new forebay in the south Delta to provide additional flexibility in operating the State Water Project. As configured, the total maximum north Delta diversion intake capacity would be 9,000 cfs.

In early 2018, DWR announced that it may consider staged implementation of the project in the future. The initial phase would consist of 6,000 cfs of diversion capacity through two intakes and one tunnel under the Delta. The remaining 3,000 cfs facilities would be constructed at a later date. Subsequently, DWR announced it would not consider staged implementation, and Metropolitan's Board approved participation in California WaterFix at up to 64.6 percent of project costs to move the project forward as described in more detail below.

The California WaterFix is expected to improve the reliability of Southern California's water delivery system by updating aging infrastructure. In addition to the more efficient and effective delivery of water supplies through the Delta, DWR has identified other benefits of the California WaterFix, including allowing for more operational flexibility to deliver water through the Delta, and enabling a more natural flow of rivers in the Delta to protect sensitive fish species. It would provide greater opportunity to capture and convey water from storm flows in wet and above-normal hydrological weather years to the State Water Contractors to refill reservoirs and replenish groundwater basins. It would also improve the quality of water for export, and reduce climate change risk of increased salinity from rising sea levels. The California WaterFix would additionally help reduce the risks from a catastrophic seismic event in the Delta.

As noted under "–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities," above, subsequent to Metropolitan's Board action approving Metropolitan's participation in California WaterFix, in his first State of the State address, delivered on February 12, 2019, Governor Gavin Newsom laid out a new direction for Delta conveyance and expressed his support for a revised project consisting of a single tunnel. DWR is assessing the nature and extent of any permit and planning work that may be necessary as a result of the potential change in scope of the California WaterFix described in the Governor's address, including the impact, if any, on the environmental approvals for the project.

Depending on the scope of any changes to, and the manner of implementing the project, the benefits to Metropolitan could be materially impacted.

DWR estimates that it will take approximately 15 years to substantially complete the California WaterFix after commencement of construction. In July 2017, DWR filed a validation action to legally establish its authority to issue revenue bonds to finance California WaterFix. More than a dozen public agencies and six environmental groups filed answers opposing the validation action; Metropolitan and three other public water agencies filed answers in support. A number of other lawsuits with respect to the project have also been filed as described below. Certain permits and other approvals necessary to commence construction remain to be obtained. Accordingly, DWR has not yet commenced construction of the project.

Based upon DWR's preliminary estimate, the capital costs of the approved California WaterFix project are estimated to be approximately $17 billion (in 2017 dollars). The preliminary cost estimate includes contingencies for construction costs and unknown expenses related to land acquisition. Given the scope of the project and the length of time it would take DWR to construct the project, this cost estimate may change based on numerous factors and the actual cost of construction of the project may differ materially. The timing of construction and costs of the project will also be impacted as a result of any change in scope of the California WaterFix as described in the Governor's address.

Financial Exposure to Metropolitan. On July 10, 2018, Metropolitan's Board approved the funding of up to 64.6 percent, approximately $10.8 billion in 2017 dollars, of the overall capital cost of the California WaterFix necessary to allow for the construction of the full project.

Metropolitan's financial exposure to California WaterFix, as approved by the Board, would occur in two forms: as a State Water Contractor and through various forms of additional financial support that Metropolitan would contribute to the project. For the approved project, DWR would issue its own bonds to finance the portion of the project that would be repaid through the State Water Project water supply contracts (which DWR currently estimates to be approximately 67 percent of the project, based on the intended water delivery benefits). DWR plans to pay debt service on those bonds by placing the costs of debt service on the statement of charges for the State Water Project. Since Metropolitan's share of costs for California WaterFix under the State Water Contract is approximately 47 percent, if DWR issues its own bonds to finance this portion of the project, Metropolitan expects to pay 47 percent of the debt service costs on its State Water Contract statement of charges. These amounts are expected to constitute Capital Charges on the statement of

charges, which means that, similar to other SWP Capital Charges, under Metropolitan's Master Senior Resolution and Master Subordinate Resolution (each defined under "METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds" in this Appendix A), Metropolitan's payment of these amounts would be after any payment of debt service on its own Water Revenue Bonds.

In addition to its share of State Water Project costs as a State Water Contractor, Metropolitan's July 10, 2018 Board action also authorized three additional forms of financial support for the project. First, the Board authorized advance funding of the project, which is currently being provided (currently in the amount of up to $86 million), to allow DWR to continue work on the project while DWR continues its validation action. It is anticipated that Metropolitan will be reimbursed with interest for this advance funding support from future bond proceeds. Second, Metropolitan is working with other State Water Contractors to enable DWR to issue its revenue bonds before the completion of its validation action. The Metropolitan Board authorized participation in a financing joint exercise of powers agency ("Financing JPA") which has been formed to issue bonds the proceeds of which would be applied to purchase the initial DWR bonds. Metropolitan and other State Water Contractors would purchase the DWR bonds from the Financing JPA pursuant to an installment contract. The installment contract payments would secure the Financing JPA bonds. Under this structure, it is expected that Metropolitan would secure its obligation to make installment payments on a basis junior to its Water Revenue Bonds under either its Master Senior Resolution or Master Subordinate Resolution. If DWR loses its validation action, then Metropolitan would be fully responsible for its installment payments and would receive no funds from DWR. Currently, it is unknown the amount of DWR bonds that Metropolitan would support, but Metropolitan's current estimate of its share of the associated capital costs of the approved project in 2017 dollars to be financed is approximately $5.2 billion. Third, the Board authorized Metropolitan's General Manager to negotiate the acquisition of transfers of State Water Project water supplies in connection with the project, and to acquire, under the approved full project configuration, the remaining 33 percent conveyance capacity in the project from DWR. The acquisition of transfers from other State Water Contractors would be an additional expense and would require the approval of the Board. The current estimate of the capital costs associated with the acquisition of the remaining 33 percent conveyance capacity in 2017 dollars is approximately $5.6 billion. It is anticipated that Metropolitan would be able to wheel water or sell portions of the acquired conveyance capacity to entities seeking to use the project. Metropolitan expects that it would secure its obligations in connection with this entire amount on a basis junior to its Water Revenue Bonds under either its Master Senior Resolution or Master Subordinate Resolution.

If Metropolitan were to provide all of these additional actions of financial support (and assuming that DWR is successful in its validation action), Metropolitan estimates that its total share of the costs of the approved project would be 64.6 percent, not including the acquisition of transfers. Based upon DWR's preliminary project cost estimate of $17 billion, that share of the costs would be approximately $10.8 billion. As noted above, this amount could be subject to material change. Based upon this estimate of capital costs and an estimate of total annual operation and maintenance costs of the project upon completion of $64 million per year (in 2017 dollars), Metropolitan has estimated that the total annual costs of its participation in the California WaterFix, as currently approved by DWR, would be approximately $515 million (in 2017 dollars) when fully operational (assuming the project is completed in the currently anticipated time frame).

Metropolitan's Estimated Costs and Rate Impacts. Metropolitan has projected that the impact on overall water rates and charges of an investment of the magnitude described above, based on Metropolitan's 2017-18 revenue requirements and assuming financing over a 40-year term at an assumed annual interest cost of 4.0 percent, would be an incremental increase in overall water rates and charges of approximately 2.2 percent per year over the anticipated construction timeline, or an approximate cumulative 33 percent at the end of 15 years. It is not possible to calculate the precise water rate impacts on retail ratepayers within Metropolitan's service area because of the wide variation of costs and water sources for each retail agency, and the fact that each retail agency makes its own retail rate decisions based on various factors. However, Metropolitan has estimated cost impacts for the average Southern California household. Metropolitan

estimates that the average cost impact on households within its service area is approximately $4.80 per month, in 2017 dollars, assuming approximately 70 percent of water users are residential and an estimated 6.2 million occupied households within the Metropolitan service area.

The incremental projected costs associated with participation by Metropolitan in the California WaterFix at the level approved on July 10, 2018 are estimated to increase Metropolitan's long-term projected average 3.0 percent annual rate increases by approximately 1.1 percent to 4.1 percent. Upon the successful completion of the California WaterFix, as envisioned, any water revenues that may be generated in the future from potential wheeling or delivery of water by Metropolitan utilizing the additional acquired capacity in the project could offset some of the projected financial impact of Metropolitan's participation; however, specific future actions are speculative and subject to separate approvals, hence receipt of any such revenues cannot be assured and is not included in the above estimates.

Factors Affecting Metropolitan's Financial Exposure to and Estimated Costs and Rate Impacts of the California WaterFix. Metropolitan's projections of future costs of the California WaterFix are based upon a number of assumptions, including those identified above. The actual cost impacts to Metropolitan of the California WaterFix will depend on a variety of factors, including among other things, the total costs of construction of the project and the interest rates at which any future financing of project costs can be implemented. Moreover, as further described below, the cost estimates and timing of construction of the project will change in the event the scope and configuration of the project is modified as described in the Governor's State of the State address. Construction projects are subject to ordinary construction risks and delays applicable to projects of their kind, examples of which include contractor nonperformance; inclement weather affecting timeliness of completion; the costs and availability of, or delivery schedule for, land acquisition, equipment, components, materials, labor or subcontractors; issues regarding compliance with applicable environmental standards; natural hazards or seismic events during construction; and changing economic conditions (such as rising interest rates and inflation), the occurrence of any of which could increase construction costs substantially. Moreover, actual construction bids could be higher than projected for purposes of the preliminary cost estimate described herein. The scope and magnitude of, and the extended construction period required for, a project of the nature of the California WaterFix may exacerbate these risks. Further, as described below, the California WaterFix is the subject of ongoing litigation. Any delays in the implementation due to litigation or other causes will increase the risk of cost escalation. Finally, in the event the project is forestalled from implementation or abandoned prior to completion, expenditures incurred by Metropolitan prior to that time may represent sunk costs.

Completion of California WaterFix is subject to numerous lawsuits and other actions. California WaterFix is currently subject to several lawsuits and Metropolitan expects that additional lawsuits may be filed in the future with respect to the project. The current lawsuits primarily relate to DWR's powers to finance and construct the project and various environmental approvals and related matters. These lawsuits challenge multiple aspects of the project and, if DWR is unsuccessful in any of these actions, it could cause delays, increases of costs of the project, changes in scope to the project and/or mitigation, or even cancellation of the project. Actions taken by Metropolitan in connection with its approved participation in the project have also been the subject of litigation. Subsequent to actions taken on April 10, 2018 by Metropolitan's Board in connection with the California WaterFix, Metropolitan received a notice from two organizations alleging certain violations of the Ralph M. Brown Act (the California state law governing how meetings of governmental agencies in the State are agendized and conducted) in connection with that meeting. Although Metropolitan disagrees with the contentions in the notice, to ensure there is no question concerning the validity of the Board's consideration of, and its vote on, whether to authorize increased funding of California WaterFix and related actions, the matter was presented to the Board anew for consideration and a vote on July 10, 2018, at which time the Board voted to rescind the April 10, 2018 approval and authorize participation in California WaterFix as described above. On September 7, 2018, two organizations filed a complaint alleging that the Board's authorization to fund up to 64.6 percent of the costs of California WaterFix is invalid because it violates certain California Constitutional restrictions on rates and

property tax increases under Proposition 26 and Proposition 13, certain statutory limitations under Metropolitan's enabling act and the joint exercise of powers act, and does not satisfy certain other alleged requirements. On March 15, 2019, the court granted Metropolitan's demurrer, without leave to amend, to all causes of action. Plaintiff organizations' last day to file an appeal is May 9, 2019. Future actions taken by Metropolitan in connection with its participation in the project could also be the subject of litigation. In addition to the legal proceedings referenced above, regulatory consideration of the project before the Council and a petition for a change in diversion point in water right proceedings before the SWRCB for the project have been ongoing. See "–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities" above. Various other permits and approvals will also be required for the project. There can be no assurance all of the permits and approvals will be obtained from the responsible parties in a timely manner and acceptable form, or at all, or that additional litigation will not result from the related proceedings.

Further, as described above, on February 12, 2019, Governor Gavin Newsom stated in his State of the State address that he does not support the current twin tunnel configuration for California WaterFix, but does support a single tunnel facility. Depending on how California WaterFix may be reconfigured pursuant to the Governor's direction, DWR may need to obtain new environmental clearances and Metropolitan's Board may need to take new actions regarding participation in and funding of the project. Metropolitan held a Board workshop on March 26, 2019, during which it reviewed the various single tunnel alternatives that were analyzed by the State during the environmental review process for the project, including a 3,000 cfs diversion capacity one tunnel option, and the 6,000 cfs diversion capacity staged implementation option previously considered by DWR. The expected benefits and estimated costs of each of these alternatives were presented. Based upon preliminary estimates, the total capital costs of a 6,000 cfs capacity alternative are estimated to be $11.1 billion in 2017 dollars ($11.8 billion as adjusted to 2019 dollars) and the total capital costs of a 3,000 cfs capacity alternative are estimated to be $9.2 billion in 2017 dollars ($9.7 billion as adjusted to 2019 dollars). No decisions have been made by DWR with respect to the proposed change in scope of the project and a number of key issues that would need to be addressed remain in connection with any such change. The lawsuits, administrative proceedings, and other matters described herein in regard to California WaterFix may be delayed or impacted in other ways as a result of the potential change in scope of the California WaterFix, as described in the Governor's address, and the specific effect of any such change in scope of any particular matter is unknown at this time. Metropolitan is unable to predict at this time whether and/or the extent to which the California WaterFix will be implemented. Moreover, the outcome of any litigation or other proceedings involving the project cannot be known. Any such litigation or proceedings could result in delays or, if decided adversely, otherwise materially impair or prevent the development, implementation or completion of the project as originally approved or as it may be changed as a result of the Governor's announcement.

Colorado River Aqueduct

Background

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 (collectively, 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 can also 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.

Construction of the CRA, which is owned and operated by Metropolitan, was undertaken by Metropolitan to provide for the transportation of its Colorado River water entitlement to its service area. The CRA originates at Lake Havasu on the Colorado River and extends approximately 242 miles through a series of pump stations and reservoirs 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. Metropolitan first delivered CRA water to its member agencies in 1941.

Colorado River Water Apportionment and Seven-Party Agreement

Pursuant to the federal Boulder Canyon Project Act of 1928, 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 (the "Lower Basin States"). Under an agreement entered into in 1931 among the California entities that expected to receive a portion of California's apportionment of Colorado River water (the "Seven-Party Agreement") and which 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. 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. As a result, California has limited its annual use to 4.4 million acre-feet since 2003, not including supplies made available under water supply programs such as intentionally-created surplus and certain conservation and storage agreements. In addition, a severe drought in the Colorado River Basin from 2000-2004 reduced storage in system reservoirs, ending the availability of surplus deliveries to Metropolitan. 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, and totaled over 889,000 acre-feet in 2018. Average annual net deliveries for 2009 through 2018 were nearly 957,000 acre-feet, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. See " – Quantification Settlement Agreement" and " – Colorado River Operations: Surplus and Shortage Guidelines – Interim Surplus Guidelines." See also "–Water Transfer, Storage and Exchange Programs – Colorado River Aqueduct Agreements and Programs."

The following table sets forth the existing priorities of the California users of Colorado River water established under the 1931 Seven-Party Agreement.

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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.

Quantification Settlement Agreement

The Quantification Settlement Agreement ("QSA"), executed by the Coachella Valley Water District ("CVWD"), Imperial Irrigation District ("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 were completed in 2009 and conserve over 98,000 acre-feet annually. Metropolitan receives this water and delivers over 77,000 acre-feet of exchange water annually to

the San Diego County Water Authority ("SDCWA"), plus any of the 4,850 acre-feet of mitigation water that is not used in that year, and provides 16,000 acre-feet of water annually by exchange to the United States for use by 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. Water became available for exchange with the United States following a May 17, 2017 notice from the Federal Energy Regulatory Commission ("FERC") satisfying the last requirement of Section 104 of the San Luis Rey Indian Water Rights Settlement Act (Title I of Public Law 100-675, as amended). The QSA and related agreements also authorized the transfer of conserved water annually by IID to SDCWA (up to a maximum expected amount in 2021 of 205,000 acre-feet, then stabilizing to 200,000 acre-feet per year). Metropolitan also receives this water and delivers exchange water annually to SDCWA. See description under the caption "– Metropolitan and San Diego County Water Authority Exchange Agreement" below; see also "METROPOLITAN REVENUES–Principal Customers" in this Appendix A. Also included under the QSA is a 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. 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 Palo Verde Land Management, Crop Rotation and Water Supply Program (described under "–Water Transfer, Storage and Exchange Programs –Colorado River Aqueduct Agreements and Programs" below), which provides up to approximately 133,000 acre-feet of water per year. (Amounts of Colorado River water received by Metropolitan in 2009 through 2018 are discussed under " –Colorado River Water Apportionment and Seven-Party Agreement" above.)

Metropolitan and San Diego County Water Authority Exchange Agreement

No facilities exist to deliver conserved 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." Accordingly, in 2003, Metropolitan and SDCWA entered into an exchange agreement (the "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. Metropolitan delivers an equal volume of water from its own sources of supply through portions of its delivery system to SDCWA. In consideration for the conserved water made available to Metropolitan by SDCWA, a lower price 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–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 2018, 207,700 acre-feet were delivered to Metropolitan by SDCWA for exchange, consisting of 130,000 acre-feet of IID conservation plus 77,000 acre-feet of conserved water from the Coachella Canal and All-American Canal lining projects.

Colorado River Operations: Surplus and Shortage Guidelines

General. The Secretary of the Interior is vested with the responsibility of managing the mainstream waters of the lower Colorado River pursuant to federal law. Each year, the Secretary of the Interior is required to declare the Colorado River water supply availability conditions for the Lower Basin States in terms of "normal," "surplus" or "shortage" and has adopted operations criteria in the form of guidelines to determine the availability of surplus or potential shortage allocations among the Lower Basin States and reservoir operations for such conditions.

Interim Surplus Guidelines. In January 2001, the Secretary of the Interior adopted guidelines (the "Interim Surplus Guidelines"), initially for use through 2016, in determining if there is surplus Colorado River water available for use in California, Arizona and Nevada. The Interim Surplus Guidelines were

amended in 2007 and now extend through 2026. The purpose of the Interim Surplus Guidelines was to provide mainstream users of Colorado River water, particularly those in California who utilize surplus flows, a greater degree of predictability with respect to the availability and quantity of surplus water. 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, and Metropolitan has not received any surplus water since 2002.

Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead. In May 2005, the Secretary of the Interior directed the Bureau of Reclamation to develop additional strategies for improving coordinated management of the reservoirs of the Colorado River system. In November 2007, the Bureau of Reclamation issued a Final EIS regarding new federal guidelines concerning the operation of the Colorado River system reservoirs, particularly during drought and low reservoir conditions. These 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. Consistent with these legal protections, under the guidelines, Arizona and Nevada are first subject to the initial annual shortages identified by the Secretary up to 500,000 acre-feet.

The guidelines also created the Intentionally Created Surplus ("ICS") program, which allows the Lower Basin States to store conserved water in Lake Mead. Under this program, ICS water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) is eligible for storage in Lake Mead by Metropolitan. See the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. The Secretary of the Interior delivers the stored ICS water to Metropolitan in accordance with the terms of December 13, 2007, January 6, 2010, and November 20, 2012 Delivery Agreements between the United States and Metropolitan. As of January 1, 2019, Metropolitan had an estimated 594,000 acre-feet in its ICS 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 international agreements that converted water conserved by Mexico to the United States, which have not been delivered to the region.

Since the 2007 Lower Basin shortage guidelines were issued for the coordinated operations of Lake Powell and Lake Mead, the Colorado River has continued to experience drought conditions. The seven Colorado River Basin States, the U.S. Department of Interior through the Bureau of Reclamation, and water users in the Colorado River basin, including Metropolitan, have been developing Drought Contingency Plans ("DCPs") to reduce the risk of Lake Powell and Lake Mead declining below critical elevations through 2026.

On December 11, 2018, Metropolitan's Board authorized Metropolitan's entering into seven agreements to implement the Lower Basin DCP on the proposed terms. The Lower Basin Drought Contingency Plan Agreement requires California, Arizona and Nevada to store defined volumes of water in Lake Mead at specified lake levels. California would begin making contributions if Lake Mead's elevation is projected to be at 1,045 feet above sea level or below on January 1. Lake Mead elevation in January 2019 was 1,085 feet. Depending on the lake's elevation, California's contributions would range from 200,000 to 350,000 acre-feet a year ("DCP Contributions"). A set of proposed intrastate implementation agreements would have divided California's obligation to make DCP Contributions among Metropolitan, IID, Palo Verde Irrigation District ("PVID"), and CVWD. Implementation of the Lower Basin DCP enhances

Metropolitan's ability to store water in Lake Mead and to ensure that water in storage can be delivered at a later date. The Lower Basin DCP increases the total volume of water that California may store in Lake Mead by 200,000 acre-feet, which Metropolitan will have the right to use. Water stored as ICS will be available for delivery so long as Lake Mead's elevation remains above 1,025 feet. Previously, that water would likely have become inaccessible below a Lake Mead elevation of 1,075 feet. DCP Contributions may be made through conversion of existing forms of ICS. These types of DCP Contributions become DCP ICS. DCP Contributions may also be made by leaving water in Lake Mead that there was a legal right to have delivered. This type of DCP Contribution becomes system water and may not be recovered. Rules are set for delivery of DCP ICS through 2026 and between 2027-2057. If any DCP ICS is left in Lake Mead after 2057, it will be lost.

Subsequent to Metropolitan's December 11, 2018 Board action, the Commissioner of the Bureau of Reclamation established a deadline of March 18, 2019 for the participating water agencies to obtain the necessary authorization for the DCP agreements. The approval of the intrastate DCP agreements by IID's board of directors occurred on December 10, 2018; however, IID's board approval was suspended until certain conditions were met, including that the State of California and the United States governments have irrevocably committed to provide sufficient funding for full completion of a 10-year Salton Sea management plan, a condition that could not likely be secured by the federal deadline for the required DCP authorizations.

In order to protect Metropolitan's access to its ICS and advance the implementation of the Lower Basin DCP, on March 12, 2019, Metropolitan's Board authorized Metropolitan to make California's contributions if IID, PVID, and/or CVWD did not participate in the Lower Basin DCP. IID's Board has not authorized its agency to participate in the Lower Basin DCP. Both PVID and CVWD's boards have authorized their respective agencies' participation in the Lower Basin DCP. Thus, Metropolitan will be directly responsible for 85% of California's DCP Contributions under the Lower Basin DCP. PVID will be responsible for 8% of California's DCP Contributions, which Metropolitan will make pursuant to Metropolitan's Land Management, Crop Rotation and Water Supply Program with PVID (described under "– Water Transfer, Storage and Exchange Programs –Colorado River Aqueduct Agreement and Programs" below). CVWD will be responsible for 7% of California's required DCP Contributions.

Congress passed, and on April 16, 2019, the President signed legislation that directs the Secretary of the Interior to sign and implement four DCP agreements related to the Upper and Lower Basin DCPs without delay. It is expected that these agreements will be executed and the Upper and Lower Basin DCPs will become effective in May 2019.

On April 22, 2019, Metropolitan was served notice of a CEQA lawsuit filed by IID against Metropolitan. In this lawsuit, IID is seeking to vacate Metropolitan's Board actions taken on December 11, 2018 and March 12, 2019 under CEQA and to block Metropolitan from implementing the Lower Basin DCP and any related agreements. Metropolitan is unable to assess at this time the likelihood of success of this litigation or any future claims, or their potential effect on the timing or likelihood of implementation of the Lower Basin DCP.

If implemented, the Lower Basin DCP will be effective through 2026. Beginning in 2020, the U.S. Department of Interior through the Bureau of Reclamation, the seven Colorado River Basin States, and water users in the Colorado River basin, including Metropolitan, are expected to begin work on the development of new shortage guidelines for the management and operation of the Colorado River after the term of the 2007 Lower Basin shortage guidelines ends in 2026.

Related Litigation–Navajo Nation Suit. 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 (described under " –Colorado River Operations: Surplus and Shortage Guidelines – Interim Surplus Guidelines" above) 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, Central Arizona Water Conservation District ("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 were 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 (described under "– Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead" above). Metropolitan has used these new guidelines to store over 1,000,000 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. 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. On December 4, 2017, the Ninth Circuit of Appeals held that the Navajo Nation lacked standing for its National Environmental Policy Act claims, but that the breach of trust claim was not barred against the federal defendants. The court remanded the breach of trust claim to the district court to consider on the merits. Metropolitan is unable to assess at this time the likelihood of success of this litigation or any future claims, or their potential effect on Colorado River water supplies.

Endangered Species Act and Other Environmental Considerations

Endangered Species Act Considerations - State Water Project

General. DWR has altered the operations of the State Water Project to accommodate species of fish listed as threatened or endangered under the Federal Endangered Species Act ("ESA") or California ESA. 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. These changes in project operations have limited the flexibility of the State Water Project and adversely affected State Water Project deliveries to Metropolitan. State Water Project operational requirements may be further modified in the future under new biological opinions for listed species under the Federal ESA or by the issuance by the California Department of Fish and Wildlife ("CDFW") 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 the water supply available for export. Such operational constraints are likely to continue until long-term solutions to the problems in the Bay-Delta are identified and implemented. See also "–State Water Project – Bay-Delta Proceedings Affecting State Water Project."

The Federal ESA requires that before any federal agency authorizes funds or carries out an action that may affect a listed species or designated critical habitat, 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 December 15, 2008 on the impacts of the State Water Project and the federal Central Valley Project on Delta smelt. On June 4, 2009, the National Marine Fisheries Service released a biological opinion for salmonid species. The water supply restrictions imposed by these biological opinions on Delta smelt and salmonid species 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 2017 are estimated to be 2.1 million acre-feet.

Endangered Species Act Considerations - Colorado River

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 (commencing in 2005). 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).

Invasive Species - Mussel Control Programs

Zebra and quagga mussels are established in many regions of the United States. Mussels can reproduce quickly and, if left unmanaged, can reduce flows by clogging intakes and raw water conveyance systems, alter or destroy fish habitats, and affect lakes and beaches. Mussel management activities may require changes in water delivery protocols to reduce risks of spreading mussel populations, and increase operation and maintenance costs.

In January 2007, quagga mussels were discovered in Lake Mead. All pipelines and facilities that transport raw Colorado River water are considered to be infested with quagga mussels. Metropolitan has a quagga mussel control plan, approved by the CDFW to address the presence of mussels in the CRA system

and limit further spread of mussels. Year-round routine monitoring for mussel larvae has been conducted at Lake Havasu, selected locations in the CRA system, and non-infested areas of Metropolitan's system and some southern locations in the State Water Project. Recent shutdown inspections have demonstrated that control activities effectively limit mussel infestation in the CRA and prevent the further spread of mussels to other bodies of water and water systems. Metropolitan's costs for controlling quagga mussels in the CRA system over the past 12 years has been approximately $5 million per year.

Established mussel populations are located within ten miles of the State Water Project. A limited number of mussels have also been detected in State Water Project supplies but there is currently no evidence of established mussel populations, nor have they impacted Metropolitan's State Water Project deliveries. To prevent the introduction and further spread of mussels into the State Water Project, the Bay-Delta, and other uninfested bodies of water and water systems, DWR has also developed quagga mussel control plans and has partnered with other State and federal agencies on a number of related activities. Metropolitan coordinates mussel monitoring and control activities with these agencies.

Water Transfer, Storage and Exchange Programs

General

To supplement its State Water Project and Colorado River water supplies, Metropolitan has developed and actively manages a portfolio of water supply programs, including water transfer, storage and exchange agreements, the supplies created by which are conveyed through the California Aqueduct of the State Water Project, utilizing Metropolitan's rights under its State Water Contract to use the portion of the State Water Project conveyance system necessary to deliver water to it, or through available CRA capacity. Consistent with its IRP, Metropolitan will continue to pursue voluntary water transfer and exchange programs with State, federal, public and private water districts and individuals to help mitigate supply/demand imbalances and provide additional dry-year supply sources. A summary description of certain of Metropolitan's supply programs are set forth below. In addition to the arrangements described below, Metropolitan is entitled to storage and access to stored water in connection with various other storage programs and facilities. See "–Colorado River Aqueduct" above, as well as the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

State Water Project Agreements and Programs

In addition to the basic State Water Project contract provisions, Metropolitan has other contract rights that accrue to the overall value of the State Water Project. Because each Contractor is paying for physical facilities, they also have the right to use the facilities to move water supplies associated with agreements, water transfers and water exchanges. Metropolitan has entered into agreements and exchanges that provide additional water supplies.

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. California's agricultural activities consume approximately 34 million acre-feet of water annually, which is approximately 80 percent of the total water used in the State for agricultural and urban uses and 40 percent of the water used for all consumptive uses, including environmental demands. Voluntary water transfers and exchanges with agricultural users can make a portion of this agricultural water supply available to support the State's urban areas. The portfolio of supplemental supplies that Metropolitan has developed to be conveyed through the California Aqueduct extend from north of the Bay-Delta to Southern California. Certain of these arrangements are also described below.

Castaic Lake and Lake Perris. Metropolitan has contractual rights to withdraw up to 65,000 acre-feet of water in Lake Perris (East Branch terminal reservoir) and 153,940 acre-feet of water in Castaic Lake (West Branch terminal reservoir). This storage provides Metropolitan with additional options for managing

State Water Project deliveries to maximize yield from the project. Any water used must be returned to the State Water Project within five years or it is deducted from allocated amounts in the sixth year.

Metropolitan Article 56 Carryover. Metropolitan has the right to store its allocated contract amount for delivery in subsequent years. Metropolitan can store between 100,000 and 200,000 acre-feet, depending on the final water supply allocation percentage.

Yuba River Accord. 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 Contractors, and the San Luis & Delta-Mendota Water Authority entered into separate agreements with DWR for the purchase of portions of the 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.

In addition to water made available under the Yuba River Accord, Metropolitan has developed groundwater storage agreements that allow Metropolitan to store available supplies in the Central Valley for return later. See also "METROPOLITAN'S WATER DELIVERY SYSTEM–Water Quality and Treatment" in this Appendix A for information regarding a recently adopted water quality regulation for 1,2,3-Trichloropropane ("TCP") that impacts certain of Metropolitan's groundwater storage programs. Metropolitan has also developed exchanges and transfers with other State Water Contractors.

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 storage account balance under the Arvin-Edison/Metropolitan Water Management Program as of January 1, 2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. As a result of detecting TCP in Arvin-Edison wells, Metropolitan has temporarily suspended operation of the program until the water quality concerns can be further evaluated and managed.

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 storage account balance under the Semitropic program as of January 1, 2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

Kern Delta Storage Program. Metropolitan entered into an agreement with Kern Delta Water District ("Kern Delta") in May 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 to permit

Metropolitan, at Metropolitan's option, a return of up to 50,000 acre-feet of water annually during hydrologic and regulatory droughts. Metropolitan's storage account balance under this program as of January 1, 2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

Mojave Storage Program. Metropolitan entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency ("Mojave") in October 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. The agreement allows Metropolitan to annually withdraw Mojave State Water Project contractual amounts, after accounting for local needs. Under a 100 percent allocation, the State Water Contract provides Mojave 82,800 acre-feet of water. Metropolitan's storage account balance under this program as of January 1, 2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

Antelope Valley-East Kern Storage and Exchange Program. In 2016, Metropolitan entered into an agreement with the Antelope Valley-East Kern Water Agency ("AVEK"), the third largest State Water Contractor, to both exchange supplies and store water in the Antelope Valley groundwater basin. Under this agreement, AVEK would provide Metropolitan up to 30,000 acre-feet of storage and the ability to exchange supplies. AVEK would provide at least 30,000 acre-feet over ten years of its unused Table A State Water Project water to Metropolitan. For every two acre-feet provided to Metropolitan as part of the exchange, AVEK would receive back one acre-foot in the future. For the one acre-foot that is retained by Metropolitan, Metropolitan would pay AVEK under a set price schedule based on the State Water Project allocation at the time. The payment would range from $587/acre-foot under a five percent State Water Project allocation to $38/acre-foot under an 86 percent State Water Project allocation. DWR has approved the storage program element but has yet to approve the exchange element of the program.

Antelope Valley-East Kern High Desert Water Bank Program. In April 2019, Metropolitan's Board authorized the General Manager to enter into an agreement with AVEK for a groundwater banking program referred to as the High Desert Water Bank Program. Under this agreement, Metropolitan would pay AVEK for the capital costs of construction of groundwater recharge and recovery facilities to be located in AVEK's service area near the split of the West and East Branches of the California Aqueduct. Metropolitan currently expects that construction will commence in fiscal year 2019-20. The estimated costs of construction of the facilities is $131 million. Following completion of construction, which is expected to take approximately five years, Metropolitan would have the right to store up to 70,000 acre-feet per year of its unused Table A State Water Project water or other supplies in the Antelope Valley groundwater basin for later return. The maximum storage capacity for Metropolitan supplies would be 280,000 acre-feet. At Metropolitan's direction, up to 70,000 acre-feet of stored water annually would be available for return by direct pump back into the East Branch of the California Aqueduct. Metropolitan would pay for the actual operation, maintenance and power costs for the water bank facilities when used for Metropolitan's benefit. In addition, Metropolitan would pay a set recovery usage fee on all recovered water. In total, the estimated cost to Metropolitan would be $320/per acre-foot. Upon completion, this program would provide additional flexibility to store and recover water for emergency or water supply needs through 2057.

San Gabriel Valley Municipal Water District and Other Exchange Programs. In 2013, Metropolitan entered into an agreement with the San Gabriel Valley Municipal Water District ("SGVMWD"). Under this agreement, Metropolitan delivers treated water to a SGVMWD subagency in exchange for twice as much untreated water in the groundwater basin. Metropolitan's member agencies can then use the groundwater supplies to meet their needs. Metropolitan can exchange and purchase at least 5,000 acre-feet per year. This program has the potential to increase Metropolitan's reliability by providing 115,000 acre-feet through 2035.

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 "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations - State Water Project."

Metropolitan/CVWD/Desert Water Agency Exchange and Advance Delivery Agreement. Metropolitan has agreements with CVWD and the Desert Water Agency ("DWA") in which Metropolitan exchanges its Colorado River water for those agencies' State Water Project contractual water and other State Water Project water acquisitions on an annual basis. Because CVWD and DWA do not have a physical connection to the State Water Project, Metropolitan takes delivery of CVWD's and DWA'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 may deliver Colorado River water in advance of receiving State Water Project supplies 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 may meet the exchange delivery obligation through drawdowns of the advance delivery account, rather than deliver Colorado River water in that year. Metropolitan's storage account under the CVWD/DWA program as of January 1, 2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. In addition to the storage benefits of the program, Metropolitan receives water quality benefits with increased deliveries of lower salinity water from the State Water Project in lieu of delivering higher saline Colorado River water.

Colorado River Aqueduct Agreements and Programs

Metropolitan has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water, including through cooperative programs with other water agencies to conserve and develop supplies and through programs to exchange water with other agencies. These supplies are conveyed through the CRA. Metropolitan determines the delivery schedule of these supplies throughout the year based on changes in the availability of State Water Project and Colorado River water. Under certain of these programs, water may be delivered to Metropolitan's service area in the year made available or in a subsequent year as ICS water from Lake Mead storage. See "–Colorado River Aqueduct –Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead."

IID/Metropolitan Conservation Agreement. Under a 1988 water conservation agreement, as amended in 2003 and 2007 (the "1988 Conservation Agreement") between Metropolitan and 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. As amended, the agreement's initial term has been extended to at least 2041 or 270 days after the termination of the QSA. In 2017, 105,000 acre-feet of conserved water was made available by IID to Metropolitan. Under the QSA and related agreements, Metropolitan, at the request of CVWD, forgoes up to 20,000 acre-feet of this water each year for diversion by CVWD. In 2016 and 2017, CVWD's requests were for 14,626 and 0 acre-feet, respectively, leaving 90,374 acre-feet in 2016 and 105,000 acre-feet in 2017 for Metropolitan. See "–Colorado River Aqueduct –Quantification Settlement Agreement."

Palo Verde Land Management, Crop Rotation and Water Supply Program. In August 2004, Metropolitan and PVID signed the program agreement for a Land Management, Crop Rotation and Water Supply Program. Under this program, participating landowners in the PVID service area are compensated for reducing water use by not irrigating a portion of their land. 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. The following table shows annual volumes of water saved and made available to Metropolitan under the Land Management, Crop Rotation and Water Supply Program with PVID:

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[(1)]	144,300
2010[(1)]	148,600
2011	122,200
2012	73,700
2013	32,800
2014	43,000
2015	94,500
2016	125,400
2017	111,800
2018[(2)]	93,300

Source: Metropolitan.

(1) Includes water from a supplemental fallowing program entered into with PVID in March 2009 that provided for fallowing of additional acreage in 2009 and 2010 and resulted in an additional 24,100 acre-feet and 32,300 acre-feet of water in 2009 and 2010, respectively, made available under the program.

(2) Estimate.

Lake Mead Storage Program. As described under "–Colorado River Aqueduct –Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead," in December 2007, Metropolitan entered into agreements to set forth the guidelines under which ICS water is developed, and stored in and delivered from Lake Mead. The amount of water stored in Lake Mead must be created through extraordinary conservation, system efficiency, tributary, imported, or binational conservation methods. Metropolitan has participated in projects to create ICS as described below:

Drop 2 (Warren H. Brock) Reservoir. In May 2008, Metropolitan provided $28.7 million to join the 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, and has the ability to receive up to 25,000 acre-feet of water in any single year. Besides the additional water supply, the addition of the Warren H. Brock reservoir adds to the flexibility of Colorado River operations by storing underutilized Colorado River water orders caused by unexpected canal outages, changes in weather conditions, and high tributary runoff into the Colorado River. As of January 1, 2019, Metropolitan had taken delivery of 35,000 acre-feet of this water, and had 65,000 acre-feet remaining in storage.

Yuma Desalting Plant. 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. As of January 1, 2019, that water was stored in Lake Mead for Metropolitan's future use.

Mexico Pilot Project. In November 2012, Metropolitan executed agreements in support of a program to augment Metropolitan's Colorado River supply between 2013 through 2017 through an international pilot project in Mexico. Metropolitan's total share of costs was $5 million for 47,500 acre-feet of project supplies. In December 2013, Metropolitan and IID executed an agreement under which IID has paid half of Metropolitan's program costs, or $2.5 million, in return for half of the project supplies, or 23,750 acre-feet. As such, 23,750 acre-feet of Intentionally Created Mexican Allocation was converted to Binational ICS and credited to Metropolitan's binational ICS water account in 2017. See "–Colorado River Aqueduct –Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead." As of January 1, 2019, that water was stored in Lake Mead for Metropolitan's future use.

Storage and Interstate Release Agreement with Nevada. In May 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 agreement, SNWA can request that Metropolitan store unused Nevada apportionment in California. The amount of water stored through 2014 under this agreement was approximately 205,000 acre-feet. In October 2015, SNWA and Metropolitan executed an additional amendment to the agreement under which Metropolitan paid SNWA approximately $44.4 million and SNWA stored an additional 150,000 acre-feet with Metropolitan during 2015. Of that amount, 125,000 acre-feet has been added to SNWA's storage account with Metropolitan, increasing the total amount of water stored to approximately 330,000 acre-feet. In subsequent years, SNWA may request recovery of the stored water. 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 plus inflation based on the amount of water returned. However, it is expected that SNWA will not request return of any of the water stored with Metropolitan before 2022.

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 6.04 million acre-feet. In 2018, 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 and Emergency Response Measures" 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 "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations – State Water Project – Delta Smelt and Salmon Federal ESAs Biological Opinions." Metropolitan replenishes its storage accounts when available 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. 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. See "CONSERVATION AND WATER SHORTAGE MEASURES–Water Supply Allocation Plan" in this

Appendix A. 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. Following withdrawals in 2014 and 2015, in 2016, approximately 350,000 acre-feet were added to storage reserves, providing for nearly 1.9 million acre-feet in reserves as of January 1, 2017. More than 1.1 million acre-feet were returned to storage reserves in 2017, providing over 3.1 million acre-feet in reserves as of January 1, 2018. Metropolitan added slightly to storage reserves in 2018, maintaining approximately 3.1 million acre-feet in reserves as of January 1, 2019. 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, 2019	Water in Storage January 1, 2018	Water in Storage January 1, 2017
Colorado River Aqueduct				
Desert / CVWD Advance Delivery Account	800,000	235,000	228,000	38,000
Lake Mead ICS	1,563,000	625,000	479,000	157,000
Subtotal	**2,363,000**	**860,000**	**707,000**	**195,000**
State Water Project				
Arvin-Edison Storage Program	350,000	154,000	149,000	108,000
Semitropic Storage Program	350,000	187,000	187,000	125,000
Kern Delta Storage Program	250,000	138,000	138,000	99,000
Mojave Storage Program	330,000[(4)]	19,000[(4)]	27,000	27,000
AVEK Storage Program	30,000	9,000	9,000	-0-
Castaic Lake and Lake Perris[(2)]	219,000	219,000	219,000	154,000
State Water Project Carryover[(3)]	350,000[(5)]	256,000	325,000	210,000
Emergency Storage	328,000	328,000	328,000	328,000
Subtotal	**2,207,000**	**1,310,000**	**1,382,000**	**1,051,000**
Within Metropolitan's Service Area				
Diamond Valley Lake	810,000	702,000	747,000	566,000
Lake Mathews	182,000	141,000	139,000	135,000
Lake Skinner	44,000	37,000	38,000	7,000
Subtotal[(6)]	**1,036,000**	**880,000**	**924,000**	**708,000**
Member Agency Storage Programs				
Cyclic Storage and Conjunctive Use	500,000	97,000	88,000	1,000
Total	**6,106,000**	**3,147,000**	**3,101,000**	**1,955,000**

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) Includes Article 56 Carryover of Metropolitan, Coachella Valley Water District, and Desert Water Agency, prior-year carryover, non-project carryover, and carryover of curtailed deliveries pursuant to Article 14(b) of Metropolitan's State Water Contract.
(4) The Mojave Storage agreement was amended in 2011 to allow for cumulative storage of up to 390,000 acre-feet. Since January 1, 2011, Metropolitan has stored 60,000 acre-feet, resulting in a remaining balance of storage capacity of 330,000 acre-feet. 41,000 acre-feet of the 60,000 acre-feet stored has been returned, leaving a remaining balance in storage of 19,000 acre-feet.
(5) A capacity of 350,000 acre-feet is estimated to be the practical operational limit for carryover storage considering Metropolitan's capacity to take delivery of carryover supplies before San Luis Reservoir fills.
(6) Includes 298,000 acre-feet of emergency storage in Metropolitan's reservoirs in 2017, 2018, and 2019.

CONSERVATION AND WATER SHORTAGE MEASURES

General

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 "METROPOLITAN'S WATER SUPPLY–State Water Project –Bay-Delta Proceedings Affecting State Water Project" and "–Endangered Species Act and Other Environmental Considerations –Endangered Species Act Considerations-State Water Project – Delta Smelt and Salmon Federal ESAs Biological Opinions" in this Appendix A. Conservation reduces the need to import water to deliver to member agencies through Metropolitan's system. Water conservation is an integral component of Metropolitan's IRP, WSDM Plan and Water Supply Allocation Plan.

Metropolitan's conservation program has largely been developed to assist its member agencies in meeting the conservation goals of the most recent IRP Update. See "METROPOLITAN'S WATER SUPPLY–Integrated Water Resources Plan" in this Appendix A. Under the terms of Metropolitan's Conservation Credits Program, Metropolitan administers regional conservation programs and also co-funds member agency conservation programs designed to achieve greater water use efficiency in residential, commercial, industrial, institutional and landscape uses. Conservation incentives and other water management programs are funded by Metropolitan's Water Stewardship Rate and available grant funds. The Water Stewardship Rate is charged on every acre-foot of water conveyed by Metropolitan, except on water delivered to SDCWA pursuant to the Exchange Agreement (see "METROPOLITAN REVENUES–Water Rates" and "–Litigation Challenging Rate Structure" in this Appendix A) in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs. See "METROPOLITAN REVENUES–Rate Structure –Water Stewardship Rate" in this Appendix A. All users of Metropolitan's system benefit from the reduced infrastructure costs and system capacity made available by investments in demand management programs like the Conservation Credits Program. Direct spending by Metropolitan on active conservation incentives, including rebates for water-saving plumbing fixtures, appliances and equipment totaled about $12.6 million in fiscal year 2017-18. The 2015 IRP Update estimates that 1,197,000 acre-feet of water will be conserved annually in Southern California by 2025. See also "METROPOLITAN'S WATER SUPPLY–Integrated Water Resources Plan" in this Appendix A and "–Increased Drought Resiliency" below.

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." Conservation and water efficiency programs are part of Metropolitan's resource management strategy which makes up these Surplus and Shortage actions.

Metropolitan's Water Supply Allocation Plan 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. See "–Water Supply Allocation Plan." 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 transactions during fiscal years 2009-10, 2010-11, 2011-12 and 2015-16.

Legislation approved in November 2009 sets a statewide conservation target for urban per capita potable water use of 20 percent reductions (from a baseline per capita use determined utilizing one of four State-approved methodologies) 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

transactions 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 Metropolitan's IRP goals that include the reduction of overall regional per capita water use by 20 percent by 2020 from a baseline of average per capita water use from 1996-2005 in Metropolitan's service area.

Water Surplus and Drought Management Plan

In addition to the long-term planning guidelines and strategy provided by its IRP, Metropolitan has developed its WSDM Plan for the on-going management of its resources and water supplies in response to hydrologic conditions. 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

In times of prolonged or severe water shortages, Metropolitan manages its water supplies through the implementation of its Water Supply Allocation Plan. The Water Supply Allocation Plan was originally approved by Metropolitan's Board in February 2008, and has been implemented three times since its adoption, including most recently 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 and if needed is typically approved in the month of April with implementation beginning in the month of July. In December 2014, the Board approved certain adjustments to the formula for calculating member agency supply allocations during subsequent periods of implementation of the Water Supply Allocation Plan. 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" in this Appendix A), 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. See also "–Increased Drought Resiliency." Based upon current hydrologic conditions and current DWR State Water Project allocation estimates, implementation of the Water Supply Allocation Plan for fiscal year 2018-19 is not expected.

Increased Drought Resiliency

Metropolitan has worked proactively with its member agencies to conserve water supplies in its service area, and significantly expanded its water conservation and outreach programs and increased funding for conservation incentive programs. In May 2017, the Alliance for Water Efficiency presented a peer review report of Metropolitan's conservation programs. Program modifications were adopted in April 2018 to reflect the peer review recommendations as well as feedback from member agencies. See "CONSERVATION AND WATER SHORTAGE MEASURES–General." Metropolitan has also taken other actions to improve drought resiliency that include increasing water recycling by providing incentives for on-site recycled water hook-ups, improving return capability of storage programs, and modifying Metropolitan's distribution system to enhance Colorado River water delivery to mitigate limitations in State Water Project supply.

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 "CONSERVATION AND WATER SHORTAGE MEASURES" in this Appendix A and "–Local Water Supplies" below. Consumer demand and locally supplied water vary from year to year, resulting in variability in the volume of Metropolitan's water transactions. Future reliance on Metropolitan supplies will depend on, among other things, 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 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 1976 to 2017. Local supplies available within Metropolitan's service area are augmented by water imported by the City of Los Angeles through the Los Angeles Aqueduct and Metropolitan supplies provided through the CRA and State Water Project.

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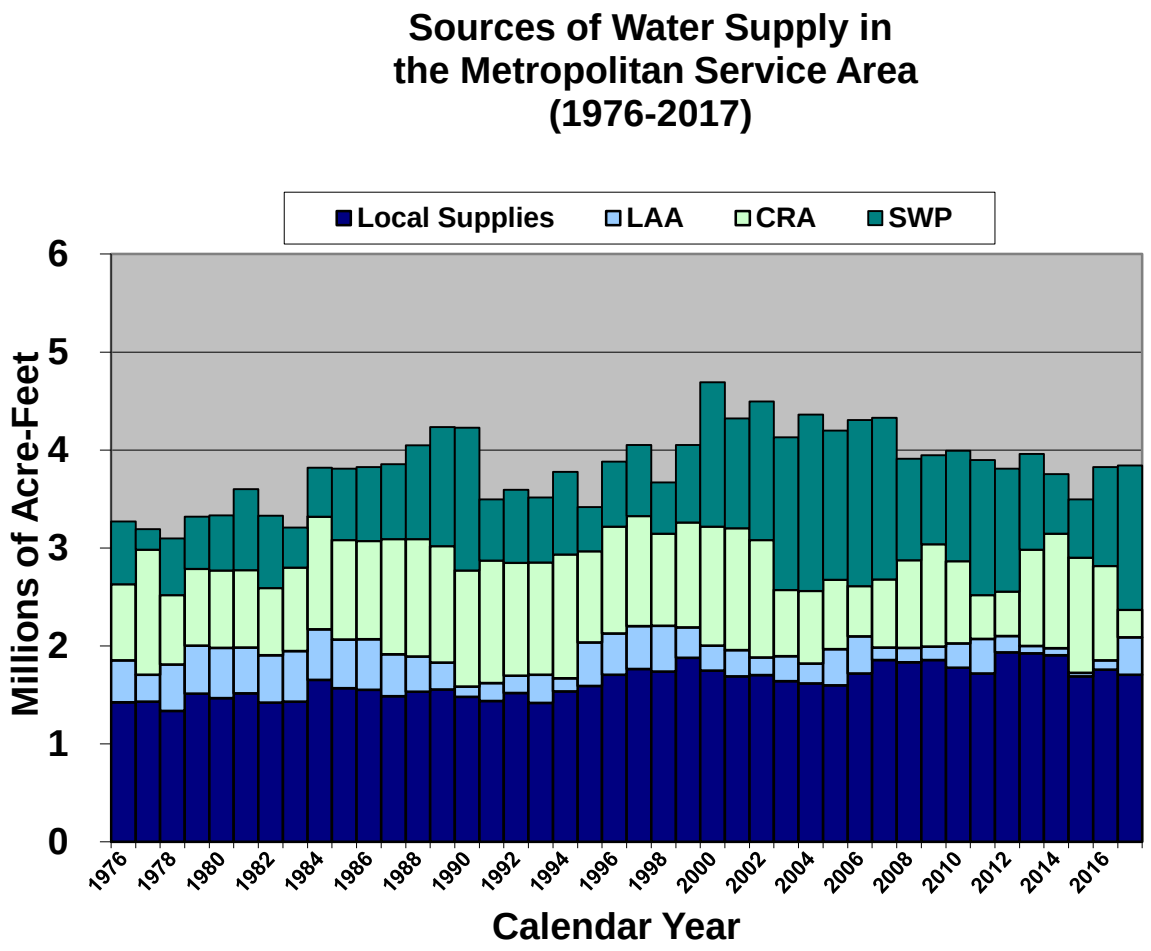

Source: Metropolitan.

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

Los Angeles Aqueduct

The City of Los Angeles, 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 prohibited from exporting water when Mono Lake elevation is below 6,377 feet above mean sea level, and is limited to export 4,500 acre-feet annually when Mono Lake elevation is between 6,377 to 6,380 feet above mean sea level, and 16,000 acre-feet annually when the elevation is between 6,380 to 6,391 feet above mean sea level, on April 1 of the runoff year. If Mono Lake is above elevation 6,391 feet, the City may export all available water from the Basin that is not dedicated to instream fishery protection flows. Due to the near record snowpack in the Eastern Sierra during the winter of 2016-17, the April 1, 2018 Mono Lake water level reached 6,382 feet, surpassing the 6,380 feet threshold which permits the increase of exports to 16,000 acre-feet pursuant to Decision 1631. As of April 1, 2019 Mono Lake water levels reached 6,382.4 feet.

Pursuant to the City's turnout agreement with DWR, AVEK and Metropolitan, LADWP commenced construction in 2010 of the turnout facilities along the California Aqueduct within AVEK's service area. The turnout was completed in December 2018 and enables 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, available capacity in the California Aqueduct and compliance with State Water Project water quality requirements.

Prior to 1991, the Los Angeles Aqueduct and local groundwater supplies had been nearly sufficient to meet the City's water demands during normal water supply years. As a result, only about 13 percent of the City's water needs (approximately 82,000 acre-feet) was supplied by Metropolitan. From fiscal year 2000-01 to fiscal year 2017-18, approximately 31 to 75 percent of the City's total water requirements were met by Metropolitan. For the five fiscal years ended June 30, 2018, the City's water deliveries from Metropolitan averaged approximately 308,725 acre-feet per year, which constituted approximately 59 percent of the City's total water supply. Deliveries from Metropolitan to the City during this period varied between approximately 182,700 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 2015 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 expects to decrease reliance on Metropolitan 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 311,000 acre-feet per year or 44 percent of its dry year supplies from Metropolitan until 2040. This corresponds to an increase from normal to dry years of approximately 236,000 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 8,700 acre-feet of water from the water use baseline established in 2013 and is expected to expand water savings in the future. LADWP reports that in calendar year 2018, 93,500 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 supplies are made up of groundwater, groundwater recovery, surface runoff, recycled water, and seawater desalination. Metropolitan supports local resources development through its Local Resources Program, which provides financial incentives up to $340 per acre-foot of water production from local water recycling, groundwater recovery and seawater desalination projects. Metropolitan utilizes conjunctive use of groundwater to encourage storage in groundwater basins. Member agencies and other local agencies have also independently funded and developed additional local supplies, including groundwater clean-up, recycled water and desalination of brackish or high salt content water.

Metropolitan's water transaction 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 transaction projection is made. Additional reductions in Metropolitan's water transaction 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 Transactions Projections" and "METROPOLITAN'S WATER SUPPLY–Integrated Water Resources Plan" in this Appendix A.

Groundwater. Demands for about 1.1 million acre-feet per year, about one-third of the annual water demands for approximately 19 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.

Member Agency Storage Programs. Metropolitan has developed a number of local programs to work with its member agencies to increase storage in groundwater basins. Metropolitan has encouraged storage through its cyclic and conjunctive use storage programs. These programs allow Metropolitan to deliver water into a groundwater basin in advance of agency demands. Metropolitan has drawn on dry-year supply from cyclic storage accounts and nine contractual conjunctive use storage programs to address shortages from the State Water Project and the CRA.

Cyclic storage agreements allow pre-delivery of imported water for recharge into groundwater basins in excess of an agency's planned and budgeted deliveries making best use of available capacity in conveyance pipelines, use of storm channels for delivery to spreading basins, and spreading basins. This water is then purchased at a later time when the agency has a need for groundwater replenishment deliveries.

Conjunctive use agreements provide for storage of imported water that can be called for use by Metropolitan during dry, drought, or emergency conditions. During a dry period, Metropolitan has the option to call water stored in the groundwater basins pursuant to its contractual conjunctive use agreements. At the time of the call, the member agency pays Metropolitan the prevailing rate for that water. Nine conjunctive use projects provide about 210,000 acre-feet of groundwater storage and have a combined extraction capacity of about 70,000 acre-feet per year. See the table entitled "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 25 projects that recover contaminated groundwater with total contract yields of about 117,000 acre-feet per year. During fiscal year 2017-18, Metropolitan provided incentives for approximately 50,000 acre-feet of recovered water under these agreements. Total groundwater recovery use under executed agreements is expected to grow to 67,000 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 110,000 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 37,000 acre-feet in calendar years 2015 and 2016.

Recycled Water-Local Agency Projects. 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 82 recycled water projects with total expected contract yields of about 312,000 acre-feet per year. During fiscal year 2017-18, Metropolitan provided incentives for approximately 165,000 acre-feet of recycled water under these agreements. Total recycled water use under executed agreements currently in place is expected to be approximately 185,000 acre-feet by 2020.

Recycled Water-Metropolitan Regional Program Demonstration Project. Since 2010, Metropolitan has been evaluating the potential and feasibility of implementing a regional recycled water program. Chronic drought conditions over the past 10 years have resulted in significant reductions in local surface supplies and groundwater production, and have increased the need for recharge supplies to groundwater and surface water

reservoirs to improve their sustainable yields and operating integrity. In 2015, Metropolitan executed an agreement with the Sanitation Districts of Los Angeles County ("LACSD") to implement a demonstration project and to establish a framework of terms and conditions of such a regional recycled water program (the "RRWP"). The objectives of this framework are to enable the potential reuse of up to 150 million gallons per day ("mgd") of treated effluent from LACSD's treatment facility. Purified water from a new advanced treatment facility could be delivered through pipelines to the region's groundwater basins, industrial facilities, and two of Metropolitan's treatment plants. The demonstration project will provide critical information needed to move forward with the potential RRWP, and will assist with regulatory approval of the proposed advance treatment process. Construction of the 0.5 mgd advanced water treatment demonstration plant was approved in 2017 and is nearly complete. Testing and operation of the plant will confirm treatment costs and provide the basis for future technical recommendations concerning design, operation, and optimization of the full-scale RRWP.

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. The IRP also 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: City of Long Beach, Municipal Water District of Orange County ("MWDOC") and West Basin Municipal Water District ("West Basin MWD"). 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 water 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. While City of Long Beach is no longer pursuing a seawater desalination project, both MWDOC's and West Basin MWD's projects are currently in the environmental review phase. If completed, the two would produce up to 25,000 acre-feet initially and potentially up to 75,000 acre-feet if expanded in the future. The SDP agreements automatically terminate in 2020 if the projects are not operational by that time. In October 2014, seawater desalination projects became eligible for funding under Metropolitan's Local Resources Program.

In late 2015, Poseidon Resources LLC ("Poseidon") 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 additional 8,000 acre-feet per year. Other seawater desalination projects that could provide supplies to Metropolitan's service area are under development or consideration. In partnership with the Orange County Water District, Poseidon is also developing a 56,000 acre-feet per year plant in Huntington Beach which is currently in the permitting phase.

Another project with the potential to augment regional supplies is a seawater desalination project in Rosarito Beach, Mexico. A consortium of private companies led by Consolidated Water Co., Ltd. and its Mexican subsidiary, N.S.C. Agua S.A. de C.V., is developing the project. The 56,000 to 112,000 acre-feet per year project is in the pre-construction phase, and could supply Metropolitan's service area either through direct delivery or exchange agreements. Additional 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

Primary Facilities and 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. Improvements are

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. 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 pumping 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. The State Water Project, managed and operated by DWR, is one of the largest water supply projects undertaken in the history of water development. The State Water Project facilities dedicated to water delivery consist of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water. Water from rainfall and snowmelt runoff is captured and stored in State Water Project conservation facilities and then delivered through State Water Project transportation facilities to water agencies and districts located throughout the Upper Feather River, Bay Area, Central Valley, Central Coast, and Southern California. Metropolitan receives water from the State Water Project through the main stem of the aqueduct system, the California Aqueduct, which is 444 miles long and includes 381 miles of canals and siphons, 49 miles of pipelines or tunnels and 13 miles of channels and reservoirs.

As described herein, Metropolitan is the largest (in terms of number of people it serves, share of State Water Project water it has contracted to receive, and percentage of total annual payments made to DWR therefor) of twenty-nine agencies and districts that have entered into contracts with DWR to receive water from the State Water Project. Contractors pay all costs of the facilities in exchange for participation rights in the system. Thus, Contractors also have the right to use the portion of the State Water Project conveyance system necessary to deliver water to them at no additional cost as long as capacity exists. 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, built, owned and operated by Metropolitan, is located southwest of the city of Hemet, California. It 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 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 emergency (assuming that there has been no impairment of Metropolitan's internal distribution network). See the table entitled "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. Metropolitan's 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 cfs, 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") centrally located in Los Angeles County. 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 Quality and 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. In recent years, the plants typically treat between 0.8 billion and 1.0 billion gallons of water per day, and have a maximum capacity of approximately 2.4 billion gallons per day. Approximately 50 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 federal Safe Drinking Water Act ("SDWA") establishes drinking water quality standards, monitoring, and public notification and enforcement requirements for public water systems. To achieve these objectives, the U.S. Environmental Protection Agency, as the lead regulatory authority, promulgates national drinking water regulations and develops the mechanism for individual states to assume primary enforcement responsibilities. The SWRCB Division of Drinking Water ("DDW"), formerly the Drinking Water Program under the California Department of Public Health, has primary responsibility for the regulation of public water supply systems in the State. Drinking water delivered to customers must comply with statutory and regulatory water quality standards designed to protect public health and safety that are now administered by DDW. Metropolitan operates its five water treatment plants under a domestic water supply permit issued by DDW which is amended, as necessary, such as when significant facility modifications occur. Metropolitan operates and maintains water storage, treatment and conveyance facilities, implements watershed management and protection activities, performs inspections, monitors drinking water quality, and submits monthly and annual compliance reports. In addition, public water system discharges to state and federal waters are regulated under general National Pollutant Discharge Elimination System ("NPDES") permits. The SWRCB issued these NPDES permits to Metropolitan which contain numerical effluent limitations, monitoring, reporting, and notification requirements for water discharges from the facilities and pipelines of Metropolitan's water supply and distribution system.

As described herein, Metropolitan has established five groundwater storage programs with other water agencies that allow Metropolitan to store available supplies in the Central Valley for return later. These programs help manage supplies by putting into storage surplus water in years when it is available and converting that to dry year supplies to be returned when needed. These programs can also provide emergency supplies. See "METROPOLITAN'S WATER SUPPLY–Water Transfer, Storage and Exchange Programs – State Water Project Agreements and Programs" and "–Storage Capacity and Water in Storage" in this Appendix A. Generally, water returned to Metropolitan under these groundwater storage programs ("return water") may be made available in one of two ways: by direct pump back from a groundwater well to the California Aqueduct or, when available, by an exchange with a supply already in the aqueduct. Water quality issues can arise in water returned by direct pumping as a result of the presence of a water quality contaminant in the groundwater storage basin and due to the imposition of stricter water quality standards by federal or State regulation.

In 2017, the SWRCB adopted a regulation setting a Maximum Contaminant Level ("MCL") for TCP of five parts per trillion or 5 ppt based upon a running annual average. TCP is a manufactured chemical used as a cleaning and degreasing solvent and has been found at industrial or hazardous waste sites. It is also associated with pesticide products used in agricultural practices. In January 2018, the new regulation went into effect. Under the new regulation, drinking water agencies are required to perform quarterly monitoring of TCP levels. There have been no detections of this chemical in Metropolitan's system. However, TCP has been detected above the new MCL in groundwater wells of three of Metropolitan's groundwater storage program partners through monitoring performed by these agencies. Levels detected in groundwater wells of the Arvin-Edison Water Storage District are the highest and will impact the ability of Metropolitan to take return water under that program. As noted under "METROPOLITAN'S WATER SUPPLY–Water Transfer, Storage and Exchange Programs" in this Appendix A, Metropolitan has temporarily suspended operation of this program until the water quality concerns can be further evaluated and managed. The levels of TCP detected at Metropolitan's other groundwater storage programs are much lower and impact fewer groundwater wells. Metropolitan is evaluating how the return capability could be reduced from those programs.

Possible remediation measures include, for example, return water with other surface water supplies, removal of wells from service, return water by exchange, or treatment. Additional capital and/or operation and maintenance costs could be incurred by Metropolitan in connection with remediation options, but the magnitude of such costs is not known at this time. To the extent return water under one or more groundwater storage programs could not be utilized due to groundwater quality, the available supply of stored water during extended drought or emergency periods would be reduced.

Metropolitan continually monitors new water quality laws and regulations and frequently comments on new legislative proposals and regulatory rules. Metropolitan is currently operating in compliance with all state and federal drinking water regulations and permit requirements.

Seismic Considerations and Emergency Response Measures

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 either to 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 (assuming there has been no impairment of Metropolitan's internal distribution network).

Metropolitan has an ongoing surveillance program that monitors the safety and structural performance of its 20 permitted 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, in conjunction with DWR and LADWP, has formed the Seismic Resilience Water Supply Task Force for the purpose of collaborating on studies and mitigation measures aimed at improving the reliability of imported water supplies to Southern California. Specific task force goals included revisiting historical assumptions regarding potential aqueduct outages after a seismic event; establishing a common understanding about individual agency aqueduct vulnerability assessments, projected damage scenarios, and planning assumptions; and discussing ideas for improving the resiliency of Southern California's imported water supplies through multi-agency cooperation. The task force has established multi-year goals and will continue to meet on these issues and develop firm plans for mitigating seismic vulnerabilities.

Metropolitan's resiliency efforts include a manufacturing, fabrication and coating shop in La Verne, California. A total of nearly $40 million has been invested to enhance and expand Metropolitan's capacity to provide fabrication, manufacturing, and coating services for rehabilitation work and capital projects. Metropolitan is also able to provide manufacturing and fabrication services through reimbursable agreements to member agencies, and to DWR for the 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 on site. In the event of earthquake damage, Metropolitan has taken measures to provide the design and fabrication capacity to fabricate pipe and manufacture 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-California Aqueduct. 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 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.

Metropolitan, in cooperation with the other 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.

State Water Project-Perris Dam. Perris Dam forms Lake Perris, the southernmost terminal reservoir for the State Water Project in Riverside County, with maximum capacity of approximately 130,000 acre-feet of water. Metropolitan uses water from Lake Perris for delivery to customers in Riverside and San Diego counties. Deliveries from the lake are used as a redundant source for the Mills Water Treatment Plant, drought supply from a flexible storage account, and for consumptive use by Metropolitan's customers. DWR reported in July 2005 that seismic studies indicate that DWR's Perris Dam facility could experience 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. Repair work was completed in April 2018. DWR's current estimate for repair costs, inclusive of environment and right-of-way work is $125.6 million. DWR has begun to refill Lake Perris to allow the dam to be tested and certified to again store 130,000 acre-feet of water. 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 are being paid for by the three agencies that use the water stored in Lake Perris: Metropolitan (42.9 percent), DWA (3.0 percent) and CVWD (21.9 percent). DWR recovers the cost of repairs through its annual statement of charges sent to each agency. See "METROPOLITAN EXPENSES–State Water Contract Obligations" in this Appendix A.

The dam remediation is one of three major projects to improve seismic stability and enhance public safety in the Perris Dam Remediation Program. The other two projects include the Outlet Tower Improvements and the Emergency Release Facility ("ERF") Project. The Outlet Tower Improvement project is in preliminary design, while the ERF is in design. The EIR for the ERF was published in February 2018. The ERF project provides improvements downstream of the reservoir that would direct the flow of water in an emergency requiring the dewatering of the reservoir. Flows would be directed through a series of berms and lined and unlined channels that would ultimately terminate at the Riverside County Flood Control and Water Conservation District's Perris Valley Channel. The Outlet Tower and Emergency Release Facility projects enhance the safety of the dam for other risks in addition to that posed by earthquakes. It is anticipated that costs will be shared in the same manner as for the Lake Perris dam remediation project:. DWR's current estimate for repair costs (including the share of costs to be assumed by the State) is $49.8 million for the Outlet Tower Improvements and $62.3 million for the Emergency Release Facility (of which Metropolitan's anticipated share would be 42.9 percent).

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 reasonably designed 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 infrastructure and system reliability projects, either as upgrades to existing capital assets or replacements and refurbishments of existing facilities, to ensure reliability as well as enhance operational efficiency and flexibility, and comply with water quality regulations. Metropolitan's CIP is regularly reviewed and updated. Metropolitan's biennial budget process includes a review of the projected long-term capital needs and the development of a capital expenditure forecast for the ten-year financial forecast, as well as the identification of the capital priorities of Metropolitan over the biennial budget term. 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. In addition, from time to time, when circumstances warrant, Metropolitan's Board may approve capital expenditures other than or in addition to those contemplated by the CIP at the time of the then current biennial budget.

Projection of Capital Investment Plan Expenditures

The table below sets forth the projected CIP expenditures as reflected in the adopted biennial budget for fiscal years 2018-19 and 2019-20, by project type for the fiscal years ending June 30, 2019 through 2023. This estimate is updated every two years 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)]
(Fiscal Years Ended June 30 - Dollars in Thousands)

	2019	2020	2021	2022	2023	Total[(2)]
Infrastructure R&R	$ 89,885	$ 98,396	$133,941	$120,049	$150,480	$ 592,752
Infrastructure Upgrade	85,724	87,372	97,425	102,371	99,080	471,972
Regulatory Compliance	2,768	3,441	5,616	4,752	349	16,926
Stewardship	10,270	2,671	1,353	838	--	15,132
Supply Reliability	6,158	2,753	3,920	1,405	--	14,236
System Flexibility	1,498	--	2,403	20,476	91	24,467
Water Quality	3,697	5,367	5,342	108	--	14,514
Total[(2)]	$200,000[(3)]	$200,000	$250,000	$250,000	$250,000	$1,150,000

Source: Metropolitan.

(1) Fiscal years 2018-19 and 2019-20 are based on the adopted biennial budget for fiscal years 2018-19 and 2019-20. Fiscal years 2020-21 through 2022-23 are based on the ten-year financial forecast provided in the adopted biennial budget.
(2) Totals may not foot due to rounding.
(3) Fiscal year 2018-19 capital expenditures are currently estimated to be approximately $214 million.

In developing the CIP, projects are reviewed, scored and prioritized towards the objectives of ensuring the sustainable delivery of reliable, high quality water, while meeting all regulatory requirements

and maintaining affordability. 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 additional facilities needs. See "METROPOLITAN'S WATER DELIVERY SYSTEM–Water Quality and Treatment" in this Appendix A.

The CIP planned spending as developed by Metropolitan's Engineering Services and presented in the Capital Expenditures (Capital Investment Plan) section of the fiscal years 2018-19 and 2019-20 budget is estimated to be $514.5 million over the biennium. Over the last several years, actual expenditures have been about 20 percent below planned spending. In keeping with that trend, the current budget for the two years is about 80 percent of planned engineering spending or $200 million in each fiscal year.

Construction projects included in the CIP are subject to ordinary construction risks and delays, including but not limited to: inclement weather or natural hazards affecting work and timeliness of completion; contractor claims or nonperformance; work stoppages or slowdowns; unanticipated project site conditions encountered during construction; errors or omissions in contract documents requiring change orders; and/or higher than anticipated construction bids or costs, any of which could affect the costs and availability of, or delivery schedule for, equipment, components, materials, labor or subcontractors, and result in increased CIP costs. In addition, on June 1, 2018, the federal government imposed tariffs on steel and aluminum imports. Contracts awarded both before and after June 1, 2018 are affected. Market data indicates material prices for steel have seen up to a 10 percent increase since March 2018. Metropolitan's direct contracts currently in progress have a total value of $344 million and face a tariff exposure of approximately $2.9 million, or less than one percent. Since implementation of the tariffs, Metropolitan has taken steps to account for the impacts of the tariffs in its bid and contract documents.

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 from current revenues. The remainder of capital program expenditures are expected to 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.

The issuance of approximately $80 million of additional water revenue bonds to fund or to reimburse prior capital expenditures is in Metropolitan's budget assumptions for the adopted biennial budget for fiscal year 2019-20, and current projections for each of the fiscal years 2020-21 through 2022-23 assume the issuance of approximately $100 million of additional water revenue bonds. These revenue bonds may be issued either as Senior Revenue Bonds under the Senior Debt Resolutions or as Subordinate Revenue Bonds under the Subordinate Debt Resolutions (each as defined under "METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds" in this Appendix A). The cost of these projected bond issues are reflected in the financial projections under, "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

Major Projects of Metropolitan's Capital Investment Plan

Colorado River Aqueduct Facilities. As previously noted, 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. Projects under the CRA facilities program are designed to replace or refurbish facilities and components on the CRA system in order to reliably convey water from the Colorado River to Southern California. A variety of projects have been completed over the past 10 years, including, among other things, 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, replacement of several miles of deteriorated concrete canal liner, new wastewater

systems at the Hinds and Eagle Mountain Pumping Plants, replacement of the sand trap facilities upstream of the Hinds, Eagle, and Iron Mountain pumping plants, and replacement of the outlet gates and appurtenant electrical, mechanical, and control systems at the Copper Basin Reservoir. Refurbishment or replacement of many of the electrical system components, including the transformers, circuit breakers and motor control centers, is currently under way. 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 current projected cost estimate for all prior and planned refurbishment or replacement projects under the CRA facilities program is $854.4 million. Costs through February 2019 were $264.6 million. Budgeted aggregate capital expenditures for improvements on the CRA for fiscal years 2018-19 and 2019-20 are $110.0 million.

Distribution System – Prestressed Concrete Cylinder Pipe. Metropolitan's distribution system is comprised of approximately 830 miles of pipelines ranging in diameter from 30 inches to over 200 inches. (See "METROPOLITAN'S WATER DELIVERY SYSTEM" in this Appendix A.) 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 improvements to several sections of PCCP. The costs for these improvements through February 2019 were $96.7 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 by relining with a welded steel liner. The first major contract to reline approximately 4.5 miles of PCCP on the Second Lower Feeder was completed in August 2018. The second major contract to reline approximately 1.9 miles of PCCP on the Second Lower Feeder was awarded in November 2018. Subsequent contracts are planned to be awarded annually depending on shutdown scheduling. Costs through February 2019 for all PCCP work (including the $96.7 million of repairs costs noted above) were $159.7 million. The estimated cost to reline all 100 miles of PCCP is approximately $2.2 billion and is expected to be undertaken over a period of approximately 20 years. Budgeted aggregate capital expenditures for PCCP rehabilitation for fiscal years 2018-19 and 2019-20 are $92.4 million.

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. Major projects completed to date include the $70 million replacement of the outlet facilities at Lake Mathews, the first two phases of the Orange County Feeder and Etiwanda Pipeline relining projects for a total of $34 million, and various other facility refurbishment and replacement projects ranging in cost from approximately $500,000 to over $10 million. 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, lining replacement of remaining portions of the Etiwanda Pipeline and Orange County Feeder, refurbishment to pressure control and hydroelectric power facilities, system improvements to provide drought relief, and various other upgrades totaling approximately $363.6 million through February 2019. The current projected cost estimate for the prior and planned refurbishment or replacement projects, other than the PCCP relining, is $1.1 billion. For fiscal years 2018-19 and 2019-20, budgeted aggregate capital expenditures for improvements on the distribution system, other than PCCP rehabilitation, are $108.9 million.

System Reliability. System Reliability projects are implemented at facilities throughout Metropolitan's system to utilize new processes or technologies, to improve safety, or to increase overall reliability. Planned projects in this category include seismic strengthening of Metropolitan's headquarters building, construction of operations support facilities such as the La Verne machine and fabrication shops, security system enhancements, and information technology infrastructure projects. The total estimated cost for all prior and projected system reliability improvements under this program is approximately $482.4 million, with $168.4 million spent through February 2019. Budgeted aggregate capital expenditures for improvements on system reliability projects for fiscal years 2018-19 and 2019-20 are $90.7 million.

F.E. Weymouth Treatment Plant Improvements. The Weymouth Treatment Plant, built in 1938, is Metropolitan's oldest water treatment facility. It has been subsequently expanded several times since its original construction. 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, upgrades to the plants filters, and a new chlorine handling and containment facility. Planned projects over the next several years include refurbishment of the plant's 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 $452.4 million, with $276.5 million spent through February 2019. Budgeted aggregate capital expenditures for improvements at the Weymouth plant for fiscal years 2018-19 and 2019-20 are $26.7 million.

Robert B. Diemer Treatment Plant Improvements. The Diemer Treatment Plant, built in 1963 and subsequently expanded in 1968, is Metropolitan's second oldest water treatment facility. 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, a new secondary access road, and upgrades to half of the plant's settling basins and filter valves. Planned projects over the next several years include the completion of refurbishment of the plant's settling basins and replacement of the valves used to control filter operation, and seismic retrofits to the filter buildings and administration building. The current cost estimate for all prior and projected improvements at the Diemer plant, not including the ozone facilities, is approximately $399.2 million, with $276.5 million spent through February 2019. Budgeted aggregate capital expenditures for improvements at the Diemer plant for fiscal years 2018-19 and 2019-20 are $17.6 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 revenues, which includes revenues from water sales, wheeling and exchanges, have provided approximately 80 percent of total revenues annually. In that time period, *ad valorem* property taxes have accounted for about 10 percent of total revenues, declining to eight percent of total revenues in fiscal year 2017-18. See "–Revenue Allocation Policy and Tax Revenues." 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 service for domestic and municipal uses is $731 per acre-foot at the Tier 1 level, which became effective January 1, 2019. See "–Rate Structure" and "–Water Rates." 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 2018-19. The rates charged by Metropolitan represent the cost of Metropolitan's 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 Revenues by Source

The following table sets forth Metropolitan's sources of revenues for the five fiscal years ended June 30, 2018, on a modified accrual basis. All information is unaudited. Audited financial statements for the fiscal years ended June 30, 2018 and June 30, 2017 are provided in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

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

	2014	2015	2016	2017	2018
Water Revenues[(2)]	$1,485	$1,383	$1,166	$1,151	$1,285
Net Tax Collections[(3)]	95	104	108	116	131
Additional Revenue Sources[(4)]	182	199	200	184	172
Interest on Investments	19	16	17	4	8
Hydroelectric Power Sales	15	8	7	21	24
Other Revenues[(5)]	19	163	246	51	28
Total Revenues	$1,815	$1,873	$1,744	$1,527	$1,648

Source: Metropolitan.

(1) Does not include any proceeds from the sale of bonded indebtedness.
(2) Water revenues include revenues from water sales, exchanges, and wheeling.
(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 revenues derived from water standby charges, readiness-to-serve, and capacity charges.
(5) Includes miscellaneous revenues and Build America Bonds (BABs) subsidy payment of $12.3 million, $12.3 million, $12.3 million, $9.8 million, and $15.0 million, in fiscal years 2013-14 through 2017-18, respectively. Fiscal years 2014-15, 2015-16, 2016-17, and 2017-18, include $142 million, $222 million, $33 million, and $1 million, respectively, of water conservation and water purchase expenditures, funded from a like amount of funds transferred from the Water Management Fund.

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. Beginning with fiscal year 1990-91, the Act limits Metropolitan's tax levy to 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 if, following a public hearing, the Board finds that such revenue is essential to Metropolitan's 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 to pay for a greater portion of Metropolitan's State Water Contract obligations. Any deficiency between tax levy receipts and Metropolitan's State Water Contract obligations is expected to be paid from Operating Revenues, as defined in the Senior Debt Resolutions (defined in this Appendix A under "METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds").

Water Revenues

General; 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, a wholesaler, provides two types of services: full service water service (treated or untreated) and wheeling service. See "–Classes of Water Service."

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 ("Purchase Orders") effective through December 31, 2024. See "–Member Agency Purchase Orders." Consumer demand and locally supplied water vary from year to year, resulting in variability in water 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 transactions. 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 Revenues. The following table sets forth water transactions (which includes water sales, exchanges, and wheeling) in acre-feet and water revenues (which includes revenues from water sales, exchanges, and wheeling) for the five fiscal years ended June 30, 2018, on a modified accrual basis. As reflected in the table below, water revenues for the fiscal year ended June 30, 2018 aggregated $1,285.2 million, of which $1,189.0 million was generated from water sales and $96.1 million was generated from exchanges and wheeling. Water revenues of Metropolitan for the fiscal years ended June 30, 2018 and June 30, 2017, on an accrual basis, are shown in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

SUMMARY OF WATER TRANSACTIONS AND REVENUES
Fiscal Years Ended June 30

Year	Water Transactions in Acre-Feet[1]	Water Revenues[2] (in millions)	Dollars Per Acre-Foot	Average Dollars Per 1,000 Gallons
2014	2,043,720	$1,484.6	$726	$2.23
2015	1,905,502	1,383.1	726	2.23
2016	1,623,052	1,166.0	718	2.20
2017	1,540,915	1,150.5	747	2.29
2018	1,610,969	1,285.2	798	2.45

Source: Metropolitan.

(1) Water Transactions include water sales, exchanges, and wheeling.
(2) Water Revenues include revenues from water sales, exchanges, and wheeling.

Principal Customers

Total water transactions accrued for the fiscal year ended June 30, 2018, were 1.61 million acre-feet, generating $1.29 billion in water revenues for such period. Metropolitan's ten largest water customers for the year ended June 30, 2018 are shown in the following table, on an accrual basis. The SDCWA has filed litigation challenging Metropolitan's rates. See "–Litigation Challenging Rate Structure."

TEN LARGEST WATER CUSTOMERS
Year Ended June 30, 2018
Accrual Basis

Agency	Water Revenues[(1)] (in Millions)	Percent of Total	Water Transactions in Acre-Feet[(2)]	Percent of Total
MWD of Orange County	$ 232.3	18.1%	266,545	16.5%
San Diego CWA	222.9	17.3	365,215	22.7
City of Los Angeles	151.3	11.8	183,527	11.4
West Basin MWD	113.9	8.9	114,422	7.1
Calleguas MWD	95.3	7.4	95,772	5.9
Eastern MWD	88.0	6.8	101,620	6.3
Western MWD	63.8	5.0	73,688	4.6
Three Valleys MWD	56.6	4.4	65,779	4.1
Inland Empire Utilities Agency	46.0	3.6	67,977	4.2
City of Long Beach	24.8	1.9	24,988	1.6
Total	$ 1,094.9	85.2%	1,359,531	84.4%
Total Water Revenues[(1)]	$1,285.2	**Total Acre-Feet**	1,610,969	

Source: Metropolitan.

(1) Water Revenues include revenues from water sales, exchanges, and wheeling.
(2) Water Transactions include water sales, exchanges, and wheeling.

Rate Structure

The following rates and charges are elements of Metropolitan's unbundled rate structure:

Tier 1 and Tier 2 Water Supply Rates. The rate structure recovers supply costs through a two-tiered price structure. The Tier 1 Supply Rate supports a regional approach through the uniform, postage stamp rate. The Tier 1 Supply Rate is calculated as the amount of the total supply revenue requirement that is not covered by the Tier 2 Supply Rate divided by the estimated amount of Tier 1 water sales. The Tier 2 Supply Rate is a volumetric rate that reflects Metropolitan's cost of purchasing water transfers north of the Delta. The Tier 2 Supply Rate encourages the member agencies and their customers to maintain existing local supplies and develop cost-effective local supply resources and conservation. 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 recovers the cost of the Conveyance and Distribution System that is used on an average annual basis through a uniform, volumetric rate. The System Access Rate is charged for each acre-foot of water transported by Metropolitan, regardless of the ownership of the water being transported. All users (including member agencies and third-party wheelers) using the Metropolitan system to transport water pay the same System Access Rate for the use of the system conveyance and distribution capacity to meet average annual demands.

Water Stewardship Rate. The Water Stewardship Rate provides a dedicated source of funding for conservation and local resources development through a uniform, volumetric rate. The Water Stewardship Rate is charged on each acre-foot of water delivered by Metropolitan, except SDCWA Exchange Agreement deliveries as explained below, and is allocated to Metropolitan's transportation rates. All users (including member agencies and third-party wheelers) benefit from avoided system infrastructure costs through conservation and local resources development, and from the system capacity made available by investments in demand management programs like Metropolitan's Conservation Credits Program and Local Resources Program. Therefore, all users pay the Water Stewardship Rate, except on water delivered to SDCWA pursuant to the Exchange Agreement (see "METROPOLITAN REVENUES–Water Rates" and "–Litigation Challenging Rate Structure" in this Appendix A) in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs.

In *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.* (see "–Litigation Challenging Rate Structure" below), the Court of Appeal held that the administrative record before it for the rates in calendar years 2011 through 2014 did not support Metropolitan's Water Stewardship Rate allocation to transportation rates, but the court did not address the allocation in subsequent years based on a different record. On April 10, 2018, the Board suspended the billing and collection of the Water Stewardship Rate on Exchange Agreement deliveries to SDCWA in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs recovered through the Water Stewardship Rate. The process may take up to two years and staff expects to propose that the results be incorporated in the next biennial budget and rate setting cycle. For calendar year 2018, the suspension was retroactive to January 1, 2018. The total effect of the proposed suspension, taking into consideration the lower revenues over the three calendar years, is estimated to be up to approximately $46 million.

System Power Rate. The System Power Rate recovers the cost of energy required to pump water to Southern California through the State Water Project and CRA. The cost of power is recovered through a uniform, volumetric rate. The System Power Rate is applied to all deliveries of Metropolitan water to member agencies. Wheeling parties pay for actual cost (not system average) of power needed to move the water. Member agencies engaging in wheeling transactions of up to one year pay the wheeling rate (consisting of the actual cost of power, the System Access Rate, the Water Stewardship Rate, and an administrative fee). Other wheeling transactions are pursuant to individual contracts. For example, a party wheeling water through the California Aqueduct would pay the variable power cost associated with using the State Water Project transportation facilities.

Treatment Surcharge. The Treatment Surcharge recovers all of the costs of providing treatment capacity and operations through a uniform, volumetric rate per acre-foot of treated water transactions. The Treatment Surcharge is charged to all treated water transactions.

The amount of each of these rates since January 1, 2014, is shown in the table entitled "SUMMARY OF WATER RATES" under "–Water Rates" below.

Member Agency Purchase Orders

The current rate structure allows member agencies to choose to purchase water from Metropolitan by means of a Purchase Order. Purchase Orders are voluntary agreements that determine the amount of water that a member agency can purchase at the Tier 1 Supply Rate. They allow member agencies to purchase a greater amount of water at the lower Tier 1 Supply Rate than would otherwise be authorized by the Administrative Code. In exchange for the higher Tier 1 Maximum, the member agency commits to purchase a specific amount of water (based on past purchase levels) over the term of the agreement. Such agreements allow member agencies to manage costs and provide Metropolitan with a measure of secure revenue.

In November 2014, the Metropolitan Board approved new Purchase Orders effective January 1, 2015 through December 31, 2024 (the "Purchase Order Term"). Twenty-one of the twenty-six member agencies have Purchase Orders, which commit the member agencies to purchase a minimum amount of supply from Metropolitan (the "Purchase Order Commitment").

The key terms of the Purchase Orders include:

- A ten-year term, effective January 1, 2015 through December 31, 2024;
- A higher Tier 1 limit based on the Base Period Demand, determined by the member agency's choice between (1) the Revised Base Firm Demand, which is the highest fiscal year purchases during the 13-year period of fiscal year 1989-90 through fiscal year 2001-02, or (2) the highest year purchases in the most recent 12-year period of fiscal year 2002-03 through 2013-14. The demand base is unique for each member agency, reflecting the use of Metropolitan's system water over time;
- An overall purchase commitment by the member agency based on the Demand Base period chosen, times ten to reflect the ten-year Purchase Order term. Those agencies choosing the more recent 12-year period may have a higher Tier 1 Maximum and commitment. The commitment is also unique for each member agency;
- The opportunity to reset the Base Period Demand using a five-year rolling average;
- 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; and
- An appeals process for agencies with unmet purchase commitments that will allow each acre-foot of unmet commitment to be reduced by the amount of production from a local resource project that commences operation on or after January 1, 2014.

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.

Other Charges

The following paragraphs describe the additional charges for the use of Metropolitan's distribution system:

Readiness-to-Serve Charge. The Readiness-to-Serve Charge ("RTS") recovers the cost of the portion of the system that is available to provide emergency service and available capacity during outages and hydrologic variability. The RTS is a fixed charge that is allocated among the member agencies based on a ten-fiscal year rolling average of firm demands. Water transfers and exchanges, except SDCWA Exchange Agreement transactions, are included for purposes of calculating the ten-fiscal year rolling average. The Standby Charge, described below, will continue to be collected at the request of a member agency and applied as a direct offset to the member agency's RTS obligation. The RTS generated $155.5 million in 2015-16, $144 million in 2016-17, and $137.5 million in 2017-18. Based on the adopted rates and charges, the RTS is projected to generate $136.5 million in fiscal year 2018-19, and $134.5 million in fiscal year 2019-20.

Water Standby Charges. The Standby Charge is authorized by the State Legislature and has been levied by Metropolitan since fiscal year 1992-93. Metropolitan will continue to levy the Standby Charge only within the service areas of the member agencies that request that the Standby Charge be utilized to help fund a member agency's RTS obligation. See "– Readiness-to-Serve Charge" above. The Standby Charge for each

acre or parcel of less than an acre will vary from member agency to member agency, reflecting current rates, which have remained the same since fiscal year 1993-94, and range from $6.94 to $15 for each acre or parcel less than an acre within Metropolitan's service area, subject to specified exempt categories. 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."

Twenty-two member agencies collect their RTS charges through standby charges. RTS charges collected by means of such standby charges were $41.7 million in each of fiscal years 2015-16 and 2016-17, and $41.6 million in fiscal year 2017-18.

Capacity Charge. The Capacity Charge recovers costs incurred to provide peak capacity within Metropolitan's distribution system. The Capacity Charge provides a price signal to encourage agencies to reduce peak demands on the distribution system and to shift demands that occur during the May 1 through September 30 period into the October 1 through April 30 period. This results in more efficient utilization of Metropolitan's existing infrastructure and deferring capacity expansion costs. Each member agency will pay the Capacity Charge per cfs based on a three-year trailing peak (maximum) day demand, measured in cfs. Each member agency's peak day is likely to occur on different days; therefore this measure approximates peak week demands on Metropolitan. The Capacity Charge was $8,700 per cfs effective as of January 1, 2018, and was $8,600 per cfs effective as of January 1, 2019. The Capacity Charge will be $8,800 per cfs effective as of January 1, 2020. The Capacity Charge is projected to generate $33.1 million in fiscal year 2018-19 and $30.5 million in fiscal year 2019-20.

Classes of Water Service

Metropolitan, a wholesaler, provides two types of services: full service water service (treated or untreated) and wheeling service. Metropolitan has one class of customers: its member agencies. The level of rate unbundling in Metropolitan's rate structure provides transparency to show that rates and charges recover only those functions involved in the applicable service, and that no cross-subsidy of costs exists. Metropolitan's cost of service process and resulting unbundled rate structure ensures that its wholesale customers pay for only those services they elect to receive.

The applicable rate components and fixed charges for each class of water service are shown in the chart below.

Current Services and Rate Components

	Rates & Charges That Apply						
Service	**System Access**	**Water Stewardship**	**System Power**	**Tier 1/ Tier 2**	**Readiness to Serve**	**Capacity Charge**	**Treatment Surcharge**
Full Service Untreated	Yes	Yes	Yes	Yes	Yes	Yes	No
Full Service Treated	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wheeling Service[(1)]	Yes	Yes	No[(2)]	No	Yes	Yes	Yes[(3)]

(1) Metropolitan's rate for wheeling service applies to wheeling to member agencies in transactions of up to one year.
(2) Under Metropolitan's rate for wheeling service, wheeling parties must pay for their own cost for power (if such power can be scheduled by Metropolitan) or pay Metropolitan for the actual cost (not system average) of power service utilized for delivery of the wheeled water. In addition, wheeling parties shall be assessed an administration fee of not less than $5,000 per transaction.
(3) If applicable.

Metropolitan offers three programs that encourage the member agencies to increase groundwater and emergency storage and for which certain Metropolitan charges are inapplicable.

(1) Conjunctive Use Program. The Conjunctive Use Program is operated through individual agreements with member and retail agencies for groundwater storage within Metropolitan's service area. Wet-year imported supplies are stored to enhance reliability during dry, drought, and emergency conditions. Metropolitan has the option to call water stored in the groundwater basins for the participating member agency pursuant to its contractual conjunctive use agreement. At the time of the call, the member agency pays the prevailing rate for that water, but the deliveries are excluded from the calculation of the Capacity Charge because Conjunctive Use Program deliveries are made at Metropolitan's discretion. Conjunctive use programs may also contain cost-sharing terms related to operational costs. See "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A.

(2) Cyclic Storage Program. The Cyclic Storage Program is operated through individual agreements with member agencies for groundwater or surface water storage within Metropolitan's service area. Wet-year imported supplies are stored to enhance reliability during dry, drought, and emergency conditions. Deliveries to the cyclic storage accounts are at Metropolitan's discretion while member agencies have discretion on whether they want to accept the water. At the time the water is delivered from the cyclic storage account, the prevailing full service rate applies, but deliveries are excluded from the calculation of the Capacity Charge because Cyclic Storage Program deliveries are made at Metropolitan's discretion. See "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A.

(3) Emergency Storage Program. The Emergency Storage Program is used for delivering water for emergency storage in surface water reservoirs and storage tanks. Emergency Storage Program purposes include initially filling a newly constructed reservoir or storage tank and replacing water used during an emergency. Because Metropolitan could interrupt delivery of this water, Emergency Storage Program Deliveries are excluded from the calculation of the RTS Charge, the Capacity Charge, and the Tier 1 maximum.

The applicable rate components and fixed charges applicable for each such program are shown in the following chart.

Current Programs and Rate Components

	Rates & Charges That Apply					
Full Service Program	**System Access**	**Water Stewardship**	**System Power**	**Tier 1 Maximum**	**Readiness to Serve**	**Capacity Charge**
Conjunctive Use Program	Yes	Yes	Yes	Yes	Yes	No
Cyclic Storage Program	Yes	Yes	Yes	Yes	Yes	No
Emergency Storage Program	Yes	Yes	Yes	No*	No	No

* Emergency Storage Program pays the Tier 1 Supply Rate; purchases under Emergency Storage program do not count towards a member agency's Tier 1 Maximum.

Water Rates

The following table sets forth Metropolitan's water rates by category beginning January 1, 2014. See also "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES–Water 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" for descriptions of current rates. See also "–Litigation Challenging Rate Structure" for a description of litigation challenging Metropolitan's water rates.

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, 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
January 1, 2019*	$209	$295	$326	$69	$127	$319
January 1, 2020*	$208	$295	$346	$65	$136	$323

	FULL SERVICE TREATED[(1)]		FULL SERVICE UNTREATED[(2)]	
	Tier 1	Tier 2	Tier 1	Tier 2
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
January 1, 2019*	$1,050	$1,136	$731	$817
January 1, 2020*	$1,078	$1,165	$755	$842

Source: Metropolitan.

* Rates effective January 1, 2019 and January 1, 2020 were adopted by Metropolitan's Board on April 10, 2018.

(1) 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.

(2) Full service untreated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate and System Power Rate.

Financial Reserve Policy

Metropolitan's reserve policy provides for a minimum reserve requirement and target amount of unrestricted reserves at June 30 of each year. The minimum reserve requirement at June 30 of each year is equal to the portion of fixed costs estimated to be recovered by water revenues for the 18 months beginning with the immediately succeeding July. Funds representing the minimum reserve requirement are held in the Revenue Remainder Fund. Any funds in excess of the minimum reserve requirement are held in the Water Rate Stabilization Fund. The target amount of unrestricted reserves is equal to the portion of the fixed costs estimated to be recovered by water revenues during the two years immediately following the 18-month period used to calculate the minimum reserve requirement. Funds in excess of the target amount are to be utilized for capital expenditures in lieu of the issuance of additional debt, or for the redemption, defeasance or purchase of outstanding bonds or commercial paper as determined by the Board. Provided that the fixed charge coverage ratio is at or above 1.2, amounts in the Water Rate Stabilization Fund may be expended for any lawful purpose of Metropolitan, as determined by the Board. See "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

At June 30, 2018, unrestricted reserves, which consist of the Water Rate Stabilization Fund and the Revenue Remainder Fund, totaled $474 million on a modified accrual basis. As of June 30, 2018, the minimum reserve requirement was $257.3 million and the target reserve level was $626.9 million.

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. In April 2016, Metropolitan transferred these funds from unrestricted financial reserves to a new designated fund, the Exchange Agreement Set-Aside Fund. As of March 31, 2019, Metropolitan held $55.8 million in the Exchange Agreement Set-Aside Fund. This amount contains the disputed Water Stewardship Rate payments and interest earned thereon based on the rate earned by Metropolitan's investment portfolio. 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. 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 – Metropolitan and San Diego County Water Authority Exchange Agreement" in this Appendix A. See also "– Litigation Challenging Rate Structure" below.

Metropolitan projects that its unrestricted reserves as of June 30, 2019 will be approximately $425 million. This amount does not include funds held in the Exchange Agreement Set-Aside Fund. 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.

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 retail water service by Metropolitan's member agencies or their agencies 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 XIIID. Metropolitan has imposed its water standby charges since 1992 and therefore its current standby charges are exempt from the Article XIIID 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 "–Other Charges – 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 makes all taxes either general or special taxes and imposes voting requirements for each kind of tax. It also 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 local governments including special districts are subject to approval by two-thirds of the electorate. 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 June 21, 2017, the California Court of Appeal ruled that whether or not Proposition 26 applies to Metropolitan's rates, the System Access Rate and System Power Rate challenged by SDCWA in such lawsuit comply with Proposition 26. See "–Litigation Challenging Rate Structure."

Propositions 218 and 26 were adopted as measures that qualified for the ballot pursuant to the State's initiative process. Other initiative measures have been proposed from time to time, including presently, or could be proposed in the future, which if qualified for the ballot, 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.

Preferential Rights

Section 135 of the Act gives each of Metropolitan's member agencies a preferential right to purchase for domestic and municipal uses within the agency 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. In 2004, the California Court of Appeal 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 rate structure also challenged Metropolitan's exclusion of payments for Exchange Agreement deliveries from the calculation of SDCWA's preferential right. On June 21, 2017, the California Court of Appeal held that SDCWA's payments under the Exchange Agreement must be included in the preferential rights calculation. See "–Litigation Challenging Rate Structure."

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 certain State Water Contract costs to the System Access Rate and the System Power Rate, and thus affect charges for transportation of water, resulting 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.

The complaint requested a court order invalidating the rates adopted April 13, 2010, and that Metropolitan be mandated to allocate costs associated with the State Water Contract 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.

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 were for breach of the water Exchange Agreement between Metropolitan and SDCWA (described herein under "METROPOLITAN'S WATER SUPPLY–Colorado River Aqueduct – Metropolitan and San Diego County Water Authority Exchange Agreement") due to a price based on allegedly illegal 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" above); and illegality of the rate structure integrity provision in conservation and local resources incentive agreements between Metropolitan and SDCWA. The rate structure integrity provision permitted 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 contained 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. The complaint contained 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" for a description of Proposition 26.

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. 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 did not affect SDCWA's separate challenge to Metropolitan's rates adopted in April 2012, which also includes Proposition 26 allegations.

Following trial of both lawsuits in two phases, concluding on January 23, 2014 and April 30, 2015, respectively, the Superior Court of the State of California, County of San Francisco (the "Superior Court"), issued its Final Judgment and a Peremptory Writ of Mandate in the 2010 and 2012 SDCWA v. Metropolitan cases. Metropolitan appealed the trial court's decision in each case, and SDCWA filed a cross-appeal of the court's ruling on the rate structure integrity claim and an attorneys' fees order.

On June 21, 2017, the California Court of Appeal released its decision in the appeals and cross-appeal filed by Metropolitan and SDCWA, respectively. The Court of Appeal ruled that Metropolitan may lawfully include its State Water Project transportation costs in the System Access Rate and System Power Rate that are part of the Exchange Agreement's price term, and that Metropolitan may also lawfully include the System Access Rate in its wheeling rate, reversing the trial court decision on this issue. The Court held Metropolitan's allocation of the State Water Project transportation costs as its own transportation costs is proper and does not violate the wheeling statutes (Water Code, § 1810, *et seq.*), Proposition 26 (Cal. Const., Article XIIIC, §1, subd.(e)), California Government Code section 54999.7, the common law, or the terms of the parties' Exchange Agreement.

The Court of Appeal also ruled that the administrative record before it for the rates in calendar years 2011 through 2014 did not support Metropolitan's inclusion of its Water Stewardship Rate as a transportation cost in the Exchange Agreement price or the wheeling rate, under the common law and wheeling statutes. Having made that determination, the Court of Appeal stated it need not evaluate the issue under any other law. The court did not address the allocation of the Water Stewardship Rate in subsequent years based on a different record. The court noted, and in a subsequent modification confirmed, that its holding does not preclude Metropolitan from including the Water Stewardship Rate in Metropolitan's full service rate.

The Court of Appeal held that because the Water Stewardship Rate was included in the Exchange Agreement price, there was a breach by Metropolitan of the Exchange Agreement in 2011 through 2014. The court remanded the case to the trial court for a redetermination of damages in light of its ruling concerning the Water Stewardship Rate. The Court of Appeal agreed with the trial court that statutory prejudgment interest applies with respect to any damages award, not a lesser contractual interest. The Court of Appeal reversed the trial court by finding that the Exchange Agreement may entitle SDCWA to attorneys' fees for the second phase of the case concerning breach of contract; but directed the trial court on remand to make a new determination of the prevailing party, if any. The cases were therefore remanded to the trial court for a review of both damages and attorneys' fees.

With respect to other issues considered on appeal, the Court of Appeal upheld the trial court's ruling that Metropolitan improperly excludes SDCWA's payments under the Exchange Agreement in Metropolitan's calculation of SDCWA's preferential rights. The court also ruled that SDCWA had the constitutional right to challenge the rate structure integrity provision in Metropolitan's conservation and local resources incentive agreements, and found that the rate structure integrity provision was invalid and unenforceable as an unconstitutional condition on the provision of a public benefit.

On September 27, 2017, the California Supreme Court denied SDCWA's petition for review, declining to consider the Court of Appeal's decision. The Court of Appeal's decision is therefore final.

On July 25, 2018, the Superior Court issued an order regarding the scope of the matters to be reconsidered by the Superior Court on remand pursuant to the Court of Appeal decision. With respect to the Superior Court's re-determination of damages in light of the Court of Appeal's ruling that the administrative record for calendar years 2011 through 2014 did not support Metropolitan's inclusion of its demand management costs in the Exchange Agreement price, the Superior Court ruled that it will award SDCWA $28,678,190.90 in contract damages for breach of the Exchange Agreement, plus prejudgment interest at 10 percent per annum. The Superior Court determined that Metropolitan is not entitled in the remand proceedings to show what it could have lawfully charged SDCWA for demand management costs and to deduct that from SDCWA's damages.

The Superior Court further ruled that SDCWA is not entitled in the remand proceedings to litigate the issue of "offsetting benefits" under the wheeling statutes for the parties' Exchange Agreement. The Superior Court found that such claim is both outside the scope of remand and waived.

The Superior Court also ruled that SDCWA is entitled to judgment on its declaratory relief cause of action declaring the rate structure integrity provision in Metropolitan's conservation and local resources incentive agreements invalid and unenforceable, SDCWA is entitled to further proceedings to litigate the issue of an entitlement to monetary restitution for 2011 through 2014, and the parties shall also litigate in further proceedings the issue of what prospective relief SDCWA may be entitled to in connection with this cause of action. The Superior Court has scheduled a case management conference for May 9, 2019 at which time it may address the scope of any appropriate discovery relating to the rate structure integrity provision monetary restitution and non-monetary equitable relief sought by SDCWA and may set a date for legal briefing and further proceedings to determine the issue of SDCWA's entitlement to the requested relief.

Finally, the Superior Court confirmed, as the parties agreed, that it will conduct further proceedings for a redetermination of the prevailing party and attorneys' fees in this matter.

On September 14, 2018, Metropolitan filed a Petition for Writ of Mandate with the California Court of Appeal, requesting the court to require the Superior Court to recalculate contract damages for breach of the Exchange Agreement from years 2011 through 2014, to include a set-off for the additional sums SDCWA would have paid had Metropolitan collected the Water Stewardship Rate through its full service sales as SDCWA argued was correct. On November 1, 2018, the Court of Appeal determined that it would not review the issue at this stage of the cases. Metropolitan may raise this issue again on any later appeal from the cases' final judgment.

Due to SDCWA's litigation challenging Metropolitan's rates, and pursuant to the Exchange Agreement between Metropolitan and SDCWA, as of March 31, 2019, Metropolitan held $55.8 million in a designated fund, the Exchange Agreement Set-Aside Fund. See "–Financial Reserve Policy." This amount includes the disputed Water Stewardship Rate payments for calendar years 2011 through the present, and interest earned by Metropolitan thereon. The amount held does not include statutory prejudgment interest or any post-judgment interest, attorneys' fees, or costs the Court may award. The Set-Aside Fund also does not include any amounts applicable to the rate structure integrity provision declaratory relief cause of action, because that claim does not involve disputed payments under the Exchange Agreement.

On February 14, 2019, Metropolitan tendered to SDCWA payment of $44.4 million for the San Francisco Superior Court's contract damages award for Water Stewardship Rate payments from 2011 through 2014, plus statutory interest through February 15, 2019, with a reservation of appeal rights, in the *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, 2010 and 2012 actions. This tender was made under compulsion to cease accrual of statutory interest in excess of market rates, but did not affect Metropolitan's rights to appeal, including its right to challenge the amount of the damages award. The tendered payment included $31.6 million of amounts withdrawn from the Exchange Agreement Set-Aside Fund, and $12.8 million withdrawn from reserves (representing statutory interest). On March 7, 2019, SDCWA rejected the tendered payment and returned the uncashed check for the tendered payment. The returned funds were credited back to the Exchange Agreement Set-Aside Fund and Metropolitan reserves in the amounts drawn. The balance in the Exchange Agreement Set-Aside Fund set forth above includes the returned funds.

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 San Francisco Superior Court ordered that the case be stayed. 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. Following a stipulated order issued by the court on November 10, 2016, SDCWA filed a First Amended Petition for Writ of Mandate and Complaint and the court ordered the case stayed pending final resolution of the 2010 and 2012 SDCWA v. Metropolitan cases' appeals. The amended petition/complaint adds allegations of the same Exchange Agreement breach as in the previous cases listed above and breach of a provision that requires Metropolitan to set aside disputed amounts, relating to the manner in which Metropolitan has set aside the amounts; requests a judicial declaration that, if a judgment is owed to SDCWA under the Exchange Agreement, SDCWA will not be required to pay any portion of that judgment; and requests a refund to SDCWA of any amount Metropolitan has collected in excess of the reasonable costs of

the services provided or, alternatively, a reduction in SDCWA's future fees. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On June 9, 2017, SDCWA filed a new Petition for Writ of Mandate and Complaint challenging the Readiness-to-Serve Charge and Capacity Charge for 2018 adopted by Metropolitan's Board on April 11, 2017. These two charges are set annually, and SDCWA's 2016 lawsuit included a challenge to these two charges for 2017. The new lawsuit similarly alleges the 2018 Readiness-to-Serve Charge and Capacity Charge violate the California Constitution, statutes, and common law. The petition/complaint asserts misallocation of costs. Metropolitan was served with the petition/complaint on June 20, 2017. On July 18, 2017, SDCWA filed a first amended petition/complaint to add Metropolitan's Board action of July 11, 2017 to make minor corrections to the Readiness-to-Serve Charge. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On June 8, 2018, SDCWA filed a new lawsuit in Los Angeles Superior Court that alleges all rates and charges for 2019 and 2020 adopted by Metropolitan's Board on April 10, 2018 violate the California Constitution, statutes, and common law. The Petition for Writ of Mandate and Complaint asserts the Water Stewardship Rate is unlawful per se and its collection in transportation charges is also unlawful; failure to provide wheelers a reasonable credit for "offsetting benefits" pursuant to Water Code Section 1810, *et seq.*, which SDCWA contends (and Metropolitan disputes) applies to the parties' Exchange Agreement; over-collection and misallocation of costs, including misallocation of Metropolitan's California WaterFix costs as its transportation costs; and specified procedural violations. SDCWA states in the Petition and Complaint that it intends to amend its complaint to allege additional claims against Metropolitan, including but not limited to a claim for breach of contract. On November 13, 2018, SDCWA submitted a Government Code Claim giving notice that, absent resolution of its claims by settlement, SDCWA intends to amend the Petition and Complaint with respect to rates and charges for 2019 and 2020 to allege breach of the exchange agreement, rate refunds, restitution with respect to the Rate Structure Integrity clause, and other damages and losses. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

Other Revenue Sources

Hydroelectric Power Recovery Revenues. Metropolitan has constructed 16 small hydroelectric plants on its distribution system. The combined generating capacity of these plants is approximately 131 megawatts. The total capital cost of the 16 facilities is approximately $176.1 million. Since 2000, annual energy generation sales revenues have ranged between $7.5 million and nearly $29.6 million. Energy generation sales revenues were $20.8 million in fiscal year 2016-17 and $23.7 million in fiscal year 2017-18.

Metropolitan has a power sales contract with Pacific Gas and Electric Company ("PG&E") for the sale to PG&E of the output of Metropolitan's 24 megawatt Etiwanda hydroelectric plant through 2034. On January 29, 2019, PG&E and its parent company, PG&E Corporation, filed for bankruptcy protection under Chapter 11 of the Bankruptcy Code. As a result of the PG&E bankruptcy filing, a $10,136 payment due in January 2019 under the power sales contract was not received. PG&E has taken no action to reject the power sales contract in the bankruptcy proceedings and Metropolitan continues to perform under the contract. The next scheduled payment will be due from PG&E in June 2019. Metropolitan will hold a claim against the bankruptcy estate for any unpaid amounts from PG&E during the pendency of the bankruptcy proceedings.

Investment Income. In fiscal years 2015-16, 2016-17, and 2017-18 Metropolitan's earnings on investments, including adjustments for gains and losses and premiums and discounts, including construction account and trust fund earnings, excluding gains and losses on swap terminations, on an accrual basis (audited) were $19.4 million, $6.2 million, and $10.6 million, respectively.

Investment of Moneys in Funds and Accounts

The Board has delegated to the Treasurer the authority to invest funds. All moneys in any of the funds and accounts established pursuant to Metropolitan's water revenue or general obligation bond resolutions are managed 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, government-sponsored enterprise 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, managed by 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 government-sponsored enterprise, 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 EXPENSES–Outstanding Senior Revenue Bonds and Senior Parity Obligations –Variable Rate and Swap Obligations – Self-Liquidity Bonds" in this Appendix A. Metropolitan's current investments comply with the Statement of Investment Policy.

As of March 31, 2019, the total market value (cash-basis) of all Metropolitan invested funds was $1,147.8 million, including bond reserves of $13.0 million. The market value of Metropolitan's investment portfolio is subject to market fluctuation and volatility and general economic conditions. Over the three years ended March 31, 2019 the market value of the month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) averaged approximately $1.10 billion. The minimum month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) during such period was approximately $890.1 million on January 31, 2018. See Footnote 3 to Metropolitan's audited financial statements in Appendix B for additional information on the investment portfolio.

Metropolitan's administrative code requires 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 2018-19 on June 13, 2018.

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 "A-1/P-1/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 AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)" for a description of Metropolitan's investments at June 30, 2018.

Since May 2002, Metropolitan has retained two outside investment firms to manage the portion of Metropolitan's portfolio not needed to provide liquidity for expenditures over the next six months. As of March 31, 2019 such managers were managing approximately $357.5 million in investments on behalf of Metropolitan. Since December 2018, Metropolitan has retained an outside investment firm to manage the liquidity portfolio. As of March 31, 2019, this firm managed approximately $773.5 million. The outside managers are required to adhere to Metropolitan's Statement of Investment Policy.

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.

METROPOLITAN EXPENSES

General

The following table sets forth a summary of Metropolitan's expenses, by major function, for the five years ended June 30, 2018, on a modified accrual basis. All information is unaudited. Expenses of Metropolitan for the fiscal years ended June 30, 2018 and June 30, 2017, on an accrual basis, are shown in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

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

	2014	2015	2016	2017	2018
Operation and Maintenance Costs[1]	$ 512	$ 697	$ 799	$ 559	$ 568
Total State Water Project[2]	465	436	512	506	527
Total Debt Service	384	303	332	330	360
Construction Expenses from Revenues[3]	117	210	273	132	98
Other[4]	6	7	6	4	5
Total Expenses (net of reimbursements)	$1,484	$1,653	$1,922	$1,531	$1,558

Source: Metropolitan.

(1) Includes operation and maintenance, debt administration, conservation and local resource programs, CRA power, and water supply expenses. Fiscal years 2014-15, 2015-16, 2016-17, and 2017-18 include $142 million, $222 million, $33 million, and $1 million, respectively, of conservation projects funded from transfers from the Water Management Fund.

(2) Includes both operating and capital expense portions.

(3) 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. Includes $160 million for acquiring properties in Riverside and Imperial Counties, funded by $160 million from the Replacement and Refurbishment Fund Reserves. Does not include expenditures of bond proceeds.

(4) Includes operating equipment.

Revenue Bond Indebtedness and Other Obligations

As of May 1, 2019, Metropolitan had total outstanding indebtedness secured by a lien on Net Operating Revenues of $4.11 billion. This indebtedness was comprised of $3.04 billion of water revenue bonds issued under the Senior Debt Resolutions (defined below), which includes $2.24 billion of fixed rate senior lien revenue bonds, and $797.3 million of variable rate senior lien revenue bonds; $1.03 billion of subordinate water revenue bonds issued under the Subordinate Debt Resolutions (defined below), which includes $579.7 million of fixed rate subordinate revenue bonds, and $446.3 million of variable rate subordinate revenue bonds; and $46.8 million Short-Term Certificates, which bear a variable rate, and are on parity with the subordinate water revenue bonds. In addition, Metropolitan has $493.6 million of fixed-payor interest rate swaps which provides a fixed interest rate hedge to an equivalent amount of variable rate debt. Metropolitan's revenue bonds and other revenue obligations are more fully described below.

REVENUE BOND INDEBTEDNESS AND OTHER OBLIGATIONS

	Variable Rate	Fixed Rate	Total
Senior Lien Revenue Bonds	$ 797,320,000	$2,244,765,000	$3,042,085,000
Subordinate Lien Revenue Bonds	446,255,000	579,655,000	1,025,910,000
Subordinate Lien Short-Term Certificates	46,800,000	0	46,800,000
Total	**$1,290,375,000**	**$2,824,420,000**	**$4,114,795,000**
Fixed-Payor Interest Rate Swaps	(493,630,000)	493,630,000	0
Net Amount (after giving effect to Swaps)	**$ 796,745,000**	**$3,318,050,000**	**$4,114,795,000**

Limitations on Additional Revenue Bonds

Resolution 8329, adopted by Metropolitan's Board on July 9, 1991, as amended and supplemented (the "Master Senior Resolution," and collectively with all such supplemental resolutions, the "Senior Debt Resolutions"), provides for the issuance of Metropolitan's senior lien water revenue bonds. The Senior Debt Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Senior Debt 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 Senior Debt Resolutions

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

Resolution 9199, adopted by Metropolitan's Board on March 8, 2016, as amended and supplemented (the "Master Subordinate Resolution," and collectively with all such supplemental resolutions, the "Subordinate Debt Resolutions," and together with the Senior Debt Resolutions, the "Revenue Bond Resolutions"), provides for the issuance of Metropolitan's subordinate water revenue bonds and other obligations secured by a pledge of Net Operating Revenues that is subordinate to the pledge securing Senior Revenue Bonds and Senior Parity Obligations. The Subordinate Debt Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Subordinate Debt Resolutions, with the exception of Senior Revenue Bonds and Senior Parity Obligations, 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 subordinate water revenue bonds authorized by the Subordinate Debt Resolutions ("Subordinate Revenue Bonds" and, together with Senior Revenue Bonds, "Revenue Bonds") or other obligations of Metropolitan having a lien and charge upon, or being payable from, the Net Operating Revenues on parity with the Subordinate Revenue Bonds ("Subordinate Parity Obligations"). No additional Subordinate Revenue Bonds or Subordinate Parity Obligations may be issued or incurred unless the conditions of the Subordinate Debt 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 of 15 percent of the assessed value of all taxable property within Metropolitan's service area. As of May 1, 2019, outstanding general obligation bonds, water revenue bonds and other evidences of indebtedness in the amount of $4.16 billion represented approximately 0.14 percent of the fiscal year 2018-19 taxable assessed valuation of $2,916.6 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, 2018 were $6.69 billion. The aggregate amount of revenue bonds outstanding as of May 1, 2019 was $4.07 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, 2018 and June 30, 2017, respectively, are shown in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (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 parity with the Senior Revenue Bonds and Subordinate Revenue Bonds of Metropolitan will remain in effect so long as any Senior Revenue Bonds and Subordinate Revenue Bonds authorized pursuant to the applicable 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 Exposure Policy

As of May 1, 2019, Metropolitan had outstanding $797.3 million of variable rate obligations issued under the Senior Debt Resolutions, including variable rate Senior Revenue Bonds (described under "–

Outstanding Senior Revenue Bonds and Senior Parity Obligations –Variable Rate and Swap Obligations" below). In addition, as of May 1, 2019, $446.3 million of Metropolitan's $1.03 billion of outstanding Subordinate Revenue Bonds issued under the Subordinate Debt Resolutions were variable rate obligations (described under "–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations" below).

As of May 1, 2019, of Metropolitan's $1.29 billion of variable rate obligations, $493.6 million of such variable rate demand obligations are treated by Metropolitan as fixed rate debt, by virtue of interest rate swap agreements (described under "–Outstanding Senior Revenue Bonds and Senior Parity Obligations – Variable Rate and Swap Obligations – Interest Rate Swap Transactions" below), for the purpose of calculating debt service requirements. The remaining $796.7 million of variable rate obligations represent approximately 19.4 percent of total outstanding water revenue secured indebtedness (including Senior Revenue Bonds and Senior Parity Obligations and Subordinate Revenue Bonds and Subordinate Parity Obligations), as of May 1, 2019.

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.

The periodic payments due to Metropolitan from counterparties under its outstanding interest rate swap agreements and the interest payments to be payable by Metropolitan under certain of its outstanding variable rate obligations are calculated by reference to the London interbank offering rate ("LIBOR"). On July 27, 2017, the Financial Conduct Authority (the "FCA"), the U.K. regulatory body currently responsible for the regulation and supervision of LIBOR, announced that it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR rates after 2021 (the "FCA Announcement"). It is not possible to predict the effects of the FCA Announcement or how any prospective phasing out of LIBOR as a reference rate and transition to an alternate benchmark rate will be implemented, but increased volatility in the reported LIBOR rates may occur and the level of such LIBOR-based swap and interest payments may be affected.

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Outstanding Senior Revenue Bonds and Senior Parity Obligations

Senior Revenue Bonds

The water revenue bonds issued under the Senior Debt Resolutions outstanding as of May 1, 2019, are set forth below:

Name of Issue	Principal Outstanding
Water Revenue Refunding Bonds, 1993 Series A	$ 21,840,000
Water Revenue Bonds, 2000 Authorization, Series B-3[(1)]	88,800,000
Water Revenue Refunding Bonds, 2009 Series B[(3)]	106,690,000
Water Revenue Refunding Bonds, 2009 Series C[(3)]	91,165,000
Water Revenue Bonds, 2008 Authorization, Series B[(3)]	5,365,000
Water Revenue Bonds, 2008 Authorization, Series C[(2) (3)]	78,385,000
Water Revenue Bonds, 2008 Authorization, Series D[(2) (3)]	250,000,000
Water Revenue Refunding Bonds, 2009 Series D[(3)]	31,030,000
Water Revenue Refunding Bonds, 2009 Series E[(3)]	6,625,000
Water Revenue Bonds, 2010 Authorization, Series A[(2)]	250,000,000
Water Revenue Refunding Bonds, 2010 Series B	63,800,000
Water Revenue Refunding Bonds, 2011 Series B	2,640,000
Water Revenue Refunding Bonds, 2011 Series C	128,750,000
Water Revenue Refunding Bonds, 2012 Series A	181,180,000
Water Revenue Refunding Bonds, 2012 Series C	54,795,000
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
Water Revenue Refunding Bonds, 2014 Series A	83,865,000
Water Revenue Refunding Bonds, 2014 Series C-1[(3)]	13,505,000
Water Revenue Refunding Bonds, 2014 Series C-2	14,020,000
Water Revenue Refunding Bonds, 2014 Series C-3	2,810,000
Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D[(1)]	38,465,000
Water Revenue Refunding Bonds, 2014 Series E	86,060,000
Water Revenue Refunding Bonds, 2014 Series G-4[(3)]	11,605,000
Water Revenue Refunding Bonds, 2014 Series G-5	6,205,000
Special Variable Rate Water Revenue Refunding Bonds, 2015 Series A-1 and A-2[(1)]	188,900,000
Water Revenue Bonds, 2015 Authorization, Series A	206,265,000
Water Revenue Refunding Bonds, 2016 Series A	239,455,000
Special Variable Rate Water Revenue Refunding Bonds, 2016 Series B-1 and B-2[(1)]	103,670,000
Water Revenue Bonds, 2017, Authorization, Series A[(1)]	80,000,000
Special Variable Water Revenue Refunding Bonds, 2018 Series A-1 and A-2[(1)]	210,040,000
Water Revenue Refunding Bonds, 2018 Series B	137,485,000
Total	**$3,042,085,000**

Source: Metropolitan.

(1) Outstanding variable rate obligation.

(2) Designated as "Build America Bonds" pursuant to the American Recovery and Reinvestment Act of 2009.

(3) Expected to be refunded by Metropolitan's Water Revenue Refunding Bonds, 2019 Series A and Subordinate Water Revenue Refunding Bonds, 2019 Series A.

Variable Rate and Swap Obligations

As of May 1, 2019, Metropolitan had outstanding $797.3 million of senior lien variable rate obligations, including variable rate Senior Revenue Bonds issued under the Senior Debt Resolutions (described under this caption "–Variable Rate and Swap Obligations") and Senior Parity Obligations incurred pursuant to a Short-Term Revolving Credit Facility (described under "–Senior Parity Obligations – Short-Term Revolving Credit Facility" below).

The outstanding variable rate Senior Revenue Bonds include special variable rate bonds initially designated as self-liquidity bonds (the "Self-Liquidity Bonds") and variable rate demand obligations supported by standby bond purchase agreements between Metropolitan and various liquidity providers.

Self-Liquidity Bonds. As of May 1, 2019, Metropolitan had $314.8 million of outstanding Self-Liquidity Bonds issued under the Senior Debt Resolutions. Each Series of the outstanding Self-Liquidity Bonds may bear interest in any one of several interest rate modes at the election of Metropolitan. The interest rates for each Series of the outstanding Self-Liquidity Bonds are currently reset on a weekly basis. 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. Purchase price payments of Self-Liquidity Bonds are subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate Parity Obligations. In addition, Metropolitan's investment policy permits it to purchase tendered Self-Liquidity Bonds as an investment for its investment portfolio (other than from 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 a Revolving Credit Agreement (as described below) pursuant to which it may make borrowings for the purpose of paying the purchase price of Self-Liquidity Bonds. See "–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations –Self-Liquidity Revolving Credit Agreement" 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 Senior Debt Resolutions.

The following table lists the outstanding Self-Liquidity Bonds as of May 1, 2019.

Self-Liquidity Bonds

Name of Issue	Principal Outstanding
Special Variable Rate Water Revenue Refunding Bonds, 2013 Series D	$ 87,445,000
Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D	38,465,000
Special Variable Rate Water Revenue Refunding Bonds, 2015 Series A-1 and A-2	188,900,000
Total	**$314,810,000**

Source: Metropolitan.

Liquidity Supported Bonds. The interest rates for Metropolitan's other variable rate demand obligations issued under the Senior Debt Resolutions, totaling $482.5 million as of May 1, 2019, are currently reset on a daily basis. While bearing interest at a daily rate, such variable rate demand obligations are subject to optional tender on any business day with same day notice by the owners thereof and mandatory tender upon specified events. 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. Metropolitan has secured its obligation to repay principal and interest advanced under the standby bond purchase agreements as Senior Parity Obligations. 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 ("bank bonds") would initially bear interest at a per annum interest rate equal to, depending on the liquidity facility, either: (a) one month LIBOR plus 7.50 percent; or (b) the highest of the

(i) the Prime Rate plus one percent, (ii) Federal Funds Rate plus two percent, and (iii) seven percent (with the spread or rate increasing in the case of each of (i), (ii) and (iii) of this clause (b) after 90 days). To the extent such bank bonds have not been remarketed or otherwise retired as of the earlier of the 90th day following the date such bonds were purchased by the liquidity provider or the stated expiration date of the related liquidity facility, 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 payable under the terms of the current liquidity facilities in semi-annual installments over a period of approximately one, three, or five years, depending on the applicable liquidity facility. In addition, upon an event of default under any such liquidity facility, including a failure by Metropolitan to perform or observe its covenants under the applicable standby bond purchase agreement, a default in other specified indebtedness of Metropolitan, or other specified events of default (including a reduction in the credit rating assigned to Senior Revenue Bonds issued under the Senior Debt Resolutions by any of Fitch, S&P or Moody's below "A–" or "A3"), the liquidity provider could require all bank bonds to be subject to immediate mandatory redemption by Metropolitan.

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 May 1, 2019.

Liquidity Facilities and Expiration Dates

Liquidity Provider	Bond Issue	Principal Outstanding	Facility Expiration
Bank of America, N.A.	2016 Series B-1 and Series B-2	$103,670,000	July 2021
Citibank, N.A.	2000 Authorization Series B-3	$ 88,800,000	March 2020
Citibank, N.A.	2017 Authorization Series A	$ 80,000,000	March 2020
The Toronto-Dominion Bank, New York Branch	2018 Series A-1 and Series A-2	$210,040,000	June 2021
Total		**$482,510,000**	

Source: Metropolitan.

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.

Metropolitan's obligations to make regularly scheduled net payments under the terms of the interest rate swap agreements are payable on a parity with the Senior Parity Obligations. Termination payments under the 2002A and 2002B interest rate swap agreements would be payable on a parity with the Senior

Parity Obligations. Termination payments under all other interest rate swap agreements would be on parity with the Subordinate Parity Obligations.

The following swap transactions were outstanding as of May 1, 2019:

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	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.

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 AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (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 (including defaults under other specified swaps and indebtedness, certain acts of insolvency, if a party may not legally perform its swap obligations, or, with respect to Metropolitan, if its credit rating is reduced below "BBB–" by Moody's or "Baa3" by S&P (under most of the interest rate swap agreements) or below "BBB" by Moody's or "Baa2" by S&P (under one of the interest

rate swap agreements)). As of March 31, 2019, Metropolitan would have been required to pay to some of its counterparties termination payments if its swaps were terminated on that date. Metropolitan's net exposure to its counterparties for all such termination payments on that date was approximately $52.0 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, Metropolitan has previously exercised, and may in the future exercise, from time to time, optional early termination provisions to terminate all or a portion of certain interest rate swap agreements.

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, 2019, 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 at that time. 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.

Term Mode Bonds

As of May 1, 2019, Metropolitan had outstanding $48.1 million of Senior Revenue Bonds bearing interest in a term mode, comprised of $30.3 million of 2014 Series C Bonds in three series, and $17.8 million of 2014 Series G Bonds in two series (collectively, 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 Term Mode Bonds outstanding as of May 1, 2019, are summarized in the following table:

Term Mode Bonds

Series	Original Principal Amount Issued	Next Scheduled Mandatory Tender Date
2014 C-1	$13,505,000	October 1, 2019[(1)]
2014 C-2	14,020,000	October 1, 2020
2014 C-3	2,810,000	October 1, 2021
2014 G-4	11,605,000	October 1, 2019[(1)]
2014 G-5	6,205,000	October 1, 2020
Total	**$48,145,000**	

Source: Metropolitan.

(1) Expected to be refunded by Metropolitan's Water Revenue Refunding Bonds, 2019 Series A and Subordinate Water Revenue Refunding Bonds, 2019 Series A.

Metropolitan will pay the principal of, and interest on, the Term Mode Bonds on parity with its other Senior Revenue 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 any tendered Term Mode Bonds is an unsecured, special limited obligation of Metropolitan payable from Net Operating Revenues. Purchase price payments of Term Mode Bonds are subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate Parity Obligations. 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. Failure to pay the purchase price of a series of Term Mode 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 Term Mode 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 Term Mode Bonds on a scheduled mandatory tender date is not a default under the Senior Debt Resolutions. 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 an obligation payable on parity with the Senior Revenue Bonds and Senior Parity Obligations.

Build America Bonds

Metropolitan previously issued and designated three series of Senior Revenue Bonds in the aggregate principal amount of $578.385 million as "Build America Bonds" under the provisions of the American Recovery and Reinvestment Act of 2009 (the "Build America Bonds"). Metropolitan currently expects to receive cash subsidies from the United States Treasury (the "Interest Subsidy Payments") equal to 35 percent of the interest payable on all such outstanding Build America Bonds less any federal budget sequestration offsets as described in the following paragraph. The Interest Subsidy Payments in connection with the Build America Bonds do not constitute Operating Revenues under the Senior Debt Resolutions or the Subordinate Debt Resolutions. 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 sequestrations, 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 semi-annual 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. The percentage reduction is re-determined for each federal fiscal year. Interest Subsidy Payments processed in the subsequent federal fiscal years ended September 30, 2014 through 2018 were also reduced by the applicable sequestration rate for each such federal fiscal year, which sequestration rate ranged from 6.6 percent to 7.3 percent for such federal fiscal years. Interest Subsidy Payments processed on or after October 1, 2018 and on or before September 30, 2019 are to be reduced by the federal fiscal year 2018 sequestration rate of 6.2 percent. At present, pursuant to federal legislation, sequestration will continue to September 30, 2027. 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. Metropolitan expects to refund $78,385,000 Water Revenue Bonds, 2008 Authorization Series C (Build America Bonds) and $250,000,000 Water Revenue Bonds, 2008

Authorization Series D (Build America Bonds) with its Water Revenue Refunding Bonds, 2019 Series A and Subordinate Water Revenue Refunding Bonds, 2019 Series A.

Senior Parity Obligations

Short-Term Revolving Credit Facility. In April 2016, Metropolitan entered into a noteholder's agreement (such agreement as subsequently amended, the "RBC Short-Term Revolving Credit Facility") with RBC Municipal Products, LLC ("RBC") and a related note purchase agreement with RBC Capital Products, LLC, as the underwriter, for the issuance and sale by Metropolitan and the purchase by RBC of Metropolitan's Index Notes, Series 2016. Pursuant to the RBC Short-Term Revolving Credit Facility, Metropolitan may borrow, pay down and re-borrow amounts, through the issuance and sale from time to time of up to $200 million of notes (including, subject to certain terms and conditions, notes to refund maturing notes) to be purchased by RBC during the term of RBC's commitment thereunder (which commitment currently extends to April 5, 2022). As of May 1, 2019, Metropolitan has outstanding $0 of short-term notes under the RBC Short-Term Revolving Credit Facility. Any unpaid principal remaining outstanding at the April 5, 2022 commitment end date of the RBC Short-Term Revolving Credit Facility is required to be paid by Metropolitan in quarterly installments over a period of approximately one year.

Notes under the RBC Short-Term Revolving Credit Facility bear interest at a variable rate of interest: for taxable borrowings, at a spread of 0.54 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to the one-month LIBOR; and for tax-exempt borrowings, at a spread of 0.38 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to the SIFMA Municipal Swap Index. Under the RBC Short-Term Revolving Credit Facility, upon a failure by Metropolitan to pay principal or interest of any note thereunder, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including a reduction in the credit rating assigned to Senior Revenue Bonds issued under the Senior Debt Resolutions by Fitch, S&P or Moody's below "A–" or "A3"), the bank has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days' notice) Metropolitan's obligation to repay its borrowings. Metropolitan has secured its obligation to pay principal and interest on notes evidencing borrowings under the RBC Short-Term Credit Facility as Senior Parity Obligations.

In connection with the execution of the RBC Short-Term Revolving Credit Facility, Metropolitan designated the principal and interest payable on the notes thereunder as Excluded Principal Payments under the Senior Debt Resolutions and thus, for purposes of calculating Maximum Annual Debt Service, included the amount of principal and interest due and payable under the RBC Short-Term Revolving Credit Facility on a schedule of Assumed Debt Service. This schedule of Assumed Debt Service assumes that Metropolitan will pay the principal under the RBC Short-Term Revolving Credit Facility over a period of 30 years at a fixed interest rate of approximately 3.3 percent.

Metropolitan has previously, and may in the future, enter into one or more other or alternative short-term revolving credit facilities, the repayment obligations of Metropolitan under which may be secured as either Senior Parity Obligations or Subordinate Parity Obligations.

Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations

The water revenue bonds issued under the Subordinate Debt Resolutions outstanding as of May 1, 2019, are set forth below:

Name of Issue	Principal Outstanding
Subordinate Water Revenue Bonds, 2016 Authorization Series A[(1)]	$175,000,000
Subordinate Water Revenue Refunding Bonds, 2017 Series A	238,015,000
Subordinate Water Revenue Refunding Bonds, 2017 Series B	178,220,000
Subordinate Water Revenue Bonds, 2017 Series C[(1)]	80,000,000
Subordinate Water Revenue Refunding Bonds, 2017 Series D[(1)]	95,630,000
Subordinate Water Revenue Refunding Bonds, 2017 Series E[(1)]	95,625,000
Subordinate Water Revenue Refunding Bonds, 2018 Series A	99,075,000
Subordinate Water Revenue Bonds, 2018 Series B	64,345,000
Total	**$1,025,910,000**

Source: Metropolitan.

(1) Outstanding variable rate obligation.

As of May 1, 2019, of the $1.03 billion outstanding Subordinate Revenue Bonds, $446.3 million were variable rate obligations. The outstanding variable rate Subordinate Revenue Bonds are all bonds bearing interest in a LIBOR Index Mode or a SIFMA Index Mode.

In December 2016, Metropolitan entered into a Continuing Covenant Agreement with Bank of America, N.A. ("BANA," and the "2016 BANA Agreement"), for the purchase by BANA and sale by Metropolitan of $175 million Subordinate Water Revenue Bonds, 2016 Authorization Series A (the "Subordinate 2016 Series A Bonds"), which was the first series of bonds issued under the Subordinate Debt Resolutions. Proceeds were used to reimburse Metropolitan for the purchase of the Delta Islands in the San Francisco Bay\Sacramento-San Joaquin River Delta that was funded from Metropolitan's reserves in July 2016.

The Subordinate 2016 Series A Bonds bear interest at a variable rate of interest, at a spread of 0.32 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to one-month LIBOR. Under the 2016 BANA Agreement, upon a failure by Metropolitan to pay principal or interest of any Subordinate 2016 Series A Bonds, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below "BBB–," or if any of Fitch, S&P or Moody's shall have assigned a credit rating below "BBB" or "Baa2," to Senior Revenue Bonds issued under the Senior Debt Resolutions), BANA has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days' notice) Metropolitan's obligation to repay the Subordinate 2016 Series A Bonds. Metropolitan has secured its obligation to pay principal and interest under the 2016 BANA Agreement as a Subordinate Parity Obligation. The Subordinate 2016 Series A Bonds are Index Tender Bonds and are subject to mandatory tender for purchase on the scheduled mandatory tender date of December 21, 2020, or, if directed by BANA upon the occurrence and continuance of an event of default under the 2016 BANA Agreement, five business days after receipt of such direction. On or before the scheduled mandatory tender date, Metropolitan may request an extension of the 2016 BANA Agreement for another tender period or may request BANA to purchase the Subordinate 2016 Series A Bonds in another interest rate mode, or Metropolitan may seek to remarket the Subordinate 2016 Series A Bonds to another bank or in the public debt markets. In the event the 2016 BANA Agreement is not extended, Metropolitan is obligated under the 2016 BANA Agreement to cause unremarketed Subordinate 2016 Series A Bonds to be redeemed five business days after the scheduled mandatory tender date in the event the purchase price of the Subordinate 2016 Series A Bonds is not paid from the proceeds of a remarketing or other funds on the scheduled mandatory tender date. A failure to pay the purchase price of the Subordinate 2016 Series A Bonds upon a mandatory tender would constitute a default under the Subordinate Debt Resolutions if not remedied within five business days.

Metropolitan's Subordinate Water Revenue Bonds, 2017 Series C, Subordinate Water Revenue Refunding Bonds, 2017 Series D and Subordinate Water Revenue Refunding Bonds, 2017 Series E (collectively, the "Subordinate 2017 Series C, D and E Bonds") bear interest at a rate that fluctuates weekly based on the SIFMA Municipal Swap Index plus a spread. The Subordinate 2017 Series C, D and E Bonds are Index Tender Bonds and are subject to mandatory tender under certain circumstances, including on certain scheduled mandatory tender dates (unless earlier remarketed or otherwise retired). Metropolitan anticipates that it will pay the purchase price of tendered Subordinate 2017 Series C, D and E Bonds from the proceeds of remarketing such Index Tender Bonds or from other available funds. Metropolitan's obligation to pay the purchase price of any such tendered Subordinate 2017 Series C, D and E Bonds is a special limited obligation of Metropolitan payable solely from Net Operating Revenues subordinate to the Senior Revenue Bonds and Senior Parity Obligations and on parity with the other outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of Subordinate 2017 Series C, D and E Bonds in connection with a scheduled mandatory tender. Failure to pay the purchase price of any Subordinate 2017 Series C, D and E Bonds on a scheduled mandatory tender date for such Index Tender Bonds for a period of five business days following written notice by any Owner of such Subordinate 2017 Series C, D and E Bonds will constitute an event of default under the Subordinate Debt Resolutions, upon the occurrence and continuance of which the owners of 25 percent in aggregate principal amount of the Subordinate Revenue Bonds then outstanding may elect a bondholders' committee to exercise rights and powers of such owners under the Subordinate Debt Resolutions, including the right to declare the entire unpaid principal of the Subordinate Revenue Bonds then outstanding to be immediately due and payable.

The mandatory tender dates and related tender periods for the Index Tender Bonds outstanding as of May 1, 2019, are summarized in the following table:

Index Tender Bonds

Series	Date of Issuance	Original Principal Amount Issued	Next Scheduled Mandatory Tender Date	Maturity Date
Subordinate 2016 Authorization Series A	December 21, 2016	$175,000,000	December 21, 2020	July 1, 2045
Subordinate 2017 Series C	July 3, 2017	80,000,000	July 25, 2019	July 1, 2047
Subordinate 2017 Refunding Series D	July 3, 2017	95,630,000	July 25, 2019	July 1, 2037
Subordinate 2017 Refunding Series E	July 3, 2017	95,625,000	July 25, 2019	July 1, 2037
Total		**$446,255,000**		

Source: Metropolitan.

Subordinate Short-Term Certificates. On August 1, 2018, Metropolitan entered into a note purchase and continuing covenant agreement with BANA (the "BANA Short-Term Note Purchase Agreement") for the purchase by BANA and sale by Metropolitan of Metropolitan's Short-Term Revenue Certificates, Series 2018 A. Pursuant to the terms of the BANA Short-Term Note Purchase Agreement, Metropolitan may borrow, through the issuance and sale from time to time of short-term notes, an aggregate principal amount not to exceed $86 million (including, subject to certain terms and conditions, notes to refund maturing notes) to be purchased by BANA during the term of BANA's commitment thereunder (the stated termination date of which is currently July 31, 2020). This facility will provide $86 million to provide advance funding to support the California WaterFix as authorized by the Board on July 10, 2018. See "METROPOLITAN'S WATER SUPPLY–California WaterFix" in this Appendix A. As of May 1, 2019, Metropolitan has sold $46.8 million of short-term notes under the BANA Short-Term Note Purchase Agreement, with the remaining balance expected to be sold by June 3, 2019.

Notes under the BANA Short-Term Note Purchase Agreement bear interest at a fluctuating per annum interest rate, equal to one-month LIBOR plus a spread of 0.32 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained). Under the BANA Short-Term Note Purchase Agreement, upon a failure by Metropolitan to pay principal or interest of any note thereunder, upon a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below "BBB–," or if any of Fitch, S&P or Moody's shall have assigned a credit rating below "BBB" or "Baa2," to Senior Revenue Bonds issued under the Senior Debt Resolutions), BANA has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days' notice) Metropolitan's obligation to repay its borrowings. Metropolitan has secured its obligations to pay principal and interest under the BANA Short-Term Note Purchase Agreement as Subordinate Parity Obligations, payable from Net Operating Revenues on a basis junior and subordinate to the Senior Revenue Bonds and Senior Parity Obligations.

Self-Liquidity Revolving Credit Agreement. In June 2018, Metropolitan entered into a revolving credit agreement (the "ICBC Self-Liquidity Revolving Credit Agreement") with the Industrial and Commercial Bank of China Limited, New York Branch ("ICBC"), under the terms of which Metropolitan may borrow up to $200 million for the purpose of paying the purchase price of tendered Self-Liquidity Bonds, including any Senior Revenue Bonds and/or Subordinate Revenue Bonds of Metropolitan that are part of Metropolitan's self-liquidity program. The stated expiration date of the ICBC Self-Liquidity Revolving Credit Agreement is June 23, 2023.

Borrowings made by Metropolitan under the ICBC Revolving Credit Agreement initially bear interest at a fluctuating per annum interest rate equal to, at Metropolitan's discretion, either: (a) one month LIBOR plus 1.50 percent; or (b) the higher of (i) the Federal Funds Rate plus 0.50 percent, and (ii) the Prime Rate, (increasing in any case periodically, beginning after 90 days). Metropolitan is required to pay principal remaining unpaid as of the earlier of the 180th day following the date of the related borrowing or the stated expiration date of the ICBC Self-Liquidity Revolving Credit Agreement in semi-annual installments over a period of approximately five years. Under the ICBC Self-Liquidity Revolving Credit Agreement, upon a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, or other specified events of default (including a reduction in the credit rating assigned to Subordinate Revenue Bonds issued under the Subordinate Debt Resolutions or any Subordinate Parity Obligation by any of Fitch, S&P or Moody's below "BBB" or "Baa2"), ICBC has the right to terminate its commitments and may accelerate Metropolitan's obligation to repay its borrowings. Metropolitan has secured its obligations to pay principal and interest under the ICBC Self-Liquidity Revolving Credit Agreement as Subordinate Parity Obligations, payable from Net Operating Revenues on a basis junior and subordinate to the Senior Revenue Bonds and Senior Parity Obligations. In addition, Metropolitan has secured its obligations under the ICBC Self-Liquidity Revolving Credit Agreement with a pledge of any principal and interest it receives from Self-Liquidity Bonds it purchases from borrowings under the ICBC Self-Liquidity Revolving Credit Agreement.

Metropolitan has previously, and may in the future, enter into one or more other or alternative self-liquidity revolving credit agreements (a "Self-Liquidity Revolving Credit Agreement"). Metropolitan may secure its obligation to pay principal and interest under any new Self-Liquidity Revolving Credit Agreement as either Senior Parity Obligations or Subordinate Parity Obligations. Metropolitan has no obligation to make borrowings under, maintain, or renew any Self-Liquidity Revolving Credit Agreement, including the ICBC Self-Liquidity Revolving Credit Agreement. See also "–Limitations on Additional Revenue Bonds."

Pursuant to the Master Subordinate Resolution, for purposes of calculating the amount of Debt Service thereunder, Metropolitan has included the amount of principal and interest due and payable under the ICBC Self-Liquidity Revolving Credit Agreement on a schedule of Revolving Credit Agreement Debt

Service (as defined in the Master Subordinate Resolution). This schedule of Revolving Credit Agreement Debt Service initially assumes that Metropolitan will pay the principal under the ICBC Self-Liquidity Revolving Credit Agreement over a period of 30 years at a fixed interest rate of 2.97 percent. Pursuant to the terms of the Revenue Bond Resolutions, while a Self-Liquidity Revolving Credit Agreement is 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 Self-Liquidity Revolving Credit Agreement to purchase Self-Liquidity Bonds.

Other Junior Obligations

Metropolitan currently is authorized to issue up to $400,000,000 of Commercial Paper Notes payable from Net Operating Revenues on a basis subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate 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.

General Obligation Bonds

As of May 1, 2019, $48,050,000 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, 2010 Series A	39,485,000	18,735,000
Waterworks General Obligation Refunding Bonds, 2014 Series A	49,645,000	12,560,000
Waterworks General Obligation Refunding Bonds, 2019 Series A	16,755,000	16,755,000
Total	**$105,885,000**	**$48,050,000**

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. As described herein, in 1960, Metropolitan entered into its State Water Contract with DWR to receive water from the State Water Project. All expenditures for capital and operations, maintenance, power and replacement costs associated with the State Water Project facilities used for water delivery are paid for by the 29 Contractors that have executed State water supply contracts with DWR, including Metropolitan. Contractors are 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. In exchange, Contractors have the right to participate in the system, with an entitlement to water service from the State Water Project and the right to use the portion of the State Water Project conveyance system necessary to deliver water to them at no additional cost as long as capacity exists. Metropolitan's State Water Contract accounts for nearly one-half of the total entitlement for State Water Project water contracted for by all Contractors.

DWR and other State Water Contractors, including Metropolitan, have reached an Agreement in Principle to extend their State water supply contracts 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.

Metropolitan's payment obligation for the State Water Project for the fiscal year ended June 30, 2018 was $527.3 million, which amount reflects prior year's credits of $43.8 million. For the fiscal year ended June 30, 2018, Metropolitan's payment obligations under the State Water Contract were approximately 34 percent of Metropolitan's total annual expenses. A portion of Metropolitan's annual property tax levy is for payment of State Water Contract obligations, as described above under "METROPOLITAN REVENUES–Revenue Allocation Policy and Tax Revenues" in this Appendix A. Any deficiency between tax levy receipts and Metropolitan's State Water Contract obligations is expected to be paid from Operating Revenues, as defined in the Senior Debt Resolutions. 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. See also "–Power Sources and Costs; Related Long-Term Commitments" 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.

Metropolitan capitalizes its share of the State Water Project capital 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.

DWR and various subsets of the State Water Contractors have entered into amendments to the State water supply contracts related to the financing of certain State Water Project facilities. The amendments establish procedures to provide for the payment of construction costs financed by DWR bonds by establishing separate subcategories of charges to produce the revenues required to pay all of the annual financing costs (including coverage on the allocable bonds) relating to the financed project. If any affected Contractor defaults on payment under certain of such amendments, the shortfall may be collected from the non-defaulting affected Contractors, subject to certain limitations.

These amendments represent additional long-term obligations of Metropolitan, 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 2018, this represented a payment of $7.8 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 ("CAISO"). 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.

East Branch Enlargement Amendment. In 1986, Metropolitan's State Water Contract and the water supply contracts of certain other State Water 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 under the State water supply contracts 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 Appendix B to Bulletin 132-17 (an annual report produced by DWR setting forth data and computations used by the State in determining State Water Contractors' Statements of Charges), California WaterFix costs forecasted based on a 64.6 percent share of the California WaterFix as authorized by the Board on July 10, 2018, and power costs forecasted by Metropolitan. The projections are included in Metropolitan's adopted biennial budget for fiscal years 2018-19 and 2019-20 and the ten-year financial forecast included in the adopted budget. See also "METROPOLITAN'S WATER SUPPLY–State Water

Project" and "–California WaterFix" in this Appendix A. The projections reflect certain assumptions concerning future events and circumstances which may not occur or materialize. Actual costs may vary from these projections if such events and circumstances do not occur as expected or materialize, and such variances may be material.

PROJECTED COSTS OF METROPOLITAN
FOR STATE WATER CONTRACT AND CALIFORNIA WATERFIX
(Dollars in Millions)

Year Ending June 30	Capital Costs[1]	Minimum OMP&R[1]	Power Costs[2]	Refunds & Credits[1]	California WaterFix[3]	Total[4]
2020	168.0	291.6	170.9	(41.0)	13.0	602.5
2021	163.0	297.4	180.9	(43.2)	50.9	649.0
2022	163.3	316.1	189.8	(37.0)	82.3	714.5
2023	161.8	335.8	197.1	(37.1)	128.4	786.0
2024	160.2	351.9	202.2	(35.9)	185.9	864.3

Source: Metropolitan.

(1) Capital Costs, Minimum Operations, Maintenance, Power and Replacement ("OMP&R") and Refunds and Credits projections are based on Appendix B to Bulletin 132-17.

(2) Power costs are forecasted by Metropolitan based on a 50 percent State Water Project allocation. Availability of State Water Project supplies vary and deliveries may include transfers and storage. All deliveries are based upon availability, as determined by hydrology, water quality and wildlife conditions. See "METROPOLITAN'S WATER SUPPLY–State Water Project" and "–Endangered Species Act and Other Environmental Considerations" in this Appendix A.

(3) Based on Metropolitan's forecast of costs for a 64.6 percent share of the California WaterFix as authorized by the Board on July 10, 2018.

(4) Totals may not add due to rounding.

Power Sources and Costs; Related Long-Term Commitments

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. Metropolitan's power costs include various ongoing fixed annual obligations under its contracts with the U.S. Department of Energy Western Area Power Administration and the U.S. Department of Interior Bureau of Reclamation for power from the Hoover and Parker Power Plants respectively. Expenses for electric power for the CRA for the fiscal years 2016-17 and 2017-18 were approximately $26.2 million (net of CRA power revenues) and $29.1 million (gross CRA power expenses), respectively. Expenses for electric power and transmission service for the State Water Project for fiscal years 2016-17 and 2017-18 were approximately $161.0 million and $156.5 million, respectively. Electricity markets are subject to volatility and Metropolitan is unable to give any assurance with respect to the magnitude of future power costs.

Colorado River Aqueduct. Approximately 50 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 for energy generated from federal facilities located on the Colorado River (Hoover Power Plant and Parker Power Plant). Payments made under the Hoover Power Plant and Parker Power Plant contracts are operation and maintenance expenses. These contracts provide Metropolitan with reliable and economical power resources to pump Colorado River water to Metropolitan's service area.

As provided for under the Hoover Power Allocation Act of 2011 (H.R. 470), Metropolitan has executed a 50-year agreement with the Western Area Power Administration for the continued purchase of electric energy generated at the Hoover Power Plant through September 2067, succeeding Metropolitan's prior Hoover contract that expired on September 30, 2017.

Depending on pumping conditions, Metropolitan can require additional energy in excess of the base resources available to Metropolitan from the Hoover and Parker Power Plants. The remaining up to approximately 50 percent of annual pumping power requirements for full capacity pumping on the CRA is obtained through energy purchases from municipal and investor-owned utilities, third party suppliers, or the CAISO markets. 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.

Gross diversions of water from Lake Havasu for fiscal years 2016-17 and 2017-18 were approximately 766,000 acre-feet and 786,000 acre-feet, respectively, including Metropolitan's basic apportionment of Colorado River water and supplies from water transfer and storage programs. In fiscal years 2016-17 and 2017-18, Metropolitan purchased approximately 32,000 and 95,000 megawatt-hours, respectively, of additional energy.

Prior to its expiration on September 30, 2017, Metropolitan was party to a 30-year Service and Interchange Agreement with Southern California Edison ("Edison"), which included provisions for the sharing between Metropolitan and Edison of the benefits realized by the integrated operation of Edison's and Metropolitan's electric systems. Under this agreement Edison also provided Metropolitan with varying amounts of additional energy (benefit energy) for CRA pumping. Metropolitan anticipates market power purchases will replace benefit energy and has reflected the additional costs in the CRA power cost projections for fiscal year 2018-19 and the ten-year financial forecast.

To replace the services previously provided by Edison under the Service and Interchange Agreement, Metropolitan has negotiated new agreements with several parties. In particular, Metropolitan has agreements with the Arizona Electric Power Cooperative ("AEPCO") to provide transmission and energy purchasing services to support CRA power operations. The term of these agreements extends to December 31, 2035.

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), and mid-term contracts with Metropolitan (hydropower), Kern River Conservation District (hydropower), Northern California Power Agency (natural gas generation), Wells Fargo Company (Solar), Dominion Solar Holdings (Solar), and S-Power Corporation (Solar). The remainder of the State Water Project power needs is met by short-term purchases.

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 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, including Metropolitan, as "real parties in interest," since they could be adversely affected by this litigation. On May 16, 2012, the trial 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. Supplemental briefing was completed in the fall of 2016. Oral argument was held on September 24, 2018. Regulatory permits and authorizations are also required before the new license can take effect. In December 2016, the National Marine Fisheries Service issued a biological opinion setting forth the terms and conditions under which the relicensing project must operate in order to avoid adverse impacts to threatened and endangered species. This was the last major regulatory requirement prior to FERC issuing a new license. Following the 2017 Oroville Dam spillway incident, Butte County, the City of Oroville, and others requested that FERC not issue a new license until an

Independent Forensic Team ("IFT") delivered their final report to FERC and FERC has had adequate time to review the report. The Final IFT report was delivered on January 5, 2018. DWR submitted a plan to address the findings of the report to FERC on March 12, 2018. See "METROPOLITAN'S WATER SUPPLY–State Water Project –2017 Oroville Dam Spillway Incident." Metropolitan anticipates that FERC will issue the new license; however, the timeframe for FERC approval is not currently known. However, 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 the CAISO. The transmission service providers participating in the CAISO may seek increased transmission rates, subject to the approval of FERC. DWR has the right to contest any such proposed increase. DWR may also be subject to increases in the cost of transmission service as new electric grid facilities are constructed.

On September 10, 2018, Governor Brown signed SB 100 into law, to take effect on January 1, 2019. SB 100 establishes a goal of providing 100 percent carbon-free electricity by 2045 and increases the 2030 Renewables Portfolio Standard ("RPS") requirement for retail electric utilities from 50 percent to 60 percent. Simultaneously, the Governor announced Executive Order B-55-18 directing state agencies to develop a framework to achieve and maintain carbon neutrality by 2045. Metropolitan and DWR are not subject to the RPS requirements. However, as a state agency, DWR is subject to the Executive Order. DWR has an existing climate action plan in order to achieve carbon neutrality by 2045.

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 hired prior to January 1, 2013 are required to contribute 7.00 percent of their earnings (excluding overtime pay) to PERS. Pursuant to the current memoranda of understanding, Metropolitan contributes the requisite 7.00 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 but before January 1, 2013, pay the full 7.00 percent contribution to PERS for the first five years of employment. After the employee completes five years of employment, Metropolitan contributes the requisite 7.00 percent contribution. Metropolitan also contributes the entire 7.00 percent on behalf of unrepresented employees. Employees hired on or after January 1, 2013 and who are "new" PERS members as defined by Public Employees' Pension Reform Act of 2013 pay a member contribution of 6.75 percent in fiscal year 2016-17, and 6.00 percent in fiscal years 2017-18 through 2019-20. 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 2017-18 contribution was based on the June 30, 2015 valuation report, the fiscal year 2018-19 contribution is based on the June 30, 2016 valuation report, and the fiscal year 2019-20 contribution is based on the June 30, 2017 valuation

report. The PERS' projected investment return (the discount rate) is 7.50 percent for fiscal year 2017-18, 7.375 percent for fiscal year 2018-19, and 7.25 percent for fiscal year 2019-20.

For fiscal year 2017-18, Metropolitan contributed 22.89 percent of annual covered payroll. The fiscal year 2017-18 annual pension cost was $61.3 million, of which $12.5 million was for Metropolitan's pick-up of the employees' 7.00 percent share. For fiscal years 2018-19 and 2019-20, Metropolitan is required to contribute 25.97 percent and 29.97 percent, respectively, of annual covered payroll, in addition to member contributions paid by Metropolitan.

Metropolitan's required contributions to PERS fluctuate each year and include a normal cost component and a component equal to an amortized amount of the unfunded liability. Many assumptions are used to estimate the ultimate liability of pensions and the contributions that will be required to meet those obligations. The PERS Board of Administration has adjusted and may in the future further adjust certain assumptions used in the PERS actuarial valuations, which adjustments may increase Metropolitan's required contributions to PERS in future years. Accordingly, Metropolitan cannot provide any assurances that its required contributions to PERS in future years will not significantly increase (or otherwise vary) from any past or current projected levels of contributions.

As part of the June 30, 2014 actuarial valuation, the PERS Board of Administration adopted changes in demographic assumptions. The most significant of these was the improvement in post-retirement mortality acknowledging greater life expectancies and expected continued improvements. On December 21, 2016 the PERS Board of Administration approved lowering the discount rate to 7.00 percent over a three year period. As a result, the discount rate for fiscal year 2018-19 will be 7.375 percent, for fiscal year 2019-20 it will be 7.25 percent, and for fiscal year 2020-21 it will be 7.00 percent. PERS has estimated that with a reduction in the rate of return to 7.00 percent, most employers could expect a 1.00 percent to 3.00 percent increase in the normal cost for miscellaneous plans. As a result, required contributions of employers, including Metropolitan, toward unfunded accrued liabilities, and as a percentage of payroll for normal costs, are expected to increase.

Beginning with fiscal year 2017-18 PERS began collecting employer contributions towards the plan's unfunded liability as dollar amounts instead of the prior method of contribution rate. This change addresses potential funding issues that could arise from a declining payroll or reduction in the number of active members in the plan.

On December 19, 2017, the PERS Board of Administration adopted new actuarial assumptions based on the recommendations in the December 2017 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases and inflation assumption for public agencies. These new assumptions were incorporated in the June 30, 2017 actuarial valuation and will impact the required contribution for fiscal year 2019-20. In addition, the Board adopted a new asset portfolio as part of its Asset Liability Management. The new asset mix supports a 7.00 percent discount rate. The reduction of the inflation assumption will be implemented in two steps in conjunction with the decreases in the discount rate. For the June 30, 2017 valuation an inflation rate of 2.625 percent was used and a rate of 2.50 percent will be used in the subsequent valuation.

The PERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the five-year ramp-up and ramp-down on unfunded accrued liability bases attributable to assumption changes and non-investment gains/losses. The new policy removes the five-year ramp-down on investment gains/losses. These changes will apply only to new unfunded accrued liability bases established on or after June 30, 2019.

The following table shows the funding progress of Metropolitan's pension plan.

Valuation Date	Accrued Liability	Market Value of Assets	Unfunded Accrued Liability	Funded Ratio
6/30/17	$2.269	$1.651	$(0.619)	72.7%
6/30/16	$2.166	$1.524	$(0.642)	70.3%
6/30/15	$2.060	$1.556	$(0.504)	75.5%
6/30/14	$1.983	$1.560	$(0.423)	78.7%
6/30/13	$1.805	$1.356	($0.449)	75.1%

Source: California Public Employees' Retirement System.

Effective July 1, 2014, Metropolitan implemented Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27* (GASB 68), affecting the reporting of pension liabilities for accounting purposes. Under GASB 68, Metropolitan is required to report the Net Pension Liability (*i.e.*, the difference between the Total Pension Liability and the Pension Plan's Net Position or market value of assets) in its financial statements.

For Metropolitan's fiscal year ended June 30, 2018 financial statements, the Net Pension Liability reported for the Miscellaneous Plan was $660.9 million (an increase of $73.3 million over the prior year), representing a Total Pension Liability as of such date of $2,315.2 million (an increase of $200.2 million over the prior year) less the Plan Fiduciary Net Position as of such date of $1,654.3 million (an increase of $126.9 million over the prior year). For fiscal year 2018, the Miscellaneous Plan Net Pension Liability as a percentage of covered-employee payroll was 331.81 percent and the Plan Net Position as a percentage of the Total Pension Liability was 71.45 percent. The Net Pension Liability for Metropolitan's Miscellaneous Plan for the year ended June 30, 2018 was measured as of June 30, 2017, and the Total Pension Liability used to calculate the Net Pension Liability was determined by an annual actuarial valuation as of June 30, 2016.

For Metropolitan's fiscal year ended June 30, 2017 financial statements, the Net Pension Liability reported for the Miscellaneous Plan was $587.7 million (an increase of $108.1 million over the prior year), representing a Total Pension Liability as of such date of $2,115.1 million (an increase of $76.5 million over the prior year) less the Plan Fiduciary Net Position as of such date of $1,527.4 million (a decrease of $31.6 million over the prior year). For fiscal year 2017, the Miscellaneous Plan Net Pension Liability as a percentage of covered-employee payroll was 300.01 percent and the Plan Net Position as a percentage of the Total Pension Liability was 72.22 percent. The Net Pension Liability for Metropolitan's Miscellaneous Plan for the year ended June 30, 2017 was measured as of June 30, 2016, and the Total Pension Liability used to calculate the Net Pension Liability was determined by an annual actuarial valuation as of June 30, 2015.

For more information on the plan, see APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (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 $30.1 million in fiscal year 2017-18. Under Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment 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 valuations dated June 30, 2015 and June 30, 2017, were released in June of 2016 and March of 2018, respectively. The June 30, 2015 valuation indicates that the Actuarially Determined Contribution ("ADC" formerly referred to as the Annual Required Contribution) in fiscal year 2017-18 is $30.1 million and the June 30, 2017 valuation indicates that the ADC will be $27.3 million and $28.1 million in fiscal years 2018-19 and 2019-20, respectively. In both valuations, the ADC was based on the entry-age normal actuarial cost method with contributions determined as a level percent of pay. The actuarial assumptions included the following:

	June 30, 2015 Valuation	**June 30, 2017 Valuation**
Investment Rate of Return	7.25%	6.75%
Inflation	3.00%	2.75%
Salary Increases	3.00%	3.00%
Health Care Cost Trends	Medicare – starting at 7.2%, grading down to 5.0% over five years. Non-Medicare – starting at 7.0%, grading down to 5.0% over five years.	Medicare – starting at 6.5%, grading down to 4.0% over fifty seven years. Non-Medicare – starting at 7.5%, grading down to 4.0% over fifty seven years.
Mortality, Termination, Disability	CalPERS 1997-2011 Experience Study Post-retirement mortality projected fully generational with Scale MP-2014, modified to converge to ultimate improvement rates in 2022	CalPERS 1997-2011 Experience Study Mortality projected fully generational with Scale MP-2017
Affordable Care Act (ACA) Excise Tax	2% load on retiree medical premium subsidy	2% load on retiree medical premium subsidy

As of June 30, 2017, the date of the most recent OPEB actuarial report, the unfunded actuarial accrued liability was estimated to be $235.5 million. The amortization period for the unfunded actuarial accrued liability is 23 years closed with 19 years remaining as of fiscal year end 2018 and the amortization period of actuarial gains and losses is 15 years closed. Adjustments to the ADC include amortization of the unfunded actuarial accrued liability and actuarial gains and losses.

In September 2013, Metropolitan's Board established an irrevocable OPEB trust fund with the California Employers' Retiree Benefit Trust Fund. The market value of assets in the trust as of June 30, 2018 was $240.0 million. As part of its biennial budget process, the Board approved the full funding of the ADC for fiscal years 2018-19 and 2019-20.

Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions*, was issued in June 2015, relating to accounting and

financial reporting by state and local governments for OPEB. This statement establishes standards for measuring and recognizing liabilities, deferred outflows and deferred inflows of resources, and expenses. For defined benefit OPEB, this statement identifies the methods and assumptions that should be used to project benefit payments, discount projected benefit payments to their actuarial present value, and attribute that present value to periods of employee service. Note disclosure and required supplementary information requirements about OPEB also are addressed. Metropolitan implemented this statement in its June 30, 2018 financial statements. Major changes as a result of this statements were (i) the inclusion of net OPEB liabilities on Metropolitan's Statement of Net Position (previously they were included as notes to Metropolitan's financial statements); (ii) recognition of deferred inflows and outflows of resources related to OPEB; (iii) more variable OPEB expense as it is now based on the net OPEB liability change between reporting dates, with some sources of change recognized immediately and others spread over years, instead of being based on actual contributions; and (iv) restatement of beginning net position for 2018 in the amount of $138.9 million to record the beginning deferred OPEB contributions and net OPEB liability.

HISTORICAL AND PROJECTED REVENUES AND EXPENSES

The "Historical and Projected Revenues and Expenses" table below provides a summary of revenues and expenses of Metropolitan prepared on a modified accrual basis. This is consistent with the adopted biennial budget for fiscal years 2018-19 and 2019-20. 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 are not recorded and payments for debt service and pay-as-you-go construction are recorded when paid. 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 revenues are recognized in the month the water transaction occurs 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 Revenue Bond 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 the 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 transactions and the 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.

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" in this Appendix A. Metropolitan has conservatively set the water transactions projections in the following table. Due to the variability of supplemental wholesale water transactions and unpredictability of future hydrologic conditions, projections of the volume of annual water transactions are based on long-term average forecasts consistent with Metropolitan's latest Board adopted Integrated Resources Plan, the 2015 IRP Update.

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.

Metropolitan's projections of the level of water transactions 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 outlined in the 2015 IRP Update. See "CONSERVATION AND WATER SHORTAGE MEASURES" 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, recycled water, and seawater desalination (see "REGIONAL WATER RESOURCES" in this Appendix A). For example, water transactions projections for fiscal year 2018-19 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 2018. For additional description of Metropolitan's water transactions projections, see "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

The water transactions projections used to determine water rates and charges assume an average year hydrology. Actual water transactions are likely to vary from projections. As shown in the chart entitled "Historical Water Transactions" below, transactions can vary significantly from average and demonstrates the degree to which Metropolitan's commitments to meet supplemental demands can impact transactions. In years when actual transactions exceed projections, the revenues from water transactions during the fiscal year will exceed budget, potentially resulting in an increase in financial reserves. In years when actual transactions 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 transactions, revenues and expenses, and financial reserve balances in setting rates for future fiscal years.

Projections in the following table reflect, for fiscal year 2018-19 actual financial results through March 31, 2019 and revised projections for the balance of that fiscal year, and revised projections for fiscal year 2019-20. Financial projections for fiscal years 2020-21 through 2023-24 reflect the ten-year financial forecast provided in the adopted budget for fiscal years 2018-19 and 2019-20. This includes the issuance of $560 million of bonds for fiscal years 2018-19 through 2023-24 to finance the CIP (of which bonds with net proceeds of $80 million were issued for fiscal year 2018-19). See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" and "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

Water transactions were 1.61 million acre-feet in fiscal year 2017-18. Water transactions are projected to be 1.46 million acre-feet for fiscal year 2018-19, 1.75 million acre-feet for fiscal year 2019-20, and 1.8 million acre-feet for fiscal years 2020-21 through 2023-24. Rates and charges increased by 4.0 percent on January 1, 2017 and January 1, 2018 and 3.0 percent on January 1, 2019. On April 10, 2018 the Board adopted average increases in rate and charges of 3.0 percent, which will become effective on January 1, 2020. Rates and charges are projected to increase an average of 4.1 percent annually thereafter. Actual rates and charges to be effective in 2021 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.

HISTORICAL AND PROJECTED REVENUES AND EXPENSES[a]
Fiscal Years Ended June 30
(Dollars in Millions)

	Actual			Projected					
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Water Revenues[b]	$1,166	$1,151	$1,285	$1,189	$1,528	$1,616	$1,668	$1,728	$1,787
Additional Revenue Sources[c]	200	184	172	170	166	179	198	216	238
Total Operating Revenues	1,366	1,335	1,457	1,359	1,694	1,795	1,866	1,944	2,025
O&M, CRA Power and Water Transfer Costs[d]	(799)	(559)	(568)	(600)	(689)	(723)	(743)	(767)	(788)
Total SWC OMP&R and Power Costs[e]	(402)	(368)	(395)	(346)	(463)	(478)	(506)	(533)	(554)
Total Operation and Maintenance	(1,201)	(927)	(963)	(946)	(1,152)	(1,201)	(1,249)	(1,300)	(1,342)
Net Operating Revenues	$ 165	$ 408	$ 494	$ 413	$ 542	$ 594	$ 617	$ 644	$ 683
Miscellaneous Revenue[f]	24	18	27	22	24	24	24	24	24
Transfer from Reserve Funds[g]	222	33	1	--	--	--	--	--	--
Sales of Hydroelectric Power[h]	7	21	24	18	19	19	20	20	20
Interest on Investments[i]	17	4	8	27	18	20	21	23	24
Adjusted Net Operating Revenues[j]	435	484	554	480	603	657	682	711	751
Senior and Subordinate Obligations[k]	(310)	(308)	(340)	(330)	(294)	(314)	(319)	(318)	(324)
Funds Available from Operations	$ 125	$ 176	$ 214	$ 150	$ 309	$ 343	$ 363	$ 393	427
Debt Service Coverage on all Senior and Subordinate Bonds[l]	1.40	1.57	1.63	1.45	2.05	2.09	2.14	2.24	2.32
Funds Available from Operations	$ 125	$ 176	$ 214	$ 150	$ 309	$ 343	$ 363	$ 393	427
Other Revenues (Expenses)	(6)	(4)	(5)	(9)	(7)	(7)	(7)	(7)	(8)
Pay-As-You Go Construction[n]	(273)	(132)	(98)	(134)	(120)	(150)	(150)	(150)	(154)
Pay-As-You Go Funded from Replacement & Refurbishment Fund Reserves[n]	160	1	1	--	--	--	--	--	--
Total SWC Capital and WaterFix Costs Paid from Current Year Operations	(24)	(45)	(21)	(22)	(36)	(60)	(96)	(133)	(189)
Remaining Funds Available from Operations	(18)	(4)	91	(15)	146	126	110	103	73
Fixed Charge Coverage[m]	1.30	1.37	1.53	1.36	1.83	1.76	1.64	1.58	1.46
Property Taxes	108	116	131	129	118	119	121	122	124
General Obligation Bonds Debt Service	(22)	(22)	(20)	(14)	(14)	(8)	(9)	(2)	(2)
SWC Capital Costs Paid from Taxes	(86)	(94)	(111)	(115)	(104)	(111)	(112)	(120)	(122)
Net Funds Available from Current Year[n]	$ (18)	$ (4)	$ 91	$ (15)	$ 146	$ 126	$ 110	$ 103	$ 76

Source: Metropolitan.

(Footnotes on next page)

(Footnotes to table on prior page)

(a) Unaudited. Prepared on a modified accrual basis. Projected revenues and expenses in fiscal year 2018-19 are based on preliminary financial results through March 31, 2019, and revised projections for the balance of fiscal year 2019-20. Projections for fiscal year 2020-21 through fiscal year 2023-24 are based on assumptions and estimates used in the adopted biennial budget for fiscal years 2018-19 and 2019-20 and reflect the projected issuance of additional bonds. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

(b) Water Revenues include revenues from water sales, exchanges, and wheeling. During the fiscal years ended June 30, 2016 through June 30, 2018, annual water transactions (in acre-feet) were 1.62 million, 1.54 million, and 1.61 million, respectively. See the table entitled "Summary of Water Transactions and Revenues" under "METROPOLITAN REVENUES–Water Revenues" in this Appendix A. The water transactions projections (in acre-feet) are 1.46 million acre-feet for fiscal year 2018-19, 1.75 million acre-feet for fiscal year 2019-20 and 1.80 million acre-feet for fiscal years 2020-21 through 2023-24. Projections reflect adopted rate and charge increases of 3.0 percent, effective on January 1, 2019 and January 1, 2020. Rates and charges are projected to increase an average of 4.1 percent per fiscal year thereafter, subject to adoption by Metropolitan's Board. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

(c) Includes revenues from water standby, readiness-to-serve, and capacity charges. The term Operating Revenues excludes *ad valorem* taxes. See "METROPOLITAN REVENUES–Other Charges" 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 EXPENSES–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.

(g) Reflects transfers from the Water Management Fund, the Water Stewardship Fund, and the Water Rate Stabilization Fund, of $222 million in fiscal year 2015-16, $33 million in fiscal year 2016-17, and $1 million in fiscal year 2017-18 to fund a like amount of costs for conservation and supply programs. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

(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.

(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 Senior Revenue Bonds and Senior Parity Obligations and Subordinate Revenue Bonds and Subordinate Parity Obligations.

(k) Includes debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds, Subordinate Parity Obligations, and additional Revenue Bonds (projected). Includes issuance of $80 million (net proceeds) in additional Revenue Bonds for fiscal year 2018-19 and assumes issuance of an additional $80 million for fiscal year 2019-20 as provided in budget assumptions for the adopted biennial budget for fiscal years 2018-19 and 2019-20 and $100 million annually as projected for fiscal years 2020-21 through 2023-24. Fiscal year 2015-16 debt service increased $7.0 million for debt service paid on June 30, 2016, rather than July 1, 2017 and fiscal year 2016-17 debt service was therefore reduced by $7.0 million. Fiscal year 2017-18 debt service increased by $15.3 million for debt service prepaid through bond refunding transactions in June 2018, rather than on July 1, 2018 and fiscal year 2018-19 debt service is therefore reduced by $15.3 million. Fiscal year 2018-19 debt service increased by $28.5 million for debt service prepaid through bond refunding transactions in June 2019, rather than on July 1, 2019 and fiscal year 2019-20 debt service is therefore reduced by $28.5 million. See "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

(l) Adjusted Net Operating Revenues, divided by the sum of debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds and Subordinate Parity Obligations, including the subordinate lien California Safe Drinking Water Revolving Fund Loan (prior to its discharge in 2017) and projected Revenue Bonds. See "METROPOLITAN EXPENSES–Outstanding Senior Revenue Bonds and Senior Parity Obligations" and "–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations" in this Appendix A.

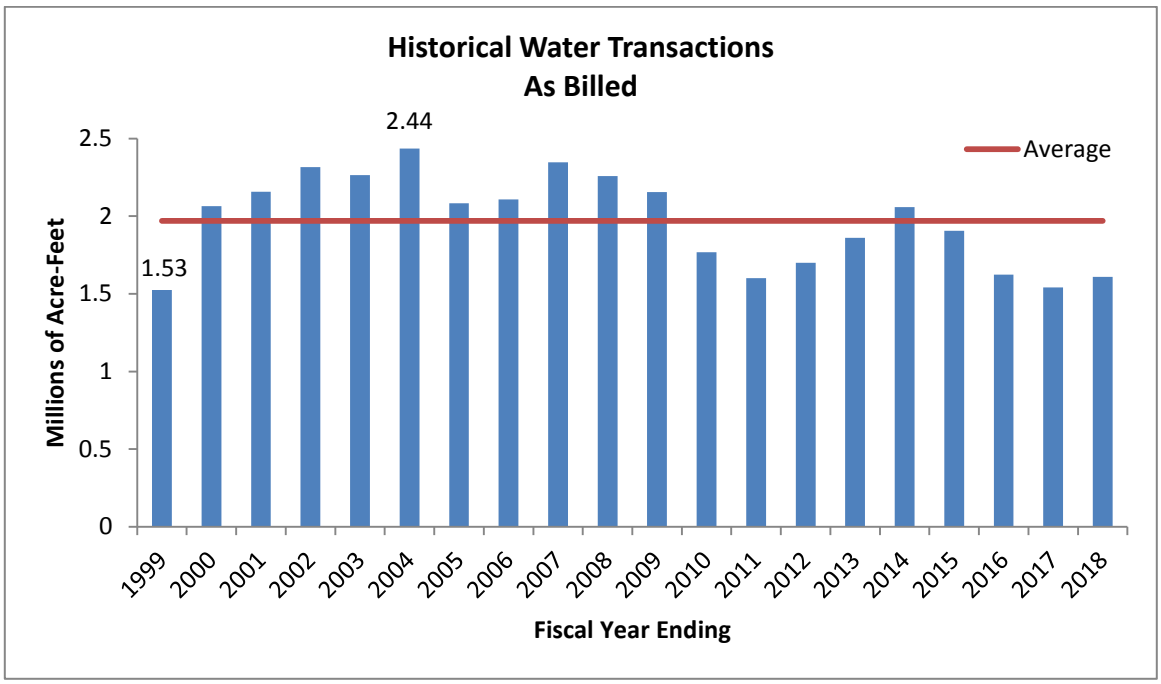
(m) Adjusted Net Operating Revenues, divided by the sum of State Water Contract capital and WaterFix costs paid from current year operations and debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds and Subordinate Parity Obligations, including the subordinate lien California Safe Drinking Water Revolving Fund Loan (prior to its discharge in 2017) and additional Revenue Bonds (projected).

(n) For fiscal year 2015-16, Metropolitan used $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 is reflected as a pay-as-you-go expenditure for fiscal year 2015-16.

MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES

Water Transactions Projections

The water transactions forecast in the table above for fiscal year 2018-19 is 1.46 million acre-feet. The water transactions forecast is 1.75 million acre-feet for fiscal years 2019-20 and 1.80 million acre-feet for fiscal years 2020-21 through 2023-24, consistent with the biennial budget and ten-year financial forecast. For purposes of comparison, Metropolitan's highest level of water transactions during the past 20 fiscal years was approximately 2.44 million acre-feet in fiscal year 2003-04 and the lowest was 1.53 million acre-feet in fiscal year 1998-99. The chart below shows the volume of water transactions over the last 20 fiscal years.



Water Revenues

Metropolitan relies on revenues from water transactions for about 80 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 transactions to determine the rates necessary to produce the required revenues to be derived from water transactions 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 10, 2018, the Board adopted average increases in rate and charges of 3.0 percent, which will become effective on January 1, 2019 and January 1, 2020. Rates and charges are projected to increase an average of 4.1 percent annually thereafter. Actual rates and charges to be effective in 2021 and thereafter are subject to adoption by Metropolitan's Board.

Projected Fiscal Year 2018-19 Results

Projections for fiscal year 2018-19, in the table above, are based on preliminary financial results through March 31, 2019, and revised projections for the balance of fiscal year and revised projections for fiscal year 2019-20. Financial projections for fiscal years 2020-21 through 2023-24 are reflected in the ten-year financial forecast provided in the biennial budget adopted by the Board on April 10, 2018. The fiscal year 2018-19 and 2019-20 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 3.0 percent annually in both fiscal years 2018-19 and 2019-20, and projected average increases of 4.1 percent per year thereafter. Actual rates and charges to be effective in fiscal year 2020-21 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 be updated as well. Increases in rates and charges reflect the impact of reduced water transactions projections, increasing operations and maintenance costs, and increasing State Water Project costs, when compared to prior fiscal years.

Operation and maintenance expenses in fiscal year 2018-19 are projected to be $946 million, which represents approximately 60.7 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. Metropolitan's operation and maintenance expenses are projected to be $156 million under budget in fiscal year 2018-19. Comparatively, operations and maintenance expenses in fiscal year 2017-18 were $963 million, which represents approximately 62.4 percent of total costs. Overall, projected expenditures for the twelve months ending June 30, 2019 are $1.6 billion. This is $134 million, or 7.9 percent, less than budgeted expenditures.

Fiscal year 2018-19 revenue bond debt service coverage is projected to be 1.45x and fixed charge coverage to be 1.36x. Fiscal year 2018-19 capital expenditures, currently estimated at $214 million, will be primarily funded by pay-as-you-go funding and the remainder from proceeds of Metropolitan's bonds issued in June 2018 for such purpose. Metropolitan's unrestricted reserves are projected to be approximately $425 million at June 30, 2019. See "METROPOLITAN REVENUES–Financial Reserve Policy" in this Appendix A. This amount does not include funds held in the Exchange Agreement Set-Aside Fund.

See also the "Management's Discussion and Analysis" contained in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

Board Distribution Draft, ~~10~~05/~~24~~01/~~18~~19

APPENDIX A

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. Certain 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 transactions 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 representing the highest level of water transactions and revenues of Metropolitan during the fiscal year ended June 30, 2018. 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 "–Other Charges" 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 based on water transactions, is a plaintiff in litigation challenging the allocation of costs to certain rates adopted by the Board and asserting other claims. 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 all or 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 4,575 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 ~~18.9~~19 million people lived in Metropolitan's service area in ~~2017,~~2018, 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 2013, 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 economy of Metropolitan's service area is exceptionally diverse. In 2017, the economy of the six counties which contain Metropolitan's service area had a gross domestic product larger than all but twelve 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. Since 2000, annual rainfall has ranged from approximately 4 to 27 inches along the coastal area, 6 to 38 inches in foothill areas, and 5 to 20 inches in inland areas.

GOVERNANCE AND MANAGEMENT

Board of Directors

Metropolitan is governed by a 38-member Board of Directors, made up of representatives from all of Metropolitan's member agencies. 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 are appointed by member agencies in accordance with those agencies' processes and the Act. They 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 to 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 and Acting Ethics Officer – Mr. Riss was appointed as Metropolitan's General Auditor in July 2002 and has served as Acting Ethics Officer since September 2017. ~~He~~As General Auditor, he is responsible for the independent evaluation of the policies, procedures and systems of control throughout Metropolitan. As Acting Ethics Officer, he is responsible for helping to establish internal disclosure, lobbying, conflicts of interest, contracts, campaign contributions, and other

internal ethics rules and policies. 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 a master's degree in business administration from Wayne State University.

June Skillman, Interim Assistant General Manager/Chief Financial Officer – Ms. Skillman has been serving as the Interim Assistant General Manager/Chief Financial Officer since July 2018. She has 30 years of experience in the water, electric and natural gas utility industries and has worked at Metropolitan for 15 years. In December 2016 she was promoted to Budget and Treasury Manager and is responsible for the development of Metropolitan's biennial budget and rates and charges; financial planning and analyses; management of MetropolitansMetropolitan's debt program; and treasury operations and investments. Ms. Skillman has a master's degree in business administration from the California State University, Fullerton.

Deven Upadhyay, Assistant General Manager/Chief Operating Officer – Mr. Upadhyay was appointed to his current position in November 2017. In this capacity, he oversees the management of Metropolitan's Water System Operations, Engineering Services and Water Resource Management. Mr. Upadhyay has over 20 years of experience in the water industry. He joined Metropolitan in 1996, beginning as a Resource Specialist and then left Metropolitan in 2005 to work at the Municipal Water District of Orange County. In 2008, he returned to Metropolitan as a Budget and Financial Planning Section Manager and became a Water Resource Management Group Manager in 2010. Mr. Upadhyay has a Bachelor of Arts degree in economics from the California State University, Fullerton and a master's degree in public administration from the University of La Verne.

Roger Patterson, Assistant General Manager/Strategic Water Initiatives – Mr. Patterson was appointed to his current position 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 U.S. Bureau of Reclamation ("Bureau of Reclamation"), retiring from the Bureau of Reclamation 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.

Shane Chapman, Assistant General Manager/Chief Administrative Officer – Mr. Chapman was appointed to his current position in January 2018 and is responsible for the strategic direction and management of Metropolitan's administrative functions. His primary responsibilities include managing human resources, information technology, real property, environmental planning, and administrative services. Mr. Chapman joined Metropolitan as a Resource Specialist in 1991, progressing to the level of Program Manager in 2001. He became the Revenue, Rates and Budget Manager in 2003 and Assistant Group Manager in Water System Operations in 2006. Mr. Chapman served as General Manager of the Upper San Gabriel Valley Municipal Water District for seven years. Mr. Chapman has a Bachelor of Arts degree in economics from Claremont McKenna College and a master's degree in public administration from the University of Southern California.

Dee Zinke, Assistant General Manager/Chief External Affairs Officer – Ms. Zinke was appointed to her current position in January 2016. She is responsible for Metropolitan's communications, business 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. Prior to her public service, she worked in the private sector as the Executive Officer and Senior Legislative Advocate for the 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 ~~October~~April 1, ~~2018~~2019 was ~~1,739~~1,757 of whom ~~1,218~~1,230 were represented by AFSCME Local 1902, ~~84~~87 by the Supervisors Association, ~~284~~286 by the Management and Professional Employees Association and ~~127~~125 by the Association of Confidential Employees. The remaining ~~26~~29 employees are unrepresented. The four bargaining units represent ~~99~~98 percent of Metropolitan's employees. The Memorandum of Understanding ("MOU") with each of AFSCME Local 1902, the Supervisors Association, the Management and Professional Employees Association and the Association of Confidential Employees were updated through negotiations and cover the period January 1, 2017 through December 31, 2021.

Risk Management

Metropolitan is exposed to various risks of loss related to, among other things, the design and construction of facilities, and the 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 coverages 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 the Board at its sole discretion.

~~**Cyber Security**~~

Cybersecurity

Metropolitan has adopted and maintains an active Cybersecurity Program ("CSP") that includes policies reviewed annually by its internal Cybersecurity Team, Audit department and independent third party auditors and consultants. Metropolitan has appointed an Information Security Officer who is responsible for overseeing the annual review of the CSP and its alignment with Metropolitan's Strategic Plan. Metropolitan's policies and procedures on information governance, risk management, and compliance are consistent with the U.S. Commerce Department's National Institute of Standards and Technology Cybersecurity Framework. Metropolitan's Cybersecurity Team is responsible for identifying cybersecurity risks to Metropolitan, preventing, investigating, and responding to any cybersecurity incidents, and providing guidance and education on the implementation of new technologies at Metropolitan. All persons or entities authorized to use Metropolitan's computer resources are required to participate in Metropolitan's Cybersecurity Awareness Training.

METROPOLITAN'S WATER SUPPLY

General

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. 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. Water management programs supplement these Colorado River supplies. To secure additional supplies, Metropolitan also has groundwater banking partnerships and water transfer and storage arrangements within and outside its service area. Metropolitan's principal water supply sources, and other supply arrangements and water management are more fully described herein.

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." 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 (the "Water Supply Allocation Plan"). See "CONSERVATION AND WATER SHORTAGE MEASURES–Water Surplus and Drought Management Plan" and "–Water Supply Allocation Plan" in this Appendix A.

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 – Bay-Delta Proceedings Affecting State Water Project." 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.

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.

Current Water Conditions

As of ~~September 30, 2018,~~April 16, 2019, the northern Sierra precipitation was ~~80~~134 percent of the 50-year average ~~with a peak snowpack accumulation that measured 50~~for the time of year, and northern Sierra snow water content measured 164 percent of the 30-year seasonal peak average~~ for the water year ended September 30, 2018. Repair and reconstruction of the spillway structures continue at Lake Oroville, the principal State Water Project reservoir. See " State Water Project – 2017 Oroville Dam Spillway Incident." On May 21, 2018,~~. On March 20, 2019, the California Department of Water Resources ("DWR")

notified State Water Contractors (defined below) that its calendar year ~~2018~~2019 allocation estimate of State Water Project water was increased to ~~35~~70 percent of contracted amounts, or ~~669,025~~1,338,050 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 325,851 gallons, which represents the needs of three average families in and around the home for one year within Metropolitan's the service area.) Changes to the ~~2018~~2019 allocation may occur and are dependent on the developing hydrologic conditions. See "–State Water Project."

~~The~~As of April 16, 2019, the Upper Colorado River Basin peak snowpack accumulation measured ~~74~~133 percent of the 30-year ~~seasonal peak average. On August 27, 2018,~~median value. On April 24, 2019, the total system storage in the Colorado River Basin was ~~49~~46 percent of capacity. As of such date, the projected base supply of Colorado River water in calendar year ~~2018~~2019 was estimated to be ~~842,509~~963,209 acre-feet. See "–Colorado River Aqueduct."

See also "–Storage Capacity and Water in Storage."

Integrated Water Resources Plan

Overview. The Integrated Water Resources Plan ("IRP") is Metropolitan's principal water resources planning document. Metropolitan, its member agencies, subagencies 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 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 has been subsequently updated in 2004, 2010 and 2015. The next IRP update is expected to occur in 2020.

On January 12, 2016, Metropolitan's Board adopted the most recent 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 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 are available 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.

An Adaptive Management Strategy. Adaptive water management, as opposed to a rigid set of planned actions over the coming decades, is the most nimble and cost-effective manner for Metropolitan and local water districts throughout Southern California to effectively prepare for the future. An adaptive management approach began to evolve with Metropolitan's first IRP in 1996, after drought-related shortages in 1991 prompted a rethinking of Southern California's long-term water strategy. Reliance on imported supplies to meet future water needs has decreased steadily over time, replaced by plans for local actions to meet new demands. The 2015 IRP Update continues to build a robust portfolio approach to water management.

The following paragraphs describe the goals, approaches and targets for each of the resource areas that are needed to ensure reliability under planned conditions.

State Water Project. The State Water Project is one of Metropolitan's two major sources of water. The goal for State Water Project supplies is to adaptively manage flow and export regulations in the near term and to achieve a long-term Bay-Delta solution that addresses ecosystem and water supply reliability challenges. In furtherance of this goal, Metropolitan continues to participate and seek successful outcomes in the California WaterFix and the California EcoRestore efforts. See "–State Water Project," "–California WaterFix" and "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A. The stated goal of the IRP is to manage State Water Project supplies in compliance with regulatory restrictions in the near-term for an average of 980,000 acre-feet of annual supplies, and to pursue an outcome in the California WaterFix and California EcoRestore efforts aimed towards achieving long-term average supplies of approximately 1.2 million acre-feet annually from this resource. See "–State Water Project – Bay-Delta Proceedings Affecting State Water Project."

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 Bureau of Reclamation. See "–Colorado River Aqueduct" and "–Water Transfer, Storage and Exchange Programs – Colorado River Aqueduct Agreements and Programs." The stated goal of the IRP for the CRA supplies is to maintain current levels of water supplies from existing programs, while also developing flexibility through dry-year programs and storage to ensure that a minimum of 900,000 acre-feet of CRA deliveries are available when needed, with a target of 1.2 million acre-feet in dry years.

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." The stated goal of the IRP is to pursue transfers and exchanges to hedge against shorter-term water demand and supply imbalances while long-term water supply solutions are developed and implemented.

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. With outdoor water use comprising at least 50 percent of residential water demand, Metropolitan has increased its conservation efforts to target outdoor water use reduction in its service area. See "CONSERVATION AND WATER SHORTAGE MEASURES" in this Appendix A. The stated goal of the IRP is to pursue further water conservation savings of 485,000 acre-feet annually by 2040 through continued increased emphasis on outdoor water-use efficiency using incentives, outreach/education and other programs.

Local Water Supplies. Local supplies are a significant and growing component of the region's diverse water portfolio. While the extent to which each member agency's water supply is provided by imported water purchased from Metropolitan varies, in the aggregate, local supplies can provide over half of the region's water in a given year, and the maintenance of these supplies remain an integral part of the IRP. Similar to water conservation, local supplies serve the important function of reducing demands for imported water supplies and thereby making regional water system capacity and storage available and accessible to meet the needs of the region. Local water supply projects may include, among other things, recycled water, groundwater recovery, conjunctive use, stormwater, and seawater desalination. Metropolitan offers financial

incentives to member agencies to help fund the development of a number of these types of local supply projects. The stated goal of the IRP is to seek to develop 230,000 acre-feet of additional local supplies produced by existing and future projects, with the region reaching a target of 2.4 million acre-feet of total dependable local supplies by 2040. See "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A.

State Water Project

Background

One of Metropolitan's two major sources of water is the State Water Project, which is owned by the State, and managed and operated by DWR. The State Water Project is the largest state-built, multipurpose, user-financed water project in the country. It was designed and built primarily to deliver water, but also provides flood control, generates power for pumping, is used for recreation, and enhances habitat for fish and wildlife. The State Water Project provides irrigation water to 750,000 acres of farmland, mostly in the San Joaquin Valley, and provides municipal and industrial water to approximately ~~25~~27 million of California's estimated ~~39.2~~39.8 million residents, including the population within the service area of Metropolitan.

The State Water Project's watershed encompasses the mountains and waterways around the Feather River, the principal tributary of the Sacramento River, in the Sacramento Valley of Northern California. Through the State Water Project, Feather River water stored in and released from Oroville Dam (located about 70 miles north of Sacramento, east of the city of Oroville, California) and unregulated flows diverted directly from the Bay-Delta are transported south through the Central Valley of California, over the Tehachapi Mountains and into Southern California, 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. See "METROPOLITAN'S WATER DELIVERY SYSTEM–Primary Facilities and Method of Delivery – State Water Project" in this Appendix A.

State Water Contract

Terms of the Contract. In 1960, Metropolitan signed a water supply contract (as amended, the "State Water Contract") with DWR to receive water from the State Water Project. Metropolitan is one of 29 agencies and districts that have long-term contracts for water service from DWR (known collectively as the "State Water Contractors" and sometimes referred to herein as "Contractors"). Metropolitan is the largest of the State Water Contractors in terms of the number of people it serves (approximately ~~18.9~~19 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 supply contracts (approximately 49 percent for 2018). Metropolitan received its first delivery of State Water Project water in 1972.

Pursuant to the terms of the State water supply contracts, all water-supply related expenditures for capital and operations, maintenance, power, and replacement costs associated with the State Water Project facilities are paid for by the State Water Contractors as components of their annual payment obligations to DWR. In exchange, Contractors have the right to participate in the system, with an entitlement to water service from the State Water Project and the right to use the portion of the State Water Project conveyance system necessary to deliver water to them. Each year DWR estimates the total State Water Project water available for delivery to the State Water Contractors and allocates the available project water among the State Water Contractors in accordance with the State water supply contracts. DWR's total water supply availability projections are refined over the course of the calendar year based upon updated rainfall and snowpack values and allocations to the State Water Contractors are adjusted accordingly.

Metropolitan's State Water Contract has been amended a number of times since its original execution and delivery. Several of the amendments, entered into by DWR and various subsets of State Water

Contractors, relate to the financing and construction of a variety of State Water Project facilities and improvements and impose certain cost responsibility therefor on the affected Contractors, including Metropolitan. For a description of Metropolitan's financial obligations under its State Water Contract, including with respect to such amendments, see "METROPOLITAN EXPENSES–State Water Contract Obligations" in this Appendix A.

Amendments, approved by Metropolitan's Board in 1995, and since executed by DWR and 27 of the State Water Contractors (collectively known as the "Monterey Amendment"), among other things, made explicit that the Contractors' rights to use the portion of the State Water Project conveyance system necessary to deliver water to them also includes the right to convey non-State Water Project water at no additional cost as long as capacity exists. These amendments also expanded the ability of the State Water Contractors to carry over State Water Project water in State Water Project storage facilities, allowed participating Contractors to borrow water from terminal reservoirs, and allowed Contractors to store water in groundwater storage facilities outside a Contractor's service area for later use. These amendments provided the means for individual Contractors to increase supply reliability through water transfers and storage outside their service area. Metropolitan has subsequently developed and actively manages a portfolio of water supplies to convey through the California Aqueduct pursuant to these contractual rights. See "–Water Transfer, Storage and Exchange Programs." The Monterey Amendment is the subject of ongoing litigation. See "– Related Litigation–Monterey Amendment" below.

Under its State Water Contract, Metropolitan has a contractual right to its proportionate share of the State Water Project water that DWR determines annually is available for allocation to the Contractors. This determination is made by DWR each year based on existing supplies in storage, forecasted hydrology, and other factors. Available State Water Project water is then allocated to the Contractors in proportion to the amounts set forth in "Table A" of their respective State water supply contract. Pursuant to Table A of its State Water Contract, Metropolitan is entitled to approximately 46 percent of the total annual allocation made available to State Water Contractors each year.

Metropolitan's 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 periodically provides subsequent estimates throughout the year if warranted by developing precipitation and water supply conditions. From calendar years 2004 through ~~2017,~~2018, 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 under "–Water Transfer, Storage and Exchange Programs" below), 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 ~~2017,~~2018, DWR's allocation to State Water Contractors was ~~85~~35 percent of contracted amounts, or ~~1,625,000~~669,025 acre-feet, for Metropolitan.

On November 30, ~~2017,~~2018, DWR announced an initial calendar year ~~2018~~2019 allocation of ~~15~~10 percent. On January ~~29, 2018,~~25, 2019, DWR increased the allocation estimate to ~~20 percent. On April 24, 2018, DWR~~15 percent. Improved hydrologic conditions, including above-average precipitation in the month of January, led to a further allocation increase to 35 percent on February 20, 2019. DWR again increased the allocation estimate ~~to 30 percent. The allocation estimate was increased again on May 21, 2018, to 35~~on March 20, 2019 to 70 percent. The current allocation estimate of ~~35~~70 percent reflects ~~recent precipitation,~~substantial improvements in runoff~~,~~ forecasts and ~~existing~~ storage in State Water Project conservation reservoirs~~. In addition to the recent hydrologic conditions, the current allocation also reflects low storage levels in Lake Oroville due to the spillway incident (described under " 2017 Oroville Dam Spillway Incident" below) and the federally mandated environmental restrictions that have been imposed upon water deliveries from the Bay-Delta, including the biological opinions discussed below. See " Endangered Species Act and Other Environmental Considerations — Endangered Species Act Considerations — State Water Project — Delta Smelt and Salmon Federal ESA Biological Opinions." If~~

~~necessary, Metropolitan may augment its State Water Project deliveries using withdrawals from its storage programs along the State Water Project and through water transfer and exchange programs.~~ aided by the third wettest February on record in the Northern Sierra since 1921. In light of current water conditions in California and the estimated ~~2018~~2019 allocation, projected ~~demands~~supplies are expected to ~~roughly balance with~~exceed projected demands. If available~~ supplies. If necessary~~, Metropolitan can utilize its storage programs to ~~ensure~~store supplies ~~balance with demands. See " Water Transfer, Storage and Exchange Programs."~~to meet future demands. Changes to the 2019 allocation may occur and are dependent on the developing hydrologic conditions.

The term of Metropolitan's State Water Contract currently extends to December 31, 2035 or until all DWR bonds issued to finance construction of project facilities are repaid, whichever is longer. Upon expiration of the State Water Contract term, Metropolitan has the option to continue service under substantially the same terms and conditions. Metropolitan and other State Water Contractors have undertaken negotiations with DWR to extend their State water supply contracts. In June 2014, DWR and the State Water Contractors reached an Agreement in Principle (the "Agreement in Principle") on an amendment to the State water supply contract to extend the contract and to make certain changes related to financial management of the State Water Project in the future. DWR and 25 of the State Water Contractors, including Metropolitan, have signed the Agreement in Principle. Under the Agreement in Principle, the term of the State water supply contract for each Contractor that signs an amendment would be extended until December 31, 2085. The Agreement in Principle served as the "proposed project" for purposes of environmental review under the California Environmental Quality Act ("CEQA"). DWR issued a Notice of Availability of the Draft Environmental Impact Report ("EIR") for the proposed project on August 17, 2016. The public review period ended October 17, 2016. State law requires DWR to make a presentation to the State Legislature at an informational hearing at least 60 days prior to final approval of a State water supply contract extension. That hearing occurred on September 11, 2018. ~~It is anticipated that DWR will certify~~DWR released the ~~final EIR and issue its~~Final EIR on November 16, 2018, and certified the Final EIR and issued a Notice of Determination~~. The final EIR will serve as the basis for DWR and the individual State Water Contractors to determine whether to approve~~ on December 11, 2018. Concurrently, Metropolitan considered the certified Final EIR and approved the water supply contract extension amendment~~.~~ at its December 11, 2018 board meeting. On January 8, 2019, North Coast Rivers Alliance and others filed petition for writ of mandate and complaint for declaratory and injunctive relief challenging DWR's final EIR and approval of the State Water Contract Extension Amendment. On January 10, 2019, Planning and Conservation League and others filed petition for writ of mandate challenging DWR's final EIR and approval of the State Water Contract Extension Amendment. Mandatory settlement conferences were held on February 22, 2019 but the administrative records have not been prepared and no briefing has occurred in either action. Any adverse impact of this litigation and rulings on Metropolitan's State Water Project supplies cannot be determined at this time.

Metropolitan and other State Water Contractors have undertaken separate negotiations with DWR to amend their State water supply contracts to clarify how costs for California WaterFix will be allocated. Contractors are also negotiating modifications to the terms of the existing State water supply contract to clarify the criteria applicable to single and multi-year water transfers and exchanges. Any modifications to the State water supply contract will have to be approved by all State Water Contractors. See also "–California WaterFix."

Related Litigation–Monterey Amendment. On May 4, 2010, DWR completed an EIR and concluded a remedial CEQA review for the Monterey Amendment (described under " – Terms of the Contract" above), which reflects the settlement of certain disputes regarding the allocation of State Water Project water. 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). In January

2013, the Court ruled that the validation cause of action in Central Delta I was time barred by the statute of limitations. The court also held that DWR must complete a limited scope remedial CEQA review addressing the potential impacts of the Kern Water Bank, a portion of the Monterey Amendment that does not directly affect Metropolitan. The court also ruled that the State Water Project may continue to be operated under the terms of the Monterey Amendment while the remedial CEQA review is prepared and leaves in place the underlying project approvals while DWR prepares the remedial CEQA review. Plaintiffs appealed. Briefing by the parties was completed, but no date for oral argument has been set. ~~Any adverse impact of this litigation and rulings on Metropolitan's State Water Project supplies cannot be determined at this time.~~

In September 2016, DWR certified the Final Revised Draft EIR for the Monterey Amendment, recorded a Notice of Determination, and filed papers in the trial demonstrating compliance with the court's order for remedial CEQA review. On October 21, 2016, the petitioner group from Central Delta I and a new lead petitioner, Center for Food Safety, filed litigation against DWR challenging this EIR and named Metropolitan and the other State Water Project contractors as respondent parties. On October 2, 2017, the court denied Center for Food Safety's petition. Plaintiffs appealed. Briefing in this appeal has been completed. No date for oral argument has been set. Any adverse impact of ~~this~~any of the litigation and rulings relating to the Monterey amendment on Metropolitan's State Water Project supplies cannot be determined at this time.

2017 Oroville Dam Spillway Incident

Oroville Dam, the earthfill embankment dam on the Feather River which impounds Lake Oroville, is operated by DWR as a facility of the State Water Project. On February 7, 2017, the main flood control spillway at Oroville Dam, a gated and concrete lined facility, experienced significant damage as DWR released water to manage higher inflows driven by continued precipitation in the Feather River basin. The damaged main spillway impaired DWR's ability to manage lake levels causing water to flow over the emergency spillway structure, an ungated, 1,730 foot long concrete barrier located adjacent to and north of the main flood control spillway structure. Use of the emergency spillway structure resulted in erosion that threatened the stability of the emergency spillway structure. This concern prompted the Butte County Sheriff, on February 12, 2017, to issue an evacuation order for approximately 200,000 people living in Oroville and the surrounding communities.

On ~~April 6, 2017, DWR released details of a recovery plan designed to ensure that by November 1, 2017, the main spillway would be reconstructed sufficiently to handle flows of 100,000 cubic feet per second ("cfs") and such initial work on the main spillway was completed as planned. The complete recovery or replacement of both damaged spillway structures is being done in multiple phases due to the enormity of the project and the time limitations of the construction season. Reconstruction work is ongoing and once completed will return the facility to the~~November 1, 2018, DWR completed reconstruction of the main spillway to its original design capacity of approximately 270,000 cubic feet per second ("cfs"), a capacity almost twice its highest historical outflow. Work on the emergency spillway was substantially completed in April 2019. Mitigation measures such as slope revegetation are expected to be completed in 2021. Although the full extent of the costs of the response and recovery efforts are unknown at this time, DWR has indicated that the total costs of the recovery and restoration project prior to any federal or other reimbursement are estimated to be approximately $1.1 billion. Cost estimates are based on actual and projected work and may be adjusted further as work continues through completion of the project in ~~2019. The~~2021. As of March 7, 2019, the Federal Emergency Management Agency ("FEMA") ~~has already~~had approved ~~and provided~~ reimbursement to DWR ~~for a significant portion of the emergency response costs for this incident. FEMA is currently evaluating information related to the recovery and construction phases of the project to determine eligibility for these phases. As of September 5, 2018, FEMA has~~of $128 million for emergency response work and $205 million for spillway reconstruction, with total approved reimbursement of $~~87.4 million of the $116.5 million submitted by DWR. DWR will continue to submit expenditures to FEMA for reimbursement~~333 million. FEMA has excluded costs for the upper spillway reconstruction and emergency spillway repair from its approval. DWR is appealing that decision and has indicated that it will advocate for

reimbursement of 75 percent of all costs. FEMA funding is generally available to recover costs to restore facilities damaged as a result of natural disasters to their pre-disaster condition. Any costs to be paid for by the State Water Contractors under the State water supply contracts are expected to be financed long-term with DWR bonds. Metropolitan is unable to assess at this time what costs it will ultimately incur as a State Water Contractor associated with the spillway repairs.

~~Members of the U.S. Army Corps of Engineers, the Federal Energy Regulatory Commission ("FERC"), the State Division of Safety of Dams, as well as dam experts on a board of consultants and an independent forensic team remain actively engaged throughout the project.~~

~~As noted above, the State Water Project water allocation to State Water Contractors for calendar year 2018 is currently 35 percent of contracted amounts. Despite the record wet conditions in 2017, Oroville water levels were lowered to facilitate the reconstruction effort and ensure safe working conditions. Consequently, less water was available to allocate going into calendar year 2018.~~

Bay-Delta Proceedings Affecting State Water Project

General. In addition to being a source of water for diversion into the State Water Project, the Bay-Delta is the source of water for local agricultural, municipal and industrial needs, and also supports significant resident and anadromous fish and wildlife resources and important recreational uses of water. Both the State Water Project's upstream reservoir operations and its Bay-Delta diversions can at times affect these other uses of Bay-Delta water directly, or indirectly, through impacts on Bay-Delta water quality. A variety of proceedings and other activities are ongoing with the participation of various State and federal agencies, as well as California's environmental, urban and agricultural communities, in an effort to develop long-term, collectively-negotiated solutions to the environmental and water management issues concerning the Bay-Delta, and Metropolitan actively participates in these proceedings. Metropolitan cannot predict the ultimate outcome of any of the litigation or regulatory processes described below, but believes that a materially adverse impact on the operation of State Water Project pumps, Metropolitan's State Water Project deliveries or Metropolitan's water reserves could result.

SWRCB Regulatory Activities and Decisions. The State Water Resources Control Board (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 permits.

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 the 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 ongoing drought conditions in 2014 and 2015, DWR and the Bureau of Reclamation requested temporary relief from certain WQCP standards and filed petitions 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 for 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 and disclosed the environmental impacts of a 30-year plan to improve the Bay-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 proposed an alternative implementation strategy and new alternatives to the BDCP to provide for the protection of water supplies conveyed through the Bay-Delta and the restoration of the ecosystem of the Bay-Delta, termed "California WaterFix" and "California EcoRestore," respectively. In this alternative approach, DWR and the Bureau of Reclamation would implement planned water conveyance improvements as a stand-alone project (California WaterFix, as further described below) that would seek incidental take authorization for an unspecified period and would include only limited amounts of habitat restoration. The habitat restoration to be required would be directly related to construction mitigation and the associated costs of such mitigation which would be underwritten by the public water agencies participating in the California WaterFix project. Ecosystem improvements and habitat restoration more generally (California EcoRestore) would be undertaken under a more phased approach than previously contemplated by the BDCP and would not be linked with the California WaterFix project or permits. Accelerated restoration actions totaling 30,000 acres of tidal marsh habitat were proposed to be undertaken in the coming decade to provide public benefits for listed fish in the Bay-Delta. Subsequent actions would be based on the proven merits of restoration. (See also "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations – State Water Project.")

The Delta Reform Act of 2009 (the "Delta Reform Act") established the Delta Stewardship Council (the "Council"), which is required to develop, adopt, and oversee implementation of a comprehensive management plan for the Delta (the "Delta Plan"). The Delta Plan is required to further the State's coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Bay Delta ecosystem. The Delta Reform Act granted the Council specific regulatory and appellate authority over certain actions that take place in whole or in part in the Sacramento-San Joaquin Delta and Suisun Marsh (Delta), referred to as "covered actions."

State and local agencies are required to certify consistency with the applicable regulatory policies when carrying out, approving, or funding a covered action prior to initiating the implementation of that action. On July 27, 2018, DWR submitted a Certification of Consistency for the California WaterFix (the "Certification") to the Council. On August 27, 2018, nine appeals were filed with the Council alleging that California WaterFix is not consistent with the Delta Plan, and as a result of the alleged inconsistencies, the project would adversely affect achieving one or both of the coequal goals. The Council held a public hearing on October 24-26, 2018 to receive testimony from the parties and the Delta Protection Commission on the issue of whether DWR's Certification is supported by substantial evidence in the administrative record. On November 8, 2018, Delta Council staff issued a Draft Determination recommending that the Council conclude that substantial evidence does not exist in the record to support DWR's findings that California WaterFix is consistent with five of the nine applicable Delta Plan policies, and that the Council remand the Certification to DWR. The Council held a public workshop on the Draft Determination on November 15-16,

2018. On December 7, 2018, DWR sent a letter to the Council withdrawing the Certification of Consistency for the California WaterFix and stated their plan to resubmit the application with changes in 2019.

On February 12, 2019, recently elected Governor Gavin Newsom presented at the State of the State address a conceptual proposal supporting a single-tunnel configuration for California WaterFix. On March 1, 2019, DWR and the Bureau of Reclamation sent a request to the SWRCB to temporarily place their petition for a change in point of diversion (an ongoing water right proceeding) for the California WaterFix in abeyance and issue a temporary 60 day stay on all proceedings for the California WaterFix change in point of diversion. DWR and the Bureau of Reclamation indicated that the request was being submitted in light of the Governor's State of the State address to allow DWR sufficient time to assess the effects on the California WaterFix and the nature and the extent the effects would have on any new permit and planning work for California WaterFix. The request for a 60-day stay of the proceedings was granted by the SWRCB on March 5, 2019.

California WaterFix

History and Description of the Project. California WaterFix is a project that was approved by DWR in July 2017 as an improvement to the State Water Project. ~~Upon~~As approved by DWR, upon completion, ~~it~~California WaterFix would provide new conveyance facilities for the transportation of State Water Project and Central Valley Project water from the north Delta, principally from three new intakes through two 30-mile long tunnels running under the Delta, to the existing aqueduct systems in the south Delta. The existing State Water Project Delta water conveyance system needs to be improved and modernized to address operational constraints on pumping in the south Delta as well as risks to water supplies and water quality from climate change, earthquakes, and flooding. The State Water Project is subject to biological opinions and incidental take permits that substantially limit the way DWR operates the State Water Project. Therefore, under the California WaterFix, DWR ~~will~~would extend the delivery system from new north Delta water intakes on the Sacramento River to a new forebay in the south Delta to provide additional flexibility in operating the State Water Project. As configured, the total maximum north Delta diversion intake capacity would be 9,000 cfs.

In early 2018, DWR announced that it may consider staged implementation of the project in the future. The initial phase would consist of 6,000 cfs of diversion capacity through two intakes and one tunnel under the Delta. The remaining 3,000 cfs facilities would be constructed at a later date. Subsequently, DWR announced it would not consider staged implementation, and Metropolitan's Board approved participation in California WaterFix at up to 64.6~~-~~ percent of project costs to move the project forward as described in more detail below. ~~Depending on the manner of implementing the project, the benefits to Metropolitan could be materially impacted.~~

The California WaterFix is expected to improve the reliability of Southern California's water delivery system by updating aging infrastructure. In addition to the more efficient and effective delivery of water supplies through the Delta, DWR has identified other benefits of the California WaterFix, including allowing for more operational flexibility to deliver water through the Delta, and enabling a more natural flow of rivers in the Delta to protect sensitive fish species. It would provide greater opportunity to capture and convey water from storm flows in wet and above-normal hydrological weather years to the State Water Contractors to refill reservoirs and replenish groundwater basins. It would also improve the quality of water for export, and reduce climate change risk of increased salinity from rising sea levels. The California WaterFix would additionally help reduce the risks from a catastrophic seismic event in the Delta.

As noted under "–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities," above, subsequent to Metropolitan's Board action approving Metropolitan's participation in California WaterFix, in his first State of the State address, delivered on February 12, 2019, Governor Gavin Newsom laid out a new direction for Delta conveyance and expressed his support for a revised project consisting of a single tunnel. DWR is assessing the nature and extent of any permit and

planning work that may be necessary as a result of the potential change in scope of the California WaterFix described in the Governor's address, including the impact, if any, on the environmental approvals for the project.

Depending on the scope of any changes to, and the manner of implementing the project, the benefits to Metropolitan could be materially impacted.

DWR estimates that it will take approximately 15 years to substantially complete the California WaterFix after commencement of construction. In July 2017, DWR filed a validation action to legally establish its authority to issue revenue bonds to finance California WaterFix. More than a dozen public agencies and six environmental groups filed answers opposing the validation action; Metropolitan and three other public water agencies filed answers in support. A number of other lawsuits with respect to the project have also been filed as described below. Certain permits and other approvals necessary to commence construction remain to be obtained. Accordingly, DWR has not yet commenced construction of the project.

Based upon DWR's preliminary estimate, the capital costs of the approved California WaterFix project are estimated to be approximately $17 billion (in 2017 dollars). The preliminary cost estimate includes contingencies for construction costs and unknown expenses related to land acquisition. Given the scope of the project and the length of time it ~~will~~would take DWR to construct the project, this cost estimate may change based on numerous factors and the actual cost of construction of the project may differ materially. The timing of construction and costs of the project will also be impacted as a result of any change in scope of the California WaterFix as described in the Governor's address.

Financial Exposure to Metropolitan. On July 10, 2018, Metropolitan's Board approved the funding of up to 64.6 percent, approximately $10.8 billion in 2017 dollars, of the overall capital cost of the California WaterFix necessary to allow for the construction of the full project.

Metropolitan's financial exposure to California WaterFix ~~will~~, as approved by the Board, would occur in two forms: as a State Water Contractor and through various forms of additional financial support that Metropolitan ~~will~~would contribute to the project. ~~Currently~~For the approved project, DWR ~~expects to~~would issue its own bonds to finance the portion of the project that ~~will~~would be repaid through the State Water Project water supply contracts (which DWR currently estimates to be approximately 67 percent of the project, based on the intended water delivery benefits). DWR plans to pay debt service on those bonds by placing the costs of debt service on the statement of charges for the State Water Project. Since Metropolitan's share of costs for California WaterFix under the State Water Contract is approximately 47 percent, if DWR issues its own bonds to finance this portion of the project, Metropolitan expects to pay 47 percent of the debt service costs on its State Water Contract statement of charges. These amounts are expected to constitute Capital Charges on the statement of charges, which means that, similar to other SWP Capital Charges, under Metropolitan's Master Senior Resolution and Master Subordinate Resolution (each defined under "METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds" in this Appendix A), Metropolitan's payment of these amounts would be after any payment of debt service on its own Water Revenue Bonds.

In addition to its share of State Water Project costs as a State Water Contractor, Metropolitan's July 10, 2018 Board action also authorized three additional forms of financial support for the project. First, the Board authorized ~~gap~~advance funding of the project, which is currently being provided (currently in the amount of up to $86 million), to allow DWR to continue work on the project while DWR continues its validation action. It is anticipated that Metropolitan will be reimbursed with interest for this ~~gap~~advance funding support from future bond proceeds. Second, Metropolitan is working with other State Water Contractors to enable DWR to issue its revenue bonds before the completion of its validation action. The Metropolitan Board authorized participation in a financing joint exercise of powers agency ("Financing JPA") which has been formed to issue bonds the proceeds of which would be applied to purchase the initial

DWR bonds. Metropolitan and other State Water Contractors would purchase the DWR bonds from the Financing JPA pursuant to an installment contract. The installment contract payments would secure the Financing JPA bonds. Under this structure, it is expected that Metropolitan would secure its obligation to make installment payments on a basis junior to its Water Revenue Bonds under either its Master Senior Resolution or Master Subordinate Resolution. If DWR loses its validation action, then Metropolitan would be fully responsible for its installment payments and would receive no funds from DWR. Currently, it is unknown the amount of DWR bonds that Metropolitan would support, but Metropolitan's current estimate of its share of the associated capital costs of the approved project in 2017 dollars to be financed is approximately $5.2 billion. Third, the Board authorized Metropolitan's General Manager to negotiate the acquisition of transfers of State Water Project water supplies in connection with the project, and to acquire, under the approved full project configuration, the remaining 33 percent conveyance capacity in the project from DWR. The acquisition of transfers from other State Water Contractors would be an additional expense and would require the approval of the Board. The current estimate of the capital costs associated with the acquisition of the remaining 33 percent conveyance capacity in 2017 dollars is approximately $5.6 billion. It is anticipated that Metropolitan would be able to wheel water or sell portions of the acquired conveyance capacity to entities seeking to use the project. Metropolitan expects that it would secure its obligations in connection with this entire amount on a basis junior to its Water Revenue Bonds under either its Master Senior Resolution or Master Subordinate Resolution.

If Metropolitan ~~takes~~were to provide all of these additional actions of financial support (and assuming that DWR is successful in its validation action), Metropolitan estimates that its total share of the costs of the approved project would be 64.6 percent, not including the acquisition of transfers. Based upon DWR's preliminary project cost estimate of $17 billion, that share of the costs would be approximately $10.8 billion. As noted above, this amount could be subject to material change. Based upon this estimate of capital costs and an estimate of total annual operation and maintenance costs of the project upon completion of $64 million per year (in 2017 dollars), Metropolitan has estimated that the total annual costs of its participation in the California WaterFix, as currently approved by DWR, would be approximately $515 million (in 2017 dollars) when fully operational (assuming the project is completed in the currently anticipated time frame).

Metropolitan's Estimated Costs and Rate Impacts. Metropolitan has projected that the impact on overall water rates and charges of an investment of ~~this~~the magnitude described above, based on Metropolitan's 2017-18 revenue requirements and assuming financing over a 40-year term at an assumed annual interest cost of 4.0 percent, would be an incremental increase in overall water rates and charges of approximately 2.2 percent per year over the anticipated construction timeline, or an approximate cumulative 33 percent at the end of 15 years. It is not possible to calculate the precise water rate impacts on retail ratepayers within Metropolitan's service area because of the wide variation of costs and water sources for each retail agency, and the fact that each retail agency makes its own retail rate decisions based on various factors. However, Metropolitan has estimated cost impacts for the average Southern California household. Metropolitan estimates that the average cost impact on households within its service area is approximately $4.80 per month, in 2017 dollars, assuming approximately 70 percent of water users are residential and an estimated 6.2 million occupied households within the Metropolitan service area.

The incremental projected costs associated with participation by Metropolitan in the California WaterFix at the level approved on July 10, 2018 are estimated to increase Metropolitan's long-term projected average 3.0 percent annual rate increases by approximately 1.1 percent to 4.1 percent. Upon the successful completion of the California WaterFix, as envisioned, any water revenues that may be generated in the future from potential wheeling or delivery of water by Metropolitan utilizing the additional acquired capacity in the project could offset some of the projected financial impact of Metropolitan's participation; however, specific future actions are speculative and subject to separate approvals, hence receipt of any such revenues cannot be assured and is not included in the above estimates.

Factors Affecting Metropolitan's Financial Exposure to and Estimated Costs and Rate Impacts of the California WaterFix. Metropolitan's projections of future costs of the California WaterFix are based upon a number of assumptions, including those identified above. The actual cost impacts to Metropolitan of the California WaterFix will depend on a variety of factors, including among other things, the total costs of construction of the project and the interest rates at which any future financing of project costs can be implemented. Moreover, as further described below, the cost estimates and timing of construction of the project will change in the event the scope and configuration of the project is modified as described in the Governor's State of the State address. Construction projects are subject to ordinary construction risks and delays applicable to projects of their kind, examples of which include contractor nonperformance; inclement weather affecting timeliness of completion; the costs and availability of, or delivery schedule for, land acquisition, equipment, components, materials, labor or subcontractors; issues regarding compliance with applicable environmental standards; natural hazards or seismic events during construction; and changing economic conditions (such as rising interest rates and inflation), the occurrence of any of which could increase construction costs substantially. Moreover, actual construction bids could be higher than projected for purposes of the preliminary cost estimate described herein. The scope and magnitude of, and the extended construction period required for, a project of the nature of the California WaterFix may exacerbate these risks. Further, as described below, the California WaterFix is the subject of ongoing litigation. Any delays in the implementation due to litigation or other causes will increase the risk of cost escalation. Finally, in the event the project is forestalled from implementation or abandoned prior to completion, expenditures incurred by Metropolitan prior to that time may represent sunk costs.

Completion of California WaterFix is subject to numerous lawsuits and other actions. California WaterFix is currently subject to several lawsuits and Metropolitan expects that additional lawsuits may be filed in the future with respect to the project. The current lawsuits primarily relate to DWR's powers to finance and construct the project and various environmental approvals and related matters. These lawsuits challenge multiple aspects of the project and, if DWR is unsuccessful in any of these actions, it could cause delays, increases of costs of the project, changes in scope to the project and/or mitigation, or even cancellation of the project. Actions taken by Metropolitan in connection with its approved participation in the project ~~could~~have also ~~be~~been the subject of litigation. Subsequent to actions taken on April 10, 2018 by Metropolitan's Board in connection with the California WaterFix, Metropolitan received a notice from two organizations alleging certain violations of the Ralph M. Brown Act (the California state law governing how meetings of governmental agencies in the State are agendized and conducted) in connection with that meeting. Although Metropolitan disagrees with the contentions in the notice, to ensure there is no question concerning the validity of the Board's consideration of, and its vote on, whether to authorize increased funding of California WaterFix and related actions, the matter was presented to the Board anew for consideration and a vote on July 10, 2018, at which time the Board voted to rescind the April 10, 2018 approval and authorize participation in California WaterFix as described above. On September 7, 2018, two organizations filed a complaint alleging that the Board's authorization to fund up to 64.6 percent of the costs of California WaterFix is invalid because it violates certain California Constitutional restrictions on rates and property tax increases under Proposition 26 and Proposition 13, certain statutory limitations under Metropolitan's enabling act and the joint exercise of powers act, and does not satisfy certain other alleged requirements. ~~Metropolitan is unable to predict at this time whether and/or the extent to which the California WaterFix will be implemented~~On March 15, 2019, the court granted Metropolitan's demurrer, without leave to amend, to all causes of action. Plaintiff organizations' last day to file an appeal is May 9, 2019. Future actions taken by Metropolitan in connection with its participation in the project could also be the subject of litigation. In addition to the legal proceedings ~~described above, various~~referenced above, regulatory consideration of the project before the Council and a petition for a change in diversion point in water right proceedings before the SWRCB for the project have been ongoing. See "–State Water Project –Bay-Delta Proceedings Affecting State Water Project – Bay-Delta Planning Activities" above. Various other permits and approvals will also be required for the project. There can be no assurance all of the permits and approvals will be obtained from the responsible parties in a timely manner and acceptable form, or at all, or that additional litigation will not result from the related proceedings.

Further, ~~the outcome of any litigation opposing the project cannot be known. Any such litigation could result in delays or, if successful, otherwise materially adversely impair or prevent the development, implementation or completion of the project.~~as described above, on February 12, 2019, Governor Gavin Newsom stated in his State of the State address that he does not support the current twin tunnel configuration for California WaterFix, but does support a single tunnel facility. Depending on how California WaterFix may be reconfigured pursuant to the Governor's direction, DWR may need to obtain new environmental clearances and Metropolitan's Board may need to take new actions regarding participation in and funding of the project. Metropolitan held a Board workshop on March 26, 2019, during which it reviewed the various single tunnel alternatives that were analyzed by the State during the environmental review process for the project, including a 3,000 cfs diversion capacity one tunnel option, and the 6,000 cfs diversion capacity staged implementation option previously considered by DWR. The expected benefits and estimated costs of each of these alternatives were presented. Based upon preliminary estimates, the total capital costs of a 6,000 cfs capacity alternative are estimated to be $11.1 billion in 2017 dollars ($11.8 billion as adjusted to 2019 dollars) and the total capital costs of a 3,000 cfs capacity alternative are estimated to be $9.2 billion in 2017 dollars ($9.7 billion as adjusted to 2019 dollars). No decisions have been made by DWR with respect to the proposed change in scope of the project and a number of key issues that would need to be addressed remain in connection with any such change. The lawsuits, administrative proceedings, and other matters described herein in regard to California WaterFix may be delayed or impacted in other ways as a result of the potential change in scope of the California WaterFix, as described in the Governor's address, and the specific effect of any such change in scope of any particular matter is unknown at this time. Metropolitan is unable to predict at this time whether and/or the extent to which the California WaterFix will be implemented. Moreover, the outcome of any litigation or other proceedings involving the project cannot be known. Any such litigation or proceedings could result in delays or, if decided adversely, otherwise materially impair or prevent the development, implementation or completion of the project as originally approved or as it may be changed as a result of the Governor's announcement.

Colorado River Aqueduct

Background

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 (collectively, 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 can also 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.

Construction of the CRA, which is owned and operated by Metropolitan, was undertaken by Metropolitan to provide for the transportation of its Colorado River water entitlement to its service area. The CRA originates at Lake Havasu on the Colorado River and extends approximately 242 miles through a series of pump stations and reservoirs 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. Metropolitan first delivered CRA water to its member agencies in 1941.

Colorado River Water Apportionment and Seven-Party Agreement

Pursuant to the federal Boulder Canyon Project Act of 1928, 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 (the "Lower Basin States"). Under an agreement entered into in 1931 among the California entities that expected to receive a portion of California's apportionment of Colorado River water (the "Seven-Party Agreement") and which 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. 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. As a result, California has limited its annual use to 4.4 million acre-feet since 2003, not including supplies made available under water supply programs such as intentionally-created surplus and certain conservation and storage agreements. In addition, a severe drought in the Colorado River Basin from 2000-2004 reduced storage in system reservoirs, ending the availability of surplus deliveries to Metropolitan. 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, and totaled over ~~677,000~~889,000 acre-feet in ~~2017~~2018. Average annual net deliveries for ~~2008~~2009 through ~~2017~~2018 were nearly ~~959,000~~957,000 acre-feet, with annual volumes dependent primarily on programs to augment supplies, including transfers of conserved water from agriculture. See " – Quantification Settlement Agreement" and " – Colorado River Operations: Surplus and Shortage Guidelines – Interim Surplus Guidelines." See also "–Water Transfer, Storage and Exchange Programs – Colorado River Aqueduct Agreements and Programs."

The following table sets forth the existing priorities of the California users of Colorado River water established under the 1931 Seven-Party Agreement.

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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	
2	Yuma Project in California not exceeding a gross area of 25,000 acres in California	3,850,000
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.

Quantification Settlement Agreement

The Quantification Settlement Agreement ("QSA"), executed by the Coachella Valley Water District ("CVWD"), Imperial Irrigation District ("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 were completed in 2009 and conserve over ~~95,000~~98,000 acre-feet annually. Metropolitan receives this water and delivers over ~~79,000~~77,000 acre-feet of exchange

water annually to the San Diego County Water Authority ("SDCWA"), plus any of the 4,850 acre-feet of mitigation water that is not used in that year, and provides 16,000 acre-feet of water annually by exchange to the United States for use by 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. Water became available for exchange with the United States following a May 17, 2017 ~~FERC~~ notice from the Federal Energy Regulatory Commission ("FERC") satisfying the last requirement of Section 104 of the San Luis Rey Indian Water Rights Settlement Act (Title I of Public Law 100-675, as amended). The QSA and related agreements also authorized the transfer of conserved water annually by IID to SDCWA (up to a maximum expected amount in 2021 of 205,000 acre-feet, then stabilizing to 200,000 acre-feet per year). Metropolitan also receives this water and delivers exchange water annually to SDCWA. See description under the caption "– Metropolitan and San Diego County Water Authority Exchange Agreement" below; see also "METROPOLITAN REVENUES–Principal Customers" in this Appendix A. Also included under the QSA is a 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. ~~The QSA and related agreements also authorized the transfer of water (up to a maximum expected amount in 2021 of 205,000 acre-feet) annually by IID to SDCWA. See description under the caption " Sale of Water by the Imperial Irrigation District to San Diego County Water Authority" below; 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 Palo Verde Land Management, Crop Rotation and Water Supply Program (described under "–Water Transfer, Storage and Exchange Programs –Colorado River Aqueduct Agreements and Programs" below), which provides up to approximately 133,000 acre-feet of water per year. (Amounts of Colorado River water received by Metropolitan in ~~2008~~2009 through ~~2017~~2018 are discussed under ~~the heading " Colorado River Aqueduct~~" –Colorado River Water Apportionment and Seven-Party Agreement" above.)

~~**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.~~

Metropolitan and San Diego County Water Authority Exchange Agreement

No facilities exist to deliver conserved water ~~from IID to SDCWA.~~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." Accordingly, in 2003, Metropolitan and SDCWA entered into an exchange agreement (the "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.".~~ 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 price 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–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 ~~2017, 179,326~~2018, 207,700 acre-feet were delivered to Metropolitan by SDCWA for exchange, consisting of ~~100,000~~130,000 acre-feet of IID conservation plus ~~79,326~~77,000 acre-feet of conserved water from the Coachella Canal and All-American Canal lining projects.

Colorado River Operations: Surplus and Shortage Guidelines

General. The Secretary of the Interior is vested with the responsibility of managing the mainstream waters of the lower Colorado River pursuant to federal law. Each year, the Secretary of the Interior is required to declare the Colorado River water supply availability conditions for the Lower Basin States in terms of "normal," "surplus" or "shortage" and has adopted operations criteria in the form of guidelines to determine the availability of surplus or potential shortage allocations among the Lower Basin States and reservoir operations for such conditions.

Interim Surplus Guidelines. In January 2001, the Secretary of the Interior adopted guidelines (the "Interim Surplus Guidelines"), initially for use through 2016, in determining if there is surplus Colorado River water available for use in California, Arizona and Nevada. The Interim Surplus Guidelines were amended in 2007 and now extend through 2026. The purpose of the Interim Surplus Guidelines was to provide mainstream users of Colorado River water, particularly those in California who utilize surplus flows, a greater degree of predictability with respect to the availability and quantity of surplus water. 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~~. In May 2002, the Southern Nevada Water Authority ("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 agreement, SNWA can request that Metropolitan store unused Nevada apportionment in California. The amount of water stored through 2014 under this agreement was approximately 205,000 acre-feet. In October 2015, SNWA and Metropolitan executed an additional amendment to the agreement under which Metropolitan paid SNWA approximately $44.4 million and SNWA stored an additional 150,000 acre-feet with Metropolitan during 2015. Of that amount, 125,000 acre-feet has been added to SNWA's storage account with Metropolitan, increasing the total amount of water stored to approximately 330,000 acre-feet. In subsequent years, SNWA may request recovery of the stored water. 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 plus inflation based on the amount of water returned. However, it is expected that SNWA will not request return of any of the water stored with Metropolitan before 2022.~~ , and Metropolitan has not received any surplus water since 2002.

Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead. In May 2005, the Secretary of the Interior directed the Bureau of Reclamation to develop additional strategies for improving coordinated management of the reservoirs of the Colorado River system. In November 2007, the Bureau of Reclamation issued a Final EIS regarding new federal guidelines concerning the operation of the Colorado River system reservoirs, particularly during drought and low reservoir conditions. These 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. Consistent with these legal protections, under the guidelines, Arizona and Nevada are first subject to the initial annual shortages identified by the Secretary up to 500,000 acre-feet.

The guidelines also created the Intentionally Created Surplus ("ICS") program, which allows the Lower Basin States to store conserved water in Lake Mead. Under this program, ICS water (water that has been conserved through an extraordinary conservation measure, such as land fallowing) is eligible for storage in Lake Mead by Metropolitan. See the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. The Secretary of the Interior delivers the stored ICS water to Metropolitan in accordance with the terms of December 13, 2007, January 6, 2010, and November 20, 2012 Delivery Agreements between the United States and Metropolitan. As of January 1, ~~2018,~~2019, Metropolitan had an estimated ~~479,000~~594,000 acre-feet in its ICS 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, ~~the Yuma Desalting Plant pilot run, and Intentionally Created Mexican Allocation converted to Binational ICS~~and international agreements that converted water conserved by Mexico to the United States, which have not been delivered to the region.

Since the 2007 Lower Basin shortage guidelines were issued for the coordinated operations of Lake Powell and Lake Mead, the Colorado River has continued to experience drought conditions. The seven Colorado River Basin States, the U.S. Department of Interior through the Bureau of Reclamation, and water users in the Colorado River basin, including Metropolitan, have been developing Drought Contingency Plans ("DCPs") to reduce the risk of Lake Powell and Lake Mead declining below critical elevations through 2026. ~~If approved by participating water agencies, the Lower Colorado River Basin DCP would be implemented through agreements among the water entitlement holders in the Lower Basin, including Metropolitan. The Lower Basin DCP and the implementing agreements would require water rights holders in Arizona, California, and Nevada to contribute additional water to Lake Mead storage if storage declines to predetermined elevations. Water entitlement holders would be able to meet contribution requirements in various ways, including use of existing ICS storage or by conserving additional water. Water contributed to Lake Mead under the DCP would be available for future recovery, although it would be subject to greater restrictions then existing ICS delivery provisions. In addition to DCP contributions, the Lower Basin DCP would incentivize ICS water to be stored in Lake Mead by increasing the limits on the amount of ICS that can currently be stored and the implementing agreements would ensure that water entitlement holders can take delivery of existing forms of ICS at lower elevations than current rules allow.~~

~~Although certain draft agreements related to the DCPs have been prepared, others are still being negotiated and Metropolitan is unable to predict what the final outcome of these efforts will be. Final agreements will require approval by the U.S. Department of Interior, seven Colorado River Basin States, and various water users within those states, including Metropolitan, and if approved by all such entities, the DCP would become effective following congressional legislation. Metropolitan's Board has not taken action on any of the draft agreements.~~

On December 11, 2018, Metropolitan's Board authorized Metropolitan's entering into seven agreements to implement the Lower Basin DCP on the proposed terms. The Lower Basin Drought Contingency Plan Agreement requires California, Arizona and Nevada to store defined volumes of water in Lake Mead at specified lake levels. California would begin making contributions if Lake Mead's elevation is projected to be at 1,045 feet above sea level or below on January 1. Lake Mead elevation in January 2019 was 1,085 feet. Depending on the lake's elevation, California's contributions would range from 200,000 to 350,000 acre-feet a year ("DCP Contributions"). A set of proposed intrastate implementation agreements would have divided California's obligation to make DCP Contributions among Metropolitan, IID, Palo Verde Irrigation District ("PVID"), and CVWD. Implementation of the Lower Basin DCP enhances

Metropolitan's ability to store water in Lake Mead and to ensure that water in storage can be delivered at a later date. The Lower Basin DCP increases the total volume of water that California may store in Lake Mead by 200,000 acre-feet, which Metropolitan will have the right to use. Water stored as ICS will be available for delivery so long as Lake Mead's elevation remains above 1,025 feet. Previously, that water would likely have become inaccessible below a Lake Mead elevation of 1,075 feet. DCP Contributions may be made through conversion of existing forms of ICS. These types of DCP Contributions become DCP ICS. DCP Contributions may also be made by leaving water in Lake Mead that there was a legal right to have delivered. This type of DCP Contribution becomes system water and may not be recovered. Rules are set for delivery of DCP ICS through 2026 and between 2027-2057. If any DCP ICS is left in Lake Mead after 2057, it will be lost.

Subsequent to Metropolitan's December 11, 2018 Board action, the Commissioner of the Bureau of Reclamation established a deadline of March 18, 2019 for the participating water agencies to obtain the necessary authorization for the DCP agreements. The approval of the intrastate DCP agreements by IID's board of directors occurred on December 10, 2018; however, IID's board approval was suspended until certain conditions were met, including that the State of California and the United States governments have irrevocably committed to provide sufficient funding for full completion of a 10-year Salton Sea management plan, a condition that could not likely be secured by the federal deadline for the required DCP authorizations.

In order to protect Metropolitan's access to its ICS and advance the implementation of the Lower Basin DCP, on March 12, 2019, Metropolitan's Board authorized Metropolitan to make California's contributions if IID, PVID, and/or CVWD did not participate in the Lower Basin DCP. IID's Board has not authorized its agency to participate in the Lower Basin DCP. Both PVID and CVWD's boards have authorized their respective agencies' participation in the Lower Basin DCP. Thus, Metropolitan will be directly responsible for 85% of California's DCP Contributions under the Lower Basin DCP. PVID will be responsible for 8% of California's DCP Contributions, which Metropolitan will make pursuant to Metropolitan's Land Management, Crop Rotation and Water Supply Program with PVID (described under "– Water Transfer, Storage and Exchange Programs –Colorado River Aqueduct Agreement and Programs" below). CVWD will be responsible for 7% of California's required DCP Contributions.

Congress passed, and on April 16, 2019, the President signed legislation that directs the Secretary of the Interior to sign and implement four DCP agreements related to the Upper and Lower Basin DCPs without delay. It is expected that these agreements will be executed and the Upper and Lower Basin DCPs will become effective in May 2019.

On April 22, 2019, Metropolitan was served notice of a CEQA lawsuit filed by IID against Metropolitan. In this lawsuit, IID is seeking to vacate Metropolitan's Board actions taken on December 11, 2018 and March 12, 2019 under CEQA and to block Metropolitan from implementing the Lower Basin DCP and any related agreements. Metropolitan is unable to assess at this time the likelihood of success of this litigation or any future claims, or their potential effect on the timing or likelihood of implementation of the Lower Basin DCP.

If implemented, the Lower Basin DCP will be effective through 2026. Beginning in 2020, the U.S. Department of Interior through the Bureau of Reclamation, the seven Colorado River Basin States, and water users in the Colorado River basin, including Metropolitan, are expected to begin work on the development of new shortage guidelines for the management and operation of the Colorado River after the term of the 2007 Lower Basin shortage guidelines ends in 2026.

Related Litigation–Navajo Nation Suit. 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 (described under " – Colorado River Operations: Surplus and Shortage Guidelines – Interim Surplus Guidelines" above) 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, Central Arizona Water Conservation District ("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 were 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 (described under "– Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead" above). Metropolitan has used these new guidelines to store over ~~500,000~~1,000,000 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. 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. On December 4, 2017, the Ninth Circuit of Appeals held that the Navajo Nation lacked standing for its National Environmental Policy Act claims, but that the breach of trust claim was not barred against the federal defendants. The court remanded the breach of trust claim to the district court to consider on the merits. Metropolitan is unable to assess at this time the likelihood of success of this litigation or any future claims, or their potential effect on Colorado River water supplies.

Endangered Species Act and Other Environmental Considerations

Endangered Species Act Considerations - State Water Project

General. DWR has altered the operations of the State Water Project to accommodate species of fish listed as threatened or endangered under the Federal Endangered Species Act ("ESA") or California ESA. 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. These changes in project operations have limited the flexibility of the State Water Project and adversely affected State Water Project deliveries to Metropolitan. State Water Project operational requirements may be further modified in the future under new biological opinions for listed species under the Federal ESA or by the issuance by the California Department of Fish and Wildlife ("CDFW") 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 the water supply available for export. Such operational constraints are likely to continue until long-term solutions to the problems in the Bay-Delta are identified and implemented. See also "–State Water Project – Bay-Delta Proceedings Affecting State Water Project."

The Federal ESA requires that before any federal agency authorizes funds or carries out an action that may affect a listed species or designated critical habitat, 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 December 15, 2008 on the impacts of the State Water Project and the federal Central Valley Project on Delta smelt. On June 4, 2009, the National Marine Fisheries Service released a biological opinion for salmonid species. The water supply restrictions imposed by these biological opinions on Delta smelt and salmonid species 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 2017 are estimated to be 2.1 million acre-feet.

Endangered Species Act Considerations - Colorado River

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 (commencing in 2005). 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).

Invasive Species - Mussel Control Programs

Zebra and quagga mussels are established in many regions of the United States. Mussels can reproduce quickly and, if left unmanaged, can ~~clog~~reduce flows by clogging intakes and raw water conveyance systems, alter or destroy fish habitats, and affect lakes and beaches. Mussel management activities ~~can~~may require changes in water delivery protocols to reduce risks of spreading mussel populations, and increase operation and maintenance costs.

In January 2007, quagga mussels were discovered in Lake Mead. All pipelines and facilities that transport raw Colorado River water are considered to be infested with quagga mussels. ~~In 2007,~~ Metropolitan ~~developed~~has a quagga mussel control plan, approved by the CDFW to address the presence of mussels in the CRA system and ~~submitted it to California Department of Fish and Wildlife. The plan was renewed in 2013, and an updated plan will be submitted in 2018.~~limit further spread of mussels. Year-round routine monitoring for mussel larvae has been conducted at Lake Havasu, selected locations in the CRA system, and non-infested areas of Metropolitan's system and some southern locations in the State Water Project. Recent shutdown inspections have demonstrated that control activities effectively limit mussel infestation in the CRA and prevent the further spread of mussels to other bodies of water and water systems. Metropolitan's costs for controlling quagga mussels in the CRA system ~~are between $4 million and~~over the past 12 years has been approximately $5 million per year.

Established mussel populations are located within ten miles of the State Water Project. A limited number of mussels have also been detected in State Water Project supplies but there is currently no evidence of established mussel populations, nor have they impacted Metropolitan's State Water Project deliveries. To prevent the introduction and further spread of mussels into the State Water Project, the Bay-Delta, and other uninfested bodies of water and water systems, DWR has also developed quagga mussel control plans and has partnered with other State and federal agencies on a number of related activities. Metropolitan coordinates mussel monitoring and control activities with these agencies.

Water Transfer, Storage and Exchange Programs

General

To supplement its State Water Project and Colorado River water supplies, Metropolitan has developed and actively manages a portfolio of water supply programs, including water transfer, storage and exchange agreements, the supplies created by which are conveyed through the California Aqueduct of the State Water Project, utilizing Metropolitan's rights under its State Water Contract to use the portion of the State Water Project conveyance system necessary to deliver water to it, or through available CRA capacity. Consistent with its IRP, Metropolitan will continue to pursue voluntary water transfer and exchange programs with State, federal, public and private water districts and individuals to help mitigate supply/demand imbalances and provide additional dry-year supply sources. A summary description of certain of Metropolitan's supply programs are set forth below. In addition to the arrangements described below, Metropolitan is entitled to storage and access to stored water in connection with various other storage programs and facilities. See "–Colorado River Aqueduct" above, as well as the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

State Water Project Agreements and Programs

In addition to the basic State Water Project contract provisions, Metropolitan has other contract rights that accrue to the overall value of the State Water Project. Because each Contractor is paying for physical facilities, they also have the right to use the facilities to move water supplies associated with agreements, water transfers and water exchanges. Metropolitan has entered into agreements and exchanges that provide additional water supplies.

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. California's agricultural activities consume approximately 34 million acre-feet of water annually, which is approximately 80 percent of the total water used in the State for agricultural and urban uses and 40 percent of the water used for all consumptive uses, including environmental demands. Voluntary water transfers and exchanges with agricultural users can make a portion of this agricultural water supply available to support the State's urban areas. The portfolio of supplemental supplies that Metropolitan

has developed to be conveyed through the California Aqueduct extend from north of the Bay-Delta to Southern California. Certain of these arrangements are also described below.

Castaic Lake and Lake Perris. Metropolitan has contractual rights to ~~store~~withdraw up to 65,000 acre-feet of water in Lake Perris (East Branch terminal reservoir) and 153,940 acre-feet of water in Castaic Lake (West Branch terminal reservoir). This storage provides Metropolitan with additional options for managing State Water Project deliveries to maximize yield from the project. Any water used must be returned to the State Water Project within five years or it is deducted from allocated amounts in the sixth year.

Metropolitan Article 56 Carryover. Metropolitan has the right to store its allocated contract amount for delivery in ~~the following year~~subsequent years. Metropolitan can store between 100,000 and 200,000 acre-feet, depending on the final water supply allocation percentage.

~~California's agricultural activities consume approximately 34 million acre-feet of water annually, which is approximately 80 percent of the total water used in the State 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. The portfolio of supplemental supplies that Metropolitan has developed to be conveyed through the California Aqueduct extend from north of the Bay-Delta to Southern California. Certain of these arrangements are described below.~~

Yuba River Accord. 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 Contractors, and the San Luis & Delta -Mendota Water Authority entered into separate agreements with DWR for the purchase of portions of the 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.

In addition to water made available under the Yuba River Accord, Metropolitan has developed groundwater storage agreements that allow Metropolitan to store available supplies in the Central Valley for return later. See also "METROPOLITAN'S WATER DELIVERY SYSTEM – Water Quality and Treatment" in this Appendix A for information regarding a recently adopted water quality regulation for 1,2,3-Trichloropropane ("TCP") that impacts certain of Metropolitan's groundwater storage programs. Metropolitan has also developed exchanges and transfers with other State Water Contractors.

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 storage

account balance under the Arvin-Edison/Metropolitan Water Management Program as of January 1, ~~2018~~2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. As a result of detecting TCP in Arvin-Edison wells, Metropolitan has temporarily suspended operation of the program until the water quality concerns can be further evaluated and managed.

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 storage account balance under the Semitropic program as of January 1, ~~2018~~2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

Kern Delta Storage Program. Metropolitan entered into an agreement with Kern Delta Water District ("Kern Delta") in May 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 to permit Metropolitan, at Metropolitan's option, a return of up to 50,000 acre-feet of water annually during hydrologic and regulatory droughts. Metropolitan's storage account balance under this program as of January 1, 2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

Mojave Storage Program. Metropolitan entered into a groundwater banking and exchange transfer agreement with Mojave Water Agency ("Mojave") in October 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. The agreement allows Metropolitan to annually withdraw Mojave State Water Project contractual amounts, after accounting for local needs. Under a 100 percent allocation, the State Water Contract provides Mojave 82,800 acre-feet of water. Metropolitan's storage account balance under this program as of January 1, ~~2018~~2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below.

Antelope Valley -East Kern Storage and Exchange Program. In 2016, Metropolitan entered into an agreement with the Antelope Valley-East Kern Water Agency ("AVEK"), the third largest State Water Contractor, to both exchange supplies and store water in the Antelope Valley groundwater basin. Under this agreement, AVEK would provide Metropolitan up to 30,000 acre-feet of storage and the ability to exchange supplies. AVEK would provide at least 30,000 acre-feet over ten years of its unused Table A State Water Project water to Metropolitan. For every two acre-feet provided to Metropolitan as part of the exchange, AVEK would receive back one acre-foot in the future. For the one acre-foot that is retained by Metropolitan, Metropolitan would pay AVEK under a set price schedule based on the State Water Project allocation at the time. The payment would range from $587/acre-foot under a ~~5~~five percent State Water Project allocation to $38/acre-foot under an 86 percent State Water Project allocation. DWR has approved the storage program element but has yet to approve the exchange element of the program.

Antelope Valley-East Kern High Desert Water Bank Program. In April 2019, Metropolitan's Board authorized the General Manager to enter into an agreement with AVEK for a groundwater banking program referred to as the High Desert Water Bank Program. Under this agreement, Metropolitan would pay AVEK for the capital costs of construction of groundwater recharge and recovery facilities to be located in AVEK's service area near the split of the West and East Branches of the California Aqueduct. Metropolitan currently expects that construction will commence in fiscal year 2019-20. The estimated costs of construction of the facilities is $131 million. Following completion of construction, which is expected to

take approximately five years, Metropolitan would have the right to store up to 70,000 acre-feet per year of its unused Table A State Water Project water or other supplies in the Antelope Valley groundwater basin for later return. The maximum storage capacity for Metropolitan supplies would be 280,000 acre-feet. At Metropolitan's direction, up to 70,000 acre-feet of stored water annually would be available for return by direct pump back into the East Branch of the California Aqueduct. Metropolitan would pay for the actual operation, maintenance and power costs for the water bank facilities when used for Metropolitan's benefit. In addition, Metropolitan would pay a set recovery usage fee on all recovered water. In total, the estimated cost to Metropolitan would be $320/per acre-foot. Upon completion, this program would provide additional flexibility to store and recover water for emergency or water supply needs through 2057.

San Gabriel Valley Municipal Water District and Other Exchange Programs. In 2013, Metropolitan entered into an agreement with the San Gabriel Valley Municipal Water District ("SGVMWD"). Under this agreement, Metropolitan delivers treated water to a SGVMWD subagency in exchange for twice as much untreated ~~State Water Project supplies delivered into~~water in the groundwater basin~~ that supplies this agency and~~. Metropolitan~~ subagencies~~'s member agencies can then use the groundwater supplies to meet their needs. Metropolitan can exchange and purchase at least 5,000 acre-feet per year. This program has the potential to increase Metropolitan's reliability by providing 115,000 acre-feet through 2035.

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 "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations - State Water Project." ~~In 2018, Metropolitan entered into an agreement with the State Water Contractors to pursue water transfer supplies. On April 10, 2018, Metropolitan's Board decided not to purchase transfer supplies through the State Water Contractors Buyer's Group, because the negotiated prices were relatively high and the transfer supplies were not needed to meet demands.~~

Metropolitan/CVWD/Desert Water Agency Exchange and Advance Delivery Agreement. Metropolitan has agreements with CVWD and the Desert Water Agency ("DWA") in which Metropolitan exchanges its Colorado River water for those agencies' State Water Project contractual water and other State Water Project water acquisitions on an annual basis. Because CVWD and DWA do not have a physical connection to the State Water Project, Metropolitan takes delivery of CVWD's and DWA'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 may deliver Colorado River water in advance of receiving State Water Project supplies 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 may meet the exchange delivery obligation through drawdowns of the advance delivery account, rather than deliver Colorado River water in that year. Metropolitan's storage account under the CVWD/DWA program as of January 1, ~~2018~~2019 is shown in the table entitled "Metropolitan's Water Storage Capacity and Water in Storage" under "–Storage Capacity and Water in Storage" below. In addition to the storage benefits of the program, Metropolitan receives water quality benefits with increased deliveries of lower salinity water from the State Water Project in lieu of delivering higher saline Colorado River water.

Colorado River Aqueduct Agreements and Programs

Metropolitan has taken steps to augment its share of Colorado River water through agreements with other agencies that have rights to use such water, including through cooperative programs with other water agencies to conserve and develop supplies and through programs to exchange water with other agencies. These supplies are conveyed through the CRA. Metropolitan determines the delivery schedule of these

supplies throughout the year based on changes in the availability of State Water Project and Colorado River water. Under certain of these programs, water may be delivered to Metropolitan's service area in the year made available or in a subsequent year as ICS water from Lake Mead storage. See "–Colorado River Aqueduct – Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead."

IID/Metropolitan Conservation Agreement. Under a 1988 water conservation agreement, as amended in 2003 and 2007 (the "1988 Conservation Agreement") between Metropolitan and 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. As amended, the agreement's initial term has been extended to at least 2041 or 270 days after the termination of the QSA. In 2017, 105,000 acre-feet of conserved water was made available by IID to Metropolitan. Under the QSA and related agreements, Metropolitan, at the request of CVWD, forgoes up to 20,000 acre-feet of this water each year for diversion by CVWD. In 2016 and 2017, CVWD's requests were for 14,626 and 0 acre-feet, respectively, leaving 90,374 acre-feet in 2016 and 105,000 acre-feet in 2017 for Metropolitan. See "–Colorado River Aqueduct – Quantification Settlement Agreement."

Palo Verde Land Management, Crop Rotation and Water Supply Program. In August 2004, Metropolitan and ~~the Palo Verde Irrigation District ("~~PVID~~")~~ signed the program agreement for a Land Management, Crop Rotation and Water Supply Program. Under this program, participating landowners in the PVID service area are compensated for reducing water use by not irrigating a portion of their land. 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. The following table shows annual volumes of water saved and made available to Metropolitan under the Land Management, Crop Rotation and Water Supply Program with PVID:

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(1)	144,300
2010(1)	148,600
2011	122,200
2012	73,700
2013	32,800
2014	43,000
2015	94,500
2016	125,400
2017~~(2)~~	~~119,400~~111,800
2018(2)	93,300

Source: Metropolitan.

(1) Includes water from a supplemental fallowing program entered into with PVID in March 2009 that provided for fallowing of additional acreage in 2009 and 2010 and resulted in an additional 24,100 acre-feet and 32,300 acre-feet of water in 2009 and 2010, respectively, made available under the program.

(2) Estimate.

Lake Mead Storage Program. As described under "–Colorado River Aqueduct – Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead," in December 2007, Metropolitan entered into

agreements to set forth the guidelines under which ICS water is developed, and stored in and delivered from Lake Mead. The amount of water stored in Lake Mead must be created through extraordinary conservation, system efficiency, tributary, imported, or binational conservation methods. Metropolitan has participated in projects to create ICS as described below:

Drop 2 (Warren H. Brock) Reservoir. In May 2008, Metropolitan provided $28.7 million to join the 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, and has the ability to receive up to 25,000 acre-feet of water in any single year. Besides the additional water supply, the addition of the Warren H. Brock reservoir adds to the flexibility of Colorado River operations by storing underutilized Colorado River water orders caused by unexpected canal outages, changes in weather conditions, and high tributary runoff into the Colorado River. As of January 1, ~~2018,~~2019, Metropolitan had taken delivery of 35,000 acre-feet of this water, and had 65,000 acre-feet remaining in storage.

Yuma Desalting Plant. 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. As of January 1, ~~2018,~~2019, that water was stored in Lake Mead for Metropolitan's future use.

Mexico Pilot Project. In November 2012, Metropolitan executed agreements in support of a program to augment Metropolitan's Colorado River supply between 2013 through 2017 through an international pilot project in Mexico. Metropolitan's total share of costs was $5 million for 47,500 acre-feet of project supplies. In December 2013, Metropolitan and IID executed an agreement under which IID has paid half of Metropolitan's program costs, or $2.5 million, in return for half of the project supplies, or 23,750 acre-feet. As such, 23,750 acre-feet of Intentionally Created Mexican Allocation was converted to Binational ICS and credited to Metropolitan's binational ICS water account in 2017. See "–Colorado River Aqueduct – Colorado River Operations: Surplus and Shortage Guidelines – Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead." As of January 1, 2019, that water was stored in Lake Mead for Metropolitan's future use.

Storage and Interstate Release Agreement with Nevada. In May 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 agreement, SNWA can request that Metropolitan store unused Nevada apportionment in California. The amount of water stored through 2014 under this agreement was approximately 205,000 acre-feet. In October 2015, SNWA and Metropolitan executed an additional amendment to the agreement under which Metropolitan paid SNWA approximately $44.4 million and SNWA stored an additional 150,000 acre-feet with Metropolitan during 2015. Of that amount, 125,000 acre-feet has been added to SNWA's storage account with Metropolitan, increasing the total amount of water stored to approximately 330,000 acre-feet. In subsequent years, SNWA may request recovery of the stored water. 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 plus inflation based on the amount of water returned. However, it is expected that SNWA will not request return of any of the water stored with Metropolitan before 2022.

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 6.04 million acre-feet. In ~~2017,~~2018, 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 and Emergency Response Measures" 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 "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations – State Water Project – Delta Smelt and Salmon Federal ESAs Biological Opinions." Metropolitan replenishes its storage accounts when available 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. 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. See "CONSERVATION AND WATER SHORTAGE MEASURES–Water Supply Allocation Plan" in this Appendix A. 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 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~~Following withdrawals in 2014 and 2015, in 2016, approximately ~~1.5 million acre-feet in storage~~ reserves as of January 1, 2016. ~~Approximately~~ 350,000 acre-feet were ~~returned~~added to storage reserves ~~in 2016,~~, providing for nearly 1.9 million acre-feet in reserves as of January 1, 2017. More than 1.1 million acre-feet were returned to storage reserves in 2017, providing over ~~3.0~~3.1 million acre-feet in reserves as of January 1, 2018. Metropolitan added slightly to storage reserves in 2018, maintaining approximately 3.1 million acre-feet in reserves as of January 1, 2019. The following table shows three years of Metropolitan's water in storage as of January 1, including emergency storage.

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

Water Storage Resource	Storage Capacity	Water in Storage January 1, 2019	Water in Storage January 1, 2018	Water in Storage January 1, 2017	~~Water in Storage January 1, 2016~~
Colorado River Aqueduct					
Desert / CVWD Advance Delivery Account	800,000	235,000	228,000	38,000	~~200,000~~
Lake Mead ICS	1,563,000	625,000	479,000	157,000	~~80,000~~
Subtotal	**2,363,000**	**860,000**	**707,000**	**195,000**	**~~280,000~~**
State Water Project					
Arvin-Edison Storage Program	350,000	154,000	149,000	108,000	~~124,000~~
Semitropic Storage Program	350,000	187,000	187,000	125,000	~~137,000~~
Kern Delta Storage Program	250,000	138,000	138,000	99,000	~~119,000~~
Mojave Storage Program	330,000[(4)]	19,000[(4)]	27,000	27,000	~~31,000~~
AVEK Storage Program	30,000	9,000	9,000	-0-	~~0~~
Castaic Lake and Lake Perris[(2)]	219,000	219,000	219,000	154,000	~~30,000~~
State Water Project Carryover[(3)]	350,000[(5)]	256,000	325,000	210,000	~~3,000~~
Emergency Storage	328,000	328,000	328,000	328,000	~~328,000~~
Subtotal	**2,207,000**	**1,310,000**	**1,382,000**	**1,051,000**	**~~772,000~~**
Within Metropolitan's Service Area					
Diamond Valley Lake	810,000	702,000	747,000	566,000	~~315,000~~
Lake Mathews	182,000	141,000	139,000	135,000	~~141,000~~
Lake Skinner	44,000	37,000	38,000	7,000	~~34,000~~
Subtotal[(6)]	**1,036,000**	**880,000**	**924,000**	**708,000**	**~~490,000~~**
Member Agency Storage Programs					
Cyclic Storage and Conjunctive Use	~~463,000~~500,000	97,000	88,000	1,000	~~7,000~~
Total	**~~6,069,000~~6,106,000**	**3,147,000**	**3,101,000**	**1,955,000**	**~~1,549,000~~**

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) Includes Article 56 Carryover of Metropolitan, Coachella Valley Water District, and Desert Water Agency, prior-year carryover, non-project carryover, and carryover of curtailed deliveries pursuant to Article 14(b) of Metropolitan's State Water Contract.

(4) The ~~remaining available storage capacity under the~~ Mojave Storage ~~agreement is 330,000 acre-feet. The~~ agreement was amended in 2011 to allow for cumulative storage of up to 390,000 acre-feet. Since January 1, 2011, Metropolitan has stored 60,000 acre-feet~~. The~~, resulting in a remaining balance of storage capacity ~~is~~of 330,000 acre-feet. 41,000 acre-feet of the 60,000 acre-feet stored has been returned, leaving a remaining balance in storage of 19,000 acre-feet.

(5) A capacity of 350,000 acre-feet is estimated to be the practical operational limit for carryover storage considering Metropolitan's capacity to take delivery of carryover supplies before San Luis Reservoir fills.

(6) Includes 298,000 acre-feet of emergency storage in Metropolitan's reservoirs in ~~2016,~~ 2017, 2018, and ~~2018.~~2019.

CONSERVATION AND WATER SHORTAGE MEASURES

General

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 "METROPOLITAN'S WATER SUPPLY–State Water Project – Bay-Delta Proceedings Affecting State Water ~~Supply~~Project" and "–Endangered Species Act and Other Environmental Considerations – Endangered Species Act Considerations~~ -~~State Water Project – Delta Smelt and Salmon Federal ESAs Biological Opinions" in this Appendix A. Conservation reduces the need to import water to deliver to member agencies through Metropolitan's system. Water conservation is an integral component of Metropolitan's IRP, WSDM Plan and Water Supply Allocation Plan.

Metropolitan's conservation program has largely been developed to assist its member agencies in meeting the conservation goals of the most recent IRP Update. See "METROPOLITAN'S WATER SUPPLY–Integrated Water Resources Plan" in this Appendix A. Under the terms of Metropolitan's Conservation Credits Program, Metropolitan administers regional conservation programs and also co-funds member agency conservation programs designed to achieve greater water use efficiency in residential, commercial, industrial, institutional and landscape uses. Conservation incentives and other water management programs are funded by Metropolitan's Water Stewardship Rate and available grant funds. The Water Stewardship Rate is charged on every acre-foot of water conveyed by Metropolitan, except on water delivered to SDCWA pursuant to the Exchange Agreement (see "METROPOLITAN~~'S~~ REVENUES–Water Rates" and "–Litigation Challenging Rate Structure" in this Appendix A) in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs. See "METROPOLITAN REVENUES –Rate Structure –Water Stewardship Rate" in this Appendix A. All users of Metropolitan's system benefit from the reduced infrastructure costs and system capacity made available by investments in demand management programs like the Conservation Credits Program. Direct spending by Metropolitan on active conservation incentives, including rebates for water-saving plumbing fixtures, appliances and equipment totaled about $12.6 million in fiscal year 2017-18. The 2015 IRP Update estimates that 1,197,000 acre-feet of water will be conserved annually in Southern California by 2025. See also "METROPOLITAN'S WATER SUPPLY–Integrated Water Resources Plan" in this Appendix A and "–Increased Drought Resiliency" below.

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." Conservation and water efficiency programs are part of Metropolitan's resource management strategy which makes up these Surplus and Shortage actions.

Metropolitan's Water Supply Allocation Plan 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. See "–Water Supply Allocation Plan." 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 transactions during fiscal years 2009-10, 2010-11, 2011-12 and 2015-16.

Legislation approved in November 2009 sets a statewide conservation target for urban per capita potable water use of 20 percent reductions (from a baseline per capita use determined utilizing one of four State-approved methodologies) 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

transactions 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 Metropolitan's IRP goals that include the reduction of overall regional per capita water use by 20 percent by 2020 from a baseline of average per capita water use from 1996-2005 in Metropolitan's service area.

Water Surplus and Drought Management Plan

In addition to the long-term planning guidelines and strategy provided by its IRP, Metropolitan has developed its WSDM Plan for the on-going management of its resources and water supplies in response to hydrologic conditions. 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

In times of prolonged or severe water shortages, Metropolitan manages its water supplies through the implementation of its Water Supply Allocation Plan. The Water Supply Allocation Plan was originally approved by Metropolitan's Board in February 2008, and has been implemented three times since its adoption, including most recently 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 and if needed is typically approved in the month of April with implementation beginning in the month of July. In December 2014, the Board approved certain adjustments to the formula for calculating member agency supply allocations during subsequent periods of implementation of the Water Supply Allocation Plan. 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" in this Appendix A), 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. See also "–Increased Drought Resiliency."~~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 and related implementing regulations (described under " Increased Drought Resiliency" below), reduced supplies delivered by Metropolitan to Metropolitan's member agencies to approximately 1.6 million acre-feet in fiscal year 2015-16. See also "CONSERVATION AND WATER SHORTAGE MEASURES–General." 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 April 2017, the Board declared a Condition 1 Water Supply Watch, reflecting the continued improvement of hydrologic conditions and a forecasted record return of water to Metropolitan's storage reserves in 2017.~~ Based upon current hydrologic conditions and current DWR State Water Project allocation estimates, implementation of the Water Supply Allocation Plan for fiscal year 2018-19 is not expected~~ at this time~~.

Increased Drought Resiliency

~~The most recent drought of 2012-2016 was one of the driest periods in the hydrologic record since 1931-1934. In calendar years 2012-2015, to offset reductions in State Water Project supplies and mitigate impacts of the California drought, in addition to utilizing the limited available supplies from the Colorado River and State Water Project deliveries, Metropolitan met water demands in its service area by supplemental water transfers and purchases, and drawing on storage reserves, while also encouraging responsible and efficient water use to lower demands. Although supply conditions improved in calendars years 2016 and 2017, Metropolitan incorporated lessons learned from the drought and continues to improve drought resiliency through water use efficiency and distribution system modifications.~~

~~As noted under "Water Supply Allocation Plan" above, 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. Following the declaration by Governor Brown on January 17, 2014 of a drought state of emergency for California, on April 1, 2015 Governor Brown issued an Executive Order ("Order") calling for a 25 percent reduction in statewide urban water use in response to the historically dry conditions. The Governor's Order was implemented through emergency regulation adopted by the SWRCB. On May 18, 2016, the SWRCB adopted modifications to the emergency regulation which replaced the state mandated conservation targets with a supply-based approach that mandates urban water suppliers take actions to ensure at least a three year supply of water to their customers under drought conditions. On April 7, 2017, Governor Brown lifted the drought state of emergency in most of California, while maintaining water reporting requirements and prohibitions on wasteful practices.~~

~~As a wholesale water agency providing a supplemental water supply to its member agencies, Metropolitan was not subject to the requirements of the Order, which applies to retail water agencies. However, water sales of Metropolitan's member agencies declined as a result of conservation efforts and other actions taken to comply with the Order and implementing regulation. In addition,~~ Metropolitan has worked proactively with its member agencies to conserve water supplies in its service area, and significantly expanded its water conservation and outreach programs and increased funding for conservation incentive programs. In May 2017, the Alliance for Water Efficiency presented a peer review report of Metropolitan's conservation programs. Program modifications were adopted in April 2018 to reflect the peer review recommendations as well as feedback from member agencies. See "CONSERVATION AND WATER SHORTAGE MEASURES–General." Metropolitan has also taken other actions to improve drought resiliency that include increasing water recycling by providing incentives for on-site recycled water hook-ups, improving return capability of storage programs, and modifying Metropolitan's distribution system to enhance Colorado River water delivery to mitigate limitations in State Water Project supply.

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 "CONSERVATION AND WATER SHORTAGE MEASURES" in this Appendix A and "–Local Water Supplies" below. Consumer demand and locally supplied water vary from year to year, resulting in variability in the volume of Metropolitan's water transactions. Future reliance on Metropolitan supplies will depend on, among other things, 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 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 1976 to 2017. Local supplies available within Metropolitan's service area are augmented by water imported by the City of Los Angeles through the Los Angeles Aqueduct and Metropolitan supplies provided through the CRA and State Water Project.

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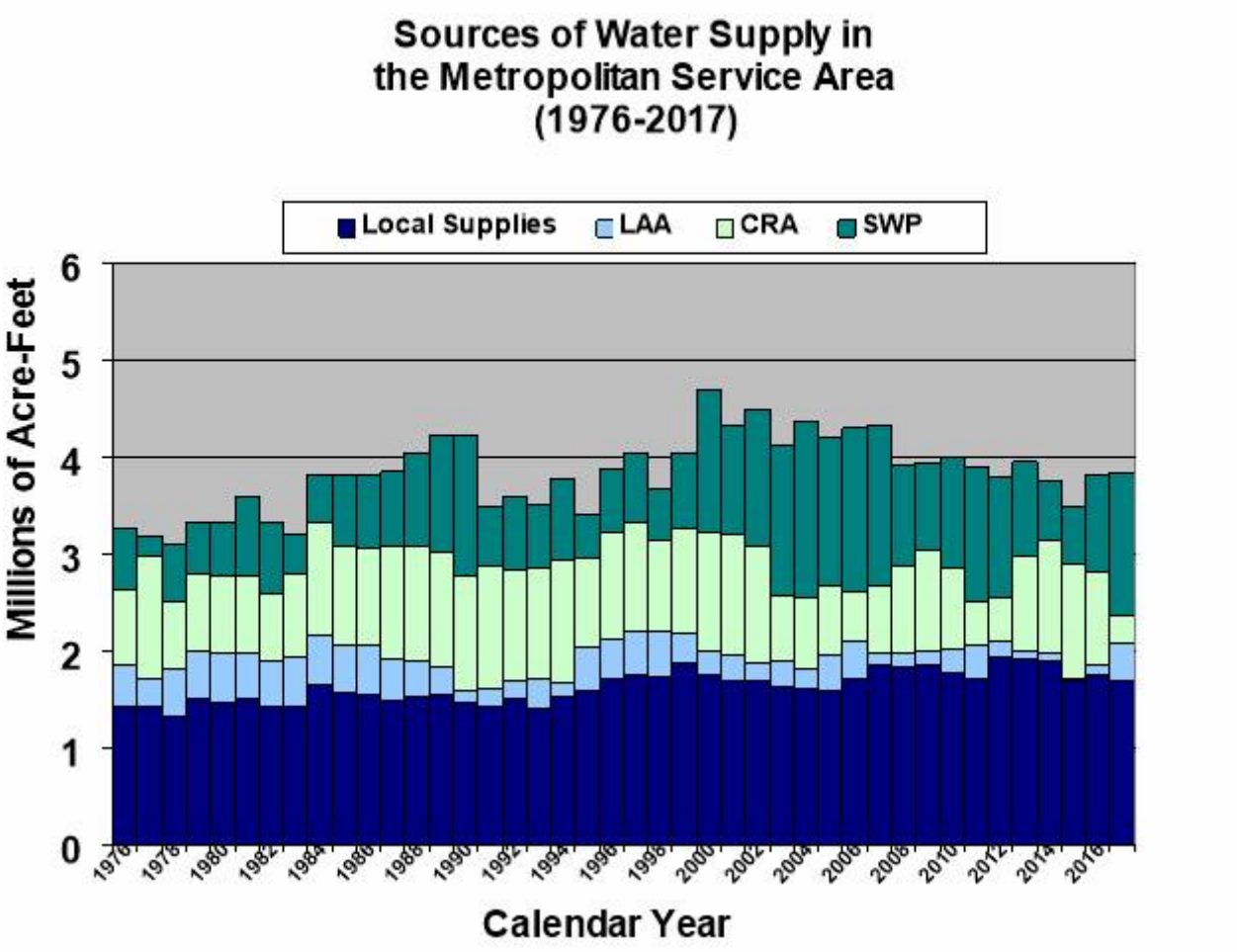

Source: Metropolitan.

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

Los Angeles Aqueduct

The City of Los Angeles, 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 prohibited from exporting water when Mono Lake elevation is below 6,377 feet above mean sea level, and is limited to export 4,500 acre-feet annually when Mono Lake elevation is between 6,377 to 6,380 feet above mean sea level, and 16,000 acre-feet annually when the elevation is between 6,380 to 6,391 feet above mean sea level, on April 1 of the runoff year. If Mono Lake~~'s water level hasn't surpassed the 6,380 feet threshold since 2014, limiting the maximum allowable exports to 4,500 acre-foot per year~~ is above elevation 6,391 feet, the City may export all available water from the Basin that is not dedicated to instream fishery protection flows. Due to the near record snowpack in the Eastern Sierra during the winter of 2016-17, the April 1, 2018 Mono Lake water level reached 6,382 feet, surpassing the 6,380 feet threshold which permits the increase of exports to 16,000 acre-feet pursuant to Decision 1631. As of April 1, 2019 Mono Lake water levels reached 6,382.4 feet.

Pursuant to the City's turnout agreement with DWR, AVEK and Metropolitan, LADWP commenced construction in 2010 of the turnout facilities along the California Aqueduct within AVEK's service area. ~~Upon completion, which is expected in late 2018, the turnout will enable~~The turnout was completed in December 2018 and enables 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, 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 to replace supplies lost to the City as a result of its Eastern Sierra environmental obligations.~~

~~Historically,~~Prior to 1991, the Los Angeles Aqueduct and local groundwater supplies ~~have~~had 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) was supplied by Metropolitan. From fiscal year 2000-01 to fiscal year ~~2016-17,~~2017-18, approximately 31 to 75 percent of the City's total water requirements were met by Metropolitan. For the five fiscal years ended June 30, 2018, the City's water deliveries from Metropolitan averaged approximately 308,725 acre-feet per year, which constituted approximately 59 percent of the City's total water supply. Deliveries from Metropolitan to the City during this period varied between approximately 182,700 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 2015 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 expects to decrease reliance on Metropolitan 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 311,000 acre-feet per year or 44 percent of its dry year supplies from Metropolitan until 2040. This corresponds to an increase from normal to dry years of approximately 236,000 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 8,700 acre-feet of water from the water use baseline established in 2013 and is expected to expand water savings in the future. LADWP reports that in calendar year ~~2017, 104,247~~2018, 93,500 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 supplies are made up of groundwater, groundwater recovery, surface runoff, recycled water, and seawater desalination. Metropolitan supports local resources development through its Local Resources 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. Metropolitan utilizes conjunctive use of groundwater to encourage storage in groundwater basins. Member agencies and other local agencies have also independently funded and developed additional local supplies, including groundwater clean-up, recycled water and desalination of brackish or high salt content water.

Metropolitan's water transaction 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 transaction projection is made. Additional reductions in Metropolitan's water transaction 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 Transactions Projections" and "METROPOLITAN'S WATER SUPPLY–Integrated Water Resources Plan" in this Appendix A.

Groundwater. Demands for about ~~1.35~~1.1 million acre-feet per year, about one-third of the annual water demands for approximately ~~18.9~~19 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.

Member Agency Storage Programs. Metropolitan has developed a number of local programs to work with its member agencies to increase storage in groundwater basins. Metropolitan has encouraged storage through its cyclic and conjunctive use storage programs. These programs allow Metropolitan to deliver water into a groundwater basin in advance of agency demands. Metropolitan has drawn on dry-year supply from cyclic storage accounts and nine contractual conjunctive use storage programs to address shortages from the State Water Project and the CRA.

Cyclic storage agreements allow pre-delivery of imported water for recharge into groundwater basins in excess of an agency's planned and budgeted deliveries making best use of available capacity in conveyance pipelines, use of storm channels for delivery to spreading basins, and spreading basins. This water is then purchased at a later time when the agency has a need for groundwater replenishment deliveries.

Conjunctive use agreements provide for storage of imported water that can be called for use by Metropolitan during dry, drought, or emergency conditions. During a dry period, Metropolitan has the option to call water stored in the groundwater basins pursuant to its contractual conjunctive use agreements. At the time of the call, the member agency pays Metropolitan the prevailing rate for that water. Nine conjunctive use projects provide about 210,000 acre-feet of groundwater storage and have a combined extraction capacity of about 70,000 acre-feet per year. See the table entitled "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 25 projects that recover contaminated groundwater with total contract yields of about 117,000 acre-feet per year. During fiscal year 2017-18, Metropolitan provided incentives for approximately ~~48,000~~50,000 acre-feet of recovered water under these agreements. Total groundwater recovery use under executed agreements is expected to grow to 67,000 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 110,000 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 37,000 acre-feet in calendar years 2015 and 2016.

Recycled Water-Local Agency Projects. 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 82 recycled water projects with total expected contract yields of about 312,000 acre-feet per year. During fiscal year 2017-18, Metropolitan provided incentives for approximately ~~164,000~~165,000 acre-feet of ~~reclaimed~~recycled water under these agreements. Total recycled

water use under executed agreements currently in place is expected to be approximately 185,000 acre-feet by 2020.

Recycled Water-Metropolitan Regional Program Demonstration Project. Since 2010, Metropolitan has been evaluating the potential and feasibility of implementing a regional recycled water program. Chronic drought conditions over the past 10 years have resulted in significant reductions in local surface supplies and groundwater production, and have increased the need for recharge supplies to groundwater and surface water reservoirs to improve their sustainable yields and operating integrity. In 2015, Metropolitan executed an agreement with the Sanitation Districts of Los Angeles County ("LACSD") to implement a demonstration project and to establish a framework of terms and conditions of such a regional recycled water program (the "RRWP"). The objectives of this framework are to enable the potential reuse of up to 150 million gallons per day ("mgd") of treated effluent from LACSD's treatment facility. Purified water from a new advanced treatment facility could be delivered through pipelines to the region's groundwater basins, industrial facilities, and two of Metropolitan's treatment plants. The demonstration project will provide critical information needed to move forward with the potential RRWP, and will assist with regulatory approval of the proposed advance treatment process. Construction of the 0.5 mgd advanced water treatment demonstration plant was approved in 2017 and is nearly complete. Testing and operation of the plant will confirm treatment costs and provide the basis for future technical recommendations concerning design, operation, and optimization of the full-scale RRWP.

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. The IRP also 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: City of Long Beach, Municipal Water District of Orange County ("MWDOC") and West Basin Municipal Water District ("West Basin MWD"). 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 water 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. While City of Long Beach is no longer pursuing a seawater desalination project, both MWDOC's and West Basin MWD's projects are currently in the environmental review phase. If completed, the two would produce up to 25,000 acre-feet initially and potentially up to 75,000 acre-feet if expanded in the future. The SDP agreements automatically terminate in 2020 if the projects are not operational by that time. In October 2014, seawater desalination projects became eligible for funding under Metropolitan's Local Resources Program.

In late 2015, Poseidon Resources LLC ("Poseidon") 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 additional 8,000 acre-feet per year. Other seawater desalination projects that could provide supplies to Metropolitan's service area are under development or consideration. In partnership with the Orange County Water District, 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~~

Another project with 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. Otay Water District, located in San Diego County along the Mexico border, is considering the feasibility of purchasing water from~~to augment regional supplies is a seawater desalination project in Rosarito Beach, Mexico. A consortium of private companies led by Consolidated Water Co., Ltd. and its Mexican subsidiary, N.S.C. Agua S.A. de C.V., is developing the project. The 56,000 to 112,000 acre-feet per year project is in the pre-construction phase, and could ~~also~~ supply Metropolitan's service area either

through direct delivery or exchange agreements~~. In 2017, Otay Water District received a Presidential Permit to import project water from Mexico to the U.S~~. Additional 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

Primary Facilities and 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. Improvements are 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. 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 pumping 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. The State Water Project, managed and operated by DWR, is one of the largest water supply projects undertaken in the history of water development. The State Water Project facilities dedicated to water delivery consist of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water. Water from rainfall and snowmelt runoff is captured and stored in State Water Project conservation facilities and then delivered through State Water Project transportation facilities to water agencies and districts located throughout the Upper Feather River, Bay Area, Central Valley, Central Coast, and Southern California. Metropolitan receives water from the State Water Project through the main stem of the aqueduct system, the California Aqueduct, which is 444 miles long and includes 381 miles of canals and siphons, 49 miles of pipelines or tunnels and 13 miles of channels and reservoirs.

As described herein, Metropolitan is the largest (in terms of number of people it serves, share of State Water Project water it has contracted to receive, and percentage of total annual payments made to DWR therefor) of twenty-nine agencies and districts that have entered into contracts with DWR to receive water from the State Water Project. Contractors pay all costs of the facilities in exchange for participation rights in the system. Thus, Contractors also have the right to use the portion of the State Water Project conveyance system necessary to deliver water to them at no additional cost as long as capacity exists. 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, built, owned and operated by Metropolitan, is located southwest of the city of Hemet, California. It 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 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 emergency (assuming that there has been no impairment of Metropolitan's internal distribution network). See the table entitled "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. Metropolitan's 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 cfs, 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") centrally located in ~~the Eagle Rock area of~~ Los Angeles County. 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 Quality and 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. In recent years, the plants typically treat between 0.8 billion and 1.0 billion gallons of water per day, and have a maximum capacity of approximately 2.4 billion gallons per day. Approximately 50 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 federal Safe Drinking Water Act ("SDWA") establishes drinking water quality standards, monitoring, and public notification and enforcement requirements for public water systems. To achieve these objectives, the U.S. Environmental Protection Agency, as the lead regulatory authority, promulgates national drinking water regulations and develops the mechanism for individual states to assume primary enforcement responsibilities. The SWRCB Division of Drinking Water ("DDW"), formerly the Drinking Water Program under the California Department of Public Health, has primary responsibility for the regulation of public water supply systems in the State. Drinking water delivered to customers must comply with statutory and regulatory water quality standards designed to protect public health and safety that are now administered by DDW. Metropolitan operates its five water treatment plants under a domestic water supply permit issued by DDW which is amended, as necessary, such as when significant facility modifications occur. Metropolitan operates and maintains water storage, treatment and conveyance facilities, implements watershed management and protection activities, performs inspections, monitors drinking water quality, and submits monthly and annual compliance reports. In addition, public water system discharges to state and federal waters are regulated under general National Pollutant Discharge Elimination System ("NPDES") permits. The SWRCB issued these NPDES permits to Metropolitan which contain

numerical effluent limitations, monitoring, reporting, and notification requirements for water discharges from the facilities and pipelines of Metropolitan's water supply and distribution system.

As described herein, Metropolitan has established five groundwater storage programs with other water agencies that allow Metropolitan to store available supplies in the Central Valley for return later. These programs help manage supplies by putting into storage surplus water in years when it is available and converting that to dry year supplies to be returned when needed. These programs can also provide emergency supplies. See "METROPOLITAN'S WATER SUPPLY – Water Transfer, Storage and Exchange Programs – State Water Project Agreements and Programs" and "–Storage Capacity and Water in Storage" in this Appendix A. Generally, water returned to Metropolitan under these groundwater storage programs ("return water") may be made available in one of two ways: by direct pump back from a groundwater well to the California Aqueduct or, when available, by an exchange with a supply already in the aqueduct. Water quality issues can arise in water returned by direct pumping as a result of the presence of a water quality contaminant in the groundwater storage basin and due to the imposition of stricter water quality standards by federal or State regulation.

In 2017, the SWRCB adopted a regulation setting a Maximum Contaminant Level ("MCL") for ~~1,2,3-Trichloropropane ("~~TCP~~")~~ of five parts per trillion or 5 ppt based upon a running annual average. TCP is a manufactured chemical used as a cleaning and degreasing solvent and has been found at industrial or hazardous waste sites. It ~~has been used as a cleaning and degreasing solvent and~~ is also associated with pesticide products used in agricultural practices. In January 2018, the new regulation went into effect. Under the new regulation, drinking water agencies are required to perform quarterly monitoring of TCP levels. There have been no detections of this chemical in Metropolitan's system. However, TCP has been detected above the new MCL in groundwater wells of three of Metropolitan's groundwater storage program partners through monitoring performed by these agencies. Levels detected in groundwater wells of the Arvin-Edison Water Storage District are the highest and will impact the ability of Metropolitan to take return water under that program. As noted under "METROPOLITAN'S WATER SUPPLY–Water Transfer, Storage and Exchange Programs" in this Appendix A, Metropolitan has temporarily suspended operation of this program until the water quality concerns can be further evaluated and managed. The levels of TCP detected at Metropolitan's other groundwater storage programs are much lower and impact fewer groundwater wells. Metropolitan is evaluating how the return capability could be reduced from those programs.

Possible remediation measures include, for example, return water with other surface water supplies, removal of wells from service, return water by exchange, or treatment. Additional capital and/or operation and maintenance costs could be incurred by Metropolitan in connection with remediation options, but the magnitude of such costs is not known at this time. To the extent return water under one or more groundwater storage programs could not be utilized due to groundwater quality, the available supply of stored water during extended drought or emergency periods would be reduced.

Metropolitan continually monitors new water quality laws and regulations and frequently comments on new legislative proposals and regulatory rules. Metropolitan is currently operating in compliance with all state and federal drinking water regulations and permit requirements.

Seismic Considerations and Emergency Response Measures

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 either to 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 (assuming there has been no impairment of Metropolitan's internal distribution network).

Metropolitan has an ongoing surveillance program that monitors the safety and structural performance of its 20 permitted 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, in conjunction with DWR and LADWP, has formed the Seismic Resilience Water Supply Task Force for the purpose of collaborating on studies and mitigation measures aimed at improving the reliability of imported water supplies to Southern California. Specific task force goals included revisiting historical assumptions regarding potential aqueduct outages after a seismic event; establishing a common understanding about individual agency aqueduct vulnerability assessments, projected damage scenarios, and planning assumptions; and discussing ideas for improving the resiliency of Southern California's imported water supplies through multi-agency cooperation. The task force has established multi-year goals and will continue to meet on these issues and develop firm plans for mitigating seismic vulnerabilities.

Metropolitan~~ also maintains machine~~'s resiliency efforts include a manufacturing, fabrication and coating ~~shops at its facility~~shop in La Verne, California. ~~Several construction projects have been completed to upgrade and expand these shops.~~ A total of nearly $40 million has been invested to enhance and expand Metropolitan's capacity ~~not only~~ to provide fabrication, manufacturing, and coating services for~~ planned~~ rehabilitation work~~, maintenance activities,~~ and capital projects~~, but also to perform emergency fabrication support to Metropolitan and its member agencies. Metropolitan has also maintained~~. Metropolitan is also able to provide manufacturing and fabrication services through reimbursable agreements with DWR to perform machining, fabrication, and coating services for critical repair and rehabilitation of~~to member agencies, and to DWR for the 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~~on site. In the event of earthquake damage, Metropolitan has taken measures to provide the design and fabrication capacity to fabricate pipe and ~~related~~manufacture 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-California Aqueduct. 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 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.

Metropolitan, in cooperation with the other 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.

State Water Project-Perris Dam. Perris Dam forms Lake Perris, the southernmost terminal reservoir for the State Water Project in Riverside County, with maximum capacity of approximately 130,000 acre-feet of water. Metropolitan uses water from Lake Perris for delivery to customers in Riverside and San Diego counties. Deliveries from the lake are used as a redundant source for the Mills Water Treatment Plant, drought supply from a flexible storage account, and for consumptive use by Metropolitan's customers. DWR reported in July 2005 that seismic studies indicate that DWR's Perris Dam facility could ~~sustain~~experience 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. Repair work was completed in April 2018. DWR's current estimate for repair costs, inclusive of environment and right-of-way work is $~~132~~125.6 million. DWR has begun to refill Lake Perris to allow the dam to be tested and certified to again store 130,000 acre-feet of water. 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~~are being paid for by the three agencies that use the water stored in Lake Perris: Metropolitan (42.9 percent), DWA (3.0 percent) and CVWD (21.9 percent). DWR recovers the cost of repairs through its annual statement of charges sent to each agency. See "METROPOLITAN EXPENSES–State Water Contract Obligations" in this Appendix A.

The dam remediation is one of three major projects to improve seismic stability and enhance public safety in the Perris Dam Remediation Program. The other two projects include the Outlet Tower Improvements and the Emergency Release Facility ("ERF") Project. The Outlet Tower Improvement project is in preliminary design, while the ERF is in design. The EIR for the ERF was published in February 2018. The ERF project provides improvements downstream of the reservoir that would direct the flow of water in an emergency requiring the dewatering of the reservoir. Flows would be directed through a series of berms and lined and unlined channels that would ultimately terminate at the Riverside County Flood Control and Water Conservation District's Perris Valley Channel. The Outlet Tower and Emergency Release Facility projects enhance the safety of the dam for other risks in addition to that posed by earthquakes. It is anticipated that costs will be shared in the same manner as for the Lake Perris dam remediation project:. DWR's current estimate for repair costs (including the share of costs to be assumed by the State) is $49.8 million for the Outlet Tower Improvements and $~~68.5~~62.3 million for the Emergency Release Facility (of which Metropolitan's anticipated share would be 42.9 percent). ~~Costs will be shared in the same manner as for the Lake Perris dam remediation project.~~

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 reasonably designed 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 infrastructure and system reliability projects, either as upgrades to existing capital assets or replacements and refurbishments of existing facilities, to ensure reliability as well as enhance operational efficiency and flexibility, and comply with water quality regulations. Metropolitan's CIP is regularly reviewed and updated. Metropolitan's biennial budget process includes a review of the projected long-term capital needs and the development of a capital expenditure forecast for the ten-year financial forecast, as well as the identification of the capital priorities of Metropolitan over the biennial budget term. 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. In addition, from time to time, when circumstances warrant, Metropolitan's Board may approve capital expenditures other than or in addition to those contemplated by the CIP at the time of the then current biennial budget.

Projection of Capital Investment Plan Expenditures

The table below sets forth the projected CIP expenditures as reflected in the adopted biennial budget for fiscal years 2018-19 and 2019-20, by project type for the fiscal years ending June 30, 2019 through 2023. This estimate is updated every two years 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]
(Fiscal Years Ended June 30 - Dollars in Thousands)

	2019	2020	2021	2022	2023	Total[2]
Infrastructure R&R	$ 89,885	$ 98,396	$133,941	$120,049	$150,480	$ 592,752
Infrastructure Upgrade	85,724	87,372	97,425	102,371	99,080	471,972
Regulatory Compliance	2,768	3,441	5,616	4,752	349	16,926
Stewardship	10,270	2,671	1,353	838	--	15,132
Supply Reliability	6,158	2,753	3,920	1,405	--	14,236
System Flexibility	1,498	--	2,403	20,476	91	24,467
Water Quality	3,697	5,367	5,342	108	--	14,514
Total[2]	$200,000[3]	$200,000	$250,000	$250,000	$250,000	$1,150,000

Source: Metropolitan.

(1) Fiscal years 2018-19 and 2019-20 are based on the adopted biennial budget for fiscal years 2018-19 and 2019-20. Fiscal years 2020-21 through 2022-23 are based on the ten-year financial forecast provided in the adopted biennial budget.
(2) Totals may not foot due to rounding.
(3) Fiscal year 2018-19 capital expenditures are currently estimated to be approximately $214 million.

In developing the CIP, projects are reviewed, scored and prioritized towards the objectives of ensuring the sustainable delivery of reliable, high quality water, while meeting all regulatory requirements and maintaining affordability. 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 additional facilities needs. See "METROPOLITAN'S WATER DELIVERY SYSTEM–Water Quality and Treatment" in this Appendix A.

The CIP planned spending as developed by Metropolitan's Engineering Services and presented in the Capital Expenditures (Capital Investment Plan) section of the fiscal years 2018-19 and 2019-20 budget is estimated to be $514.5 million over the biennium. Over the last several years, actual expenditures have been about 20 percent below planned spending. In keeping with that trend, the current budget for the two years is about 80 percent of planned engineering spending or $200 million in each fiscal year.

Construction projects included in the CIP are subject to ordinary construction risks and delays, including but not limited to: inclement weather or natural hazards affecting work and timeliness of completion; contractor claims or nonperformance; work stoppages or slowdowns; unanticipated project site conditions encountered during construction; errors or omissions in contract documents requiring change orders; and/or higher than anticipated construction bids or costs, any of which could affect the costs and availability of, or delivery schedule for, equipment, components, materials, labor or subcontractors, and result in increased CIP costs. In addition, on June 1, 2018, the federal government imposed tariffs on steel and aluminum imports. Contracts awarded both before and after June 1, 2018 are affected. Market data indicates material prices for steel have seen ~~a five~~up to ~~ten~~a 10 percent increase since March 2018. Metropolitan's direct contracts currently in progress have a total value of $~~209~~344 million and face a tariff exposure of approximately $~~3.9~~2.9 million, or less than ~~two percent. Construction and procurement contract documents and the process used to develop engineering estimates have been updated to take into~~one percent. Since implementation of the tariffs, Metropolitan has taken steps to account for the impacts of the tariffs in its bid and contract documents.

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 from current

revenues. The remainder of capital program expenditures are expected to 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.

The issuance of approximately $80 million of additional water revenue bonds to fund or to reimburse prior capital expenditures is in Metropolitan's budget assumptions for the adopted biennial budget ~~in each of~~for fiscal ~~years 2018-19 and~~year 2019-20, and current projections for each of the fiscal years 2020-21 through 2022-23 assume the issuance of approximately $100 million of additional water revenue bonds. These revenue bonds may be issued either as Senior Revenue Bonds under the Senior Debt Resolutions or as Subordinate Revenue Bonds under the Subordinate Debt Resolutions (each as defined under "METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds" in this Appendix A). The cost of these projected bond issues are reflected in the financial projections under, "HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A. ~~As contemplated in the budget assumptions, Metropolitan's Subordinate Water Revenue Bonds, 2018 Series B was issued in June 2018 to fund approximately $80 million of Metropolitan's capital expenditures for fiscal year 2018-19.~~

Major Projects of Metropolitan's Capital Investment Plan

Colorado River Aqueduct Facilities. As previously noted, 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. Projects under the CRA facilities program are designed to replace or refurbish facilities and components on the CRA system in order to reliably convey water from the Colorado River to Southern California. A variety of projects have been completed over the past 10 years, including, among other things, 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, replacement of several miles of deteriorated concrete canal liner, new wastewater systems at the Hinds and Eagle Mountain Pumping Plants, replacement of the sand trap facilities upstream of the Hinds, Eagle, and Iron Mountain pumping plants, and replacement of the outlet gates and appurtenant electrical, mechanical, and control systems at the Copper Basin Reservoir. Refurbishment or replacement of many of the electrical system components, including the transformers, circuit breakers and motor control centers, is currently under way. 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 current projected cost estimate for all prior and planned refurbishment or replacement projects under the CRA facilities program is $854.4 million. Costs through ~~June 2018~~February 2019 were $~~252.9~~264.6 million. Budgeted aggregate capital expenditures for improvements on the CRA for fiscal years 2018-19 and 2019-20 are $110.0 million.

Distribution System – Prestressed Concrete Cylinder Pipe. Metropolitan's distribution system is comprised of approximately 830 miles of pipelines ranging in diameter from 30 inches to over 200 inches. (See "METROPOLITAN'S WATER DELIVERY SYSTEM" in this Appendix A.) 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 improvements to several sections of PCCP. The costs for these improvements through ~~June 2018~~February 2019 were $~~93.3~~96.7 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 by relining with a welded steel liner. The first major contract to reline approximately 4.5 miles of PCCP on the Second Lower Feeder was ~~awarded in August 2017.~~completed in August 2018. The second major contract to reline approximately 1.9 miles of PCCP on the Second Lower Feeder was awarded in November 2018. Subsequent contracts are planned to be awarded annually depending on shutdown scheduling. Costs through ~~June 2018~~February 2019 for all PCCP work (including the $~~93.3~~96.7 million of repairs costs noted above) were $~~144.8~~159.7 million. The estimated cost to reline all 100 miles of PCCP is approximately $2.2 billion and is expected to be undertaken

over a period of approximately 20 years. Budgeted aggregate capital expenditures for PCCP rehabilitation for fiscal years 2018-19 and 2019-20 are $92.4 million.

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. Major projects completed to date include the $70 million replacement of the outlet facilities at Lake Mathews, the first two phases of the Orange County Feeder and Etiwanda Pipeline relining projects for a total of $34 million, and various other facility refurbishment and replacement projects ranging in cost from approximately $500,000 to over $10 million. 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, lining replacement of remaining portions of the Etiwanda Pipeline and Orange County Feeder, refurbishment to pressure control and hydroelectric power facilities, system improvements to provide drought relief, and various other upgrades totaling approximately $~~328.1~~363.6 million through ~~June 2018.~~February 2019. The current projected cost estimate for the prior and planned refurbishment or replacement projects, other than the PCCP relining, is $1.1 billion. For fiscal years 2018-19 and 2019-20, budgeted aggregate capital expenditures for improvements on the distribution system, other than PCCP rehabilitation, are $108.9 million.

System Reliability. System Reliability projects are implemented at facilities throughout Metropolitan's system to utilize new processes or technologies, to improve safety, or to increase overall reliability. Planned projects in this category include seismic strengthening of Metropolitan's headquarters building, construction of operations support facilities such as the La Verne machine and fabrication shops, security system enhancements, and information technology infrastructure projects. The total estimated cost for all prior and projected system reliability improvements under this program is approximately $482.4 million, with $~~150.8~~168.4 million spent through ~~June 2018.~~February 2019. Budgeted aggregate capital expenditures for improvements on system reliability projects for fiscal years 2018-19 and 2019-20 are $90.7 million.

F.E. Weymouth Treatment Plant Improvements. The ~~F.E.~~ Weymouth Treatment Plant, built in 1938, is Metropolitan's oldest water treatment facility. It has been subsequently expanded several times since its original construction. 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, upgrades to the plants filters, and a new chlorine handling and containment facility. Planned projects over the next several years include refurbishment of the plant's 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 $452.4 million, with $~~271.7~~276.5 million spent through ~~June 2018.~~February 2019. Budgeted aggregate capital expenditures for improvements at the Weymouth plant for fiscal years 2018-19 and 2019-20 are $26.7 million.

Robert B. Diemer Treatment Plant Improvements. The ~~Robert B.~~ Diemer Treatment Plant, built ~~in~~ in 1963 and subsequently expanded in 1968, is Metropolitan's second oldest water treatment facility. 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, a new secondary access road, and upgrades to half of the ~~plants~~plant's settling basins and filter valves. Planned projects over the next several years include the completion of refurbishment of the plant's settling basins and replacement of the valves used to control filter operation, and seismic retrofits to the filter buildings and

administration building. The current cost estimate for all prior and projected improvements at the Diemer ~~Treatment Plant~~plant, not including the ozone facilities, is approximately $399.2 million, with $~~261.8~~276.5 million spent through ~~June 2018.~~February 2019. Budgeted aggregate capital expenditures for improvements at the Diemer plant for fiscal years 2018-19 and 2019-20 are $17.6 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 revenues, which includes revenues from water sales, wheeling and exchanges, have provided approximately 80 percent of total revenues annually. In that time period, *ad valorem* property taxes have accounted for about 10 percent of total revenues, declining to eight percent of total revenues in fiscal year 2017-18. See "–Revenue Allocation Policy and Tax Revenues." 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 service for domestic and municipal uses is $~~695~~731 per acre-foot at the Tier 1 level, which became effective January 1, ~~2018. This rate will increase to $731 per acre-foot effective January 1, ~~2019. See "–Rate Structure" and "–Water Rates." 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 2018-19. The rates charged by Metropolitan represent the cost of Metropolitan's 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 Revenues by Source

The following table sets forth Metropolitan's sources of revenues for the five fiscal years ended June 30, 2018, on a modified accrual basis. All information is unaudited. Audited financial statements for the fiscal years ended June 30, 2018 and June 30, 2017 are provided in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017.~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

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

	2014	2015	2016	2017	2018
Water Revenues[(2)]	$1,485	$1,383	$1,166	$1,151	$1,285
Net Tax Collections[(3)]	95	104	108	116	131
Additional Revenue Sources[(4)]	182	199	200	184	172
Interest on Investments	19	16	17	4	8
Hydroelectric Power Sales	15	8	7	21	24
Other Revenues[(5)]	19	163	246	51	~~27~~28
Total Revenues	$1,815	$1,873	$1,744	$1,527	$~~1,647~~1,648

Source: Metropolitan.

(1) Does not include any proceeds from the sale of bonded indebtedness.
(2) Water revenues include revenues from water sales, exchanges, and wheeling.
(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 revenues derived from water standby charges, readiness-to-serve, and capacity charges.
(5) Includes miscellaneous revenues and Build America Bonds (BABs) subsidy payment of $12.3 million, $12.3 million, $12.3 million, $9.8 million, and $15.0 million, in fiscal years 2013-14 through 2017-18, respectively. Fiscal years 2014-15, 2015-16, 2016-17, and 2017-18, include $142 million, $222 million, $33 million, and $1 million, respectively, of water conservation and water purchase expenditures, funded from a like amount of funds transferred from the Water Management Fund.

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. Beginning with fiscal year 1990-91, the Act limits Metropolitan's tax levy to 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 if, following a public hearing, the Board finds that such revenue is essential to Metropolitan's 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 to pay for a greater portion of Metropolitan's State Water Contract obligations. Any deficiency between tax levy receipts and Metropolitan's State Water Contract obligations is expected to be paid from Operating Revenues, as defined in the Senior Debt Resolutions (defined ~~herein~~in this Appendix A under "METROPOLITAN EXPENSES–Limitations on Additional Revenue Bonds").

Water Revenues

General; 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, a wholesaler, provides two types of services: full service water service (treated or untreated) and wheeling service. See "–Classes of Water Service."

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 ("Purchase Orders") effective through December 31, 2024. See "–Member Agency Purchase Orders." Consumer demand and locally supplied water vary from year to year, resulting in variability in water 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 transactions. 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 Revenues. The following table sets forth water transactions (which includes water sales, exchanges, and wheeling) in acre-feet and water revenues (which includes revenues from water sales, exchanges, and wheeling) for the five fiscal years ended June 30, 2018, on a modified accrual basis. As reflected in the table below, water revenues for the fiscal year ended June 30, 2018 aggregated $1,285.2 million, of which $1,189.0 million was generated from water sales and $96.1 million was generated from exchanges and wheeling. Water revenues of Metropolitan for the fiscal years ended June 30, 2018 and June 30, 2017, on an accrual basis, are shown in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017.~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

SUMMARY OF WATER TRANSACTIONS AND REVENUES
Fiscal Years Ended June 30

Year	Water Transactions in Acre-Feet[1]	Water Revenues[2] (in millions)	Dollars Per Acre-Foot	Average Dollars Per 1,000 Gallons
2014	2,043,720	$1,484.6	$726	$2.23
2015	1,905,502	1,383.1	726	2.23
2016	1,623,052	1,166.0	718	2.20
2017	1,540,915	1,150.5	747	2.29
2018	1,610,969	1,285.2	798	2.45

Source: Metropolitan.

(1) Water Transactions include water sales, exchanges, and wheeling.
(2) Water Revenues include revenues from water sales, exchanges, and wheeling.

Principal Customers

Total water transactions accrued for the fiscal year ended June 30, 2018, were 1.61 million acre-feet, generating $1.29 billion in water revenues for such period. Metropolitan's ten largest water customers for the year ended June 30, 2018 are shown in the following table, on an accrual basis. The SDCWA has filed litigation challenging Metropolitan's rates. See "–Litigation Challenging Rate Structure."

TEN LARGEST WATER CUSTOMERS
Year Ended June 30, 2018
Accrual Basis

Agency	Water Revenues[1] (in Millions)	Percent of Total	Water Transactions in Acre-Feet[2]	Percent of Total
MWD of Orange County	$ 232.3	18.1%	~~236,303~~266,545	~~14.8~~16.5%
San Diego CWA	222.9	17.3	365,215	~~22.9~~22.7
City of Los Angeles	151.3	11.8	183,527	~~11.5~~11.4
West Basin MWD	113.9	8.9	114,422	~~7.2~~7.1
Calleguas MWD	95.3	7.4	95,772	~~6.0~~5.9
Eastern MWD	88.0	6.8	101,620	~~6.4~~6.3
Western MWD	63.8	5.0	73,688	4.6
Three Valleys MWD	56.6	4.4	65,779	4.1
Inland Empire Utilities Agency	46.0	3.6	67,977	~~4.3~~4.2
City of Long Beach	24.8	1.9	24,988	1.6
Total	$ 1,094.9	85.2%	~~1,329,289~~1,359,531	~~83.4~~84.4%

Total Water Revenues[(1)]	$1,285.2	**Total Acre-Feet**	1,610,969

Source: Metropolitan.

(1) Water Revenues include revenues from water sales, exchanges, and wheeling.
(2) Water Transactions include water sales, exchanges, and wheeling.

Rate Structure

The following rates and charges are elements of Metropolitan's unbundled rate structure:

Tier 1 and Tier 2 Water Supply Rates. The rate structure recovers supply costs through a two-tiered price structure. The Tier 1 Supply Rate supports a regional approach through the uniform, postage stamp rate. The Tier 1 Supply Rate is calculated as the amount of the total supply revenue requirement that is not covered by the Tier 2 Supply Rate divided by the estimated amount of Tier 1 water sales. The Tier 2 Supply Rate is a volumetric rate that reflects Metropolitan's cost of purchasing water transfers north of the Delta. The Tier 2 Supply Rate encourages the member agencies and their customers to maintain existing local supplies and develop cost-effective local supply resources and conservation. 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 recovers the cost of the Conveyance and Distribution System that is used on an average annual basis through a uniform, volumetric rate. The System Access Rate is charged for each acre-foot of water transported by Metropolitan, regardless of the ownership of the water being transported. All users (including member agencies and third-party wheelers) using the Metropolitan system to transport water pay the same System Access Rate for the use of the system conveyance and distribution capacity to meet average annual demands.

Water Stewardship Rate. The Water Stewardship Rate provides a dedicated source of funding for conservation and local resources development through a uniform, volumetric rate. The Water Stewardship Rate is charged on each acre-foot of water delivered by Metropolitan, except SDCWA Exchange Agreement deliveries as explained below, and is allocated to Metropolitan's transportation rates. All users (including member agencies and third-party wheelers) benefit from avoided system infrastructure costs through conservation and local resources development, and from the system capacity made available by investments in demand management programs like Metropolitan's Conservation Credits Program and Local Resources Program. Therefore, all users pay the Water Stewardship Rate, except on water delivered to SDCWA pursuant to the Exchange Agreement (see "METROPOLITAN~~'S~~ REVENUES–Water Rates" and "–Litigation Challenging Rate Structure" in this Appendix A) in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs.

In *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.* (see "–Litigation Challenging Rate Structure" below), the Court of Appeal held that the administrative record before it for the rates in calendar years 2011 through 2014 did not support Metropolitan's Water Stewardship Rate allocation to transportation rates, but the court did not address the allocation in subsequent years based on a different record. On April 10, 2018, the Board suspended the billing and collection of the Water Stewardship Rate on Exchange Agreement deliveries to SDCWA in calendar years 2018, 2019, and 2020, pending Metropolitan's completion of a cost allocation study of its demand management costs recovered through the Water Stewardship Rate. The process may take up to two years and staff expects to propose that the results be incorporated in the next biennial budget and rate setting cycle. For calendar year 2018, the suspension ~~is~~was retroactive to January 1, 2018. The total effect of the proposed suspension, taking into consideration the lower revenues over the three calendar years, ~~will~~is estimated to be up to approximately $46 million.

System Power Rate. The System Power Rate recovers the cost of energy required to pump water to Southern California through the State Water Project and CRA. The cost of power is recovered through a uniform, volumetric rate. The System Power Rate is applied to all deliveries of Metropolitan water to member agencies. Wheeling parties pay for actual cost (not system average) of power needed to move the water. Member agencies engaging in wheeling transactions of up to one year pay the wheeling rate (consisting of the actual cost of power, the System Access Rate, the Water Stewardship Rate, and an administrative fee). Other wheeling transactions are pursuant to individual contracts. For example, a party wheeling water through the California Aqueduct would pay the variable power cost associated with using the State Water Project transportation facilities.

Treatment Surcharge. The Treatment Surcharge recovers all of the costs of providing treatment capacity and operations through a uniform, volumetric rate per acre-foot of treated water transactions. The Treatment Surcharge is charged to all treated water transactions.

The amount of each of these rates since January 1, 2014, is shown in the table entitled "SUMMARY OF WATER RATES" under "–Water Rates" below.

Member Agency Purchase Orders

The current rate structure allows member agencies to choose to purchase water from Metropolitan by means of a Purchase Order. Purchase Orders are voluntary agreements that determine the amount of water that a member agency can purchase at the Tier 1 Supply Rate. They allow member agencies to purchase a greater amount of water at the lower Tier 1 Supply Rate than would otherwise be authorized by the Administrative Code. In exchange for the higher Tier 1 Maximum, the member agency commits to purchase a specific amount of water (based on past purchase levels) over the term of the agreement. Such agreements allow member agencies to manage costs and provide Metropolitan with a measure of secure revenue.

In November 2014, the Metropolitan Board approved new Purchase Orders effective January 1, 2015 through December 31, 2024 (the "Purchase Order Term"). Twenty-one of the twenty-six member agencies have Purchase Orders, which commit the member agencies to purchase a minimum amount of supply from Metropolitan (the "Purchase Order Commitment").

The key terms of the Purchase Orders include:

- A ten-year term, effective January 1, 2015 through December 31, 2024;
- A higher Tier 1 limit based on the Base Period Demand, determined by the member agency's choice between (1) the Revised Base Firm Demand, which is the highest fiscal year purchases during the 13-year period of fiscal year 1989-90 through fiscal year 2001-02, or (2) the highest year purchases in the most recent 12-year period of fiscal year 2002-03 through 2013-14. The demand base is unique for each member agency, reflecting the use of Metropolitan's system water over time;
- An overall purchase commitment by the member agency based on the Demand Base period chosen, times ten to reflect the ten-year Purchase Order term. Those agencies choosing the more recent 12-year period may have a higher Tier 1 Maximum and commitment. The commitment is also unique for each member agency;
- The opportunity to reset the Base Period Demand using a five-year rolling average;
- 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; and

- An appeals process for agencies with unmet purchase commitments that will allow each acre-foot of unmet commitment to be reduced by the amount of production from a local resource project that commences operation on or after January 1, 2014.

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.

Other Charges

The following paragraphs describe the additional charges for the use of Metropolitan's distribution system:

Readiness-to-Serve Charge. The Readiness-to-Serve Charge ("RTS") recovers the cost of the portion of the system that is available to provide emergency service and available capacity during outages and hydrologic variability. The RTS is a fixed charge that is allocated among the member agencies based on a ten-fiscal year rolling average of firm demands. Water transfers and exchanges, except SDCWA Exchange Agreement transactions, are included for purposes of calculating the ten-fiscal year rolling average. The Standby Charge, described below, will continue to be collected at the request of a member agency and applied as a direct offset to the member agency's RTS obligation. The RTS generated $155.5 million in 2015-16, $144 million in 2016-17, and $137.5 million in 2017-18. Based on the adopted rates and charges, the RTS is projected to generate $136.5 million in fiscal year 2018-19, and $134.5 million in fiscal year 2019-20.

Water Standby Charges. The Standby Charge is authorized by the State Legislature and has been levied by Metropolitan since fiscal year 1992-93. Metropolitan will continue to levy the Standby Charge only within the service areas of the member agencies that request that the Standby Charge be utilized to help fund a member agency's RTS obligation. See "– Readiness-to-Serve Charge" above. The Standby Charge for each acre or parcel of less than an acre will vary from member agency to member agency, reflecting current rates, which have remained the same since fiscal year 1993-94, and range from $6.94 to $15 for each acre or parcel less than an acre within Metropolitan's service area, subject to specified exempt categories. 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."

Twenty-two member agencies collect their RTS charges through standby charges. RTS charges collected by means of such standby charges were $41.7 million in each of fiscal years 2015-16 and 2016-~~17~~17, and $41.6 million in fiscal year 2017-18.

Capacity Charge. The Capacity Charge recovers costs incurred to provide peak capacity within Metropolitan's distribution system. The Capacity Charge provides a price signal to encourage agencies to reduce peak demands on the distribution system and to shift demands that occur during the May 1 through September 30 period into the October 1 through April 30 period. This results in more efficient utilization of Metropolitan's existing infrastructure and deferring capacity expansion costs. Each member agency will pay the Capacity Charge per cfs based on a three-year trailing peak (maximum) day demand, measured in cfs. Each member agency's peak day is likely to occur on different days; therefore this measure approximates peak week demands on Metropolitan. The Capacity Charge was $8,700 per cfs ~~on~~effective as of January 1, 2018, and ~~will be~~was $8,600 per cfs ~~on~~effective as of January 1, ~~2019 and~~2019. The Capacity Charge will be $8,800 per cfs ~~on~~effective as of January 1, 2020. The Capacity Charge is projected to generate $~~33.8~~33.1 million in fiscal year 2018-19 and $~~31.3~~30.5 million in fiscal year 2019-20.

Classes of Water Service

Metropolitan, a wholesaler, provides two types of services: full service water service (treated or untreated) and wheeling service. Metropolitan has one class of customers: its member agencies. The level of rate unbundling in Metropolitan's rate structure provides transparency to show that rates and charges recover only those functions involved in the applicable service, and that no cross-subsidy of costs exists. Metropolitan's cost of service process and resulting unbundled rate structure ensures that its wholesale customers pay for only those services they elect to receive.

The applicable rate components and fixed charges for each class of water service are shown in the chart below.

Current Services and Rate Components

	Rates & Charges That Apply						
Service	System Access	Water Stewardship	System Power	Tier 1/ Tier 2	Readiness to Serve	Capacity Charge	Treatment Surcharge
Full Service Untreated	Yes	Yes	Yes	Yes	Yes	Yes	No
Full Service Treated	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wheeling Service[1]	Yes	Yes	No[2]	No	Yes	Yes	Yes[3]

[1] Metropolitan's rate for wheeling service applies to wheeling to member agencies in transactions of up to one year.
[2] Under Metropolitan's rate for wheeling service, wheeling parties must pay for their own cost for power (if such power can be scheduled by Metropolitan) or pay Metropolitan for the actual cost (not system average) of power service utilized for delivery of the wheeled water. In addition, wheeling parties shall be assessed an administration fee of not less than $5,000 per transaction.
[3] If applicable.

Metropolitan offers three programs that encourage the member agencies to increase groundwater and emergency storage and for which certain Metropolitan charges are inapplicable.

(1) Conjunctive Use Program. The Conjunctive Use Program is operated through individual agreements with member and retail agencies for groundwater storage within Metropolitan's service area. Wet-year imported supplies are stored to enhance reliability during dry, drought, and emergency conditions. Metropolitan has the option to call water stored in the groundwater basins for the participating member agency pursuant to its contractual conjunctive use agreement. At the time of the call, the member agency pays the prevailing rate for that water, but the deliveries are excluded from the calculation of the Capacity Charge because Conjunctive Use Program deliveries are made at Metropolitan's discretion. Conjunctive use programs may also contain cost-sharing terms related to operational costs. See "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A.

(2) Cyclic Storage Program. The Cyclic Storage Program is operated through individual agreements with member agencies for groundwater or surface water storage within Metropolitan's service area. Wet-year imported supplies are stored to enhance reliability during dry, drought, and emergency conditions. Deliveries to the cyclic storage accounts are at Metropolitan's discretion while member agencies have discretion on whether they want to accept the water. At the time the water is delivered from the cyclic storage account, the prevailing full service rate applies, but deliveries are excluded from the calculation of the Capacity Charge because Cyclic Storage Program deliveries are made at Metropolitan's discretion. See "REGIONAL WATER RESOURCES–Local Water Supplies" in this Appendix A.

(3) Emergency Storage Program. The Emergency Storage Program is used for delivering water for emergency storage in surface water reservoirs and storage tanks. Emergency Storage Program purposes include initially filling a newly constructed reservoir or storage tank and replacing water used during an emergency. Because Metropolitan could interrupt delivery of this water, Emergency Storage Program

Deliveries are excluded from the calculation of the RTS Charge, the Capacity Charge, and the Tier 1 maximum.

The applicable rate components and fixed charges applicable for each such program are shown in the following chart.

Current Programs and Rate Components

	Rates & Charges That Apply					
Full Service Program	**System Access**	**Water Stewardship**	**System Power**	**Tier 1 Maximum**	**Readiness to Serve**	**Capacity Charge**
Conjunctive Use Program	Yes	Yes	Yes	Yes	Yes	No
Cyclic Storage Program	Yes	Yes	Yes	Yes	Yes	No
Emergency Storage Program	Yes	Yes	Yes	No*	No	No

* Emergency Storage Program pays the Tier 1 Supply Rate; purchases under Emergency Storage program do not count towards a member agency's Tier 1 Maximum.

Water Rates

The following table sets forth Metropolitan's water rates by category beginning January 1, 2014. See also "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES–Water 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" for ~~a description~~descriptions of current rates. See also "–Litigation Challenging Rate Structure" for a description of litigation challenging Metropolitan's water rates.

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, 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
January 1, 2019*	$209	$295	$326	$69	$127	$319
January 1, 2020*	$208	$295	$346	$65	$136	$323

	FULL SERVICE TREATED[1]			FULL SERVICE UNTREATED[2]	
	Tier 1	~~**Tier 2**~~	**Tier**	**Tier 1**	**Tier 2**
January 1, 2014	$890	~~$1,032~~	$~~593~~1,	$593	$735
January 1, 2015	$923	~~$1,055~~	$~~582~~1,	$582	$714
January 1, 2016	$942	~~$1,076~~	$~~594~~1,	$594	$728
January 1, 2017	$979	~~$1,073~~	$~~666~~1,	$666	$760
January 1, 2018	$1,015	~~$1,101~~	$~~695~~1,	$695	$781
January 1,	$1,050	~~$1,136~~	$~~731~~1,	$731	$817
January 1,	$1,078	~~$1,165~~	$~~755~~1,	$755	$842

Source: Metropolitan.

* Rates effective January 1, 2019 and January 1, 2020 were adopted by Metropolitan's Board on April 10, 2018.

(1) 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.

(2) Full service untreated water rates are the sum of the applicable Supply Rate, System Access Rate, Water Stewardship Rate and System Power Rate.

Financial Reserve Policy

Metropolitan's reserve policy provides for a minimum reserve requirement and target amount of unrestricted reserves at June 30 of each year. The minimum reserve requirement at June 30 of each year is equal to the portion of fixed costs estimated to be recovered by water revenues for the 18- months beginning with the immediately succeeding July. Funds representing the minimum reserve requirement are held in the Revenue Remainder Fund. Any funds in excess of the minimum reserve requirement are held in the Water Rate Stabilization Fund. The target amount of unrestricted reserves is equal to the portion of the fixed costs estimated to be recovered by water revenues during the two years immediately following the 18-month period used to calculate the minimum reserve requirement. Funds in excess of the target amount are to be utilized for capital expenditures in lieu of the issuance of additional debt, or for the redemption, defeasance or purchase of outstanding bonds or commercial paper as determined by the Board. Provided that the fixed charge coverage ratio is at or above 1.2, amounts in the Water Rate Stabilization Fund may be expended for any lawful purpose of Metropolitan, as determined by the Board. See "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

At June 30, 2018, unrestricted reserves, which consist of the Water Rate Stabilization Fund and the Revenue Remainder Fund, totaled $474 million on a modified accrual basis. As of June 30, 2018, the minimum reserve requirement was $257.3 million and the target reserve level was $626.9 million.

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. In April 2016, Metropolitan transferred these funds from unrestricted financial reserves to a new designated fund, the Exchange Agreement Set-Aside Fund. As of ~~September 30, 2018,~~March 31, 2019, Metropolitan held $~~55.2~~55.8 million in the Exchange Agreement Set-Aside Fund. This amount contains the disputed Water Stewardship Rate payments and interest earned thereon based on the rate earned by Metropolitan's investment portfolio. 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. 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~~Metropolitan and San Diego County Water Authority Exchange Agreement" in this Appendix A ~~and~~. See also "–Litigation Challenging Rate Structure" below.

Metropolitan projects that its unrestricted reserves as of June 30, 2019 will be approximately $~~478~~425 million. This amount does not include funds held in the Exchange Agreement Set-Aside Fund. 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.

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 retail water service by Metropolitan's member agencies or their agencies 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 XIIID. Metropolitan has imposed its water standby charges since 1992 and therefore its current standby charges are exempt from the Article XIIID 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 "–Other Charges – 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 makes all taxes either general or special taxes and imposes voting requirements for each kind of tax. It also 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 local governments including special districts are subject to approval by two-thirds of the electorate. 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 June 21, 2017, the California Court of Appeal ruled that whether or not Proposition 26 applies to Metropolitan's rates, the System Access Rate and System Power Rate challenged by SDCWA in such lawsuit comply with Proposition 26. See "–Litigation Challenging Rate Structure."

Propositions 218 and 26 were adopted as measures that qualified for the ballot pursuant to the State's initiative process. Other initiative measures have been proposed from time to time, including presently, or could be proposed in the future, which if qualified for the ballot, 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.

Preferential Rights

Section 135 of the Act gives each of Metropolitan's member agencies a preferential right to purchase for domestic and municipal uses within the agency 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. In 2004, the California Court of Appeal 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 rate structure also challenged Metropolitan's exclusion of payments for Exchange Agreement deliveries from the calculation of SDCWA's preferential right. On June 21, 2017, the California Court of Appeal held that SDCWA's payments under the Exchange Agreement must be included in the preferential rights calculation. See "–Litigation Challenging Rate Structure."

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 certain State Water Contract costs to the System Access Rate and the System Power Rate, and thus affect charges for transportation of water, resulting 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.

The complaint requested a court order invalidating the rates adopted April 13, 2010, and that Metropolitan be mandated to allocate costs associated with the State Water Contract 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.

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 were 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~~ – Metropolitan and San Diego County Water Authority Exchange Agreement") due to a price based on allegedly illegal 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" above); and illegality of the rate structure integrity provision in conservation and local resources incentive agreements between Metropolitan and SDCWA. The rate structure integrity provision permitted 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 contained 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. The complaint contained 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" for a description of Proposition 26.

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. 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 did not affect SDCWA's separate challenge to Metropolitan's rates adopted in April 2012, which also includes Proposition 26 allegations.

Following trial of both lawsuits in two phases, concluding on January 23, 2014 and April 30, 2015, respectively, the Superior Court of the State of California, County of San Francisco (the "Superior Court"), issued its Final Judgment and a Peremptory Writ of Mandate in the 2010 and 2012 SDCWA v. Metropolitan cases. Metropolitan appealed the trial court's decision in each case, and SDCWA filed a cross-appeal of the court's ruling on the rate structure integrity claim and an attorneys' fees order.

On June 21, 2017, the California Court of Appeal released its decision in the appeals and cross-appeal filed by Metropolitan and SDCWA, respectively. The Court of Appeal ruled that Metropolitan may lawfully include its State Water Project transportation costs in the System Access Rate and System Power Rate that are part of the Exchange Agreement's price term, and that Metropolitan may also lawfully include the System Access Rate in its wheeling rate, reversing the trial court decision on this issue. The Court held Metropolitan's allocation of the State Water Project transportation costs as its own transportation costs is proper and does not violate the wheeling statutes (Water Code, § 1810, *et seq.*), Proposition 26 (Cal.

Const., Article XIIIC, §1, subd.(e)), California Government Code section 54999.7, the common law, or the terms of the parties' Exchange Agreement.

The Court of Appeal also ruled that the administrative record before it for the rates in calendar years 2011 through 2014 did not support Metropolitan's inclusion of its Water Stewardship Rate as a transportation cost in the Exchange Agreement price or the wheeling rate, under the common law and wheeling statutes. Having made that determination, the Court of Appeal stated it need not evaluate the issue under any other law. The court did not address the allocation of the Water Stewardship Rate in subsequent years based on a different record. The court noted, and in a subsequent modification confirmed, that its holding does not preclude Metropolitan from including the Water Stewardship Rate in Metropolitan's full service rate.

The Court of Appeal held that because the Water Stewardship Rate was included in the Exchange Agreement price, there was a breach by Metropolitan of the Exchange Agreement in 2011 through 2014. The court remanded the case to the trial court for a redetermination of damages in light of its ruling concerning the Water Stewardship Rate. The Court of Appeal agreed with the trial court that statutory prejudgment interest applies with respect to any damages award, not a lesser contractual interest. The Court of Appeal reversed the trial court by finding that the Exchange Agreement may entitle SDCWA to attorneys' fees for the second phase of the case concerning breach of contract; but directed the trial court on remand to make a new determination of the prevailing party, if any. The cases were therefore remanded to the trial court for a review of both damages and attorneys' fees.

With respect to other issues considered on appeal, the Court of Appeal upheld the trial court's ruling that Metropolitan improperly excludes SDCWA's payments under the Exchange Agreement in Metropolitan's calculation of SDCWA's preferential rights. The court also ruled that SDCWA had the constitutional right to challenge the rate structure integrity provision in Metropolitan's conservation and local resources incentive agreements, and found that the rate structure integrity provision was invalid and unenforceable as an unconstitutional condition on the provision of a public benefit.

On September 27, 2017, the California Supreme Court denied SDCWA's petition for review, declining to consider the Court of Appeal's decision. The Court of Appeal's decision is therefore final.

On July 25, 2018, the Superior Court issued an order regarding the scope of the matters to be reconsidered by the Superior Court on remand pursuant to the Court of Appeal decision. With respect to the Superior Court's re-determination of damages in light of the Court of Appeal's ruling that the administrative record for calendar years 2011 through 2014 did not support Metropolitan's inclusion of its demand management costs in the Exchange Agreement price, the Superior Court ruled that it will award SDCWA $28,678,190.90 in contract damages for breach of the Exchange Agreement, plus prejudgment interest at 10 percent per annum. The Superior Court determined that Metropolitan is not entitled in the remand proceedings to show what it could have lawfully charged SDCWA for demand management costs and to deduct that from SDCWA's damages.

The Superior Court further ruled that SDCWA is not entitled in the remand proceedings to litigate the issue of "offsetting benefits" under the wheeling statutes for the parties' Exchange Agreement. The Superior Court found that such claim is both outside the scope of remand and waived.

The Superior Court also ruled that SDCWA is entitled to judgment on its declaratory relief cause of action declaring the rate structure integrity provision in Metropolitan's conservation and local resources incentive agreements invalid and unenforceable, SDCWA is entitled to further proceedings to litigate the issue of an entitlement to monetary restitution for 2011 through 2014, and the parties shall also litigate in further proceedings the issue of what prospective relief SDCWA may be entitled to in connection with this cause of action. The Superior Court has scheduled a case management conference for May 9, 2019 at which

time it may address the scope of any appropriate discovery relating to the rate structure integrity provision monetary restitution and non-monetary equitable relief sought by SDCWA and may set a date for legal briefing and further proceedings to determine the issue of SDCWA's entitlement to the requested relief.

Finally, the Superior Court confirmed, as the parties agreed, that it will conduct further proceedings for a redetermination of the prevailing party and attorneys' fees in this matter.

On September 14, 2018, Metropolitan filed a Petition for Writ of Mandate with the California Court of Appeal, requesting the court to require the Superior Court to recalculate contract damages for breach of the Exchange Agreement~~,~~ from years 2011 through 2014, to include a set-off for the additional sums SDCWA would have paid had Metropolitan collected the Water Stewardship Rate through ~~the price charged to water purchasers~~its full service sales as SDCWA argued was correct. On November 1, 2018, the Court of Appeal determined that it would not review the issue at this stage of the cases. Metropolitan may raise this issue again on any later appeal from the cases' final judgment.

Due to SDCWA's litigation challenging Metropolitan's rates, and pursuant to the Exchange Agreement between Metropolitan and SDCWA, as of ~~September 30, 2018,~~March 31, 2019, Metropolitan held $~~55.2~~55.8 million in a designated fund, the Exchange Agreement Set-Aside Fund. See "–Financial Reserve Policy." This amount includes the disputed Water Stewardship Rate payments for calendar years 2011 through the present, and interest earned by Metropolitan thereon. The amount held does not include statutory prejudgment interest or any post-judgment interest, attorneys' fees, or costs the Court may award. The Set-Aside Fund also does not include any amounts applicable to the rate structure integrity provision declaratory relief cause of action, because that claim does not involve disputed payments under the Exchange Agreement.

On February 14, 2019, Metropolitan tendered to SDCWA payment of $44.4 million for the San Francisco Superior Court's contract damages award for Water Stewardship Rate payments from 2011 through 2014, plus statutory interest through February 15, 2019, with a reservation of appeal rights, in the *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, 2010 and 2012 actions. This tender was made under compulsion to cease accrual of statutory interest in excess of market rates, but did not affect Metropolitan's rights to appeal, including its right to challenge the amount of the damages award. The tendered payment included $31.6 million of amounts withdrawn from the Exchange Agreement Set-Aside Fund, and $12.8 million withdrawn from reserves (representing statutory interest). On March 7, 2019, SDCWA rejected the tendered payment and returned the uncashed check for the tendered payment. The returned funds were credited back to the Exchange Agreement Set-Aside Fund and Metropolitan reserves in the amounts drawn. The balance in the Exchange Agreement Set-Aside Fund set forth above includes the returned funds.

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 San Francisco Superior Court ordered that the case be stayed. 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. Following a stipulated order issued by the court on November 10, 2016, SDCWA filed a First Amended Petition for Writ of Mandate and Complaint and the court ordered the case stayed pending final resolution of the 2010 and 2012 SDCWA v. Metropolitan cases' appeals. The amended petition/complaint adds allegations of the same Exchange Agreement breach as in the previous cases listed

above and breach of a provision that requires Metropolitan to set aside disputed amounts, relating to the manner in which Metropolitan has set aside the amounts; requests a judicial declaration that, if a judgment is owed to SDCWA under the Exchange Agreement, SDCWA will not be required to pay any portion of that judgment; and requests a refund to SDCWA of any amount Metropolitan has collected in excess of the reasonable costs of the services provided or, alternatively, a reduction in SDCWA's future fees. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On June 9, 2017, SDCWA filed a new Petition for Writ of Mandate and Complaint challenging the Readiness-to-Serve Charge and Capacity Charge for 2018 adopted by Metropolitan's Board on April 11, 2017. These two charges are set annually, and SDCWA's 2016 lawsuit included a challenge to these two charges for 2017. The new lawsuit similarly alleges the 2018 Readiness-to-Serve Charge and Capacity Charge violate the California Constitution, statutes, and common law. The petition/complaint asserts misallocation of costs. Metropolitan was served with the petition/complaint on June 20, 2017. On July 18, 2017, SDCWA filed a first amended petition/complaint to add Metropolitan's Board action of July 11, 2017 to make minor corrections to the Readiness-to-Serve Charge. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

On June 8, 2018, SDCWA filed a new lawsuit in Los Angeles Superior Court that alleges all rates and charges for 2019 and 2020 adopted by Metropolitan's Board on April 10, 2018 violate the California Constitution, statutes, and common law. The Petition for Writ of Mandate and Complaint asserts the Water Stewardship Rate is unlawful per se and its collection in transportation charges is also unlawful; failure to provide wheelers a reasonable credit for "offsetting benefits" pursuant to Water Code Section 1810, *et seq.*, which SDCWA contends (and Metropolitan disputes) applies to the parties' Exchange Agreement; over-collection and misallocation of costs, including misallocation of Metropolitan's California WaterFix costs as its transportation costs; and specified procedural violations. SDCWA states in the Petition and Complaint that it intends to amend its complaint to allege additional claims against Metropolitan, including but not limited to a claim for breach of contract. On November 13, 2018, SDCWA submitted a Government Code Claim giving notice that, absent resolution of its claims by settlement, SDCWA intends to amend the Petition and Complaint with respect to rates and charges for 2019 and 2020 to allege breach of the exchange agreement, rate refunds, restitution with respect to the Rate Structure Integrity clause, and other damages and losses. Metropolitan is unable to assess at this time the likelihood of success of this case, any possible appeal or any future claims.

Other Revenue Sources

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 the 16 facilities is approximately $176.1 million. Since 2000, annual energy generation sales revenues have ranged between $7.5 million and nearly $29.6 million. Energy generation sales revenues were $20.8 million in fiscal year 2016-17 and $~~19.1~~23.7 million in fiscal year 2017-18.

Metropolitan has a power sales contract with Pacific Gas and Electric Company ("PG&E") for the sale to PG&E of the output of Metropolitan's 24 megawatt Etiwanda hydroelectric plant through 2034. On January 29, 2019, PG&E and its parent company, PG&E Corporation, filed for bankruptcy protection under Chapter 11 of the Bankruptcy Code. As a result of the PG&E bankruptcy filing, a $10,136 payment due in January 2019 under the power sales contract was not received. PG&E has taken no action to reject the power sales contract in the bankruptcy proceedings and Metropolitan continues to perform under the contract. The next scheduled payment will be due from PG&E in June 2019. Metropolitan will hold a claim against the bankruptcy estate for any unpaid amounts from PG&E during the pendency of the bankruptcy proceedings.

Investment Income. In fiscal years 2015-16, 2016-17, and 2017-18 Metropolitan's earnings on investments, including adjustments for gains and losses and premiums and discounts, including construction account and trust fund earnings, excluding gains and losses on swap terminations, on an accrual basis (audited) were $19.4 million, $6.2 million, and $10.6 million, respectively.

Investment of Moneys in Funds and Accounts

The Board has delegated to the Treasurer the authority to invest funds. All moneys in any of the funds and accounts established pursuant to Metropolitan's water revenue or general obligation bond resolutions are managed 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, government-sponsored enterprise 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, managed by 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 government-sponsored enterprise, 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 EXPENSES–Outstanding Senior Revenue Bonds and Senior Parity Obligations – Variable Rate and Swap Obligations – Self-Liquidity Bonds" in this Appendix A. Metropolitan's current investments comply with the Statement of Investment Policy.

As of ~~September 30, 2018,~~March 31, 2019, the total market value (cash-basis) of all Metropolitan invested funds was $~~995.3~~1,147.8 million, including bond reserves of $~~26.2~~13.0 million. The market value of Metropolitan's investment portfolio is subject to market fluctuation and volatility and general economic conditions. Over the three years ended ~~September 30, 2018~~March 31, 2019 the market value of the month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) averaged approximately $~~1.11~~1.10 billion. The minimum month-end balance of Metropolitan's investment portfolio (excluding bond reserve funds) during such period was approximately $890.1 million on January 31, 2018. See Footnote 3 to Metropolitan's audited financial statements in Appendix B for additional information on the investment portfolio.

Metropolitan's administrative code requires 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 2018-19 on June 13, 2018.

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 "A-1/P-1/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 AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, 2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)" for a description of Metropolitan's investments at June 30, 2018.

Since May 2002, Metropolitan has retained two outside investment firms to manage the portion of Metropolitan's portfolio not needed to provide liquidity for expenditures over the next six months. ~~The outside managers are required to adhere to Metropolitan's Statement of Investment Policy. As of September 30, 2018 such managers were managing approximately $346.8 million in investments on behalf of Metropolitan.~~ As of March 31, 2019 such managers were managing approximately $357.5 million in investments on behalf of Metropolitan. Since December 2018, Metropolitan has retained an outside investment firm to manage the liquidity portfolio. As of March 31, 2019, this firm managed approximately $773.5 million. The outside managers are required to adhere to Metropolitan's Statement of Investment Policy.

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.

METROPOLITAN EXPENSES

General

The following table sets forth a summary of Metropolitan's expenses, by major function, for the five years ended June 30, 2018, on a modified accrual basis. All information is unaudited. Expenses of

Metropolitan for the fiscal years ended June 30, 2018 and June 30, 2017, on an accrual basis, are shown in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

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

	2014	2015	2016	2017	2018
Operation and Maintenance Costs[1]	$ 512	$ 697	$ 799	$ 559	$ ~~567~~568
Total State Water Project[2]	465	436	512	506	527
Total Debt Service	384	303	332	330	360
Construction Expenses from Revenues[3]	117	210	273	132	98
Other[4]	6	7	6	4	5
Total Expenses (net of reimbursements)	$1,484	$1,653	$1,922	$1,531	$~~1,557~~1,558

Source: Metropolitan.

(1) Includes operation and maintenance, debt administration, conservation and local resource programs, CRA power, and water supply expenses. Fiscal years 2014-15, 2015-16, 2016-17, and 2017-18 include $142 million, $222 million, $33 million, and $1 million, respectively, of conservation projects funded from transfers from the Water Management Fund.

(2) Includes both operating and capital expense portions.

(3) 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. Includes $160 million for acquiring properties in Riverside and Imperial Counties, funded by $160 million from the Replacement and Refurbishment Fund Reserves. Does not include expenditures of bond proceeds.

(4) Includes operating equipment.

Revenue Bond Indebtedness and Other Obligations

As of ~~November~~May 1, ~~2018,~~2019, Metropolitan had total outstanding indebtedness secured by a lien on Net Operating Revenues of $~~4.13~~4.11 billion. This indebtedness was comprised of $~~3.07~~3.04 billion of water revenue bonds issued under the Senior Debt Resolutions (defined below), which includes $~~2.28~~2.24 billion of fixed rate senior lien revenue bonds, and $797.3 million of variable rate senior lien revenue bonds; $1.03 billion of subordinate water revenue bonds issued under the Subordinate Debt Resolutions (defined below), which includes $579.7 million of fixed rate subordinate revenue bonds, and $446.3 million of variable rate subordinate revenue bonds; and $~~31.2~~46.8 million Short-Term Certificates, which bear a variable rate, and are on parity with the subordinate ~~lien~~ water revenue bonds. In addition, Metropolitan has $493.6 million of fixed-payor interest rate swaps which provides a fixed interest rate hedge to an equivalent amount of variable rate debt. Metropolitan's revenue bonds and other revenue obligations are more fully described ~~in this section~~ below.

REVENUE BOND INDEBTEDNESS AND OTHER OBLIGATIONS

	Variable Rate	Fixed Rate	Total
Senior Lien Revenue Bonds	$ 797,320,000	$~~2,277,075,000~~2,244,765,000	$~~3,074,395,000~~3,042,085,000
Subordinate Lien Revenue Bonds	446,255,000	579,655,000	1,025,910,000
Subordinate Lien Short-Term Certificates	~~31,200,000~~46,800,000	0	~~31,200,000~~46,800,000
Total	**$~~1,274,775,000~~1,290,375,000**	**$~~2,856,730,000~~2,824,420,000**	**$~~4,131,505,000~~4,114,795,000**

Fixed-Payor Interest Rate Swaps	(493,630,000)	493,630,000	0
Net Amount (after giving effect to Swaps)	**$ ~~781,145,000~~796,745,000**	**$~~3,350,360,000~~3,318,050,000**	**$~~4,131,505,000~~4,114,795,000**

Limitations on Additional Revenue Bonds

Resolution 8329, adopted by Metropolitan's Board on July 9, 1991, as amended and supplemented (the "Master Senior Resolution," and collectively with all such supplemental resolutions, the "Senior Debt Resolutions"), provides for the issuance of Metropolitan's senior lien water revenue bonds. The Senior Debt Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Senior Debt 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 Senior Debt Resolutions ("Senior Revenue Bonds") or other obligations of Metropolitan having a lien and charge upon, or being payable from, the Net Operating Revenues on parity with such Senior Revenue Bonds ("Senior Parity Obligations"). No additional Senior Revenue Bonds or Senior Parity Obligations may be issued or incurred unless the conditions of the Senior Debt Resolutions have been satisfied.

Resolution 9199, adopted by Metropolitan's Board on March 8, 2016, as amended and supplemented (the "Master Subordinate Resolution," and collectively with all such supplemental resolutions, the "Subordinate Debt Resolutions," and together with the Senior Debt Resolutions, the "Revenue Bond Resolutions"), provides for the issuance of Metropolitan's subordinate water revenue bonds and other obligations secured by a pledge of Net Operating Revenues that is subordinate to the pledge securing Senior Revenue Bonds and Senior Parity Obligations. The Subordinate Debt Resolutions establish limitations on the issuance of additional obligations payable from Net Operating Revenues. Under the Subordinate Debt Resolutions, with the exception of Senior Revenue Bonds and Senior Parity Obligations, 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 subordinate water revenue bonds authorized by the Subordinate Debt Resolutions ("Subordinate Revenue Bonds" and, together with Senior Revenue Bonds, "Revenue Bonds") or other obligations of Metropolitan having a lien and charge upon, or being payable from, the Net Operating Revenues on parity with the Subordinate Revenue Bonds ("Subordinate Parity Obligations"). No additional Subordinate Revenue Bonds or Subordinate Parity Obligations may be issued or incurred unless the conditions of the Subordinate Debt 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 of 15 percent of the assessed value of all taxable property within Metropolitan's service area. As of ~~November~~May 1, ~~2018,~~2019, outstanding general obligation bonds, water revenue bonds and other evidences of indebtedness in the amount of $~~4.19~~4.16 billion represented approximately 0.14 percent of the fiscal year 2018-19 taxable assessed valuation of $~~2,917~~2,916.6 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, 2018 were $6.69 billion. The aggregate amount of revenue bonds outstanding as of ~~November~~May 1, ~~2018~~2019 was $~~4.10~~4.07 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, 2018 and June 30, 2017, respectively, are shown in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017.~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (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 parity with the Senior Revenue Bonds and Subordinate Revenue Bonds of Metropolitan will remain in effect so long as any Senior Revenue Bonds and Subordinate Revenue Bonds authorized pursuant to the applicable 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 Exposure Policy

As of ~~November~~May 1, ~~2018,~~2019, Metropolitan had outstanding $797.3 million of variable rate obligations issued under the Senior Debt Resolutions, including variable rate Senior Revenue Bonds (described under "–Outstanding Senior Revenue Bonds and Senior Parity Obligations – Variable Rate and Swap Obligations" below). In addition, as of ~~November~~May 1, ~~2018,~~2019, $446.3 million of Metropolitan's $1.03 billion of outstanding Subordinate Revenue Bonds issued under the Subordinate Debt Resolutions were variable rate obligations (described under "–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations~~ Subordinate Revenue Bonds~~" below).

As of ~~November~~May 1, ~~2018,~~2019, of Metropolitan's $~~1.27~~1.29 billion of variable rate obligations, $493.6 million of such variable rate demand obligations are treated by Metropolitan as fixed rate debt, by virtue of interest rate swap agreements (described under "–Outstanding Senior Revenue Bonds and Senior Parity Obligations – Variable Rate and Swap Obligations – Interest Rate Swap Transactions" below), for the purpose of calculating debt service requirements. The remaining $~~781.1~~796.7 million of variable rate obligations represent approximately ~~18.9~~19.4 percent of total outstanding water revenue secured indebtedness (including Senior Revenue Bonds and Senior Parity Obligations and Subordinate Revenue Bonds and Subordinate Parity Obligations), as of ~~November~~May 1, ~~2018.~~2019.

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.

The periodic payments due to Metropolitan from counterparties under its outstanding interest rate swap agreements and the interest payments to be payable by Metropolitan under certain of its outstanding variable rate obligations are calculated by reference to the London interbank offering rate ("LIBOR"). On July 27, 2017, the Financial Conduct Authority (the "FCA"), the U.K. regulatory body currently responsible for the regulation and supervision of LIBOR, announced that it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR rates after 2021 (the "FCA Announcement"). It is not possible to predict the effects of the FCA Announcement or how any prospective phasing out of LIBOR as a reference rate and transition to an alternate benchmark rate will be implemented, but increased volatility in the reported LIBOR rates may occur and the level of such LIBOR-based swap and interest payments may be affected.

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Outstanding Senior Revenue Bonds and Senior Parity Obligations

Senior Revenue Bonds

The water revenue bonds issued under the Senior Debt Resolutions outstanding as of ~~November~~May 1, ~~2018,~~2019, are set forth below:

Name of Issue	Principal Outstanding
Water Revenue Refunding Bonds, 1993 Series A	$ 21,840,000
Water Revenue Bonds, 2000 Authorization, Series B-3(1)	88,800,000
Water Revenue Refunding Bonds, ~~2008 Authorization,~~2009 Series ~~A~~B(~~2~~3)	~~169,795,000~~106,690,000
Water Revenue Refunding Bonds, 2009 Series ~~B~~C(3)	~~106,690,000~~91,165,000
Water Revenue ~~Refunding~~ Bonds, ~~2009~~2008 Authorization, Series ~~C~~B(3)	~~91,165,000~~5,365,000
Water Revenue Bonds, 2008 Authorization, Series ~~B~~C(2) (3)	~~5,365,000~~78,385,000
Water Revenue Bonds, 2008 Authorization, Series ~~C~~D(~~3~~2) (3)	~~78,385,000~~250,000,000
Water Revenue Refunding Bonds, ~~2008 Authorization,~~2009 Series D(3)	~~250,000,000~~31,030,000
Water Revenue Refunding Bonds, 2009 Series ~~D~~E(3)	~~31,030,000~~6,625,000
~~Water Revenue Refunding Bonds, 2009 Series E~~	~~6,625,000~~
Water Revenue Bonds, 2010 Authorization, Series A(~~3~~2)	250,000,000
Water Revenue Refunding Bonds, 2010 Series B	63,800,000
Water Revenue Refunding Bonds, 2011 Series B	2,640,000
Water Revenue Refunding Bonds, 2011 Series C	128,750,000
Water Revenue Refunding Bonds, 2012 Series A	181,180,000
Water Revenue Refunding Bonds, 2012 Series C	54,795,000
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
Water Revenue Refunding Bonds, 2014 Series A	83,865,000
Water Revenue Refunding Bonds, 2014 Series C-1(3)	13,505,000
Water Revenue Refunding Bonds, 2014 Series C-~~1 C-3~~2	~~30,335,000~~14,020,000
Water Revenue Refunding Bonds, 2014 Series C-3	2,810,000
Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D(1)	38,465,000
Water Revenue Refunding Bonds, 2014 Series E	86,060,000
Water Revenue Refunding Bonds, 2014 Series G-4~~ G-5~~(~~3~~4)	~~17,810,000~~11,605,000
Water Revenue Refunding Bonds, 2014 Series G-5	6,205,000
Special Variable Rate Water Revenue Refunding Bonds, 2015 Series A-1 and A-2(1)	188,900,000
Water Revenue Bonds, 2015 Authorization, Series A	206,265,000
Water Revenue Refunding Bonds, 2016 Series A	239,455,000
Special Variable Rate Water Revenue Refunding Bonds, 2016 Series B-1 and B-2(1)	103,670,000
Water Revenue Bonds, 2017, Authorization, Series A(1)	80,000,000
Special Variable Water Revenue Refunding Bonds, 2018 Series A-1 and A-2(1)	210,040,000
Water Revenue Refunding Bonds, 2018 Series B	137,485,000
Total	**$~~3,074,395,000~~3,042,085,000**

Source: Metropolitan.

(1) Outstanding variable rate obligation.

(2) ~~Expected to be refunded by Metropolitan's Water Revenue Refunding Bonds, 2018 Series B.~~(3) Designated as "Build America Bonds" pursuant to the American Recovery and Reinvestment Act of 2009.

(3) Expected to be refunded by Metropolitan's Water Revenue Refunding Bonds, 2019 Series A and Subordinate Water Revenue Refunding Bonds, 2019 Series A.

Variable Rate and Swap Obligations

As of ~~November~~May 1, ~~2018,~~2019, Metropolitan had outstanding $797.3 million of senior lien variable rate obligations, including variable rate Senior Revenue Bonds issued under the Senior Debt Resolutions (described under this caption "–Variable Rate and Swap Obligations") and Senior Parity Obligations incurred pursuant to a Short-Term Revolving Credit Facility (described under "–Senior Parity Obligations – Short-Term Revolving Credit Facility" below).

The outstanding variable rate Senior Revenue Bonds include special variable rate bonds initially designated as self-liquidity bonds (the "Self-Liquidity Bonds") and variable rate demand obligations supported by standby bond purchase agreements between Metropolitan and various liquidity providers.

Self-Liquidity Bonds. As of ~~November~~May 1, ~~2018,~~2019, Metropolitan had $314.8 million of outstanding Self-Liquidity Bonds issued under the Senior Debt Resolutions. Each Series of the outstanding Self-Liquidity Bonds may bear interest in any one of several interest rate modes at the election of Metropolitan. The interest rates for each Series of the outstanding Self-Liquidity Bonds are currently reset on a weekly basis. 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. Purchase price payments of Self-Liquidity Bonds are subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate Parity Obligations. In addition, Metropolitan's investment policy permits it to purchase tendered Self-Liquidity Bonds as an investment for its investment portfolio (other than from 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 a Revolving Credit Agreement (as described below) pursuant to which it may make borrowings for the purpose of paying the purchase price of Self-Liquidity Bonds. See "–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations – Self-Liquidity Revolving Credit Agreement~~.~~" 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 Senior Debt Resolutions.

The following table lists the outstanding Self-Liquidity Bonds as of ~~November~~May 1, ~~2018.~~2019.

Self-Liquidity Bonds

Name of Issue	Principal Outstanding
Special Variable Rate Water Revenue Refunding Bonds, 2013 Series D	$ 87,445,000
Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D	38,465,000
Special Variable Rate Water Revenue Refunding Bonds, 2015 Series A-1 and A-2	188,900,000
Total	**$314,810,000**

Source: Metropolitan.

Liquidity Supported Bonds. The interest rates for Metropolitan's other variable rate demand obligations issued under the Senior Debt Resolutions, totaling $482.5 million as of ~~November~~May 1,

~~2018,~~2019, are currently reset on a daily basis. While bearing interest at a daily rate, such variable rate demand obligations are subject to optional tender on any business day with same day notice by the owners thereof and mandatory tender upon specified events. 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. Metropolitan has secured its obligation to repay principal and interest advanced under the standby bond purchase agreements as Senior Parity Obligations. 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 ("bank bonds") would initially bear interest at a ~~significantly higher interest rate and to the extent such~~per annum interest rate equal to, depending on the liquidity facility, either: (a) one month LIBOR plus 7.50 percent; or (b) the highest of the (i) the Prime Rate plus one percent, (ii) Federal Funds Rate plus two percent, and (iii) seven percent (with the spread or rate increasing in the case of each of (i), (ii) and (iii) of this clause (b) after 90 days). To the extent such bank bonds have not been remarketed or otherwise retired as of the earlier of the 90th day following the date such bonds were purchased by the liquidity provider or the stated expiration date of the related liquidity facility, 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 payable under the terms of the current liquidity facilities in semi-annual installments over a period of approximately one ~~to~~, three, or five years, depending on the applicable liquidity facility. In addition, upon an event of default under any such liquidity facility, including a failure by Metropolitan to perform or observe its covenants under the applicable standby bond purchase agreement, a default in other specified indebtedness of Metropolitan, or other specified events of default (including a reduction in the credit rating assigned to Senior Revenue Bonds issued under the Senior Debt Resolutions by any of Fitch, S&P or Moody's below "A–" or "A3"), the liquidity provider could require all ~~variable rate~~bank bonds ~~purchased by the liquidity provider~~ to be subject to immediate mandatory redemption by Metropolitan.

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 ~~November~~May 1, ~~2018.~~2019.

Liquidity Facilities and Expiration Dates

Liquidity Provider	Bond Issue	Principal Outstanding	Facility Expiration
Bank of America, N.A.	2016 Series B-1 and Series B-2	$103,670,000	July 2021
Citibank, N.A.	2000 Authorization Series B-3	$ 88,800,000	March 2020
Citibank, N.A.	2017 Authorization Series A	$ 80,000,000	March 2020
The Toronto-Dominion Bank, New York Branch	2018 Series A-1 and Series A-2	$210,040,000	June 2021
Total		**$482,510,000**	

Source: Metropolitan.

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.

Metropolitan's obligations to make regularly scheduled net payments under the terms of the interest rate swap agreements are payable on a parity with the Senior Parity Obligations. Termination payments under the 2002A and 2002B interest rate swap agreements would be payable on a parity with the Senior Parity Obligations. Termination payments under all other interest rate swap agreements would be on parity with the Subordinate Parity Obligations.

The following swap transactions were outstanding as of ~~November~~May 1, ~~2018~~2019:

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	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.

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 AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017.~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (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 September 30, 2018,~~ (including defaults under other specified swaps and indebtedness, certain acts of insolvency, if a party may not legally perform its swap obligations, or, with respect to Metropolitan, if its credit rating is reduced below "BBB–" by Moody's or "Baa3" by S&P (under most of the interest rate swap agreements) or below "BBB" by Moody's or "Baa2" by S&P (under one of the interest rate swap agreements)). As of March 31, 2019, Metropolitan would have been required to pay to some of its counterparties termination payments if its swaps were terminated on that date. Metropolitan's net exposure to its counterparties for all such termination payments on that date was approximately $~~42.2~~52.0 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 has previously exercised, and may in the future exercise, from time to time, 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 ~~September 30, 2018,~~March 31, 2019, 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 at that time. 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.

Term Mode Bonds

As of ~~November~~May 1, ~~2018,~~2019, Metropolitan had outstanding $48.1 million of Senior Revenue Bonds bearing interest in a term mode, comprised of $30.3 million of 2014 Series C Bonds in three series, and $17.8 million of 2014 Series G Bonds in two series (collectively, 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 Term Mode Bonds outstanding as of ~~November~~May 1, ~~2018,~~2019, are summarized in the following table:

Term Mode Bonds

Series	Original Principal Amount Issued	Next Scheduled Mandatory Tender Date
2014 C-1	$13,505,000	October 1, 2019[(1)]
2014 C-2	14,020,000	October 1, 2020
2014 C-3	2,810,000	October 1, 2021
2014 G-4	11,605,000	October 1, 2019[(1)]
2014 G-5	6,205,000	October 1, 2020
Total	**$48,145,000**	

Source: Metropolitan.

(1) Expected to be refunded by Metropolitan's Water Revenue Refunding Bonds, 2019 Series A and Subordinate Water Revenue Refunding Bonds, 2019 Series A.

Metropolitan will pay the principal of, and interest on, the Term Mode Bonds on parity with its other Senior Revenue 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 any tendered Term Mode Bonds is an unsecured, special limited obligation of Metropolitan payable from Net Operating Revenues. Purchase price payments of Term Mode Bonds are subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate Parity Obligations. 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. Failure to pay the purchase price of a series of Term Mode 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 Term Mode 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 Term Mode Bonds on a scheduled mandatory tender date is not a default under the Senior Debt Resolutions. 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 an obligation payable on parity with the Senior Revenue Bonds and Senior Parity Obligations.

Build America Bonds

Metropolitan previously issued and designated three series of Senior Revenue Bonds in the aggregate principal amount of ~~$578,385,000~~578.385 million as "Build America Bonds" under the provisions of the American Recovery and Reinvestment Act of 2009 (the "Build America Bonds"). Metropolitan currently expects to receive cash subsidies from the United States Treasury (the "Interest Subsidy Payments") equal to 35 percent of the interest payable on all such outstanding Build America Bonds less any federal budget sequestration offsets as described in the following paragraph. The Interest Subsidy Payments in connection with the Build America Bonds do not constitute Operating Revenues under the Senior Debt Resolutions or the Subordinate Debt Resolutions. 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~~sequestrations, 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 semi-annual 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. The percentage reduction is re-determined for each federal fiscal year. Interest Subsidy Payments processed in the subsequent federal fiscal years ended September 30, 2014 through 2018 were also reduced by the applicable sequestration rate for each such federal fiscal year, which sequestration rate ranged from 6.6 percent to 7.3 percent for such federal fiscal years. Interest Subsidy Payments processed on or after October 1, 2018 and on or before September 30, 2019 are ~~anticipated~~ to be reduced by the federal fiscal year 2018 sequestration rate of 6.2 percent. At present, pursuant to federal legislation, sequestration will continue ~~through fiscal year 2023.~~to September 30, 2027. 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. Metropolitan expects to refund $78,385,000 Water Revenue Bonds,

2008 Authorization Series C (Build America Bonds) and $250,000,000 Water Revenue Bonds, 2008 Authorization Series D (Build America Bonds) with its Water Revenue Refunding Bonds, 2019 Series A and Subordinate Water Revenue Refunding Bonds, 2019 Series A.

Senior Parity Obligations

Short-Term Revolving Credit Facility. In April 2016, Metropolitan entered into a noteholder's agreement (such agreement as subsequently amended, the "RBC Short-Term Revolving Credit Facility") with RBC Municipal Products, LLC ("RBC") and a related note purchase agreement with RBC Capital Products, LLC, as the underwriter, for the issuance and sale by Metropolitan and the purchase by RBC of Metropolitan's Index Notes, Series 2016. Pursuant to the RBC Short-Term Revolving Credit Facility, Metropolitan may borrow, pay down and re-borrow amounts, through the issuance and sale from time to time of up to $200 million of notes (including, subject to certain terms and conditions, notes to refund maturing notes) to be purchased by RBC during the term of RBC's commitment thereunder (which commitment currently extends to April 5, 2022). As of ~~November~~May 1, ~~2018,~~2019, Metropolitan has outstanding $0 of short-term notes under the RBC Short-Term Revolving Credit Facility. Any unpaid principal remaining outstanding at the April 5, 2022 commitment end date of the RBC Short-Term Revolving Credit Facility is required to be paid by Metropolitan in quarterly installments over a period of approximately one year.

Notes under the RBC Short-Term Revolving Credit Facility bear interest at a variable rate of interest: for taxable borrowings, at a spread of 0.54 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to the one-month LIBOR; and for tax-exempt borrowings, at a spread of 0.38 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to the SIFMA Municipal Swap Index. Under the RBC Short-Term Revolving Credit Facility, upon a failure by Metropolitan to pay principal or interest of any note thereunder, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including a reduction in the credit rating assigned to Senior Revenue Bonds issued under the Senior Debt Resolutions by Fitch, S&P or Moody's below "A–" or "A3"), the bank has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days' notice) Metropolitan's obligation to repay its borrowings. Metropolitan has secured its obligation to pay principal and interest on notes evidencing borrowings under the RBC Short-Term Credit Facility as Senior Parity Obligations.

In connection with the execution of the RBC Short-Term Revolving Credit Facility, Metropolitan designated the principal and interest payable on the notes thereunder as Excluded Principal Payments under the Senior Debt Resolutions and thus, for purposes of calculating Maximum Annual Debt Service, included the amount of principal and interest due and payable under the RBC Short-Term Revolving Credit Facility on a schedule of Assumed Debt Service. This schedule of Assumed Debt Service assumes that Metropolitan will pay the principal under the RBC Short-Term Revolving Credit Facility over a period of 30 years at a fixed interest rate of approximately 3.3 percent.

Metropolitan has previously, and may in the future, enter into one or more other or alternative short-term revolving credit facilities, the repayment obligations of Metropolitan under which may be secured as either Senior Parity Obligations or Subordinate Parity Obligations.

Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations

The water revenue bonds issued under the Subordinate Debt Resolutions outstanding as of ~~November~~May 1, ~~2018,~~2019, are set forth below:

Name of Issue	Principal Outstanding

Name of Issue	Principal Outstanding
Subordinate Water Revenue Bonds, 2016 Authorization Series A[(1)]	$175,000,000
Subordinate Water Revenue Refunding Bonds, 2017 Series A	238,015,000
Subordinate Water Revenue Refunding Bonds, 2017 Series B	178,220,000
Subordinate Water Revenue Bonds, 2017 Series C[(1)]	80,000,000
Subordinate Water Revenue Refunding Bonds, 2017 Series D[(1)]	95,630,000
Subordinate Water Revenue Refunding Bonds, 2017 Series E[(1)]	95,625,000
Subordinate Water Revenue Refunding Bonds, 2018 Series A	99,075,000
Subordinate Water Revenue Bonds, 2018 Series B	64,345,000
Total	**$1,025,910,000**

Source: Metropolitan.

(1) Outstanding variable rate obligation.

As of ~~November~~May 1, ~~2018,~~2019, of the $1.03 billion outstanding Subordinate Revenue Bonds, $446.3 million were variable rate obligations. The outstanding variable rate Subordinate Revenue Bonds are all bonds bearing interest in a LIBOR Index Mode or a SIFMA Index Mode.

In December 2016, Metropolitan entered into a Continuing Covenant Agreement with Bank of America, N.A. ("BANA," ~~;~~ and the "2016 BANA Agreement"), for the purchase by BANA and sale by Metropolitan of $175 million Subordinate Water Revenue Bonds, 2016 Authorization Series A (the "Subordinate 2016 Series A Bonds"), which was the first series of bonds issued under the Subordinate Debt Resolutions. Proceeds were used to reimburse Metropolitan for the purchase of the Delta Islands in the San Francisco Bay\Sacramento-San Joaquin River Delta that was funded from Metropolitan's reserves in July 2016.

The Subordinate 2016 Series A Bonds bear interest at a variable rate of interest, at a spread of 0.32 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained) to one-month LIBOR. Under the 2016 BANA Agreement, upon a failure by Metropolitan to pay principal or interest of any Subordinate 2016 Series A Bonds, a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below "BBB–," or if any of Fitch, S&P or Moody's shall have assigned a credit rating below "BBB" or "Baa2," to Senior Revenue Bonds issued under the Senior Debt Resolutions), BANA has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days' notice) Metropolitan's obligation to repay the Subordinate 2016 Series A Bonds. Metropolitan has secured its obligation to pay principal and interest under the 2016 BANA Agreement as a Subordinate Parity Obligation. The Subordinate 2016 Series A Bonds are Index Tender Bonds and are subject to mandatory tender for purchase on the scheduled mandatory tender date of December 21, 2020, or, if directed by BANA upon the occurrence and continuance of an event of default under the 2016 BANA Agreement, five business days after receipt of such direction. On or before the scheduled mandatory tender date, Metropolitan may request an extension of the 2016 BANA Agreement for another tender period or may request BANA to purchase the Subordinate 2016 Series A Bonds in another interest rate mode, or Metropolitan may seek to remarket the Subordinate 2016 Series A Bonds to another bank or in the public debt markets. In the event the 2016 BANA Agreement is not extended, Metropolitan is obligated under the 2016 BANA Agreement to cause unremarketed Subordinate 2016 Series A Bonds to be redeemed five business days after the scheduled mandatory tender date in the event the purchase price of the Subordinate 2016 Series A Bonds is not paid from the proceeds of a remarketing or other funds on the scheduled mandatory tender date. A failure to pay the purchase price of the Subordinate 2016 Series A Bonds upon a mandatory tender would constitute a default under the Subordinate Debt Resolutions if not remedied within five business days.

Metropolitan's Subordinate Water Revenue Bonds, 2017 Series C, Subordinate Water Revenue Refunding Bonds, 2017 Series D and Subordinate Water Revenue Refunding Bonds, 2017 Series E (collectively, the "Subordinate 2017 Series C, D and E Bonds") bear interest at a rate that fluctuates weekly based on the SIFMA Municipal Swap Index ~~published weekly by Municipal Market Data~~ plus a spread. The Subordinate 2017 Series C, D and E Bonds are Index Tender Bonds and are subject to mandatory tender under certain circumstances, including on certain scheduled mandatory tender dates (unless earlier remarketed or otherwise retired). Metropolitan anticipates that it will pay the purchase price of tendered Subordinate 2017 Series C, D and E ~~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 any such tendered Subordinate 2017 Series C, D and E ~~Index Tender~~ Bonds is a special limited obligation of Metropolitan payable solely from Net Operating Revenues subordinate to the Senior Revenue Bonds and Senior Parity Obligations and on parity with the other outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations. Metropolitan has not secured any liquidity facility or letter of credit to support the payment of the purchase price of Subordinate 2017 Series C, D and E ~~Index Tender~~ Bonds in connection with a scheduled mandatory tender. Failure to pay the purchase price of any Subordinate 2017 Series C, D and E ~~Index Tender~~ Bonds on a scheduled mandatory tender date for such Index Tender Bonds for a period of five business days following written notice by any Owner of such Subordinate 2017 Series C, D and E ~~Index Tender~~ Bonds will constitute an event of default under the Subordinate Debt Resolutions, upon the occurrence and continuance of which the owners of 25 percent in aggregate principal amount of the Subordinate Revenue Bonds then outstanding may elect a bondholders' committee to exercise rights and powers of such owners under the Subordinate Debt Resolutions, including the right to declare the entire unpaid principal of the Subordinate Revenue Bonds then outstanding to be immediately due and payable.

The mandatory tender dates and related tender periods for the Index Tender Bonds outstanding as of ~~November~~May 1, ~~2018,~~2019, are summarized in the following table:

Index Tender Bonds

Series	Date of Issuance	Original Principal Amount Issued	Next Scheduled Mandatory Tender Date	Maturity Date
Subordinate 2016 Authorization Series A	December 21, 2016	$175,000,000	December 21, 2020	July 1, 2045
Subordinate 2017 ~~Refunding~~ Series C	July 3, 2017	80,000,000	July 25, 2019	July 1, 2047
Subordinate 2017 Refunding Series D	July 3, 2017	95,630,000	July 25, 2019	July 1, 2037
Subordinate 2017 Refunding Series E	July 3, 2017	95,625,000	July 25, 2019	July 1, 2037
Total		**$446,255,000**		

Source: Metropolitan.

Subordinate Short-Term Certificates. On August 1, 2018, Metropolitan entered into a note purchase and continuing covenant agreement with BANA (the "BANA Short-Term Note Purchase Agreement") for the purchase by BANA and sale by Metropolitan of Metropolitan's Short-Term Revenue Certificates, Series 2018 A. Pursuant to the terms of the BANA Short-Term Note Purchase Agreement, Metropolitan may borrow, through the issuance and sale from time to time of short-term notes, an aggregate principal amount not to exceed $86 million (including, subject to certain terms and conditions, notes to refund maturing notes) to be purchased by BANA during the term of BANA's commitment thereunder (the stated termination date of which is currently July 31, 2020). This facility will provide $86 million to provide ~~gap~~advance funding to support the California WaterFix as authorized by the Board on July 10, 2018. See "METROPOLITAN'S WATER SUPPLY–California WaterFix" in this Appendix A. As of ~~November~~May 1, ~~2018,~~2019, Metropolitan has sold $~~31.2~~46.8 million of short-term notes under the BANA Short-Term Note Purchase Agreement, with the remaining balance expected to be sold by June 3, 2019.

Notes under the BANA Short-Term Note Purchase Agreement bear interest at a ~~variable rate of~~fluctuating per annum interest~~, at a spread~~ rate, equal to one-month LIBOR plus a spread of 0.32 percent (so long as the current credit rating on Metropolitan's Senior Revenue Bonds issued under the Senior Debt Resolutions is maintained). Under the BANA Short-Term Note Purchase Agreement, upon a failure by Metropolitan to pay principal or interest of any note thereunder, upon a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, certain acts of insolvency, or other specified events of default (including if S&P shall have assigned a credit rating below "BBB–," or if any of Fitch, S&P or Moody's shall have assigned a credit rating below "BBB" or "Baa2," to Senior Revenue Bonds issued under the Senior Debt Resolutions), BANA has the right to terminate its commitments and may accelerate (depending on the event, seven days after the occurrence, or for certain events, only after 180 days' notice) Metropolitan's obligation to repay its borrowings. Metropolitan has secured its obligations to pay principal and interest under the BANA Short-Term Note Purchase Agreement as Subordinate Parity Obligations, payable from Net Operating Revenues on a basis junior and subordinate to the Senior Revenue Bonds and Senior Parity Obligations.

Self-Liquidity Revolving Credit Agreement. In June 2018, Metropolitan entered into a revolving credit agreement (the "ICBC Self-Liquidity Revolving Credit Agreement") with the Industrial and Commercial Bank of China Limited, New York Branch ("ICBC"), under the terms of which Metropolitan may borrow up to $200 million for the purpose of paying the purchase price of tendered Self-Liquidity Bonds, including any Senior Revenue Bonds and/or Subordinate Revenue Bonds of Metropolitan that are part of Metropolitan's self-liquidity program. The stated expiration date of the ICBC Self-Liquidity Revolving Credit Agreement is June 23, 2023.

Borrowings made by Metropolitan under the ICBC Revolving Credit Agreement initially bear interest at a ~~variable rate of interest~~fluctuating per annum interest rate equal to, at Metropolitan's discretion, either: (a) one month LIBOR plus 1.50 percent; or (b) the higher of (i) the Federal Funds Rate plus 0.50 percent, and (ii) the Prime Rate, (increasing in any case periodically, beginning after 90 days). Metropolitan is required to pay principal remaining unpaid as of the earlier of the 180th day following the date of the related borrowing or the stated expiration date of the ICBC Self-Liquidity Revolving Credit Agreement in semi-annual installments over a period of approximately five years. Under the ICBC Self-Liquidity Revolving Credit Agreement, upon a failure by Metropolitan to perform or observe its covenants, a default in other specified indebtedness of Metropolitan, or other specified events of default (including a reduction in the credit rating assigned to Subordinate Revenue Bonds issued under the Subordinate Debt Resolutions or any Subordinate Parity Obligation by any of Fitch, S&P or Moody's below "BBB" or "Baa2"), ICBC has the right to terminate its commitments and may accelerate Metropolitan's obligation to repay its borrowings. Metropolitan has secured its obligations to pay principal and interest under the ICBC Self-Liquidity Revolving Credit Agreement as Subordinate Parity Obligations, payable from Net Operating Revenues on a basis junior and subordinate to the Senior Revenue Bonds and Senior Parity Obligations. In addition, Metropolitan~~'s~~ has secured its obligations under the ICBC Self-Liquidity Revolving Credit Agreement with a pledge of any principal and interest it receives from Self-Liquidity Bonds it purchases from borrowings under the ICBC Self-Liquidity Revolving Credit Agreement.

Metropolitan has previously, and may in the future, enter into one or more other or alternative self-liquidity revolving credit agreements (a "Self-Liquidity Revolving Credit Agreement"). Metropolitan may secure its obligation to pay principal and interest under any new Self-Liquidity Revolving Credit Agreement as either Senior Parity Obligations or Subordinate Parity Obligations. Metropolitan has no obligation to make borrowings under, maintain, or renew any Self-Liquidity Revolving Credit Agreement, including the ICBC Self-Liquidity Revolving Credit Agreement. See also "–Limitations on Additional Revenue Bonds."

Pursuant to the Master Subordinate Resolution, for purposes of calculating the amount of Debt Service thereunder, Metropolitan has included the amount of principal and interest due and payable under

the ICBC Self-Liquidity Revolving Credit Agreement on a schedule of Revolving Credit Agreement Debt Service (as defined in the Master Subordinate Resolution). This schedule of Revolving Credit Agreement Debt Service initially assumes that Metropolitan will pay the principal under the ICBC Self-Liquidity Revolving Credit Agreement over a period of 30 years at a fixed interest rate of 2.97 percent. Pursuant to the terms of the Revenue Bond Resolutions, while a Self-Liquidity Revolving Credit Agreement is 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 Self-Liquidity Revolving Credit Agreement to purchase Self-Liquidity Bonds.

Other Junior Obligations

Metropolitan currently is authorized to issue up to $400,000,000 of Commercial Paper Notes payable from Net Operating Revenues on a basis subordinate to both the Senior Revenue Bonds and Senior Parity Obligations and to the Subordinate Revenue Bonds and Subordinate 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.

General Obligation Bonds

As of ~~November 1, 2018, $60,600,000~~May 1, 2019, $48,050,000 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~~	~~$20,865,000~~
Waterworks General Obligation Refunding Bonds, 2010 Series A	39,485,000	18,735,000
Waterworks General Obligation Refunding Bonds, 2014 Series A	49,645,000	~~21,000,000~~12,560,000
Waterworks General Obligation Refunding Bonds, 2019 Series A	16,755,000	16,755,000
Total	**~~$134,645,000~~105,885,000**	**~~$60,600,000~~48,050,000**

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. As described herein, in 1960, Metropolitan entered into its State Water Contract with DWR to receive water from the State Water Project. All expenditures for capital and operations, maintenance, power and replacement costs associated with the State Water Project facilities used for water delivery are paid for by the 29 Contractors that have executed State water supply contracts with DWR, including Metropolitan. Contractors are 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. In exchange, Contractors have the right to participate in the system, with an entitlement to water service from the State Water Project and the right to use the portion of the State Water Project conveyance system necessary to deliver water to them at no additional cost as long as capacity exists. Metropolitan's State Water Contract

accounts for nearly one-half of the total entitlement for State Water Project water contracted for by all Contractors.

DWR and other State Water Contractors, including Metropolitan, have reached an Agreement in Principle to extend their State water supply contracts 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.

Metropolitan's payment obligation for the State Water Project for the fiscal year ended June 30, 2018 was $527.3 million, which amount reflects prior year's credits of $43.8 million. For the fiscal year ended June 30, 2018, Metropolitan's payment obligations under the State Water Contract were approximately 34 percent of Metropolitan's total annual expenses. A portion of Metropolitan's annual property tax levy is for payment of State Water Contract obligations, as described above under "METROPOLITAN REVENUES–Revenue Allocation Policy and Tax Revenues" in this Appendix A. Any deficiency between tax levy receipts and Metropolitan's State Water Contract obligations is expected to be paid from Operating Revenues, as defined in the Senior Debt Resolutions. 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. See also "–Power Sources and Costs; Related Long-Term Commitments" 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.

Metropolitan capitalizes its share of the State Water Project capital 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.

DWR and various subsets of the State Water Contractors have entered into amendments to the State water supply contracts related to the financing of certain State Water Project facilities. The amendments establish procedures to provide for the payment of construction costs financed by DWR bonds by establishing separate subcategories of charges to produce the revenues required to pay all of the annual financing costs (including coverage on the allocable bonds) relating to the financed project. If any affected Contractor defaults on payment under certain of such amendments, the shortfall may be collected from the non-defaulting affected Contractors, subject to certain limitations.

These amendments represent additional long-term obligations of Metropolitan, 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 ~~2017,~~2018, this represented a payment of $~~8.9~~7.8 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 ("CAISO"). 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 FERC regulations.~~

East Branch Enlargement Amendment. In 1986, Metropolitan's State Water Contract and the water supply contracts of certain other State Water 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 under the State water supply contracts 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 Appendix B to Bulletin 132-~~17,~~17 (an annual report produced by DWR setting forth data and computations used by the State in determining State Water Contractors' Statements of Charges), California WaterFix costs forecasted based on a 64.6 percent share of the California WaterFix as authorized by the Board on July 10, 2018, and power costs forecasted by Metropolitan. The projections are included in Metropolitan's adopted biennial budget for fiscal years 2018-19 and 2019-20 and the ten-year financial forecast included in the adopted budget. See also "METROPOLITAN'S WATER SUPPLY–State Water Project" and "–California WaterFix" in this Appendix A. The projections reflect certain assumptions concerning future events and circumstances which may not occur or materialize. Actual costs may vary from these projections if such events and circumstances do not occur as expected or materialize, and such variances may be material.

PROJECTED COSTS OF METROPOLITAN
FOR STATE WATER CONTRACT AND CALIFORNIA WATERFIX
(Dollars in Millions)

Year Ending June 30	Capital Costs[1]	Minimum OMP&R[1]	Power Costs[2]	Refunds & Credits[1]	California WaterFix[3]	Total[4]
~~2019~~	~~$172.9~~	~~$267.0~~	~~$163.5~~	~~$(40.2)~~	~~$ 3.6~~	~~$566.7~~
2020	168.0	291.6	170.9	(41.0)	13.0	602.5
2021	163.0	297.4	180.9	(43.2)	50.9	649.0
2022	163.3	316.1	189.8	(37.0)	82.3	714.5
2023	161.8	335.8	197.1	(37.1)	128.4	786.0
2024	160.2	351.9	202.2	(35.9)	185.9	864.3

Source: Metropolitan.

(1) Capital Costs, Minimum Operations, Maintenance, Power and Replacement ("OMP&R") and Refunds and Credits projections are based on Appendix B to Bulletin 132-17.

(2) Power costs are forecasted by Metropolitan based on a 50 percent State Water Project allocation. Availability of State Water Project supplies vary and deliveries may include transfers and storage. All deliveries are based upon availability, as determined by hydrology, water quality and wildlife conditions. See "METROPOLITAN'S WATER SUPPLY–State Water Project" and "–Endangered Species Act and Other Environmental Considerations" in this Appendix A.

(3) Based on Metropolitan's forecast of costs for a 64.6 percent share of the California WaterFix as authorized by the Board on July 10, 2018.

(4) Totals may not add due to rounding.

Power Sources and Costs; Related Long-Term Commitments

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. Metropolitan's power costs include various ongoing fixed annual obligations under its ~~contract~~contracts with the U.S. Department of Energy Western Area Power Administration and the U.S. Department of Interior Bureau of Reclamation for power from the Hoover and Parker Power ~~Plant~~Plants respectively. Expenses for electric power for the CRA ~~(not including credits from power sales and related revenues)~~ for the fiscal years 2016-17 and 2017-18 were approximately $~~21.3~~26.2 million (net of CRA power revenues) and $~~23.9~~29.1 million (gross CRA power expenses), respectively. Expenses for electric power and transmission service for the State Water Project for fiscal years 2016-17 and 2017-18 were approximately $161.0 million and $156.5 million, respectively. ~~Given the continuing uncertainty surrounding the electricity markets in California and in the electric industry in general,~~Electricity markets are subject to volatility and Metropolitan is unable to give any assurance with respect to the magnitude of future power costs.

Colorado River Aqueduct. Approximately 50 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 for energy generated from federal facilities located on the Colorado River (Hoover Power Plant and Parker Power Plant). Payments made under the Hoover Power Plant and Parker Power Plant contracts are ~~treated as~~ operation and maintenance expenses. These contracts provide Metropolitan with reliable and economical power resources to pump Colorado River water to Metropolitan's service area.

As provided for under the Hoover Power Allocation Act of 2011 (H.R. 470), Metropolitan has executed a 50-year agreement with the Western Area Power Administration for the continued purchase of electric energy generated at the Hoover Power Plant through September 2067, succeeding Metropolitan's prior Hoover contract that expired on September 30, 2017.

Depending on pumping conditions, Metropolitan can require additional energy in excess of the base resources available to Metropolitan from the Hoover and Parker Power Plants. The remaining up to approximately 50 percent of annual pumping power requirements for full capacity pumping on the CRA is obtained through energy purchases from municipal and investor-owned utilities, ~~power marketers~~third party suppliers, or the CAISO markets. 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.

Gross diversions of water from Lake Havasu for fiscal years 2016-17 and 2017-18 were approximately 766,000 acre-feet and 786,000 acre-feet, respectively, including Metropolitan's basic apportionment of Colorado River water and supplies from water transfer and storage programs. In fiscal years 2016-17 and 2017-18, Metropolitan purchased approximately 32,000 and ~~94,000~~95,000 megawatt-hours, respectively, of additional energy.

Prior to its expiration on September 30, 2017, Metropolitan was party to a 30-year Service and Interchange Agreement with Southern California Edison ("Edison"), which included provisions for the sharing between Metropolitan and Edison of the benefits realized by the integrated operation of Edison's and Metropolitan's electric systems. Under this agreement Edison also provided Metropolitan with varying amounts of additional energy (benefit energy) for CRA pumping. Metropolitan anticipates market power purchases will replace benefit energy and has reflected the additional costs in the CRA power cost projections for fiscal year 2018-19 and the ten-year financial forecast.

To replace the services previously provided by Edison under the Service and Interchange Agreement, Metropolitan has negotiated new agreements with several parties. In particular, Metropolitan has agreements with the Arizona Electric Power Cooperative ("AEPCO") to provide transmission and energy purchasing services to support CRA power operations. The term of these agreements extends to December 31, 2035.

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), and mid-term contracts with Metropolitan (hydropower), Kern River Conservation District (hydropower), Northern California Power Agency (natural gas generation), Wells Fargo Company (Solar), Dominion Solar Holdings (Solar), and S-Power Corporation (Solar). The remainder of the State Water Project power needs is met by short-term purchases.

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 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, including Metropolitan, as "real parties in interest," since they could be adversely affected by this litigation. On May 16, 2012, the trial 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. Supplemental briefing was completed in the fall of 2016. Oral argument was held on September 24, 2018. Regulatory permits and authorizations are also required before the new license can take effect. In December 2016, the National Marine Fisheries Service issued a biological opinion setting forth the terms and conditions under which the relicensing project must operate in order to avoid adverse impacts to threatened and endangered species. This was the last major regulatory ~~hurdle~~requirement prior to FERC issuing a new license. Following the 2017 Oroville Dam spillway incident, Butte County, the City of Oroville, and others requested that FERC not issue a new license until an Independent Forensic Team ("IFT") delivered their final report to FERC and FERC has had adequate time to review the report. The Final IFT report was delivered on January 5, 2018. DWR submitted a plan to address the findings of the report to FERC on March 12, 2018. See "METROPOLITAN'S WATER SUPPLY–State Water Project – 2017 Oroville Dam Spillway Incident." Metropolitan anticipates that FERC will issue the new license ~~in 2018.~~; however, the timeframe for FERC approval is not currently known. However, 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 the CAISO. The transmission service providers participating in the CAISO may seek increased transmission rates, subject to the approval of FERC. DWR has the right to contest any such proposed increase. DWR may also be subject to increases in the cost of transmission service as new electric grid facilities are constructed.

On September 10, 2018, Governor Brown signed SB 100 into law, to take effect on January 1, 2019. SB 100 establishes a goal of providing 100 percent carbon-free electricity by 2045 and increases the 2030 Renewables Portfolio Standard ("RPS") requirement for retail electric utilities from 50 percent to 60 percent. Simultaneously, the Governor announced Executive Order B-55-18 directing state agencies to develop a framework to achieve and maintain carbon neutrality by 2045. Metropolitan and DWR are not subject to the RPS requirements. However, as a state agency, DWR is subject to the Executive Order. DWR has an existing climate action plan in order to achieve carbon neutrality by 2045.

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 hired prior to January 1, 2013 are required to contribute 7.00 percent of their earnings (excluding overtime pay) to PERS. Pursuant to the current memoranda of understanding, Metropolitan contributes the requisite 7.00 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 but before January 1, 2013, pay the full 7.00 percent contribution to PERS for the first five years of employment. After the employee completes five

years of employment, Metropolitan contributes the requisite 7.00 percent contribution. Metropolitan also contributes the entire 7.00 percent on behalf of unrepresented employees. Employees hired on or after January 1, 2013 and who are "new" PERS members as defined by Public Employees' Pension Reform Act of 2013 pay a member contribution of 6.75 percent in fiscal year 2016-17, and 6.00 percent in fiscal years 2017-18 and 2018-19.through 2019-20. 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 2017-18 contribution was based on the June 30, 2015 valuation report, the fiscal year 2018-19 contribution is based on the June 30, 2016 valuation report, and the fiscal year 2019-20 contribution is based on the June 30, 2017 valuation report. The PERS' projected investment return (the discount rate) is 7.50 percent for fiscal year 2017-18, 7.375 percent for fiscal year 2018-19, and 7.25 percent for fiscal year 2019-20.

For fiscal year 2017-18, Metropolitan contributed 22.89 percent of annual covered payroll. The fiscal year 2017-18 annual pension cost was $61.3 million, of which $12.5 million was for Metropolitan's pick-up of the employees' 7.00 percent share. For fiscal years 2018-19 and 2019-20, Metropolitan is required to contribute 25.97 percent and 29.97 percent, respectively, of annual covered payroll, in addition to member contributions paid by Metropolitan.

Metropolitan's required contributions to PERS fluctuate each year and include a normal cost component and a component equal to an amortized amount of the unfunded liability. Many assumptions are used to estimate the ultimate liability of pensions and the contributions that will be required to meet those obligations. The PERS Board of Administration has adjusted and may in the future further adjust certain assumptions used in the PERS actuarial valuations, which adjustments may increase Metropolitan's required contributions to PERS in future years. Accordingly, Metropolitan cannot provide any assurances that its required contributions to PERS in future years will not significantly increase (or otherwise vary) from any past or current projected levels of contributions.

As part of the June 30, 2014 actuarial valuation, the PERS Board of Administration adopted changes in demographic assumptions. The most significant of these was the improvement in post-retirement mortality acknowledging greater life expectancies and expected continued improvements. On December 21, 2016 the PERS Board of Administration approved lowering the discount rate to 7.00 percent over a three year period. As a result, the discount rate for fiscal year 2018-19 will be 7.375 percent, for fiscal year 2019-20 it will be 7.25 percent, and for fiscal year 2020-21 it will be 7.00 percent. PERS has estimated that with a reduction in the rate of return to 7.00 percent, most employers could expect a 1.00 percent to 3.00 percent increase in the normal cost for miscellaneous plans. As a result, required contributions of employers, including Metropolitan, toward unfunded accrued liabilities, and as a percentage of payroll for normal costs, are expected to increase.

Beginning with fiscal year 2017-18 PERS began collecting employer contributions towards the plan's unfunded liability as dollar amounts instead of the prior method of contribution rate. This change addresses potential funding issues that could arise from a declining payroll or reduction in the number of active members in the plan.

On December 19, 2017, the PERS Board of Administration adopted new actuarial assumptions based on the recommendations in the December 2017 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases and inflation assumption for public agencies. These new assumptions were incorporated in the June 30, 2017 actuarial valuation and will impact the required contribution for fiscal year 2019-20. In addition, the Board adopted a new asset portfolio as part of its Asset Liability Management. The new asset mix supports a 7.00 percent discount rate. The reduction of the inflation assumption will be implemented in

two steps in conjunction with the decreases in the discount rate. For the June 30, 2017 valuation an inflation rate of 2.625 percent ~~will be~~was used and a rate of 2.50 percent will be used in the ~~following~~subsequent valuation.

The PERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the five-year ramp-up and ramp-down on unfunded accrued liability bases attributable to assumption changes and non-investment gains/losses. The new policy removes the five-year ramp-down on investment gains/losses. These changes will apply only to new unfunded accrued liability bases established on or after June 30, 2019.

The following table shows the funding progress of Metropolitan's pension plan.

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

Valuation Date	Accrued Liability	~~Actuarial Value of Assets(1)~~	Market Value of Assets	~~Actuarial Value~~	~~Market Value~~Unfunded Accrued Liability	~~Actuarial Value~~	Funded ~~Market Value~~Ratio
6/30/17	$2.269	~~N/A~~	$1.6	~~N/A~~	$(0.619)	~~N/A~~	72.7%
6/30/16	$2.166	~~N/A~~	$1.5	~~N/A~~	$(0.642)	~~N/A~~	70.3%
6/30/15	$2.060	~~N/A~~	$1.5	~~N/A~~	$(0.504)	~~N/A~~	75.5%
6/30/14	$1.983	~~N/A~~	$1.5	~~N/A~~	$(0.423)	~~N/A~~	78.7%
6/30/13	$1.805	~~N/A~~	$1.3	~~N/A~~	($0.449)	~~N/A~~	75.1%
~~6/30/12~~	~~$1.731~~	~~$1.471~~	~~$1.227~~	~~($0.260)~~		~~($0.504)~~	

Source: California Public Employees' Retirement System.

~~(1) Beginning with the June 30, 2013 Valuation PERS no longer uses an actuarial value of assets and instead uses the market value of assets to determine contribution rates per PERS' direct rate smoothing policy.~~

Effective July 1, 2014, Metropolitan implemented Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27* (GASB 68), affecting the reporting of pension liabilities for accounting purposes. Under GASB 68, Metropolitan is required to report the Net Pension Liability (*i.e.*, the difference between the Total Pension Liability and the Pension Plan's Net Position or market value of assets) in its financial statements.

For Metropolitan's fiscal year ended June 30, 2018 financial statements, the Net Pension Liability reported for the Miscellaneous Plan was $660.9 million (an increase of $73.3 million over the prior year), representing a Total Pension Liability as of such date of $2,315.2 million (an increase of $200.2 million over the prior year) less the Plan Fiduciary Net Position as of such date of $1,654.3 million (an increase of $126.9 million over the prior year). For fiscal year 2018, the Miscellaneous Plan Net Pension Liability as a percentage of covered-employee payroll was 331.81 percent and the Plan Net Position as a percentage of the Total Pension Liability was 71.45 percent. The Net Pension Liability for Metropolitan's Miscellaneous Plan for the year ended June 30, 2018 was measured as of June 30, 2017, and the Total Pension Liability used to calculate the Net Pension Liability was determined by an annual actuarial valuation as of June 30, 2016.

For Metropolitan's fiscal year ended June 30, 2017 financial statements, the Net Pension Liability reported for the Miscellaneous Plan was $587.7 million (an increase of $108.1 million over the prior year), representing a Total Pension Liability as of such date of $2,115.1 million (an increase of $76.5 million over the prior year) less the Plan Fiduciary Net Position as of such date of $1,527.4 million (a decrease of $31.6 million over the prior year). For fiscal year 2017, the Miscellaneous Plan Net Pension Liability as a percentage of covered-employee payroll was 300.01 percent and the Plan Net Position as a percentage of the Total Pension Liability was 72.22 percent. The Net Pension Liability for Metropolitan's Miscellaneous Plan for the year ended June 30, 2017 was measured as of June 30, 2016, and the Total Pension Liability used to calculate the Net Pension Liability was determined by an annual actuarial valuation as of June 30, 2015.

For more information on the plan, see APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017.~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (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 $30.1 million in fiscal year 2017-18. Under Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment 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 valuations dated June 30, 2015 and June 30, 2017, were released in June of 2016 and March of 2018, respectively. The June 30, 2015 valuation indicates that the Actuarially Determined Contribution ("ADC" formerly referred to as the Annual Required Contribution) in fiscal year 2017-18 is $30.1 million and the June 30, 2017 valuation indicates that the ADC will be $27.3 million and $28.1 million in fiscal years 2018-19 and 2019-20, respectively. In both valuations, the ADC was based on the entry-age normal actuarial cost method with contributions determined as a level percent of pay. The actuarial assumptions included the following:

	June 30, 2015 Valuation	**June 30, 2017 Valuation**
Investment Rate of Return	7.25%	6.75%
Inflation	3.00%	2.75%
Salary Increases	3.00%	3.00%
Health Care Cost Trends	Medicare – starting at 7.2%, grading down to 5.0% over five years. Non-Medicare – starting at 7.0%, grading down to 5.0% over five years.	Medicare – starting at 6.5%, grading down to 4.0% over fifty seven years. Non-Medicare – starting at 7.5%, grading down to 4.0% over fifty seven years.
Mortality, Termination, Disability	CalPERS 1997-2011 Experience Study Post-retirement mortality projected fully generational with Scale MP-2014, modified to converge to ultimate improvement rates in 2022	CalPERS 1997-2011 Experience Study Mortality projected fully generational with Scale MP-2017
Affordable Care Act (ACA) Excise Tax	2% load on retiree medical premium subsidy	2% load on retiree medical premium subsidy

As of June 30, 2017, the date of the most recent OPEB actuarial report, the unfunded actuarial accrued liability was estimated to be $235.5 million. The amortization period for the unfunded actuarial accrued liability is 23 years closed with 19 years remaining as of fiscal year end 2018 and the amortization period of actuarial gains and losses is 15 years closed. Adjustments to the ADC include amortization of the unfunded actuarial accrued liability and actuarial gains and losses.

In September 2013, Metropolitan's Board established an irrevocable OPEB trust fund with the California Employers' Retiree Benefit Trust Fund. The market value of assets in the trust as of June 30, 2018 was $240.0 million. As part of its biennial budget process, the Board approved the full funding of the ADC for fiscal years 2018-19 and 2019-20.

Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions*, was issued in June 2015, relating to accounting and

financial reporting by state and local governments for OPEB. This statement establishes standards for measuring and recognizing liabilities, deferred outflows and deferred inflows of resources, and expenses. For defined benefit OPEB, this statement identifies the methods and assumptions that should be used to project benefit payments, discount projected benefit payments to their actuarial present value, and attribute that present value to periods of employee service. Note disclosure and required supplementary information requirements about OPEB also are addressed. Metropolitan implemented this statement in its June 30, 2018 financial statements. Major changes as a result of this statements were (i) the inclusion of net OPEB liabilities on Metropolitan's Statement of Net Position (previously they were included as notes to Metropolitan's financial statements); (ii) recognition of deferred inflows and outflows of resources related to OPEB; (iii) more variable OPEB expense as it is now based on the net OPEB liability change between reporting dates, with some sources of change recognized immediately and others spread over years, instead of being based on actual contributions; and (iv) restatement of beginning net position for 2018 in the amount of $138.9 million to record the beginning deferred OPEB contributions and net OPEB liability.

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~~.~~HISTORICAL AND PROJECTED REVENUES AND EXPENSES

The "Historical and Projected Revenues and Expenses" table below provides a summary of revenues and expenses of Metropolitan prepared on a modified accrual basis. This is consistent with the adopted biennial budget for fiscal years 2018-19 and 2019-20. 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~~are not ~~be~~ recorded and payments ~~of~~for debt service ~~will be~~and pay-as-you-go construction are recorded when paid. 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 revenues are recognized in the month the water transaction occurs 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 Revenue Bond 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 the 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 transactions and the 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.

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" in this Appendix A. Metropolitan has conservatively set the water transactions projections in the following table. Due to the variability of supplemental wholesale water transactions and unpredictability of future hydrologic conditions, projections of the volume of annual water transactions are

based on long-term average forecasts consistent with Metropolitan's latest Board adopted Integrated Resources Plan, the 2015 IRP Update.

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.

Metropolitan's projections of the level of water transactions 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 outlined in the 2015 IRP Update. See "CONSERVATION AND WATER SHORTAGE MEASURES" 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, recycled water, and seawater desalination (see "REGIONAL WATER RESOURCES" in this Appendix A). For example, water transactions projections for fiscal year 2018-19 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 2018. For additional description of Metropolitan's water transactions projections, see "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

The water transactions projections used to determine water rates and charges assume an average year hydrology. Actual water transactions are likely to vary from projections. As shown in the chart entitled "Historical Water Transactions" below, transactions can vary significantly from average and demonstrates the degree to which Metropolitan's commitments to meet supplemental demands can impact transactions. In years when actual transactions exceed projections, the revenues from water transactions during the fiscal year will exceed budget, potentially resulting in an increase in financial reserves. In years when actual transactions 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 transactions, revenues and expenses, and financial reserve balances in setting rates for future fiscal years.

~~Financial projections~~Projections in the following table reflect, for fiscal ~~years 2018-19 through 2022-23 are reflected in the adopted budget for fiscal years 2018-19 and 2019-20 and~~year 2018-19 actual financial results through March 31, 2019 and revised projections for the balance of that fiscal year, and revised projections for fiscal year 2019-20. Financial projections for fiscal years 2020-21 through 2023-24 reflect the ten-year financial forecast provided in the adopted ~~biennial~~ budget~~.~~ for fiscal years 2018-19 and 2019-20. This includes the issuance of $~~460~~560 million of bonds for fiscal years 2018-19 through ~~2022-23~~2023-24 to finance the CIP (of which bonds with net proceeds of $80 million were issued for fiscal year 2018-19). See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES~~–Water Revenues~~" and "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

Water transactions were 1.61 million acre-feet in fiscal year 2017-18. Water transactions are projected to be ~~1.65~~1.46 million acre-feet for fiscal year 2018-19, 1.75 million acre-feet for fiscal ~~years~~year 2019-20, and 1.8 million acre-feet for fiscal years 2020-21 through ~~2020-23.~~2023-24. Rates and charges increased by 4.0 percent on January 1, 2017 and January 1, ~~2018.~~2018 and 3.0 percent on January 1, 2019. On April 10, 2018 the Board adopted average increases in rate and charges of 3.0 percent, which will

become effective on January 1, ~~2019 and January 1,~~ 2020. Rates and charges are projected to increase an average of 4.1 percent annually thereafter. Actual rates and charges to be effective in 2021 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.

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HISTORICAL AND PROJECTED REVENUES AND EXPENSES[a]
Fiscal Years Ended June 30
(Dollars in Millions)

	~~Actual~~			~~Projected~~Actual		Projected				
	~~2015~~	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Revenues[b]	~~$1,383~~	$1,166	$1,151	$1,285	~~$1,396~~1,382	1,528	$1,616	$1,668	$1,728	$1,787
Additional Revenue Sources[c]	~~199~~	200	184	172	170	166	179	198	216	238
Total Operating Revenues	~~1,582~~	1,366	1,335	1,457	~~1,566~~1,359	1,694	1,795	~~1,867~~1,866	1,944	2,025
O&M, CRA Power and Water Transfer Costs[d]	~~(697)~~	(799)	(559)	(568)	(~~672~~600)	(689)	(723)	(743)	(767)	(788)
Total SWC OMP&R and Power Costs[e]	~~(308)~~	(402)	(368)	(395)	(~~430~~346)	(463)	(478)	(506)	(533)	(554)
Total Operation and Maintenance	~~(1,005)~~	(1,201)	(927)	(963)	(~~1,102~~946)	(1,152)	(~~1,202~~1,201)	(1,249)	(~~1,299~~1,300)	(1,342)
Net Operating Revenues	~~$ 577~~	$ 165	$ 408	~~495~~494	$ ~~464~~413	$ 542	~~593~~594	~~618~~617	$ 644	$ 683
Miscellaneous Revenue[f]	~~21~~	24	18	~~26~~27	~~23~~22	24	24	24	24	24
Transfer from Reserve Funds[g]	~~142~~	222	33	1	--	--	--	--	--	--
Sales of Hydroelectric Power[h]	~~8~~	7	21	24	~~21~~18	19	19	20	20	20
Interest on Investments[i]	~~13~~	17	4	8	~~17~~27	18	20	21	23	24
Adjusted Net Operating Revenues[j]	~~761~~	435	484	~~553~~554	~~525~~480	603	~~656~~657	~~683~~682	~~712~~711	751
Senior and Subordinate Obligations[k]	~~(281)~~	(310)	(308)	(340)	(~~323~~330)	(~~322~~294)	(314)	(319)	(318)	(324)
Funds Available from Operations	~~$ 480~~	$ 125	$ 176	~~213~~214	$ ~~201~~150	~~281~~309	~~342~~343	~~364~~363	~~394~~393	427
Debt Service Coverage on all Senior and Subordinate Bonds[l]	~~2.71~~	1.40	1.57	~~1.62~~1.63	~~1.62~~1.45	~~1.87~~2.05	2.09	2.14	2.24	2.32
Funds Available from Operations	~~$ 480~~	$ 125	$ 176	~~213~~214	$ ~~201~~150	~~281~~309	~~342~~343	~~364~~363	~~394~~393	427
Other Revenues (Expenses)	~~(7)~~	(6)	(4)	(5)	(9)	(7)	(7)	(7)	(7)	(8)
Pay-As-You Go Construction[n]	~~(210)~~	(273)	(132)	(98)	(~~120~~134)	(120)	(150)	(150)	(150)	(154)
Pay-As-You Go Funded from Replacement & Refurbishment Fund Reserves[n]	~~--~~	160	1	1	--	--	--	--	~~1~~--	--
Total SWC Capital and WaterFix Costs Paid from Current Year Operations	~~(46)~~	(24)	(45)	(21)	(~~34~~22)	(36)	(60)	(96)	(133)	(189)
Remaining Funds Available from Operations	~~217~~	(18)	(4)	~~90~~91	~~39~~(15)	~~118~~146	126	~~111~~110	~~105~~103	73
Fixed Charge Coverage[m]	~~2.33~~	1.30	1.37	1.53	~~1.47~~1.36	~~1.68~~1.83	1.76	~~1.65~~1.64	1.58	1.46
Property Taxes	~~104~~	108	116	131	~~117~~129	118	119	121	122	124
General Obligation Bonds Debt Service	~~(22)~~	(22)	(22)	(20)	(14)	(14)	(8)	(9)	(2)	(2)
SWC Capital Costs Paid from Taxes	~~(82)~~	(86)	(94)	(111)	(~~102~~115)	(104)	(111)	(112)	(120)	(122)

Net Funds Available from Current Year[n]	~~$ 217~~	$ (18)	$ (4)	$ ~~90~~91	$ ~~39~~(15)	$ ~~118~~146	$ ~~111~~110	$ ~~105~~103	$ 76

Source: Metropolitan.

(Footnotes on next page)

(Footnotes to table on prior page)

(a) Unaudited. Prepared on a modified accrual basis. Projected revenues and expenses in fiscal year 2018-19 are based on preliminary financial results through March 31, 2019, and revised projections for the balance of fiscal year 2019-20. Projections for fiscal year ~~2018-19~~2020-21 through fiscal year ~~2022-23~~2023-24 are based on assumptions and estimates used in the adopted biennial budget for fiscal years 2018-19 and 2019-20 and reflect the projected issuance of additional bonds. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

(b) Water Revenues include revenues from water sales, exchanges, and wheeling. During the fiscal years ended June 30, ~~2015~~2016 through June 30, 2018, annual water transactions (in acre-feet) were ~~1.91 million,~~ 1.62 million, 1.54 million, and 1.61 million, respectively. See the table entitled "Summary of Water Transactions and Revenues" under "METROPOLITAN REVENUES–Water Revenues" in this Appendix A. The water transactions projections (in acre-feet) are ~~1.65~~1.46 million acre-feet for fiscal year 2018-19, 1.75 million acre-feet for fiscal year 2019-20 and 1.80 million acre-feet for fiscal years 2020-21 through ~~2022-23~~2023-24. Projections reflect adopted rate and charge increases of 3.0 percent, effective on January 1, 2019 and January 1, 2020. Rates and charges are projected to increase an average of 4.1 percent per fiscal year thereafter, subject to adoption by Metropolitan's Board. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

(c) Includes revenues from water standby, readiness-to-serve, and capacity charges. The term Operating Revenues excludes *ad valorem* taxes. See "METROPOLITAN REVENUES–Other Charges" 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 EXPENSES–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.

(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,~~ $222 million in fiscal year 2015-16, $33 million in fiscal year 2016-17, and $1 million in fiscal year 2017-18 to fund a like amount of costs for conservation and supply programs. See "MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES" in this Appendix A.

(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.

(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 Senior Revenue Bonds and Senior Parity Obligations and Subordinate Revenue Bonds and Subordinate Parity Obligations.

(k) Includes debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds, Subordinate Parity Obligations, and additional Revenue Bonds (projected). Includes issuance of $80 million (net proceeds) in additional Revenue Bonds for fiscal year 2018-19 and assumes issuance of an additional $80 million for fiscal year 2019-20 as provided in budget assumptions for the adopted biennial budget for fiscal years 2018-19 and 2019-20 and $100 million annually as projected for fiscal years 2020-21 through ~~2022-23~~2023-24. Fiscal year 2015-16 debt service increased $7.0 million for debt service paid on June 30, 2016, rather than July 1, 2017 and fiscal year 2016-17 debt service was therefore reduced by $7.0 million. Fiscal year 2017-18 debt service increased by $15.3 million for debt service prepaid through bond refunding transactions in June 2018, rather than on July 1, 2018 and fiscal year 2018-19 debt service is therefore reduced by $15.3 million. Fiscal year 2018-19 debt service increased by $28.5 million for debt service prepaid through bond refunding transactions in June 2019, rather than on July 1, 2019 and fiscal year 2019-20 debt service is therefore reduced by $28.5 million. See "CAPITAL INVESTMENT PLAN–Capital Investment Plan Financing" in this Appendix A.

(l) Adjusted Net Operating Revenues, divided by the sum of debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds and Subordinate Parity Obligations, including the subordinate lien California Safe Drinking Water Revolving Fund Loan (prior to its discharge in 2017) and projected Revenue Bonds. See "METROPOLITAN EXPENSES–Outstanding Senior Revenue Bonds and Senior Parity Obligations" and "–Outstanding Subordinate Revenue Bonds and Subordinate Parity Obligations" in this Appendix A.

(m) Adjusted Net Operating Revenues, divided by the sum of State Water Contract capital and WaterFix costs paid from current year operations and debt service on outstanding Senior Revenue Bonds, Senior Parity Obligations, Subordinate Revenue Bonds and Subordinate Parity Obligations, including the subordinate lien California Safe Drinking Water Revolving Fund Loan (prior to its discharge in 2017) and additional Revenue Bonds (projected).

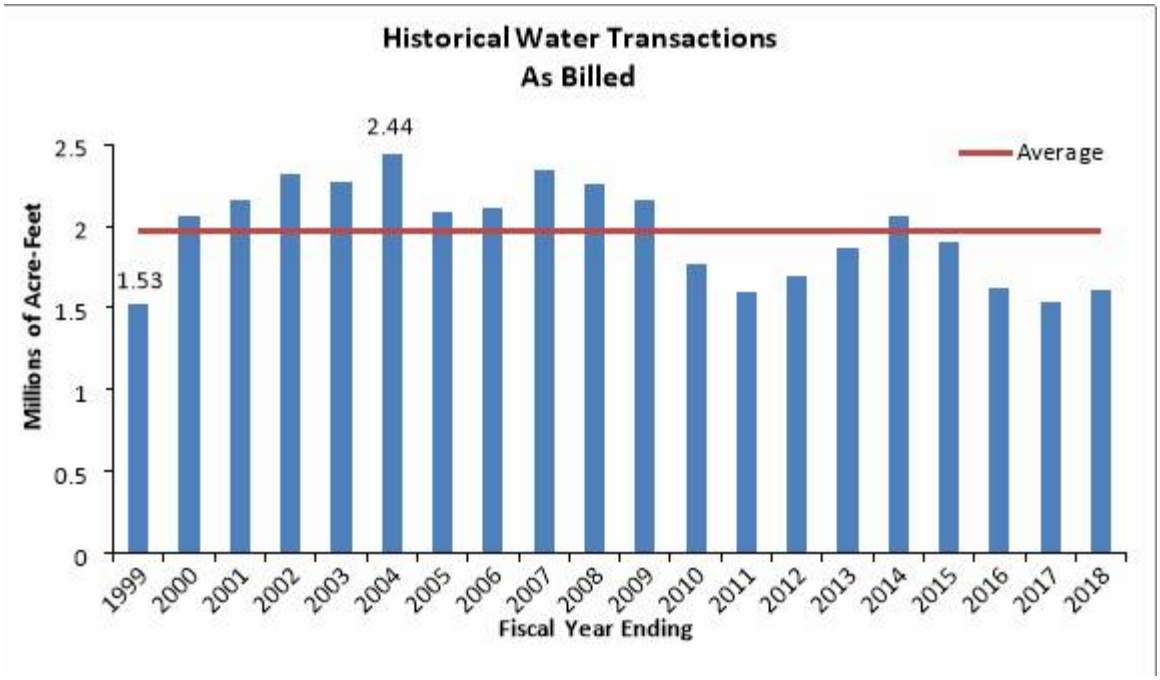
(n) ~~Fiscal Year 2014-15 includes amounts transferred prior to June 30, 2015: $160 million to the Water Management Fund, for water conservation programs.~~ For fiscal year 2015-16, Metropolitan used $264 million for acquiring properties in Riverside and Imperial Counties, funded by $160 million from the Replacement and Refurbishment Fund Reserves and the balance from unrestricted reserves. This land purchase is reflected as a pay-as-you-go expenditure for fiscal year 2015-16.

MANAGEMENT'S DISCUSSION OF HISTORICAL AND PROJECTED REVENUES AND EXPENSES

Water Transactions Projections

The water transactions forecast in the table above for fiscal year 2018-19 is ~~1.65~~1.46 million acre-feet. The water transactions forecast is 1.75 million acre-feet for fiscal years 2019-20 and 1.80 million acre-feet for fiscal years 2020-21 through ~~2022-23~~2023-24, consistent with the biennial budget and ten-year financial forecast. For purposes of comparison, Metropolitan's highest level of water transactions during the past 20 fiscal years was approximately 2.44 million acre-feet in fiscal year 2003-04 and the lowest was 1.53

million acre-feet in fiscal year 1998-99. The chart below shows the volume of water transactions over the last 20 fiscal years.



Water Revenues

Metropolitan relies on revenues from water transactions for about 80 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 transactions to determine the rates necessary to produce the required revenues to be derived from water transactions 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 10, 2018, the Board adopted average increases in rate and charges of 3.0 percent, which will become effective on January 1, 2019 and January 1, 2020. Rates and charges are projected to increase an average of 4.1 percent annually thereafter. Actual rates and charges to be effective in 2021 and thereafter are subject to adoption by Metropolitan's Board.

Projected Fiscal Year 2018-19 Results

~~The financial projection~~Projections for fiscal year 2018-19, in the table above, are based on preliminary financial results through March 31, 2019, and revised projections for the balance of fiscal year and revised projections for fiscal year 2019-20. Financial projections for fiscal years ~~2018-19 and 2019-20 reflects the biennial budget as adopted by the Board on April 10, 2018. Financial projections for fiscal years~~ 2020-21 through ~~2021-23~~2023-24 are reflected in the ten-year financial forecast provided in the ~~adopted~~ biennial budget~~.~~ adopted by the Board on April 10, 2018. The fiscal year 2018-19 and 2019-20 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 3.0 percent annually in both fiscal years 2018-19 and 2019-20, and projected average increases of 4.1 percent per year thereafter. Actual rates and charges to be effective in fiscal year 2020-21 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 be updated as well. Increases in rates and charges reflect the impact of reduced water transactions projections, increasing operations and maintenance costs, and increasing State Water Project costs, when compared to prior fiscal years.

Operation and maintenance expenses in fiscal year 2018-19 are projected to be $946 million, which represents approximately 60.7 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. Metropolitan's operation and maintenance expenses are projected to be $156 million under budget in fiscal year 2018-19. Comparatively, operations and maintenance expenses in fiscal year 2017-18 were $963 million, which represents approximately 62.4 percent of total costs. Overall, projected expenditures for the twelve months ending June 30, 2019 are $1.6 billion. This is $134 million, or 7.9 percent, less than budgeted expenditures.

Fiscal year 2018-19 revenue bond debt service coverage is projected to be ~~1.62~~1.45x and fixed charge coverage to be ~~1.47~~1.36x. Fiscal year 2018-19 capital expenditures, currently estimated at $~~200~~214 million, will be primarily funded by pay-as-you-go funding and the remainder from proceeds of Metropolitan's bonds issued in June 2018 for such purpose. Metropolitan's unrestricted reserves are projected to be approximately $~~478~~425 million at June 30, 2019. See "METROPOLITAN REVENUES–Financial Reserve Policy" in this Appendix A. This amount does not include funds held in the Exchange Agreement Set-Aside Fund.

See also the "Management's Discussion and Analysis" contained in APPENDIX B–"THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA INDEPENDENT AUDITORS' REPORT AND BASIC FINANCIAL STATEMENTS FOR FISCAL YEARS ENDED JUNE 30, 2018 AND JUNE 30, ~~2017.~~2017 AND BASIC FINANCIAL STATEMENTS FOR THE SIX MONTHS ENDED DECEMBER 31, 2018 AND 2017 (UNAUDITED)."

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Rendering set	Standard

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Insertion	
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Deletions	708
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Moved to	35
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Format changed	0
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